SABM EXECUTIVE GUIDE

FOR PATIENT BLOOD MANAGEMENT PROGRAMS©

Aligning *Patient Blood Management* with Hospital Quality, Safety and Operational Performance

SOCIETY FOR THE ADVANCEMENT OF BLOOD MANAGEMENT®
www.sabm.org

1

EXECUTIVE BRIEFING:

What Healthcare Executives Need to Know

Our Patient Blood Management Program improves efficiency and clinical outcomes while reducing costs.

Its practice is evidence-based and relies on crucial data to measure impact of clinical practice and process changes.

Most importantly, Patient Blood Management improves the quality of the patient experience.

What is Patient Blood Management?

Patient Blood Management (PBM) is the timely application of evidence-based medical and surgical concepts aimed at achieving better patient outcomes by relying on the patient's own blood rather than donor blood.

Why do modern healthcare delivery systems need to adopt it?

PBM preempts and significantly reduces blood transfusions by addressing modifiable risk factors that may result in transfusion.[1-5]

PBM Programs are patient-focused rather than product-focused and offer the rare opportunity to reduce health care costs while improving quality of care.[3,6,7]

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

PBM focuses on three drivers for hospital leadership now and in the immediate future:

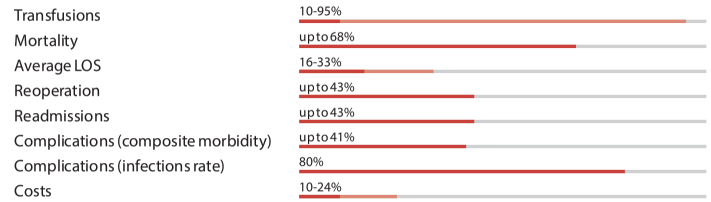
1. Improving clinical outcomes
2. Aligning with regulatory compliance
3. Reducing waste and costs

1 Improving clinical outcomes

- Patient Safety is improved when patients are not unnecessarily exposed to risks of blood transfusions, including potential of infections, reactions and human error [1,2,7-9]
- PBM reduces morbidity and mortality in critically ill patients [2,9,10]
- PBM results in a shorter length of stay in hospital [2,10,11]

When considering improved patient outcomes, the majority of blood transfusions may be inappropriate[Δ]

PBM has significantly reduced...[#]



[Δ] 494 red blood cell transfusion studies were analyzed in 450 clinical scenarios; appropriateness deemed as improving health outcomes. Shander et al. Trans Med Rev 2011.232-246

[#] LaPar 2013, Kotze 2012, Moskowitz 2010, Reddy 2009, Brevig 2009, Ferraris 2007, Wong 2007, Ghiglione 2007, Freedman 2007, Martinez 2007, DeAnda 2006, Freedman 2005, pierson 2004, Kourtzis 2004, Morgan 2004, Slappendel 2003, Van der Linden 2001, Helm 1998

2 Aligning with regulatory compliance

New regulations have economic implications because reimbursement will be tied to performance and compliance.

The Healthcare Reform Law (PPACA) is lengthy, complex and includes many initiatives. The law mandates changes to how health care will be delivered, paid for and perceived.

PBM aligns hospital with new ACA rules because it is:

Examples of reform that bring added fiscal responsibilities include the accountable care organization model of health care delivery, value-based purchasing [12], payment for outcomes or episode-based payments [13], lowering cost structure and eliminating waste—all of which tie reimbursement to sound financial practices.[14,15]

Fiscally Responsible: Reduces purchase and delivery costs of blood products through restricting inappropriate blood product utilization, [1,5,10,23-26] lowers cost and reducing waste of a precious and diminishing resource; and by limiting exposure to hospital acquired infections and conditions, can shrink unreimbursed costs and reduce preventable readmissions.[6,26]

Reform concepts place increased emphasis on clinical outcomes which reflect care quality, improved patient safety, reduction in preventable hospital acquired conditions and readmissions,[2,11,16] and reduction in clinical uncertainty and unwarranted variability in practice.[2,3,17-19]

Clinically Superior: Increases safety and quality of care by reducing infections and improving outcomes, shortens length of stay and lowers morbidity and mortality.[8,10] Additionally it is evidence-based, narrows the gap between science and behavior, and reduces variability in practice.[2,7,17-19] PBM is result-oriented, highlighting improved patient outcomes as the main goal.[3,9,13]

Transparency[20] is increasing to both the patient and purchaser who can analyze cost, quality and outcome variations, patient experience and patient assessment of individual providers.[21,22]

Patient-Centered, not product-centered: Improved patient experience is improved through patient-directed decision-making thus achieving better clinical outcomes at lower cost and waste.[2,7,28]

3 Reducing waste and costs

PBM address the realities of the new healthcare economy, provides competitive advantages, enhances financial stability and increases revenues by:

- Reduction of waste, inefficiency and associated costs (including less product purchased/wasted, reduction of costs associated with delivery of products)[1,6,9,10,14,23-25]
- Maximization of provider payments due to improved performance [14,15]
- Increased market share as greater transparency allows patients to compare hospitals/physicians identified as best-performing providers[6,20-22]

Patient Blood Management Restrictive Transfusion Practices have impacted Blood Product Utilization by reducing:

Wilson 2002, Tavares 2011

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

RESULTS

Eastern Maine Medical Center

Implementing meticulous surgical technique, a goal-directed coagulation algorithm and a more restrictive transfusion threshold resulted in a substantial decrease in blood component transfusion rates (from 39.3% to 20.8% for RBC; from 18.3% to 6.5% for FFP; from 17.8% to 9.8% for platelets); a shorter length of stay (approximately 2.6 days) and lower direct cost (a statistically significant average adjusted per case reduction in cost of approximately $4,000 compared to base year).

Published. Grossi, et al. Patient Blood Management in cardiac surgery results in fewer transfusions and better outcome. Transfusion 2015;55:1075-1081

University of Kentucky Hospital

In the three fiscal years from 2010-2012 with a more restrictive transfusion trigger (Hgb 7+) a total of 4492 RBC units were saved and 662 patients were not transfused compared to the 2009 baseline numbers. Direct costs savings realized were $943,320. If activity-based costing is used, the savings may have reached as high as $5,314,036 during this 3 year period.

Based on information provided by Kentucky Hospital

Oklahoma Heart Hospital

Achieved a Transfusion Rate Reduction in all phases of care from 49.1% Pre-program Implementation to 10.8% Post-Program Implementation resulting in nearly 84% savings in Annual Blood Administration Costs from $459,000 Pre-Implementation to $75,000 Post-Implementation.

Based on information provided by Oklahoma Heart Hospital

Stanford Hospital

Despite a nearly 3% increase in annual case mix comparing 2009 to 2012, total RBC transfusions decreased by 24% resulting in an estimated net savings (purchase costs at $225/unit x 7,186 units) of $1,616,750 in 2012 compared to 2009.

Based on information provided by Stanford Hospital

IMPLEMENT A PBM PROGRAM AT YOUR HOSPITAL

Ask your senior management team:

1. **What are we doing** in patient blood management today?
2. **Do we know what is required** to get started?
3. **Do we know the drivers** for long-term success?
4. **Are we ready** to proceed?

Let our PBM Program Executive Guide provide the resources, support and solutions to help your Executive Team build a sustainable and comprehensive Patient Blood Management Program.[1,4,5,7,9]

START EXPLORING

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

2

Initial Organization

"Patient blood management is a great example of how we can use evidence-based practices, team work and data to improve quality of care and reduce costs."

PETER J. PRONOVOST, MD, PhD, FCCM; Sr. Vice President for Patient Safety and Quality, Director of the Armstrong Institute for Patient Safety and Quality, Johns Hopkins Medicine; cited by TIME as one of the top 100 most influential people.

TALKING POINTS FOR THE HOSPITAL ADMINISTRATOR

1 **Economics - PBM reduces waste and costs associated with the purchase and delivery of unneeded blood components**

Example - University of Kentucky Hospital: In the three fiscal years from 2010-2012 with a more restrictive transfusion trigger (Hgb 7+) a total of 4492 RBC units were saved and 662 patients were not transfused compared to the 2009 baseline numbers. Direct costs savings realized were $943,320. If activity-based costing is used, the savings may have reached as high as $5,314,036 during this 3-year period. Based on information provided by Kentucky Hospital.

2 **Regulatory Compliance - PBM aligns hospital with new ACA rules that tie reimbursement to patient outcomes and reduces costs associated with unreimbursed treatment for blood-related hospital acquired conditions**

Latkovic T. The Trillion Dollar Prize - Using outcomes-based payment to address the US healthcare financing crisis. Accessed at http://healthcare.mckinsey.com/sites/default/files/the-trillion-dollar-prize.pdf on March 9, 2015

3 **Clinical Outcomes - PBM improves patient outcomes by reducing exposure to risks associated with blood transfusion and by employing strategies that reduce the need for blood, resulting in decreased morbidity, mortality, shorter length of stay and reduced readmissions within 30 days**

Hoffman A, Farmer S, Shander A. Five Drivers Shifting the Paradigm from Product-Focused Transfusion Practice to Patient Blood Management. The Oncologist 2011;16 (supp 3):3-11

Spahn D, Moch H, Hoffman A, Isbister, J. Patient Blood Management: The Pragmatic Solution for the Problems with Blood Transfusions. Anesthesiology 12 2008, Vol.109, 951-953

4 **Market Impact - PBM makes the hospital more competitive by offering a service that decreases costs, is safer for the community, employs best practices and sets the institution apart from the rest**

Centers for Medicare & Medicaid Services. Guide to Choosing a Hospital. Accessed at www.medicare.gov/Pubs/pdf/10181.pdf on March 3, 2015

5 **Patient Experience and Hospital Reputation - PBM potentially improves the grades the hospital receives from patients because it is patient-centered, not product-centered and focused on better patient outcomes, quality and safety**

CAHPS Hospital Survey August 2013. HCAHPS Fact Sheet. Accessed at www.hcahpsonline.org/facts.aspx on March 3,2015

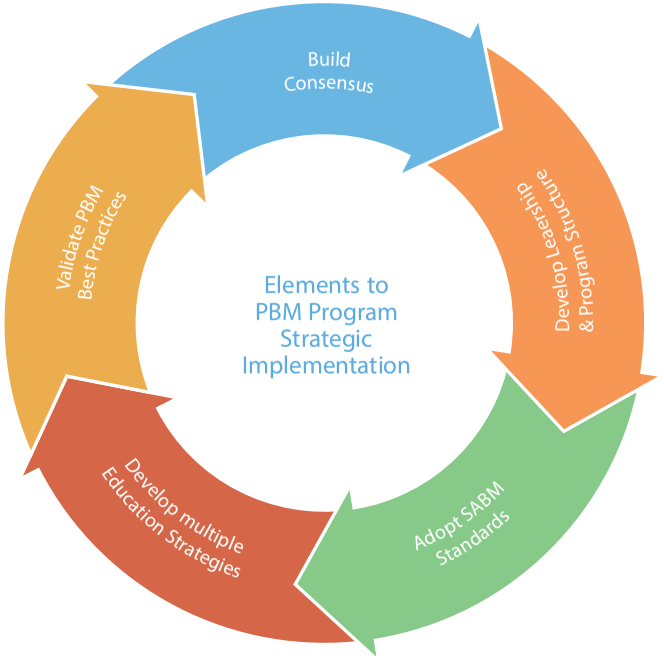
6 **Patient Recruitment - PBM potentially increases patient recruitment by creating a safer, more progressive healthcare experience and destination that produces good results and healthier patients**

Centers for Medicare & Medicaid Services. Guide to Choosing a Hospital. Accessed at www.medicare.gov/Pubs/pdf/10181.pdf on March 3, 2015

7 **Science Based - PBM is evidence-driven based on latest research and represents the cutting-edge of healthcare delivery**

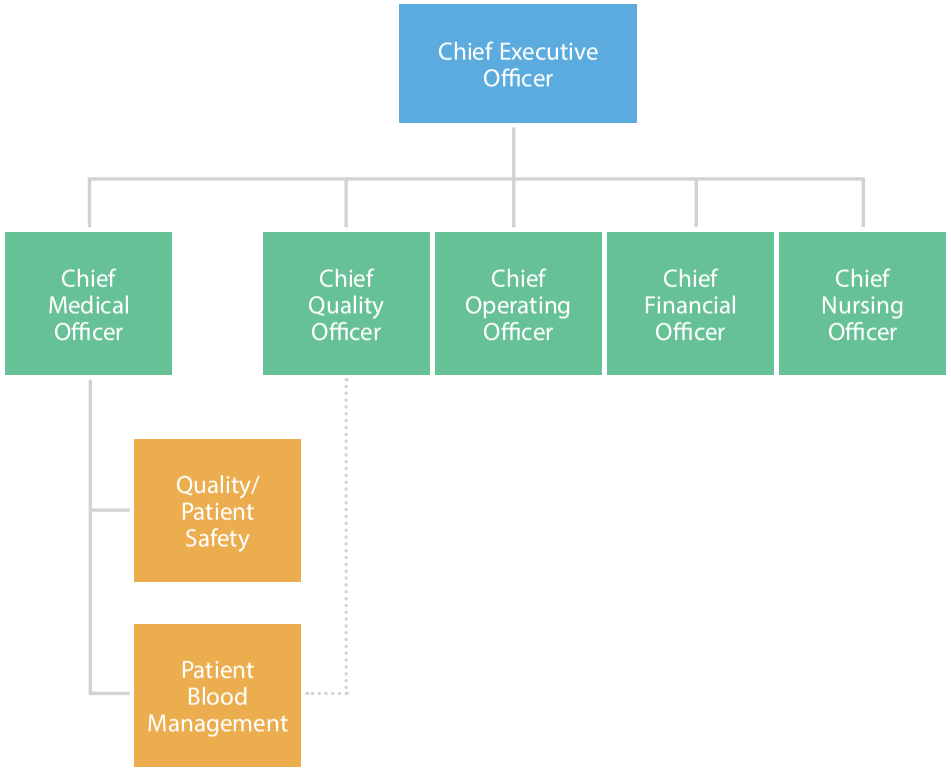
Shander A. Appropriate Blood Management. Proceedings from the National Summit on Overuse September 24, 2012. Accessed at www.jointcommission.org/assets/1/6/National_Summit_Overuse.pdf on March 15, 2015. Isbister J. The three-pillar matrix of patient blood management - an overview. Best Practice & Research Clinical Anaesthesiology. 2013 Mar, 27(1):69-84

CORE ELEMENTS TO IMPLEMENTATION



RESOURCE 2.3

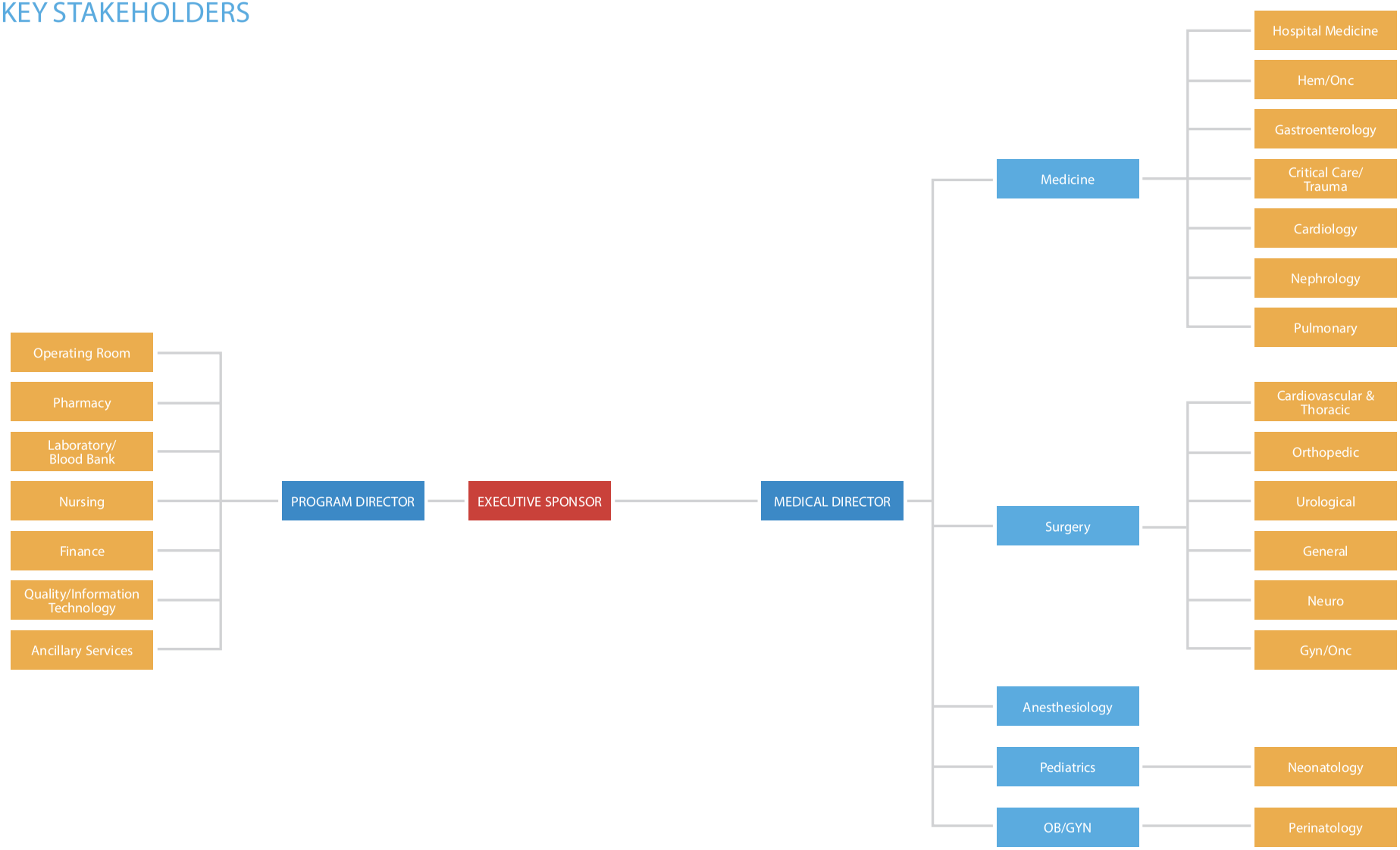
OPTIMAL REPORTING STRUCTURE



Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

RESOURCE 2.4

KEY STAKEHOLDERS



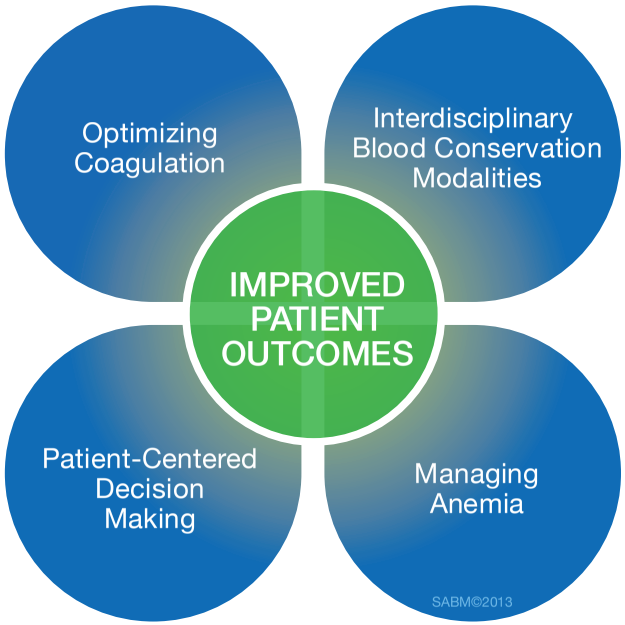
Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

RESOURCE 2.5

PBM CLINICAL CONCEPTS AND MODALITIES

Patient Blood Management is the timely application of evidence-based medical and surgical concepts designed to maintain hemoglobin concentration, optimize hemostasis, and minimize blood loss in an effort to improve patient outcome.

It can be visualized using the graphic below:



Optimizing Coagulation

- Evaluate both quantitative and qualitative measures to assess true coagulation status
- Accurately assess true cause of bleeding dysfunction
- Employ goal directed therapy to correct coagulation abnormalities
- Apply evidence based rationale for use of plasma

Interdisciplinary Blood Conservation Modalities

- Adopt precise and meticulous surgical technique using all available methods of hemostasis
- Rapidly diagnose and promptly arrest blood loss in all situations
- Employ appropriate intraoperative blood conservation modalities in an evidence-based fashion
- Use available intra and post operative autologous blood conservation modalities
- Use methods to measure and assess hemoglobin loss
- Control diagnostic blood loss

Managing Anemia

- Create methods for early and ongoing detection of anemia
- Enhance physiologic tolerance of anemia by minimizing oxygen consumption
- Employ timely evidence based pharmaceutical and nutritional intervention to support erythropoiesis
- Determine causes and contributing factors of anemia
- Apply evidence based rationale for use of red cells

Patient-Centered Decision Making

- Listen to patient needs, desires, and concerns
- Explore treatment possibilities, provide patient with correct and current information about all PBM interventions
- Inform patients of risks, benefits, and alternatives of treatment choices
- Integrate patient values and autonomy in decision making, decide together on a course of action and tailor a plan of care which incorporates patient choice
- Document and communicate patient's preferences

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

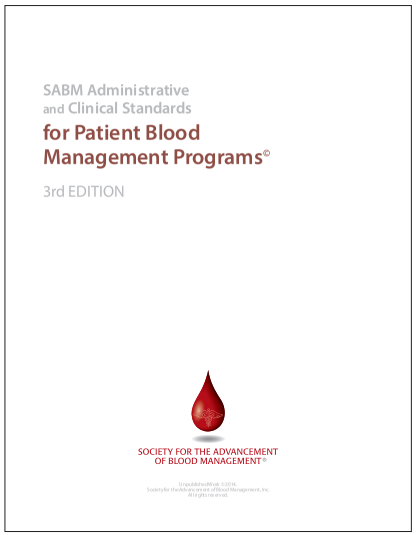
SABM STANDARDS

"Converting knowledge into bedside practice"

The question of when blood should be transfused, that is, when benefit outweighs the risk, is a difficult question to answer. SABM Standards is a multi-page PDF that provides guiding principles that help administrators and physicians make evidence-based decisions that benefit patients.

SABM Standards:

- Close the time gap between guidelines and practice
- Are broad and patient-centered
- Provide a roadmap for the creation of infrastructure to bring evidence-based medicine to the bedside
- Establish operational markers to full implementation of PBM



Download this PDF at sabm.org

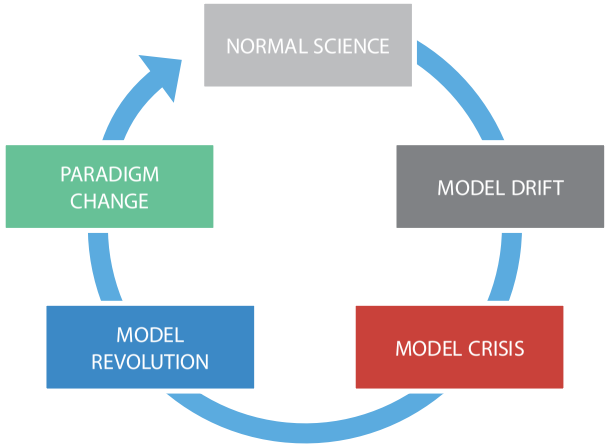
EXECUTIVE FAQ'S AND ANSWERS

QUESTION	SHORT ANSWER	RESOURCE/SOLUTION
I understand PBM concepts and understand building an organized program is best – do I really need an FTE to do this? How do I fund this? What are the qualifications of the person who will be operationally running the program?	The PBM Program will not self-install. One FTE minimum to start with additional staff as the program grows. The Program self-funds as cost-savings and decreases in adverse events are demonstrated	Job Description (Appendix) SABM Standards Project Charter/Business Plan
My institution is very large (or has multi campuses) – how can I be sure this rolls out well across all areas – or sites?	Executive sponsorship and clinical leadership is essential. Use of Change Management principles, OPPE, and ongoing QI/PI processes work well.	Change Management principles/methods e.g., Lean, Six Sigma, etc. SABM Standards SABM Standards Quality Guide SABM online learning
We deal with lots of internal politics – how do we decide who leads this from a physician perspective?	Choice of respected, committed and influential PBM Program Medical Director by executive leadership is invaluable	Job Description (Appendix) SABM Standards
Will there be a positive/negative impact on patient volume?	Positive	Executive Briefing Lessons Learned (Appendix)
Will there be a positive/negative impact on patient experience?	Positive	Executive Briefing Lessons Learned (Appendix)
It is very hard to get medical staff to attend/change/listen – what education strategies can help?	Simple, quick communications (e.g., Score cards in physician areas, newsletters, peer reviews, CPOE alerts)	Change Management principles/methods (e.g., Lean, Six Sigma, etc.) SABM Professional Development e.g., SABM Hospital Affiliation, Annual Meeting, online learning, etc. (Appendix)
You say organization wide- how do you reach everyone?	Executive sponsorship and selection of program leadership	SABM Standards SABM Quality Guide Change Management principles Job Descriptions (Appendix)

MORE

QUESTION	SHORT ANSWER	RESOURCE/SOLUTION
Why should this NOT be managed from Lab/ blood bank?	Laboratory is essential part of PBM team. However PBM and transfusion-related clinical decisions are made at the bedside.	Job Descriptions (Appendix) SABM Standards PBM tools and metrics
How well (or not) will my institution's EMR work in supporting this initiative? What software do I need?	EMR software that interfaces with ordering provider, lab/transfusion service, pharmacy, and surgery is essential. Both Cerner and Epic are making strides in PBM clinical data—but many hospitals are customizing their current programs or purchasing special PBM software programs that are now available.	
It seems that everything about PBM is positive – is there a down side?	No	

Why can change be slow in Patient Blood Management?



REALITY:

- People and systems change only when:
  - They are forced to change
  - Change offers a large advantage
- People are biased to the present paradigm
- Any new paradigm is seen as INFERIOR even if evidence says it is better

'A paradigm shift happens when there is no way to "correct" without restructuring the underlying principles'

THOMAS S. KUHN

3

OPERATIONAL PERFORMANCE:

Quality and Process Improvement

"Patient Blood Management is evidence based. Thus, our PBM Program relies on crucial data to measure impact of clinical practice and process changes."

JACOB CINTRON, CEO, Del Sol Medical Center, El Paso, TX

RESOURCE 3.1

GETTING STARTED: BLOOD UTILIZATION METRICS

	METRIC	RATIONALE
1	Number/Percentage of blood components transfused by Service Line (all components, broken out by component)	Identify high blood use Service Lines (Medical and Surgical)
2	Number/Percentage of blood components transfused by DRG/procedure	dentify top 10 services and top 20 DRGs with high frequency transfusion
3	Transfusion rates by physician by DRG/procedure	Determine practice variation and identify primary opportunities/targets for PBM education
4	Total transfusion of blood products (broken out by component) per 1000 inpatient days or per adjusted patient discharge	To evaluate impact of transfusion guide-lines on blood product utilization and identify product specific improvement opportunities
5	Number/Percentage of elective surgery patients admitted with Hgb < 13 and number of units transfused and LOS	Learn prevalence of pre-operative anemia and impact on length of hospital stay and identify opportunities for correction

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

RESOURCE 3.2

MOVING FORWARD:
PBM METRICS, SABM STANDARDS AND HOSPITAL ORGANIZATIONAL GOALS

PATIENT BLOOD MANAGEMENT PROGRAM				HOSPITAL ORGANIZATIONAL GOALS			
				QUALITY/VALUE/SAFETY		FINANCIAL	
SABM STD	PBM MATRIX	PBM METRIC	RATIONALE	IMPROVE OPERATIONAL PROCESS TO ACHIEVE GREATER EFFICIENCY	IMPROVE CLINICAL PROCESS TO IMPROVE PATIENT OUTCOMES	INCREASE OPERATING INCOME	ACHIEVE COST-SAVINGS
4,6,11	MA	Compare LOS adjusted for Case Mix Index in transfused versus non-transfused patients by (DRG/Service/Procedure) before and after implementation of PBM	Evaluate if Length of Stay and Mortality are impacted by transfusion and applied PBM		✓		✓
4,6,11	MA	Percentage of complications (CVA, DVT, MI, PE, Sepsis) and LOS in transfused vs. non-transfused adjusted for acuity and comorbidities per DRG/Service/ Procedure	Evaluate if complication rates are impacted by transfusion and applied PBM		✓		✓
4.6,11	MA	Percentage of re-admissions in 30 days in transfused vs. non-transfused per DRG/ Service/Procedure	Evaluate if complication rates are impacted by transfusion and applied PBM		✓		✓
4,6	MA	Percentage of patients undergoing elective surgery w/anticipated blood loss > than one (1) unit who are screened for pre-op anemia at least 21 days before surgery by (target TBD e.g., Y1, Y2, Y3)	Evaluate pathway for patients that qualify for pre-op correction of anemia	✓	✓	✓	✓
4,6	MA	Percentage of patients undergoing elective surgery w/anticipated blood loss greater than 1 unit who are treated for pre-op anemia at least 21 days before surgery by (target TBD e.g., Y1, Y2, Y3)	Evaluate pathway for patients that qualify for pre-op correction of anemia	✓	✓	✓	✓
4,5,6	MA	Percentage of patients with Hgb. <13 day of procedure by gender and procedure that are admitted for elective surgery	Evaluate pathway for patients that qualify for pre-correction of anemia	✓	✓		
4,6	MA	Rate/Number/Percentage of Emergency Department patients transfused in the Emergency Department then discharged home	Employ iron therapy in lieu of RBC transfusion		✓		
4,5	MA	Compare percentage of single (1) unit transfusion orders in non-hemorrhaging patients with double (2) unit transfusion orders bi-annually	Evaluate PBMP impact on compliance with RBC transfusion guidelines	✓	✓		✓
11	MA	1) Percentage of patients with anemia on admission who have iron studies (Fe, TIBC, ferritin) performed during admission. Or 2) Percentage of inpatients with ferritin less than 100 ng/mL or TSAT less than 15% who receive IV iron during admission	Evaluate use and impact of inpatient Anemia Protocol	✓	✓		✓
5	MA	Percentage discharge Hgb. level in Trauma and/or Obstetrics >8	Identify transfusion overuse and measure compliance with transfusion guidelines	✓	✓		✓
4,8	BCM	Percentage of non-ICU patients with standing daily orders for laboratory testing (CBC & BMP) daily)	Evaluate PBMP impact on iatrogenic blood loss and overutilization of tests	✓	✓		✓
4,8	BCM	Percentage of critical care patients utilizing waste reinfusion device (e.g. VAMP)	Evaluate PBMP impact on iatrogenic blood loss and overutilization of tests		✓		✓
4,7	BCM	Percentage use of cell recovery in (e.g., Cardiac Surgery, Vascular, high-risk OB, liver resection/transplant, THA, Spine surgery) and transfusion rates	Evaluate impact of blood recovery technology on transfusion rates		✓		✓
9	OC	Percentage% use of anti-fibrinolytics in THA, TKA or CVT Surgery and transfusion rates	Evaluate impact of PBM/coagulation optimization education		✓		✓
9	OC	Percentage of anti-fibrinolytics in trauma patients who arrive within three hours of surgery	Evaluate impact of PBM/coagulation optimization education		✓		✓
4,5	OC	1) Percentage of patients on warfarin with INR less than 2.0 who receive FFP Or 2) Percentage of patients receiving FFP or Prothrombin Complex Concentrate (PCC) for warfarin reversal who received IV Vitamin K	Evaluate impact of PBM/coagulation optimization education		✓		✓
9	OC	Compare percentage of transfused cardiac patients who were transfused within TEG/TEM guidelines	Evaluate impact of diagnostic testing on transfusion reduction		✓		✓

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

FROM PBM METRICS TO KEY PERFORMANCE INDICATORS

EXAMPLE 1

PBM KEY PERFORMANCE INDICATOR		
1	Title	PBM and Hospital LOS
2	Description (PBM Metric)	Compare LOS adjusted for Case Mix Index in transfused versus non-transfused patients by (DRG/Service/Procedure) before and after implementation of PBM
3	Rationale	Evaluate if and how LOS is affected by transfusion and applied PBM
4	Classification	Patient Safety and Effective Care
5	Target	Average LOS < 4 days in non-transfused in selected DRG
6	Calculation	LOS non transfused patients/LOS all patients in specific DRG/Service/procedure
7	Data Source	EMR Billing/coding/financial data
8	Data Collection (Frequency)	Monthly
9	Reporting Method and Frequency	Quarterly via E-mail to all key stakeholders monthly and report to the PBM/Transfusion committee and or Patient Safety and Quality Committee

FROM PBM METRICS TO KEY PERFORMANCE INDICATORS

EXAMPLE 2

PBM KEY PERFORMANCE INDICATOR		
1	Title	Single Unit Transfusion Rate (SUT)
2	Description (PBM Metric)	Compare total number/percentage of single (1) unit RBC transfusion orders in non-hemorrhaging patients with double (2) unit RBC transfusion orders
3	Rationale	Evaluate PBMP impact on compliance with RBC transfusion guidelines and SABM Standards 4 and 5
4	Classification	Patient safety and utilization of resources
5	Target	Single Unit Transfusion RBC transfusion rate >80%
6	Calculation	Total number of RBC ordered as SUT/total number transfusions ordered vs. total number of RBC ordered at 2 units/total number RBC units ordered
7	Data Source	EMR/CPOE
8	Data Collection (Frequency)	Monthly
9	Reporting Method and Frequency	Quarterly via E-mail report to all key stakeholders monthly and report to the PBM/Transfusion committee and or Patient Safety and Quality Committee

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

FROM PBM METRICS TO KEY PERFORMANCE INDICATORS

EXAMPLE 3

PBM KEY PERFORMANCE INDICATOR		
1	Title	Pre-operative Anemia Evaluation
2	Description (PBM Metric)	Percentage of patients undergoing elective surgery w/anticipated blood loss > than one (1) unit who are screened for pre-op anemia at least 21 days before surgery by (target TBD) e.g., Y1, Y2, Y3
3	Rationale	Evaluate impact of PBM pre-op anemia management pathway for patients that qualify for pre-op correction of anemia
4	Classification	Effective Care and Patient Safety
5	Target	>90% of patients who qualify by elective procedure are evaluated for pre-operative anemia
6	Calculation	Percentage of elective pre-operative patients with anticipated blood loss> 1 unit evaluated for pre-operative anemia >21 days/total number elective surgery patients w/anticipated blood loss > than one (1) unit
7	Data Source	EMR/Lab data
8	Data Collection (Frequency)	Monthly
9	Reporting Method and Frequency	Quarterly via E-mail report to all key stakeholders monthly and report to the PBM/Transfusion committee and or Patient Safety and Quality committee.

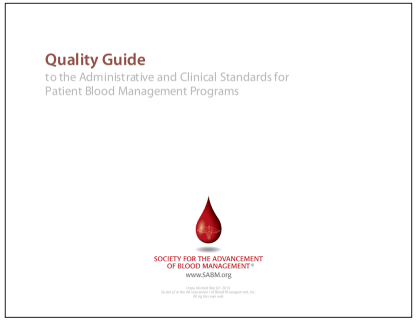
FUTURE GOALS: PBM METRICS, SABM STANDARDS AND QUALITY

PATIENT BLOOD MANAGEMENT PROGRAM				QUALITY	
SABM STD	PBM MATRIX	PBM METRIC	RATIONALE	IMPROVE OPERATIONAL PROCESS TO ACHIEVE GREATER EFFICIENCY	IMPROVE CLINICAL PROCESS TO IMPROVE PATIENT OUTCOMES
4,6,11	MA	Compare LOS adjusted for Case Mix Index in transfused versus non-transfused patients by (DRG/Service/Procedure) before and after implementation of PBM	Evaluate if Length of Stay and Mortality are impacted by transfusion and applied PBM	✓	✓
4,6,11	MA	Percentage of complications (CVA, DVT, MI, PE, Sepsis) and LOS in transfused vs. non-transfused adjusted for acuity and comorbidities per DRG/Service/ Procedure	Evaluate if complication rates are impacted by transfusion and applied PBM	✓	✓

RESOURCE 3.5

SABM QUALITY GUIDE

- Effectively measures program quality
- Monitors adherence to the SABM Standards
- Monitors impact of PBM modalities
- Evaluates PBM Program for performance improvement opportunities



Download this PDF at sabm.org

A

Appendix

"The finances will take care of themselves. Our PBM Program is really a home run because you'll have better outcomes, healthier patients, a healthier community, and at a more affordable cost."

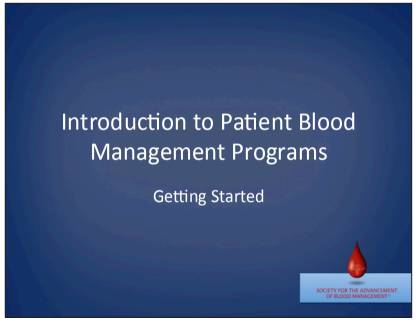
JOHN AMOS, CEO, Yavapai Regional Medical Center, Prescott, AZ. Rated by Consumer Reports/July 2013 as one of the Top Ten Safest Hospitals in U.S.

INTRODUCTION TO PATIENT BLOOD MANAGEMENT PROGRAMS

Executive PBMP Slide Deck

Ready to use slides (18) for use with your clinical and administrative management teams that answer the following questions:

- **What** is PBM?
- **Why** PBM Programs?
- **Who** should be involved?
- **How** do we get started?



Download this slide deck at sabm.org

Professional Development and Resources

SABM PBMP Executive Guide

sabm.org/publications

SABM.org online CME/CE

sabm.org/content/learning_institute

Anemia.org

PBM Reference Library

secure.societyhq.com/sabm.members/library.iphtml

SABM Annual Meeting

sabm.org/content/annual-meeting

SABM Hospital Affiliation

sabm.org/collaborations

SABM PBMP Organization and Implementation Primer online CME/CE in 5 Modules

sabm.org/content/learning_institute

Module 1 – Introduction: Issues, Opportunities and New Realities for the Healthcare Provider

Module 2 – History and Definition of Patient Blood Management

Module 3 – Patient Blood Management Principles—Applications for the Hospitalized Patient

Module 4 – Organization of Patient Blood Management – Part I: Bringing PBM to the Bedside using the SABM Administrative and Clinical Standards for Patient Blood Management Programs©

Module 5 – Organization of Patient Blood Management – Part II: Operationalizing PBM through Effective Administration and Performance Improvement

MATERIALS REQUIRED:

- SABM Administrative and Clinical Standards for Patient Blood Management Programs©
- SABM Quality Guide for the Administrative and Clinical Standards for Patient Blood Management Programs©

APPENDIX 3

POTENTIAL IMPLEMENTATION CHALLENGES AND SOLUTIONS

POTENTIAL CHALLENGES	SOLUTION							
	Adherence to current PBM guidelines	Application of Change Management principles	Use of SABM Standards & Quality Guide	Use of PBM Tools and Metrics	Use of PBM education programs and access to SABM online learning	Use of Project Plan/Charter or Business Plan with budget	Prudent Selection of Program Director	Cross-discipline, integrated approach to PBM
Gap between current health research findings and clinical practice	✓	✓	✓	✓	✓			
Lack of knowledge regarding clinical evidence suggesting avoidable transfusions harm patients	✓			✓	✓			
Lack of effective change management to implement new PBM clinical paradigm		✓	✓	✓				
Focus on product (transfusion and utilization) rather than patient (prevention and clinical outcomes)	✓		✓	✓	✓			✓
Insufficient funding for staff education and physician learning						✓	✓	
Limited resources/tools for data collection and abstraction						✓		
Sporadic Interdepartmental communication and cooperation						✓	✓	✓

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

LEARNING POINTS FROM THREE ESTABLISHED PROGRAMS

Englewood Hospital and Medical Center is located in Englewood New Jersey USA. Since its inception in 1994 the PBM Program at Englewood Hospital and Medical Center is a world-recognized leader in patient blood management. Physicians from every discipline have been trained and practice bloodless medicine and surgery at the Institute. Tens of thousands of patients from the US and abroad have received medical treatment and undergone highly complex procedures such as brain, open-heart, orthopedic and gastro-intestinal surgeries without blood transfusions.

Aryeh Shander MD FCCM, FCCP, Executive Medical Director

ONTraC is a provincially (state) funded program located in Ontario Canada. The ONTraC program is a network of transfusion coordinators in 25 Ontario hospitals with the focus of implementing PBM practices. The program has been highly successful in reducing transfusion rates and improving clinical outcomes and has proven very cost-effective.

Marianne De Bretan-Berg, RN, CFRN, PBM Coordinator

Western Australia Patient Blood Management Program – Instituted in 2008, the Western Australia Department of Health initiated a 5-year project to implement a comprehensive health-system-wide Patient Blood Management Program with the aim of improving patient outcomes while reducing costs. It has successfully employed multiple strategies to bring about a cultural change from a blood-product focus to a patient focus.

Simon Towler MD, Chief Medical Officer

"Hospital system administration must be engaged."

"Clinical leadership is vital."

"Program Director must be qualified to manage both clinical and administrative aspects of the Program."

"Program must have multi-disciplinary team ownership. Practicing clinical PBM leaders are cultivated from multiple departments and specialties and attraction of new leaders is achieved through continuing education."

"Networking is essential. Hospital PBM leadership consults with other Programs and national PBM experts to stay abreast of current best practice."

"Customized adaptation of PBM within each institution or specialty is best. Each institution adapts PBM principles at its own pace encouraging acceptance in line with local practices."

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

JOB DESCRIPTIONS

PBM Program Medical Director

REPORTS TO: Chief Medical Officer, Senior Administrator

QUALIFICATIONS

Physician that is knowledgeable and experienced in PBM concepts, principles and modalities. This can be a specialist in Surgery, Anesthesiology, Hospital Medicine or Transfusion Medicine

SUMMARY

Consultant will work closely with the PBM Clinical Director/Manager to foster performance improvement for the PBM program and works with administrative and medical staff to help ensure high quality patient care through clinical supervision and performance of duties as set forth below:

1. Act as the PBMP liaison to appropriate medical staff committees
2. Serve as chair or co-chair of the PBM Committee
3. Develop a minimum of one PBM CME program per year for medical staff
4. Oversee development of PBM protocols, policies and procedures and review annually
5. Initiate one PBM quality/performance Improvement project annually
6. Will evaluate specific products, equipment and services offered by vendors that may enhance patient care
7. Perform specific case review functions as needed when clinical blood management issues arise
8. Serve as a PBM physician resource
9. Attend SABM CME Annual Meeting

JOB DESCRIPTIONS

PBM Program Director

REPORTS TO: Chief Medical Officer, Quality Officer or Senior Administrator

QUALIFICATIONS:

Knowledgeable and experienced in PBM concepts, principles and modalities. This can be a clinician or non-clinician with proven organizational skills. In some large hospitals and systems, the administrative and clinical functions are divided.

SUMMARY

PBMP Director/Manager will direct and oversee the operations and clinical activities of the PBM Program and works closely with the PBM Medical Director to foster performance improvement to ensure high quality patient care in accordance with the essential functions set forth below:

ESSENTIAL FUNCTIONS

1. Develops and leads implementation of PBM strategies that align with SABM's PBM standards to contribute to improving patient safety and quality of clinical care.
2. Apprises PBM Committee and senior leadership of implementation status of these strategies and ensures their timely success to meet internal and external goals
3. Supports, organizes, and provides data to Patient Blood Management/Blood Utilization committee, monitoring trends in hospital blood use
4. Manages and reports all blood utilization data to clinical and executive leadership
5. Initiates clinical quality and performance and research projects related to PBM
6. Interfaces with regulatory/oversight/professional organizations
7. Creates, updates, and maintains evidence based consents/policies/protocols/procedures related to Patient Blood Management
8. Monitors and evaluates program performance, maintaining necessary reports and studies
9. Directs development and monitoring of departmental operating and capital equipment budgets
10. Directs educational aspects of the department, including orientations & education for nurses, students, physicians, residents and fellows
11. Interfacing with various vendors/commercial supporters in PBM related education/business opportunities
12. Manages new physician recruitment and orientation as relates to program
13. Performs duties and responsibilities while demonstrating an understanding and commitment to the Standards for Service Excellence.
14. Oversees daily clinical/support inpatient interaction

Additional Administrative duties with "Bloodless" Programs:

15. Serves on Medical Center's Bioethics Committee as resource for issues with Bloodless patients.
16. Oversees content of all marketing and Public relations efforts in PBM/Bloodless Medicine
17. Supervises staff liaison between patient, physician, family, and staff
18. Supervises patient/physician referral process
19. Supervises patient education activities related to completion of advance directives documenting alternatives acceptable to patient
20. Regularly creates educational forums for community groups
21. Oversees daily clinical/support inpatient interaction
22. Supervises pastoral support program for bloodless patient population

KNOWLEDGE, SKILLS & ABILITIES REQUIRED:

- RN Licensure Preferred
- Bachelors Degree Preferred
- Experience of two to four years in a related role in a hospital setting
- Strong interpersonal skills required
- Excellence in communication, presentation and conflict resolution
- Excellent organizational skills
- Ability to follow projects through to completion
- Ability to work in a team environment
- Computer skills necessary (Microsoft Office Programs)

PBM Competencies: Attend SABM CME Annual Meeting

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

APPENDIX 6

LITERATURE REFERENCES

[1] Hoffman A, Farmer S, Shander A. Five Drivers Shifting the Paradigm from Product-Focused Transfusion Practice to Patient Blood Management. The Oncologist 2011;16 (supp 3):3-11

[2] Spahn D, Moch H, Hoffman A, Isbister, J. Patient Blood Management: The Pragmatic Solution for the Problems with Blood Transfusions. Anesthesiology 12 2008, Vol.109, 951-953

[3] Chair Shander A. Appropriate Blood Management. Proceedings from the National Summit on Overuse September 24, 2012
www.jointcommission.org/assets/1/6/National_Summit_Overuse.pdf on March 15, 2015

[4] Isbister J. The three-pillar matrix of patient blood management - an overview. Best Practice & Research Clinical Anaesthesiology. 2013 Mar, 27(1):69-84.

[5] Leahy MF, Mukhtar SA. From blood transfusion to patient blood management: a new paradigm for patient care and cost assessment of blood transfusion practice. Internal Medicine Journal, 2012 Mar; 42 (3):332-8.

[6] Shander A, Kirby SL. Special report: The Value of a Patient Blood Management Program in Improving Care.
www.clinicaloncology.com/download/SR0942BloodMgmnt_WM.pdf on March 15, 2015

[7] King R, Michelman M, Curran V, Bean J, Rowden P, Lindsey J. Patient-centered approach to ensuring appropriateness of care through blood management. South Med J 2013 Jun; 106(6):362-8

[8] Morton J, Anastassopoulos KP, Patel ST, Lerner JH, Ryan KJ, Goss TF, Dodd SL. Frequency and Outcomes of Blood Products Transfusion Across Procedures and Clinical Conditions Warranting Inpatient Care: An Analysis of the 2014 Healthcare Cost and Utilization Project Nationwide Inpatient Sample Database. American Journal of Medical Quality 25(4) 289-296

[9] Tokin C, Almeda J, Jain S, Kim J, Henderson R, Nadim M, Sher L, Selby R. Blood-Management Programs: A Clinical and Administrative Model with program Implementation Strategies. The Permanente Journal/ Winter 2009/Volume 13 No.1

[10] Clark C. Blood Use, Quality, and Cost.
www.healthleadersmedia.com/content/MAG-289969/Blood-Use-Quality-and-Cost on March 15, 2015

[11] Morton J, et al. Frequency and Outcomes of Blood Products Transfusion Across Procedures and Clinical Conditions Warranting Inpatient Care: An Analysis of the 2014 Healthcare Cost and Utilization Project Nationwide Inpatient Sample Database.

[12] Neslon B. Value-Based Purchasing Raises the Stakes.
www.the-hospitalist.org/article/value-based-purchasing-raises-the-stakes on March 15, 2015

[13] Latkovic T. The Trillion Dollar Prize - Using outcomes-based payment to address the US healthcare financing crisis.
http://healthcare.mckinsey.com/sites/default/files/the-trillion-dollar-prize.pdf on March 9, 2015

[14] Diamond G. Evidence-Based Financial Incentives for Healthcare Reform.
http://circoutcomes.ahajournals.org/content/2/2/134.full on March 15, 2015

[15] Evans M, Demko P. Medicare's payment reform push draws praise and fears.
www.modernhealthcare.com/article/20150126/NEWS/301269813 on March 15, 2015

[16] Medicare Learning Network. Hospital-Acquired Conditions and Present on Admission Indicator Reporting Provision.
www.cms.goc/Outreach-and-Education/Medicare-learning-Network-MLN/MLNProducts/Downloads/wPOAFactSheet.pdf on April 9, 2015

[17] Qian F, Osler T, Eaton M, Dick A, Hohmann S, Lustik S, Diachun C, Pasternak R, Wissler R, Glance L. Variation of Blood Transfusion in Patients Undergoing Major Noncardiac Surgery. Annals of Surgery: 2 2013, Vol.257(2) 266-278

[18] Goodnough LT, Johnston MF, Toy PT. The variability of transfusion practice in coronary artery bypass surgery. Transfusion Medicine Academic Award Group. JAMA. 1991 Jan2;265(1):86-90

[19] Frank SM, Savage WJ, Rothschild JA, Rivers RJ, Ness PM, Paul SL, Ulatowski JA. Variability in Blood and Blood Component Utilization as Assessed by an Anesthesia Information Management System. Anesthesiology 2012; 117:99-106

[20] Kelsey T, Henke N, Whately H. Can transparency be the most powerful driver of healthcare improvement?
www.hsj.co.uk/opinion/columnists/can-transparency-be-the-most-powerful-driver-of-healthcare-improvement/5041410.article#.VShYcvnF_ao on March 15, 2015

[21] CAHPS Hospital Survey August 2013. HCAHPS Fact Sheet.
www.hcahpsonline.org/facts.aspx on March 3,2015

[22] Centers for Medicare & Medicaid Services. Guide to Choosing a Hospital. Accessed at www.medicare.gov/Pubs/pdf/10181.pdf on March 3, 2015

[23] Sarode R, Refaai MA, Matevosyan K, Burner JD, Hampton S, Rutherford C. (2010). Prospective monitoring of plasma and platelet transfusions in a large teaching hospital results in significant cost reduction. Transfusion, 50: 487-492.

[24] Waters JR, Meier HH, Waters JH. An economic analysis of costs associated with development of a cell salvage program. Anesth Analg. 2007 Apr; 104(4):869-75

[25] Phillips SD, Maguire D, Deshpande R, Muiesan P, Bowles MJ, Rela M, Heaton ND. A prospective study investigating the cost effectiveness of intraoperative blood salvage during liver transplantation. Transplantation. 2006 Feb 27;81(4):536-40

[26] Trentino KM, Farmer SL, Swain SG, Burrows SA, Hofmann A, Ienco R, Pavey W, Daly FF, Van Niekerk, A, Webb SA, Towler, S, Leahy, MF. Increased hospital costs associated with red blood cell transfusion. Transfusion. 2014 Dec 8

[27] McKinney M. Reducing transfusions reduces patient risk at Maine hospital.
www.modernhealthcare.com/article/20140621/MAGAZINE/306219995/1247 on March 15, 2015

[28] Anthes E. Save Blood, Save Lives. Nature/ Vol 520/ April 2, 2015 / Macmillan Publishers Limited

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.

SABM FACULTY / EDITORIAL REVIEW PANEL

SABM Patient Blood Management Program Organization and Implementation CME Primer
SABM Executive Guide for Patient Blood Management Programs©

COURSE DIRECTORS

Aryeh Shander, MD, FCCM, FCCP; Professor of Anesthesiology, Critical Care Medicine; Icahn School of Medicine, New York, NY

Victor Ferraris, MD; PhD, Professor of Surgery; University of Kentucky Chandler Medical Center, Lexington, KY

CONTENT ADVISORS

Kevin Splaine, FACHE; Senior VP Trinity Health, Chief Administrative Officer, Trinity Health Partners, Livonia, MI

Jacob Cintron, FACHE; Chief Executive Officer, Del Sol Medical Center, El Paso, TX

Warren Geller, FACHE; President and Chief Executive Officer, Englewood Hospital & Medical Center, Englewood, NJ

Sherri Ozawa, RN; Clinical Director, Institute for Patient Blood Management, Englewood Hospital & Medical Center, Englewood, NJ

Irwin Gross, MD; Medical Director, Patient Blood Management, Transfusion Services, Eastern Maine Medical Center, Bangor ME

Tiffany Nelson, RN; Clinical Director, Patient Blood Management, Transfusion Safety Officer, Florida Hospital Orlando, FL

Karim Jabr, CCP; Chief of Perfusion, The Medical Center of Central Georgia, Macon, GA

Roland Dale Black; Coordinator, Patient Blood Management Program, Yavapai Regional Medical Center, Prescott, AZ

ADMINISTRATIVE DIRECTOR

Richard Melseth; Director of Project Development, Society for the Advancement of Blood Management, Englewood, NJ

Unpublished Work © 2015. Society for the Advancement of Blood Management, Inc. All rights reserved.