

Reducing Medication Errors in Acute Cardiovascular and Stroke Patients

On March 23, the American Heart Association published practice recommendations intended to reduce medication errors in acute cardiovascular medicine. The full report is available at circ.ahajournals.org/cgi/doi/10.1161/CIR.obo13e3181d4b43e. The writing group assessed the evidence and rated the support for the recommendations according to the American College of Cardiology/American Heart Association classification system. The article includes detailed explanations of the rationale behind each of these recommendations as well as some guidance on implementation.

The two levels of evidence and support noted in these guidelines are:

- I(B): There is evidence and/or general agreement that this is beneficial, useful and effective. Data derived from a single randomized trial or nonrandomized studies.
- I(C): There is evidence and/or general agreement that this is beneficial, useful and effective. Only consensus opinion of experts, cases studies or standard of care.

In summary, the recommendations are:

- An accurate weight should be obtained on admission. I(C)
- Estimated creatinine clearance should be calculated with the Cockcroft-Gault formula on admission and as changes in creatinine occur. I(B)

- Because of age-related changes in pharmacokinetics, pharmacodynamics, and renal function, medication dosage adjustments and heightened surveillance for adverse medication events are recommended. I(B)
- Order forms and protocols for anticoagulation should be standardized. I(B)
- Pharmacists and nurses should be integrated within the cardiovascular care teams in the ED, ICU and inpatient wards to enhance communication and medication safety. I(B)
- CPOE, medication bar-coding technology and smart infusion pumps should be implemented throughout all inpatient wards, including the ED. I(B)
- Staff should be educated on high-alert medications, safe medication administration techniques, medication reconciliation procedures, look-alike/sound-alike medications and automated dispensing device technologies. I(C)
- An organizational culture of safety that promotes no-fault internal and external medication error reporting and interdisciplinary quality improvement review processes to

reduce the frequency and impact of medication errors is recommended. I(C)

The authors also note, “No comprehensive national monitoring system exists for patient safety and medication errors.” PSOs were established to provide this monitoring system. CHPSO currently has access to reports from 700 hospitals through the Nationwide Alliance of PSOs (NAPSO™), and expects to expand this alliance. Also, as part of the PSO law, there will be a Network of Patient Safety Databases (NPSD) established that will aggregate deidentified information from participating PSOs. Since the information is deidentified, NPSD will not have access to the patient details that CHPSO (and NAPSO) will, but should be able to help establish a better knowledgebase in medication-safety and other patient-safety issues.

— Rory Jaffe, MD MBA rjaffe@calhospital.org

Michaels, A. D., Spinler, S. A., Leeper, B., Ohman, E. M., Alexander, K. P., Newby, L. K., et al. (2010). Medication Errors in Acute Cardiovascular and Stroke Patients. A Scientific Statement from the American Heart Association. *Circulation*.

Selected similar drug names in acute cardiovascular practice (italics indicate brand names)

Accupril — *Aciphex*
Activase — *TNKase*
Aggrastat — *Argatroban*
 Calcium chloride — Calcium gluconate
Captopril — *Carvedilol*
Cardene — *Cardizem* — *Cardura*
 Dobutamine — Dopamine
 Epinephrine — Ephedrine
 Isosorbide mononitrate — Isosorbide dinitrate
Lanoxin — Levothyroxine

Metoprolol tartrate — Metoprolol succinate
 Nicardipine — Nifedipine
 Norepinephrine — Neo-synephrine
Pindolol — *Plendil*
Plavix — *Paxil*
 Pravachol — Propranolol
 Protamine — Protonix
Tiazac — *Ziac*
Toprol-XL — *Topamax*
Tricor — *Tracleer*
 Valsartan — Losartan
Zebeta — *DiaBeta*

Missing Minneapolis

Over the past few months, I've faced a new challenge as I work to apply aviation techniques and tools in health care. It usually goes something like this: "If all of this teamwork and communication stuff is so great, then why did that crew fly 150 miles past Minneapolis. Shouldn't somebody have 'communicated with them'?"

My response usually begins by noting that even though some of the information has been made public, very few informed voices have actually been heard in the mainstream media. James Reason, professor emeritus at Manchester University and author of the book *Human Error*, perfectly predicted the response from the FAA, the airline, the media and the general public. That response was basically, "Hang the guilty bastards." Dr. Reason warns us that blaming individuals is our reflexive response because it is simple and emotionally satisfying. If we simply get rid of the incompetent practitioners then this will never happen again. Sound familiar?

Dr. Key Dismukes, a leading human factors researcher at NASA Ames laboratory, responded to this incident in a very different way than the mass media, stating, "It's not astonishing to me at all that people get absorbed in a task and lose track of time and where they are." Increasingly capable automation handles nearly all of the mundane, routine actions that are required for level flight. Highly trained, intelligent professionals are relegated to a monitor role for hours, something for which humans are not well suited. Further, the communications and control infrastructure has been known to be inadequate for decades. Suffice it to say that an intelligent response requires a systems approach to analyzing what happened and what interventions will prevent recurrence of this incident, and only then

take appropriate actions, such as training, policy changes and perhaps punishment.

Let me finish where I began. Is this incident a repudiation of teamwork and communication practices? On the contrary, it was a member of the cabin crew who detected that something seemed odd and called the cockpit to inquire about it. Having alerted the crew to the seeming disparity from the plan, her intervention ensured that the flight landed safely and less than an hour late. This incident is an excellent example of resilience, or the capability of a system to mitigate the impact of individual error. Should the cockpit crew have been aware of their location? Of course! Should Air Traffic Control have succeeded in warning them? Yes. Should the airline have alerted them? Yes. But in the end, it was the flight attendant who was trained to question something out of the ordinary who saved the day.

— Steven Montague lifewings@verizon.net, Vice President, [LifeWings](http://LifeWings.net)

NPDB Rule Change Does Not Affect PSOs

On January 28, the Department of Health and Human Services (DHHS) published a rule expanding National Practitioner Data Bank (NPDB) reporting. In the *Federal Register* discussion, DHHS states, "we do not expect PSOs to take any reportable actions under this regulation. ... it would be inconsistent with PSO commitments made to the Secretary pursuant to section 924(a) and 921(5) of the Public Health Service Act to make sanction recommendations regarding providers and therefore there would be no cross-

over with this regulation mandating peer review organization reporting responsibilities with the separate and distinct objectives and responsibilities of PSOs, as set forth in the Patient Safety Act."

CHPSO agrees with the statements by DHHS regarding PSOs, sanctions and NPDB. CHPSO activities include the following (as listed in 921(5) of the Public Health Service Act):

- Efforts to improve patient safety and the quality of health care delivery.
- The collection and analysis of patient safety work product.
- The development and dissemination of information with respect to improving patient safety, such as recommendations, protocols, or information regarding best practices.
- The utilization of patient safety work product for the purposes of encouraging a culture of safety and of providing feedback and assistance to effectively minimize patient risk.

A PSO is not the organization to make sanction decisions. CHPSO exists for voluntary sharing and learning from the experiences of member hospitals.

CHPSO helps hospitals evaluate events and near misses and develop effective strategies to improve patient safety. It also provides hospitals with a new legal protection that enables increased sharing of privileged confidential information. CHPSO does not take actions that are reportable to NPDB.

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More Viaspan® News

Friday March 26 CHPSO sent out an alert regarding Viaspan from Teva Pharmaceuticals. We now have learned of similar concerns raised in 2005 about Viaspan from Barr Laboratories (*ISMP Medication Safety Alert*, Volume 10 Issue 13). In that instance, Viaspan was left at a hospital by the donor procurement team and had been placed in the pharmacy return bin, after which it could have accidentally been used for another patient.

Viaspan, a solution for the flushing and cold storage of organs for transplantation, contains about 125 mEq/L potassium. If the solution is mistakenly used for intravenous infusion, cardiac arrest is likely.

The following concerns have been identified (changes to the alert highlighted):

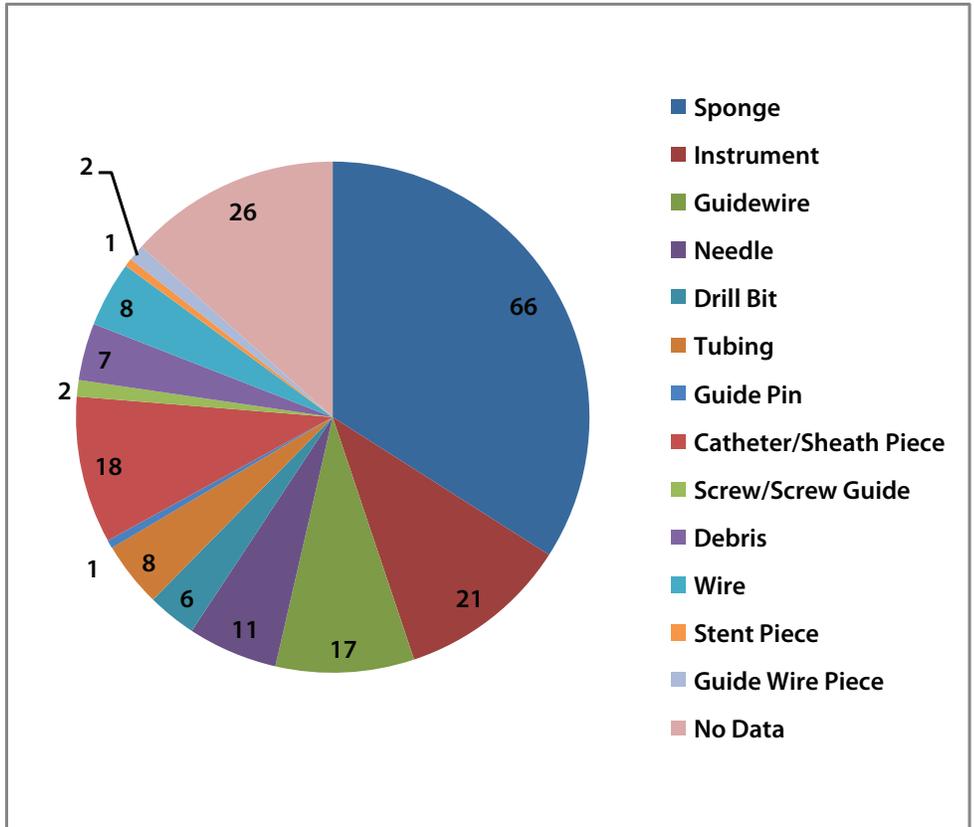
Packaging:

- The labeling “Not for direct injection or IV infusion”, “Risk of cardiac arrest” along with the ingredient labeling (especially the large amount of potassium) are all in very small font in black print over plastic making it very difficult to read or capture the attention of the user.
- Despite the bag being labeled not for infusion, the delivery set port can easily accommodate regular IV tubing. Other manufacturers have rendered such a port, for a non-infusion purpose, impossible to connect with IV administration tubing.

Distribution:

- Viaspan can be purchased through non-pharmacy channels, such as materials management, without the knowledge of the pharmacy. This has reportedly happened at several hospitals. CMS states that this product

Retained Foreign Bodies Reported to the California Department of Public Health July 2008 through June 2009



should only be purchased and delivered to pharmacies and not directly to surgical services departments.

- **Viaspan has been left at a hospital by a donor procurement team and subsequently misidentified as a normal IV solution. While procurement teams do not intend to leave Viaspan behind, hospitals should be aware that Viaspan has the potential to accidentally enter their distribution system after organ donation procedures.**

As Viaspan represents a source of concentrated KCl and presents a risk of accidental intravenous administration, appropriate safeguards should be in place.

— Rory Jaffe, rjaffe@calhospital.org

CHPSO Joins Nationwide Alliance With Other PSOs

To better serve members, CHPSO has allied with several other hospital association-sponsored PSOs and Quantros to share incident report data with identifiers of hospital and providers removed.

The new Nationwide Alliance of PSOs (NAPSO™) already includes 700 hospitals. This alliance will accelerate progress toward identifying and understanding risks, and acting to eliminate preventable harm to hospital patients.

The data sharing is made possible through provisions in the Patient Safety and Quality Improvement Act, and will maintain strict and extensive protections afforded information reported to PSOs.

CHPSO Patient Safety News

April 2010 ≈ Page 4

Calendar

Following is a list of upcoming events that are still open for enrollment. For more information or to enroll, use the contacts listed below.

April

1: *SCPSC* (Southern California Patient Safety Collaborative): Track III: Perinatal Care. City of Industry.

8: (Date change — was April 15) *BEACON*: Compass Series course day 4 (of 4). Santa Clara.

22: *CHPSO*: Introduction to Web-Based Event Information Entry. Web seminar 10 AM – 11 AM.

27: (Date change — was April 7) *HASD&IC* (Hospital Association of San Diego & Imperial Counties): San Diego Patient Safety Council; Sepsis. San Diego.

27: *BEACON*: Annual Meeting. Santa Clara.

30: *CAPSAC*: Statewide Convening. Sacramento.

May

11: *SCPSC*: Track I: Surgical Care Improvement Project, Sepsis, Hospital-Acquired Infections in the ICU Setting. City of Industry.

13: *BEACON*: Leadership Council. Location to be determined.

June

2: *HASD&IC*: San Diego Patient Safety Council; Sepsis. San Diego.

11: *CAPSAC*: California Patient Safety Action Coalition Meeting Pasadena.

15: *SCPSC*: Track II: Pressure Ulcers. City of Industry.

July

27: *BEACON*: Quarterly Meeting. Location to be determined.

August

10: *SCPSC*: Track I: Surgical Care Improvement Project, Sepsis, Hospital-Acquired Infections in the ICU Setting. City of Industry.

12: *HASD&IC*: San Diego Patient Safety Council; Sepsis. San Diego.

September

1: *SCPSC*: Track II: Pressure Ulcers. City of Industry.

10: *CAPSAC*: California Patient Safety Action Coalition Meeting Napa.

10: *BEACON*: Key Contacts Meeting. Location to be determined.

23: *BEACON*: Physician Leadership Meeting. Location to be determined.

24: *BEACON*: CNE Meeting. Location to be determined.

October

6: *HASD&IC*: San Diego Patient Safety Council; Sepsis. San Diego.

November

16: *SCPSC*: Track I: Surgical Care Improvement Project, Sepsis, Hospital-Acquired Infections in the ICU Setting. City of Industry.

December

2: *SCPSC*: Track II: Pressure Ulcers. City of Industry.

3: *CAPSAC*: California Patient Safety Action Coalition Meeting. Torrance.

15: (Date change — was December 1) *HASD&IC*: San Diego Patient Safety Council; Sepsis. San Diego.

For further information on these events:

BEACON: Pamela Speich pspeich@hospitalcouncil.net or www.beaconcollaborative.org

CAPSAC: Theresa Manley manleyt1@pamf.org or www.capsac.org

CHPSO: Rory Jaffe rjaffe@calhospital.org

HASD&IC: Lindsey Wade lwade@hasdic.org

SCPSC: Catherine Carson ccarson@hasc.org

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 will be archived on the CHPSO website (www.chpso.org).

Send subscription requests (additions, deletions) to ltate@calhospital.org.

Submit articles to rjaffe@calhospital.org.