Ask the Experts: Challenges for Health-system Pharmacists in Managing Acute Bleeding in Patients with Hemophilia

Presented as a Live Webinar
Wednesday, February 27, 2013
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W E B I N A R I N F O R M A T I O N

How do I register?

Go to http://ashpadvantagemedia.com/stopbleeding/webinar/ and click on the **Register** button. After you submit your information, you will be e-mailed computer and audio information.

What is a live webinar?

A live webinar brings the presentation to you – at your work place, in your home, through a staff in-service program. You listen to the speaker presentation in "real time" as you watch the slides on the screen. You will have the opportunity to ask the speaker questions at the end of the program. Please join the conference at least 5 minutes before the scheduled start time for important announcements.

How do I process my Continuing Education (CE) credit?

Continuing pharmacy education for this activity will be processed on ASHP's new eLearning system and reported directly to CPE Monitor. After completion of the live webinar, you will process your CPE and print your statement of credit online at http://elearning.ashp.org/my-activities. To process your CPE, you will need the enrollment code that will be announced at the end of the webinar.

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What if I would like to arrange for my colleagues to participate in this webinar as a group?

One person serving as the group coordinator should register for the webinar. That group coordinator will receive an e-mail confirmation with instructions for joining the webinar. A few minutes before the webinar begins, the group coordinator should launch the webinar link. Once the webinar has been activated, the coordinator will have the option to open the audio via VoIP (Voice Over IP) on the webinar toolbar or use a touch tone phone with the provided dial-in information. At the conclusion of the activity, the group coordinator will complete a brief online evaluation and report the number of participants at that site. Each participant will process his or her individual continuing education statement online.

What do I need in order to participate in the webinar?

1. Computer with internet access and basic system requirements. When you register, the webinar system will assess your system to ensure compatibility.
2. Telephone to dial the toll-free number and listen to the presentation (if you choose not to use Voice Over IP [VoIP] via your computer).

Webinar System Requirements

Be sure to view the webinar system requirements for Windows, Mac, iOS, and Android prior to the activity.

A C T I V I T Y F A C U L T Y

William E. Dager, Pharm.D., BCPS (AQ-Cardiology)
Activity Chair
Pharmacist Specialist
UC Davis Medical Center
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William E. Dager, Pharm.D., BCPS (AQ-Cardiology), is a pharmacist specialist at UC Davis Medical Center in Sacramento, California, where he is responsible for managing challenging cases in anticoagulation, pharmacokinetics, and critical care. He also is clinically active with the cardiology service and serves as the director of the postgraduate year two (PGY-2) residency in cardiology at UC Davis. In addition, Dr. Dager holds three academic positions. He is Clinical Professor of Pharmacy at the University of California, San Francisco (UCSF) School of Pharmacy and Clinical Professor of Medicine at the University of California, Davis (UC Davis) School of Medicine. He also serves as Clinical Professor at the Touro School of Pharmacy in Vallejo, California.

Dr. Dager earned his Doctor of Pharmacy degree at UCSF and completed a residency at the UC Davis Medical Center in Sacramento. In addition, he completed the University of Pittsburgh Nephrology Pharmaceutical Care Preceptorship. He is a board-certified pharmacotherapy specialist and fellow of the American College of Clinical Pharmacy (ACCP), American Society of Health-System Pharmacists (ASHP), California Society of Hospital Pharmacists, and Society of Critical Care Medicine (SCCM).

Dr. Dager's research interests focus on anticoagulation, critical care medicine, cardiovascular disease, and pharmacokinetics and pharmacodynamics. He has authored numerous articles, book chapters, and scientific reviews, and he coauthored “Anticoagulation Therapy: A Point-of-care Guide” published by ASHP in 2011. He also regularly makes presentations at national and international educational conferences.

Dr. Dager serves as a reviewer and editorial board member for several medical journals, and he currently is chair of the Editorial Advisory Board Panel on Anticoagulation for *The Annals of Pharmacotherapy*. He has served as a site coordinator for the ASHP Research and Education Foundation Antithrombotic Pharmacotherapy Traineeship.

Dr. Dager has received multiple teaching and professional awards, including the 2008 ACCP Best Practice Award.

Ask the Experts: Challenges for Health-system Pharmacists in Managing Acute Bleeding in Patients with Hemophilia

Mark T. Reding, M.D.
Director, Center for Bleeding and Clotting Disorders
University of Minnesota Medical Center, Fairview
Associate Professor
University of Minnesota Medical School
Minneapolis, Minnesota.

Mark T. Reding, M.D., is Director of the Center for Bleeding and Clotting Disorders at University of Minnesota Medical Center in Minneapolis. In this role he is responsible for providing and coordinating patient care in the clinic and hospital for all adult patients followed by the Center, which is a hemophilia treatment center supported by the Centers for Disease Control and Prevention. Dr. Reding also serves as Medial Director of the Inpatient Hematology/Oncology Unit at University of Minnesota Medical Center. In addition, he is Associate Professor of Medicine in the Division of Hematology, Oncology, and Transplantation at the University of Minnesota.

Dr. Reding received his Bachelor of Science degree in Microbiology and Biology at South Dakota State University in Brookings. He then earned a Doctor of Medicine degree at University of Minnesota Medical School in Minneapolis. He is board certified in hematology.

Dr. Reding's clinical interest is the treatment of non-malignant hematologic disorders with particular emphasis on disorders of hemostasis and thrombosis, including hemophilia. His current research efforts focus on the immune response to factor VIII, the cellular mechanisms involved in the synthesis of factor VIII inhibitors, and the immunologic consequences of gene therapy. He has also served as the local principal investigator for multi-center clinical trials. His research has been published in peer-reviewed journals.

Dr. Reding considers teaching to be the most important and rewarding aspect of his work, and he twice was awarded the Outstanding Clinical Mentor Award from his division at the Medical School. In addition to teaching responsibilities at the University, he frequently speaks at educational programs for physicians and other health care professionals.

Dr. Reding is a member of American Society of Hematology, Hemostasis and Thrombosis Research Society (HTRS), and International Society for Thrombosis and Hemostasis. He recently completed a two-year term on the board of directors for HTRS.

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Dr. Dager declares that he has no relationships pertinent to this activity.

Mark T. Reding, M.D.

Dr. Reding declares that he has been a consultant, member of advisory board or speakers bureau, and/or recipient of research funding from Baxter; Bayer HealthCare; Biogen Idec; Novo Nordisk Inc.; Octapharma USA, Inc.; and Pfizer Inc.

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Carla J. Brink, M.S., B.S.Pharm.

Ms. Brink declares that she has no relationships pertinent to this activity.

ASHP staff has no relevant financial relationships to disclose.

Ask the Experts: Challenges for Health-system Pharmacists in Managing Acute Bleeding in Patients with Hemophilia

ACTIVITY OVERVIEW

While hemophilia is rare and is primarily managed in outpatient settings and hemophilia treatment centers, acute bleeding situations and planned surgeries with a high risk of bleeding warrant prompt treatment in health systems. In this activity, the faculty will provide health-system pharmacists with practice pearls for addressing both system and patient-care challenges related to the management of acute bleeding in patients with hemophilia.

The content for this live webinar is based on questions raised by participants in a recent educational symposium on this topic. Time for questions and answers from the webinar audience will be provided at the end of the presentation.

LEARNING OBJECTIVES

At the conclusion of this application-based educational activity, participants should be able to

- Outline elements of a systems approach for the management of acute bleeding in patients with hemophilia.
- Develop a plan for dosing and monitoring agents used to manage acute bleeding in patients with hemophilia.

CONTINUING EDUCATION ACCREDITATION

The American Society of Health-System Pharmacists is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. This activity provides 1.0 hour (0.1 CEU) of continuing pharmacy education credit (ACPE activity #0204-0000-13-419-L01-P).

Attendees must complete a Continuing Pharmacy Education Request online and may immediately print their official statements of continuing pharmacy education (CPE) credit following the activity.

Complete instructions for processing CE can be found on the last page of this handout.

Additional Educational Opportunities on this Topic

- On-demand activity entitled, “Challenges in Managing Acute Bleeding in Patients with Hemophilia” (2 hours CPE)
- Informational recordings featuring the faculty in a roundtable discussion about important issues related to managing acute bleeding in this patient population
- e-Newsletters featuring updates on emerging information, as well as tips for managing bleeding emergencies in hospitals for patients with hemophilia

www.ashpadvantage.com/stopbleeding

Ask the Experts: Challenges for Health-system Pharmacists in Managing Acute Bleeding in Patients with Hemophilia

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Managing Hemophilia in the Acute-care Setting: Challenges for Pharmacists

Depends on the assigned responsibility

- Assuring correct product is ordered and provided
- Clinical assessment of the therapy
  - Input from nearest hemophilia treatment center (HTC)

Who is involved in developing and implementing the management plan

Systems Considerations

- Ability to order, dispense, and bill correctly
  - Keep staff and resources current
  - Can obtain product and process quickly
- Resources easy to access
  - Key clinicians and contact information
  - Product and laboratory information
- Clinical information and notes easy to follow
  - Alerts for prospective assessment

Skill: Assess the Situation

- Active bleeding vs. planned procedure
  - Confirm type of hemophilia
    - Insight from patient's HTC or hematologist
    - Inhibitors present
  - Laboratory assay
  - What additional or related therapies may be necessary
- Urgency of situation

When dosing recombinant factor VIIa (rFVIIa), which of the following considerations is true?

a. Higher requirements for factor VII deficiency
b. Avoid if inhibitors to factor IX are present
c. Should be used when inhibitor titer is less than 5 BU/mL
d. May be an option if inhibitors with hemophilia A are present

BU = Bethesda unit

Hemostatic Agent Considerations

- Dosing: prophylaxis vs. active bleeding
  - Baseline factor levels
  - Presence of inhibitors
  - Type of hemophilia (rFVIIa dose < in factor VII deficiency vs. hemophilia A or B with inhibitors)
- Administration
  - Bolus
  - Continuous infusion
  - Inhibitors
    - < 5 BU/mL – High dose factor replacement
    - ≥ 5 BU/mL – Agent bypassing the inhibitor (rFVIIa or aPCC)
- Single or combined therapies

aPCC = activated prothrombin complex concentrate

Berntorp E et al. *Lancet*. 2012; 379:1447-56.

Avoiding Complications

- Frequent bleeding a concern
  - Consider minimally invasive procedure
- Advanced age
  - More conservative procedures
- Risk assessment
  - Scar tissue from multiple procedures
  - Other non-invasive options
  - Patient's physical and clinical presentation
- Simplify agents used
  - Singular therapies vs. multiple agents
- Clinical support nearby or easy to contact
  - Consider when scheduling

Types of Bleeds Managed in the Hospital

- Gastrointestinal bleeding
- Deep soft tissue / muscular bleeding
  - Iliopsoas bleed
  - Potential compartment syndrome
- Intracranial hemorrhage
- Traumatic bleeding
- Perioperative bleeding
  - Prevention
  - Treatment

Patient Assessment

- ✓ Blood pressure, heart rate
- ✓ Hemoglobin, factor levels
- ✓ Dressings, drains
- ✓ Swelling
- ✓ Bruising
- ✓ Local vs. systemic bleeding

Distinguishing Local / Anatomic Bleeding from Coagulopathic Bleeding

Clinical Features

- Location and extent of bruising
- Look for petechiae
- Inspect i.v. and venipuncture sites
- Single vs. multiple sites

Laboratory Values

- Factor levels
- INR, aPTT
- Fibrinogen
- Platelet count
- Platelet function

Transfusion Therapy for Hemophilia

1840 – Transfusion of whole blood to stop bleeding after eye surgery
1940 – Availability of frozen plasma → factor levels of ~ 5%
1964 – Cryoprecipitate developed → FVIII levels of > 20%
1967 – Large scale production of plasma-derived factor VIII, → levels of 100%
1969 – Large-scale production of prothrombin complex concentrates (PCCs) for factor IX deficiency
1986 – Solvent / detergent method developed to inactivate viruses
1992 – recombinant factor VIII
1998 – recombinant factor IX

Factor Replacement Therapy

- Dosing and treatment guidelines are largely empiric
- Although general approach is similar, there are institutional and provider preferences and variations
- Goal is to provide enough factor to ensure adequate hemostasis, without over treating (driven largely by cost, and to a lesser extent concern about thrombosis)
- Very few proper studies
  - ► Small patient population + very expensive treatment = difficult-to-conduct studies
  - ► "Modern" factor replacement therapy is relatively new
  - ► Marked differences in resource availability

Replacement therapy for invasive procedures in patients with haemophilia: literature review, European survey, and recommendations

Hermans C et al. on behalf of The European Haemophilia Therapy Standardisation Board

Haemophilia. 2009; 15:639-58.

- Extensive literature review and survey of 26 European treatment centers
- 110 original papers published from 1965 to 2007
- Except for 2 studies in dental surgery, there were no randomized controlled trials of factor replacement therapy identified

This is NOT evidence-based medicine !

Literature Review – Major Surgery

- 35 clinical studies identified and reviewed
- 9 multi-center, 6 case control with historical controls
- Levels of evidence

Level	Definition	Number of Studies
1	High quality meta-analysis, RCTs	0
2	High quality case control or cohort studies	8
3	Case reports, case series	27
4	"Expert" opinion	0

- Other limitations
  - Small patient numbers
  - Lack of details regarding factor levels, duration of treatment
  - Bleeding complications not systematically reported

Hermans C et al. *Haemophilia.* 2009; 15:639-58.

Factor Replacement Therapy

Issues to Consider in the Acute Care Setting

1. Target factor level
2. Dosing parameters
3. Mode of administration
4. Use of adjuncts
5. Monitoring

GN: Man with Hemophilia A

GN, a 43-year-old man with severe hemophilia A, is brought to Emergency Department following motor vehicle accident.

- Found to have a lacerated spleen
- After administration of factor VIII, taken to surgery for emergent splenectomy
- Immediately after surgery, factor VIII level is 70%

Surgeon consults with hematologist and pharmacist for advice regarding whether factor levels must be maintained above 100% for bleeding to be adequately prevented following this surgery.

The surgeon should be told:

a. Yes, maintain factor levels above 100%
b. No, a normal factor level is 60-140%

GN: Postoperative Day 2

- GN's hemoglobin level has decreased from 13.5 to 8.2, BP is 90/60, pulse is 120
- CT scan shows a new fluid collection in the abdomen, consistent with blood
- Surgeon suggests that hematologist increase the amount of clotting factor administered because the most common cause of postoperative bleeding in a patient with hemophilia is inadequate factor replacement

Is it true that inadequate factor replacement is the most common cause of postoperative bleeding in a hemophilia patient?

a. Yes
b. No

Issues to Consider in the Acute Care Setting
Target factor levels

- "Normal" is 60 – 140%
- Level required for adequate hemostasis varies, depending upon
  - Type of bleeding event or surgery
  - Degree of postoperative immobility
  - Amount of tension along incision line
- Do not forget to consider consumption of clotting factor during active bleeding or surgery
- Typical goals
  - Initial: 80 – 100% for major bleed or surgery
  - Higher if anticipate significant consumption
  - Lower peaks of 60 – 80% once stable, for minor surgery

Issues to Consider in the Acute Care Setting
Duration of factor replacement therapy

Variety of opinions > Number of "experts" > Science, real data

- Most surgical wounds are well healed from a hemostatic point of view by postoperative day 4 or 5
- Generally treat for 7 – 14 days following major surgery, 3 – 5 days following minor procedures
- Prolonged prophylaxis often used following orthopedic surgery during rehab and aggressive PT
- Same general approach for nonsurgical bleeds

Issues to Consider in the Acute Care Setting
Dosing parameters

- Little published data on effect of morphometric variables, such as fat mass index, body mass index, or difference between actual and ideal body weight
- Increasing trend toward use of ideal body weight rather than actual body weight for obese patients
- Need to individualize until better data available
- Dose rounding
  - Variety of vial sizes available
  - Old standard of +/- 10% being replaced with +/- 4%
  - Significant cost savings, particularly in larger patients

Henrard S et al. *J Thromb Haemost*. 2011; 9:1784-90.

Issues to Consider in the Acute Care Setting
Mode of factor administration

Bolus vs. continuous infusion
- Comparative studies lacking
- Provider and institutional preference

Advantages of continuous infusion
- Avoids peaks and troughs
- Factor level can be accurately determined at any time
- Lessens chance of delayed or missed doses
- No increased risk of inhibitors
- May use less factor

Dingli D et al. *Haemophilia.* 2002; 8:629-34.
Batorva A et al. *Haemophilia.* 2012; 18:753-9.

Issues to Consider in the Acute Care Setting
Use of adjunctive agents

- Antifibrinolytics, fibrin glues / sealants
- Commonly used in dental, oral cavity, and GI tract bleeds or procedures
- Often considered in orthopedic and other major surgeries
- Good data regarding efficacy and safety are lacking
- Avoid antifibrinolytics in urinary tract bleeding

Issues to Consider in the Acute Care Setting
Monitoring

- ✓ Target factor levels
- ✓ Other coagulation parameters
- ✓ Overall hemostatic efficacy

Reasons for Lack of Hemostatic Efficacy

- Inadequate factor levels
- Other coagulation defect
  - Disseminated intravascular coagulation
  - Thrombocytopenia
  - Anticoagulant or antiplatelet agents
  - Acidosis
  - Citrate toxicity
- Development of inhibitor antibody
- Anatomic cause for bleeding

Management of Bleeding in Patients with Inhibitors

- Antibodies ("inhibitors") that neutralize the procoagulant action of factor VIII or IX render standard factor replacement therapy ineffective
- Hemophilia A – inhibitors develop in ~25%
- Hemophilia B – inhibitors occur in < 5%
- Clinical consequences
  - ► Bleeding more difficult to control
  - ► Severe joint disease and disability
  - ► Surgery is more challenging, risky, and costly

Berntorp E et al. *Lancet.* 2012; 379:1447-56.

Management of Bleeding in Patients with Inhibitors: *Bypassing Agents*

Activated prothrombin complex concentrate (aPCC)	*Recombinant activated factor VII (rFVIIa)*
FEIBA (Baxter)	NovoSeven (Novo Nordisk)
Plasma derived	Recombinant
Dosed every 6 – 12 hours	Dosed every 2 – 3 hours initially
Contains small amount of factor VIII, may increase inhibitor titer	No anamnestic rise in inhibitor titer
Overall efficacy only 75 – 90% and can be unpredictable	
Risk of thrombosis is a concern	
No routine method of laboratory monitoring available	

Zhou ZY et al. *Clin Ther*. 2012; 34:434-45.

Selection of Bypassing Agents

- Overall, aPCC and rFVIIa have similar efficacy in the treatment and prevention of bleeding events
- Variables that may influence efficacy
  - Type of bleed
  - Timing of treatment initiation
  - Patient
- If one does not work, try the other
- Sequential therapy: alternating doses of aPCC and rFVIIa may be used in desperate situations

Optimal management of acute bleeding and surgery requires expertise rarely found outside of a Hemophilia Treatment Center

VTE Prophylaxis in Surgical Patients with Hemophilia

- Much discussion, little data, varying practices
- Thrombotic events can occur in these patients
- Mechanical prophylaxis is almost never contraindicated
- Pharmacologic prophylaxis should be considered in patients without inhibitors in high risk situations
- Pharmacologic prophylaxis not recommended for patients with inhibitors
- Careful documentation of decision making is crucial

If GN develops bleeding & requires factor replacement therapy, which of these should be included in his management plan?

Select all that apply.

a. Avoid continuous infusion therapies
b. Communicate with the hematologist and bedside nurse
c. Ensure adequate supply of the necessary hemostatic agent
d. Check factor levels, calcium level, and hemoglobin

What Follow-up Should the Pharmacist Consider?

- Understanding the management plan
- Effective communication
- Feedback to decision makers (hematologist?)
  - Assay results (correct blood draw time)
  - Changing dose, continuous infusion vs. bolus
  - Stopping or withholding therapy

Therapy Assessment

- Do we have adequate hemostasis?
  - Onsite expert
  - Risk for undesirable clotting
- Severity of bleeding
  - Assessing wound (site, packing removed, etc.)
  - Hgb for internal bleeding
  - Improving or limited/no progress
- Thrombosis risks

Monitoring Hemostatic Agent

- Titrating infusion
  - Time assessment with revised dose
    - Change rate or dosing interval just prior to physician assessment
- Factor levels
  - Establish targets
  - Inhibitors developing?

Adjunctive Therapies

- Antifibrinolytic agents
- Desmopressin
- Steroids
- Cytotoxic immunosuppressants
  - IVIG
  - Cyclophosphamide
  - Rituximab
- Topical agents
- Plasma exchange
- Single or combined therapies

Toschi V et al. *Intern Emerg Med*. 2010; 5:325-33.

Key Pharmacy Considerations

- Is the right agent being dispensed?
- Is the dose correct?
- Who is determining the dose, and how is the dose being determined?
- Is it safe?
- Is it working?
- Do we have enough clotting factor concentrates available?
- Is a change in therapy being considered?
- Is the dose going to be adjusted?
- How can we minimize cost and wastage?
- Was the correct pre-authorization or billing done?

SELECTED REFERENCES

1. Batorva A, Holme P, Gringeri A et al. Continuous infusion in haemophilia: current practice in Europe. *Haemophilia.* 2012; 18:753-9.
2. Berntorp E, Shapiro AD. Modern haemophilia care. *Lancet.* 2012; 379:1447-56.
3. Dingli D, Gastineau DA, Gilchrist GS et al. Continuous factor VIII infusion therapy in patients with haemophilia A undergoing surgical procedures with plasma-derived or recombinant factor VIII concentrates. *Haemophilia.* 2002; 8:629-34.
4. Henrard S, Speybroeck N, Hermans C. Body weight and fat mass index as strong predictors of factor VIII in vivo recovery in adults with hemophilia A. *J Thromb Haemost.* 2011; 9:1784-90.
5. Hermans C, Altisent C, Batorova A et al for the European Haemophilia Therapy Standardisation Board. Replacement therapy for invasive procedures in patients with haemophilia: literature review, European survey and recommendations. *Haemophilia.* 2009; 15:639-58.
6. Toschi V, Baudo F. Diagnosis, laboratory aspects and management of acquired hemophilia A. *Intern Emerg Med.* 2010; 5:325-33.
7. Zhou ZY, Hay JW. Efficacy of bypassing agents in patients with hemophilia and inhibitors: a systematic review and meta-analysis. *Clin Ther.* 2012; 34:434-45.

S E L F - A S S E S S M E N T Q U E S T I O N S

1. When dosing recombinant factor VIIa (rFVIIa), which of the following considerations is true?

    a. Higher requirements for factor VII deficiency.
    b. Avoid if inhibitors to factor IX are present.
    c. Should be used when inhibitor titer is less than 5 BU/mL.
    d. May be an option if inhibitors with hemophilia A are present.

2. GN, a 43-year-old man with severe hemophilia A, is brought to the Emergency Department following motor vehicle accident and is found to have a lacerated spleen. After administration of factor VIII, he is taken to surgery for emergent splenectomy. Immediately after surgery, his factor VIII level is 70%. The surgeon consults with hematologist and pharmacist for advice regarding whether factor levels must be maintained above 100% for bleeding to be adequately prevented following this surgery. The surgeon should be told:

    a. Yes, maintain factor levels above 100%.
    b. No, a normal factor level is 60-140%.

3. On postoperative day 2, GN's hemoglobin level has decreased from 13.5 to 8.2, BP is 90/60, pulse is 120. A CT scan shows a new fluid collection in the abdomen, consistent with blood. The surgeon suggests that the hematologist increase the amount of clotting factor administered because the most common cause of postoperative bleeding in a patient with hemophilia is inadequate factor replacement. Is it true that inadequate factor replacement is the most common cause of postoperative bleeding in a hemophilia patient?

    a. Yes.
    b. No.

4. If GN develops bleeding & requires factor replacement therapy, which of these should be included in his management plan? (Select all that apply.)

    a. Avoid continuous infusion therapies.
    b. Communicate with the hematologist and bedside nurse.
    c. Ensure adequate supply of the necessary hemostatic agent.
    d. Check factor levels, calcium level, and hemoglobin.

Answers

1. d
2. b
3. b
4. b,c,d

Instructions for Processing CPE Credit

All CPE credit processed on the eLearning site will be reported directly to CPE Monitor. To claim pharmacy credit, you must have your NABP e-profile ID, birth month, and birth day. If you do not have an NABP e-Profile ID, go to www.MyCPEMonitor.net for information and application. Please follow the instructions below to process your CPE credit for this activity.

1. The **ASHP eLearning** site allows participants to obtain statements of continuing pharmacy education (CPE) conveniently and immediately using any computer with an internet connection. Type the following link into your web browser to access the e-Learning site: **elearning.ashp.org**.

2. If you already have an account registered with ASHP, log in using your username and password.
   If you have not logged in to any of the ASHP sites before and/or are not a member of ASHP, you will need to set up an account. Click on the **Register** link and follow the registration instructions.

3. Once logged in to the site, enter the enrollment code for this activity in the field provided and click **Redeem**.
   Note: The Enrollment Code was announced at the end of the live activity.
   Please record the Enrollment Code in the grid below for your records.

4. The title of this activity should now appear in a pop-up box on your screen. Click on the **Go** button or the **activity title.**

5. Click on the **Evaluation** link. Complete the evaluation and click **Submit**. A green ✔ should now appear beside **Evaluation**. You can now claim your credit.

6. Look for your profession on the right side of the screen and click the appropriate **Claim** button.
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7. Review the information for the credit you are claiming, and fill in your NABP e-Profile ID, birth month, and birth day. If the information all appears to be correct, check the box at the bottom and click **Claim**. You will see a message if there are any problems claiming your credit.

8. After successfully claiming credit, you may print your statement of credit by clicking on **Print Statement of Credit**. If you require a reprint of a certificate, you can return here at any time to print a duplicate. Please note that printed certificates may not be necessary because your CPE credit will be reported directly to CPE Monitor.

Date of Activity	Activity Title	Enrollment Code	Credit Hours
Wednesday, February 27, 2013	Ask the Experts: Challenges for Health-system Pharmacists in Managing Acute Bleeding in Patients with Hemophilia	_ _ _ _ _	1.0

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