

Medication Checklists

Investigators evaluated checklists designed for an “independent double checking” process in which the second person, without referring to the first person’s work, decides upon a setting or dosage, then checks his/her conclusions with those of the first person. Checklists were evaluated in a simulator to identify components that were most effective in identifying chemotherapy administration errors.

The article details what worked and what did not. For example, general reminders did not help (e.g., “follow the five rights of medication administration”). Their primary recommendations for developing a checklist were:

- Determine the errors with high risk or high probability that could reach the bedside, using a technique such as failure modes and effects analysis.
- Develop specific checklist instructions for each predictable error. Include details of what information to check (e.g., dose in mg) and from what sources (physician’s order and drug label). Keep the list short by omitting items with lower risk and lower probability.
- If the possibility of an error is abstract or general (e.g., error in physician’s dosage choice), but the error itself has a high severity or probability, break the error down into smaller, more specific steps that can be added to the instructions (e.g., check dosage on medication order against hospital drug formulary of appropriate adult doses).

- Determine the workflow of the first and second nurses by observing them working in their natural environment using a technique such as contextual enquiry.

- To encourage efficiency and adoption, assemble the itemized instructions into a checklist that corresponds with their workflow, and use language and terms that match their existing tools such as the infusion pump screen prompts.

- To test and improve the usability of the checklist, recruit a small sample of end users (three to six people) to use the checklist while you observe. If they become confused, use the checklist in a way that is not anticipated, or readily miss errors, refine the design of the form to be more intuitive, and repeat the testing process.

- For each potential error not included on the checklist, develop alternate strategies to prevent it from reaching the bedside. Continue to develop additional strategies for eliminating all possible errors, even those that can be identified with the checklist, since no human checking process is failsafe.

— Rory Jaffe, MD MBA, rjaffe@chpso.org

References

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Pooling Experience: Retained Surgical Items

Starting in June, CHPSO members will be able to participate in an evaluation of retained surgical item (RSI) incidents. The purpose of this initiative is to assist hospitals in their root cause analysis process and help CHPSO identify common underlying causes of RSIs, particularly broken devices and fragments.

A conference call was held on Thursday, May 20 2–3 p.m. to review pilot project results on data collection for RSIs and to ask for comments on the RSI incident data collection tool. The tool is under revision to incorporate those suggestions and will be distributed soon for further comments.

Watch your email for release of the revised tool. Your comments will be appreciated, either by email or by telephone.

The June member call will be devoted to discussion of this tool and to initiate roll-out to those CHPSO member hospitals wishing to participate. The call will be held at a special date and time. For this call and discussion of information needs, non-members may join in as well, though they will not be able to participate in the data collection initiative. Registration is not necessary.

Date: June 6

Time: 10–11 AM

Telephone number: 712.432.3100

Conference code: 791488

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Patient Blood Management

Improve patient outcomes, conserve health care resources and reduce unnecessary health care cost. These are key goals of every hospital administrator. “Patient blood management” is a highly effective strategy to achieve these goals. Appropriate patient blood management is a responsibility that requires strong administrative leadership and commitment.

Conserving Resources

Approximately 16 million units of blood are donated each year in the United States.⁽¹⁾ Less than 5 percent of the population donates blood and the donor pool is shrinking causing at least sporadic blood shortages. Many blood centers carry a three-day or less inventory of blood. A recent International Consensus Conference on Transfusion Outcomes (ICCTO) concluded that a minimum of 40 percent, possibly as high as 60 percent, of all transfusions are administered to stable non-bleeding patients and 90 percent of blood is given because of a low red cell count without any significant symptoms.⁽²⁾

Improving Patient Outcomes

Clinical outcomes are better or unchanged when patients receive fewer blood transfusions. A PubMed literature search produced roughly 200 articles between April 2006 and April 2008 that demonstrated improved patient outcomes when blood transfusion is restricted. The ABC Trial⁽³⁾ and the Transfusion Requirements In Critical Care (TRICC) Trial⁽⁴⁾ demonstrated lower infection rates, lower mortality and shorter hospital stays associated with reduced transfusion. Recent studies evaluating cardiac surgery have

linked transfusion to increased mortality, post-operative infections, ischemic events (myocardial infarction, stroke and renal complications), increased ICU and increased hospital length of stay. These studies have also shown a blood dose-response relationship linking increased blood exposure with adverse events.^(5,6)

Restrictive blood practices conflict with our general perception that “Blood Saves Lives.” An editorial by Drs. Howard Corwin and Jeffrey Carson states “Red cell transfusion should no longer be regarded (by physicians) as ‘may help, will not hurt.’”⁽⁷⁾

Strategies to Reduce Transfusion

There are three strategies to improve transfusion practices: *Start with more blood; lose less blood; and salvage lost blood.* Patients can start with more blood by reducing anemia prior to elective surgery through implementation of anemia clinics to replete iron and other nutrients and build hemoglobin levels. Lose-less strategies incorporate hemodilution and meticulous control of patient bleeding, a relatively time-consuming activity with high patient safety and financial benefits. Cell salvage may return reclaimed lost blood to effectively reduce transfusion requirements. These strategies are most effective when coordinated by a blood conservation program that includes a thoughtful team approach by physicians.

Vital Leadership

Administrative commitment to patient blood management is critical to success. Leadership is required to bring about

planning and cooperation among physicians, nurses, pharmacy, laboratory, surgical services and blood bank. Leadership will be required to build physician champions, promote physician education and change transfusion practice. Rational budgeting of modest upfront expense is needed to reap nearly immediate hospital cost savings. For instance, one unit of medically unnecessary blood likely costs the institution \$1,500 per unit not just for processing and nursing administration, but for costs associated with treating avoidable complications and increased hospital length of stay. Effective blood management likely can reduce \$3,000 in unnecessary expense from each patient receiving blood.⁽⁸⁾

A successful blood conservation program will effectively coordinate care and develop specific roles for hematologists, surgeons, anesthesiologists, hospitalists, transfusion directors and blood perfusionists. Comprehensive audits of hospital blood use, funded by cost savings, are essential to measure the effectiveness of improved transfusion protocols. Blood-use audits should be objective to eliminate reviewer bias, standardized to ensure that every chart, every physician and every hospital is evaluated in similar fashion and uses comprehensive chart analytic techniques.

Conclusion

Patient blood management is an evolving, dynamic medical discipline. Reducing blood use cannot only dramatically improve patient care and safety, but will substantially reduce hospital length of stay and health care costs. Bloodless

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medicine and surgery programs are sprouting across the country to meet patient desires for fewer blood transfusions, better care and lower health care costs. Not only are centers of bloodless medicine and bloodless surgery operating within hospitals, but bloodless hospitals are now being established. In 2002, the [Society for the Advancement of Blood Management \(SABM\)](#) was founded to facilitate research, improve general awareness about modern transfusion and blood conservation principles, and improve transfusion practices in hopes of dramatically reducing or even eliminating future blood transfusions. SABM is a resource for hospitals wishing to improve bloodless patient care.

— Bradford Ray, NRABT, Director of Blood Management Services, [Columbia Healthcare Analytics, Inc.](#), bray@columbia-analytics.com

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CHPSO Annual Meeting

Our annual meeting will be held in the fourth quarter of 2011 and planning has begun. If you have suggestions for topics or keynote speakers, please contact Bobbie Dietz (bdietz@chpso.org).

Calendar

The following upcoming events are still open for enrollment. For more information or to enroll, use the contacts listed below.

June

- 6 (was June 13):** CHPSO: Members Call. Retained Surgical Items. 10–11 AM
- 17:** CAPSAC: California Patient Safety Action Coalition meeting. Pasadena.

21: PSCSD&IC (Patient Safety Council of San Diego & Imperial Counties): HAI Elimination. San Diego.

21: SCPC (Southern California Patient Safety Collaborative): Track II — Pressure Ulcers, Readmissions and Transitions of Care. Industry Hills.

28: PSCSD&IC: Standardizing Dosing Limits. San Diego.

28: SCPC: Perinatal Monthly Webinar. 12:15 PM

July

11: CHPSO: Members Call. Just Culture Road Map. 10–11 AM

13: PSCSD&IC: Preventing Rehospitalizations Network (PRN). San Diego.

13: SCPC: Track III — Perinatal Care. Industry Hills.

August

8: CHPSO: Members Call. 10–11 AM

9: SCPC: Track I — Hospital Acquired Infections in the ICU Setting, Sepsis and Surgical Care Improvement Project. Industry Hills.

16: PSCSD&IC: HAI Elimination. San Diego.

23: SCPC: Perinatal Monthly Webinar. 12:15 PM

24: PSCSD&IC: Ending Elective Deliveries Before 39 Weeks Gestation. San Diego.

30: PSCSD&IC: Standardizing Dosing Limits. San Diego.

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September

9: CAPSAC: California Patient Safety Action Coalition meeting. Sacramento.

12: CHPSO: Members Call. 10–11 AM

13: SCPSAC: Track II — Pressure Ulcers, Readmissions and Transitions of Care. Industry Hills.

14: PSCSD&IC: Preventing Rehospitalizations Network (PRN). San Diego.

27: SCPSAC: Perinatal Monthly Webinar. 12:15 PM

October

10: CHPSO: Members Call. 10–11 AM

18: PSCSD&IC: HAI Elimination. San Diego.

20: PSCSD&IC: Standardizing Dosing Limits. San Diego.

25: SCPSAC: Perinatal Monthly Webinar. 12:15 PM

November

8: SCPSAC: Track I — Hospital Acquired Infections in the ICU Setting, Sepsis and Surgical Care Improvement Project. Industry Hills.

9: PSCSD&IC: Preventing Rehospitalizations Network (PRN). San Diego.

14: CHPSO: Members Call. 10–11 AM

15: SCPSAC: Track III — Perinatal Care. Industry Hills.

15: PSCSD&IC: Ending Elective Deliveries Before 39 Weeks Gestation. San Diego.

December

2: CAPSAC: California Patient Safety Action Coalition meeting. Torrance.

12: CHPSO: Members Call. 10–11 AM

13: SCPSAC: Track II — Pressure Ulcers, Readmissions and Transitions of Care. Industry Hills.

13: PSCSD&IC: HAI Elimination. San Diego.

15: PSCSD&IC: Standardizing Dosing Limits. San Diego

For further information on these events:

CAPSAC: John Keats John.Keats@CHW.edu or www.capsac.org

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About This Newsletter

CHPSO Patient Safety News provides lessons learned from reviews of patient safety events and news of patient-safety activities in this state. We hope you will find it useful in your efforts to improve patient outcomes. This newsletter may be freely distributed in its original form. Copies of each newsletter are archived on the CHPSO website (www.chpsso.org).

Prospective authors may submit articles to Rory Jaffe, MD, MBA: rjaffe@chpsso.org, 916.552.7568. Typical articles will be brief — between 200 and 600 words. A completed [publication agreement form](#) must be submitted prior to publication.

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As part of our information security plan, we have changed email providers and addresses. Emails to our prior location will be forwarded appropriately, but any new messages should be sent as follows:

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