AmSECT Quality and Outcomes Conference

Patient Blood Management: A Wise Investment for the Patient and the Health System

Miriam A. Markowitz, CEO
October 2, 2014, 1:45pm – 2:10pm
Blood Industry Example

Market Focus

Transfusion Medicine (Hospitals)

Blood Centers (BCs)

Engineering & Technology Focus

Science & Medicine Focus

“Better Transfusion” (Understanding and applying cellular biology to improve patient outcomes)

“Safe & Effective” (Automated infectious disease testing, Component Separation, Apheresis Collection, NAT, Bacterial testing, Male-only Plasma, etc.)

“Do No Harm” (WB, ABO/Rh, STD tests, 42 day storage, Frozen RBCs...)


Whole Blood  ABO Rh  Disease Testing  Automated Collection  Pathogen Reduction  New Storage & Treatment Science

NAT  New Transfusion Medicine Awareness
Emerging Paradigm Shift:
Transfusion Medicine Industry & Practice

- 3rd level paradigm in blood transfusion marketplace
- Technology development advancing collection and storage knowledge: computer chips, software, nucleic acid testing, pathogen reduction strategies
- From “Do No Harm” to “Safe and Effective” to “Better Transfusion Outcomes”
  - A new set of demands require a response

Raymond Goodrich, PhD, CSO
Terumo BCT

www.aabb.org
"Patient blood management (PBM) is an evidence-based, multidisciplinary approach to optimizing the care of patients who might need transfusion."
The application of evidence-based medical and surgical concepts to achieve measurable improvements in patient safety and clinical outcomes using an interdisciplinary care team to optimize:

- hemoglobin
- hemodynamic stability
- tissue oxygenation
- hemostasis

in a patient-specific manner.
Current Health Care Context: PBM’s Role

Triple Aim Goals

• Improving the patient experience of care (including quality and satisfaction)
• Improving the health of populations
• Reducing the per capita cost of health care

Patient Blood Management Programs

• Improve Patient Outcomes
• Improve Patient Safety
• Drive out Overuse & Waste
• Reduce Practice Variation
• Improve Clinical Decision Making
• Drive Patient-Centered Care
<table>
<thead>
<tr>
<th>Health Care Waste Categories</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overtreatment</td>
<td>158</td>
<td>226</td>
</tr>
<tr>
<td>Administrative complexity</td>
<td>107</td>
<td>389</td>
</tr>
<tr>
<td>Failures of care delivery</td>
<td>102</td>
<td>154</td>
</tr>
<tr>
<td>Pricing failures</td>
<td>84</td>
<td>178</td>
</tr>
<tr>
<td>Fraud and abuse</td>
<td>82</td>
<td>272</td>
</tr>
<tr>
<td>Failures of care coordination</td>
<td>25</td>
<td>45</td>
</tr>
<tr>
<td>Total</td>
<td>558</td>
<td>1263</td>
</tr>
</tbody>
</table>

% of Total Spending

21% 47%

Comprehensive Patient Blood Management: What is Possible?

- Improved patient outcomes
- Increased Net Revenue from Pre-Emptive, Patient-Centered Strategies
- 40-50% reduction in transfusion for cardiac surgery
- Reduction in Practice Variation
- Improved Care Coordination
- ...

Patient Blood Management Program

- Leadership
- Performance Management
- Accountability Systems
- Education
- Health Information
- Patient Flow Management
- Infrastructure
- Clinical Experts
Comprehensive PBM Components

Informatics

Change Management

Clinical Decision Support

Education
AABB’s PBM Standards Structure: Activity Based

According to Standard 1.1.2.1, a PBM program can be designated as a program activity level 1, 2 or 3. To be designated as such, the program shall be responsible for or have direct involvement with oversight and monitoring of specific activities. A level 2 program is responsible for activities in levels 2 and 3. A level 1 program is responsible for activities in levels 1, 2 and 3.
Improved Blood Utilization Using Real-Time Clinical Decision Support

Conclusion:

- Real-time CDS has significantly improved blood utilization.
- Overall estimated net savings for RBC units (@$225/unit) acquisition costs 2012 over 2009 $1.6m

Results:

% of blood ordered w/ patient Hb levels > 8g/dL

- August 2009 Range: 57% - 66%
- July 2010 Range: 52% - 66% (Education Initiative)
- December 2010 Range: 35% (CDS & BPA Initiative)
- Post 2010 Range: 30%
Improved Blood Utilization Using Real-Time Clinical Decision Support
Improved Blood Utilization Using Real-Time Clinical Decision Support

Change Management Practice & Tools

• Blood utilization clinical effectiveness team
• Real-time CDS deployed within EMR system
• Best practice alert vetted via wide approval process, within quality & safety structures
• Strong educational initiatives
Blood management: Reducing blood use reduces risks and lowers costs

• 2007 => 2009 Program Interval
  – Saved $2.9M implementing program
  – 2 Unit => 1 Unite ordering policy (hospital-wide)
  – Lowered Hemoglobin Trigger 10 g/dL => 7 g/dL

• Sustained Savings reports, almost 50% drop in blood cost acquisition

• Clinical Research and Quality Improvement teams engaged

OR Manager, Vol. 28 No 1, Jan. 2012
Fewer Transfusions, better outcomes…

- 2010 => 2012 Program Interval
- 27% decline in overall blood transfusion, even with 20% increase of patient discharges.
- 19,000 transfusion units avoided
- CVS Program lowered transfusions by 50%
  - 8% of procedures require transfusions, compared with 60% of cardiac surgeries nationally (2012)
Maine Hospital Slashes Transfusions..

- 60% reduction RBC transfusions
- 50% reduction Platelet transfusions
- 75% reductions Plasma transfusions
- 2 Unit => 1 Unit Orders Shift: 55% => 90%
- Overall Hemoglobin trigger: 8.5 => 7.8
- $1.6M annual savings in blood acquisition

Tools:
- Physician Education
- CPOE with alerts
- Physician Report Card
- Clinical Champion
- Patient Cohorts

Maureen McKinney, Modern Healthcare, June 23, 2014
Next Generation Patient Blood Management

• Risk Adjusted Blood Utilization Metrics
  – Benchmarking and comps: how do you account for “year after year” and across hospital outcomes?
  – How do you adjust across surgeons and physician practice?
  – How do we consider reimbursement models for blood products acquisition?

• 2006-2012: Five Year Trend of 3 AMCs
  – 244K hospitalizations
  – Findings:
    • Reduction in mean RBCs units used
    • Increase in proportion of hospitalized patients transfused
    • Highest RBC utilization/admission: SCT service, followed by cardiology, critical care
    • Highest % of admissions receiving RBCs: Internal Medicine (14%), Hematology oncology (14%), orthopedic service (13%)
    • No downward trend in #of RBCs/admission for surgical services, cardiology, nephrology
Next Generation Patient Blood Management

- PBM Success Dependent on Institution-Wide Change in Transfusion Practice
  - 2011 over 2006: RBC units transfused decreased 27% overall
  - Pre-PBM .96 units per patient discharged vs. .55 units per discharge
  - Pre-PBM 62% RBC transfusions ordered for surgical patients
    Post-PBM 57.5%
  - Success attributed to Hospital Wide physician buy-in re restrictive transfusion approach.
    - Guidelines
    - Benchmarks
    - Clinical Co-Chair to BUC …now, BUManagementC
    - 2 => 1 unit “Transfuse and Assess”

Total N of units decreased; Total N of transfusion episodes did not
How Do You Build PBM Program?

• Determine Clinical Variation, Get Specific
• Detect Where You Are
• Develop New Tools for Old Problems & Shamelessly Adopt Others Tools and Resources
• Determine Where You Want to Go – Set Targets
• Anchor within larger hospital quality, risk, financial goals
When does Wise Investments Pay Off?

#1 Right Skill Sets in Place

- Clinical Know-How
- Change Management
- Program Management
- Performance Measurement
- Executive Leadership

#2 Incentives are Aligned

- Program Goals and Larger Institutional Goals
- ACO “Compatibility”

#3 Impact is Measured

Data, Information, Feedback, Hemovigilance & Adverse Reporting, Benefits
Outcomes Reporting
Patient Blood Management: Health Systems Impact

Transfusion Expenditures

Cost-Effective

Expensive

Safe and Beneficial

Clinical Variation & Non-Evidence Based

Transfusion Outcomes

Previous Transfusion Activities

Blood Management Initiatives

Future Transfusion Activities
Take Home Message

• Read the literature
• Engage in research
• Pursue hemovigilance activities via PSO
• Do the math
• Get patient specific
• Get surgeon specific
• Anchor efforts within larger health system frame
• Get out of the surgical suite and share your expertise.
Thank You

Questions?

Contact: mamarkowitz@aabb.org

Office: 301-215-6583