

Last month, I wrote about issues faced by non-trauma, or Level III and IV trauma centers who typically have to send some of their patients to higher level centers. This month, I'll focus on topics of concern from the standpoint of the receiving hospitals.

Think about it. Level I and II hospitals have to rely on the skills and judgment of other trauma professionals providing initial care for trauma patients. They will assume care, not only providing higher level services available at their institutions, but they must also ensure that all injuries have been identified and have received proper initial treatment.

This is a major and very important hand-off, so good communication is extremely important. This issue of the newsletter will cover important topics that are part of the hand-off: financial matters, repeat imaging, radiation reduction, radiologist reinterpretation of images, and feedback to the referring center.

## Can Transfer Patients Actually Pay Their Bills?

Everybody loves EMTALA, the Emergency Medical Treatment and Active Labor Act of 1986. It's been around a long time, and serves a purpose: to prevent "dumping" of patients with expensive problems who are unable to pay. **This law requires patients with conditions requiring resources or capabilities a hospital does not have, to be evaluated and stabilized there before transport to a higher level of care.**

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Sample Transfer Checklist <http://bit.ly/trauma-xfer>

### TRAUMA CALENDAR OF EVENTS

#### NEUROTRAUMA 2017

LOCATION: SNOWBIRD RESORT & CONFERENCE CENTER

SNOWBIRD, UTAH

JULY 7-12, 2017

#### AMERICAN ASSOCIATION FOR THE SURGERY OF TRAUMA

LOCATION: MARRIOTT WATERFRONT, BALTIMORE, MARYLAND

SEPTEMBER 13-16, 2017

Many smaller emergency departments, as well as lower level trauma centers, have difficulty providing on-call coverage for all disciplines. The most problematic specialties include neurosurgery, plastic surgery, ENT, and orthopedics.

**But Level I trauma centers, by definition, must provide comprehensive coverage for all disciplines at all times.** Therefore, the lower level hospital must evaluate, and then the Level I center must accept, all patients as long as they have the capacity to do so. But some of those centers fear that they will be taken advantage of, and that patients that can pay will be cherry picked, leaving them to receive a disproportionate number who are uninsured. Could it be true?

A Level I center in southern California looked at their own inbound transfer experience over a two-year period. They reviewed patient demographics, surgical services required, and payor status.

Here are the factoids:

- A total of 692 transfer requested were received, and 77% were accepted
- 19% were denied due to lack of capacity, and 4% were declined as "not indicated" (!)
- Transferred patients tended to be younger, more likely to need OR, and had a higher mortality despite similar ISS
- Services most commonly requested by the transferring hospital were trauma (24%), neurosurgery (24%), ortho (20%), hand (18%), face (7%), and eye (7%)

- Although trauma and neurosurgery were the most requested services, very few required operative intervention (about 10% each). Ortho operated on 60% of transfers.
- There was no difference in payor mix for transfers vs primary patients. Operative rates were the same for insured vs uninsured patients.

**Bottom line: In general, most referring hospitals do not seem to be doing a wallet biopsy before deciding to transfer. They are sending patients who genuinely require a higher level of care or need specialists that they do not have. But don't be shy to critically evaluate each potential transfer and decline if you do not believe that your services are actually needed. I strongly recommend that you do so over a recorded transfer line so that the conversation can be analyzed later, if needed.**

**But what if you do suspect that you are getting a disproportionate number of uninsured patients from a particular referring hospital? Here are my suggestions:**

1. **Talk to the trauma medical director or the lead emergency physician at the referring hospital.** They may be one and the same at Level III and IV trauma centers. Let them know that you have noticed an "irregularity" in the insurance status of their referred patients compared to others in their geographic area. Ask them to look into it. If it is intentional, *they* now know that *you* know.
2. If you are still getting nowhere, it's time to let your CFO and CEO know your suspicions. They can deal with it at a higher level.

*Reference: Requests for 692 Transfers to an Academic Level I Trauma Center: Implications of the Emergency Medical Treatment and Active Labor Act. J Trauma 62(1):63-68, 2007.*

## EMS Documentation In Transfer Patients

A few years ago, I wrote about deficiencies in documentation during EMS transport of scene patients. A 2010 paper showed a correlation between poor documentation enroute and increased mortality. What about the documentation that ultimately arrives at the receiving hospital? Good stuff, or a bad game of telephone?



A Swiss trauma center retrospectively looked at a year's worth of incoming interhospital transfers. They looked at completeness of data, both prehospital (from scene to referring hospital), and from the initial hospital itself.

They received 243 transfers, but only 218 were included because they were transported by their Emergency Health Services (EHS) system.

Here are the factoids:

- Only 64% were accompanied by an EHS report, the equivalent of a prehospital run sheet (!!)
- Male patients were more likely to arrive with their run sheet than females (what?!)
- **Prehospital airway, vital signs, and GCS were severely deficient**, present less than 50% of the time if there was no run sheet. It was present only about 75% of the time even if the run sheet was there.
- **Higher ISS correlated with worse documentation**, especially GCS
- **Poor prehospital documentation was associated with higher mortality**

**Bottom line: Switzerland has a major problem with prehospital documentation, as do many centers here in the US. And even if a scene run sheet was present, key information never made it to the receiving hospital. As in the earlier US study, this can have an adverse impact on mortality.**

**Vital signs and GCS trends are critical pieces of information that we must have to correctly manage spine and brain injury, as well as patients with high injury severity and bleeding risk. Every receiving trauma center must insist on getting a copy of the scene run sheet, comprehensive documentation of evaluation and interventions performed at the referring hospital, and the interhospital run sheet.**

**If you are not getting these routinely, work with your referring hospitals, your local EMS agencies, and your state EMS board or trauma system to ensure that you get these documents in a timely manner!**

References:

*Lack of Emergency Medical Services documentation is associated with poor patient outcomes: a validation of audit filters for prehospital trauma care. Journal of the American College of Surgeons, 210(2):220-227, 2010.*

*Data capture and communication during transfers to definitive care in an inclusive trauma system. Injury 48(5):1069-1073, 2017.*

## Using Technology To Reduce Radiation Exposure

Last month I wrote about the three ways to get incoming radiographic images from referring hospitals:

- **Hard copy.** These days, that usually means a CD.
- **Direct PACS system connections.** These are software links that enable one hospital's PACS software to communicate with another's, typically through a virtual private network (VPN).
- **Web-based image sharing system.** These are web server-based software applications that may be commercial products or special products set up by a state or county system.

West Virginia University Hospitals adopted Candelis ImageGrid, one of the web-based sharing systems, in 2011. They looked at a one month snapshot of trauma activation patients transferred into their center a year after implementation, and compared it to the same month a year before implementation.

Here are the factoids:

- 77 of 183 trauma activation patients were transferred in before ImageGrid, and 105 of 243 were transferred in in the later period
- The percentage of patients undergoing studies prior to transfer was the same before and after implementing ImageGrid (pretty much all of them)
- **The number of studies that had to be repeated was cut in half**, from 58% to 26% (!)
- Cervical CT remained about the same, but repeat face and chest-abdomen-pelvis imaging dropped to only about 10% (!!)

**Bottom line: Well, this is interesting. It does show that the number of repeat CT scans decreases once a reliable way of sharing them with the re-**

**ceiving hospital is adopted. But I still maintain that referring hospitals are still doing *too many scans in the first place.***

**As I mentioned last month, online image sharing services are slick but somewhat expensive. In the case of WVU and ImageGrid, the up front cost was \$375K, and the annual upkeep was \$25K back in 2012. Each hospital or state system will need to do their own cost/benefit analysis with current products to see if an online solution is right for them. In the meantime, work with your referring hospitals to perform only imaging necessary to make the decision to keep or transfer, and make sure the images reliably get to you, one way or another.**

*Reference: The use of technology to reduce radiation exposure in trauma patients transferred to a level 1 trauma center. WV Med J 110.3:14, 2014.*

## The Value Of Reinterpreting Outside CT Scans

Okay, one of your referring hospitals has transferred a patient to you. They diligently filled out the transfer checklist (see last month's newsletter), and made sure to include a CD containing the imaging that they performed. For good measure, they also included a copy of the radiologist report for those images.

Now what do you do?

- Read the report and consider the results
- Look at the images yourself and make decisions
- Have your friendly neighborhood radiologist re-read the images and produce a new report

**Correct answer: all of the above.** But why? First, you can get a quick idea of what another professional thought about the images, which may help you think about the decisions you need to make.

And one of the few dogmas that I preach is: "read the images yourself!" *You* have the benefit of the clinical details of your patient, which the outside radiologist did not. This may allow you to see things that they didn't because they did not have that clinical suspicion. Besides, do it often enough and you will get fairly good at it!

But why trouble your own radiologist to take a look? Isn't it a waste of their time? Boston Children's Hospital examined this practice in the context of taking care

of pediatric trauma patients. This hospital accepts children from six hospitals in the New England states. In 2010, they made a policy change that mandated all outside images be reinterpreted once the patient arrived. They were interested in determining how often there were new or changed diagnoses, and what the clinical impact was to the patient. They focused their attention only on CT scans of the abdomen and pelvis performed at the referring hospital.

The factoids:

- 168 patients were identified over a 2-year period. 70 were excluded because there was no report from the outside hospital (!), and 2 did not include the pelvis.
- **Reinterpretation in 28% of studies differed from the original report (!!)**
- Newly identified injuries were noted in 12 patients, and included 7 solid organ injuries, 3 fractures, an adrenal hematoma, and a bowel injury. Three solid organ injuries had been undergraded.
- Four patients with images interpreted as showing injury were re-read as normal
- **20 of the changed interpretations would have changed management**

**Bottom line: Reinterpretation of images obtained at the outside hospital is essential. Although this study was couched as pediatric research, the average age was 12 with an upper limit of 17. Many were teens with adult physiology and anatomy. There are logistical hurdles that must be addressed in order to get buy-in from your radiologists, but the critical additional clinical information obtained may change therapy in a significant number of cases.**

*Reference: The value of official reinterpretation of trauma computed tomography scans from referring hospitals. J Ped Surg 51:486-489, 2016.*

## Optimizing Feedback To Referring Hospitals

The American College of Surgeons requires that referring hospitals provide feedback to prehospital providers **and referring hospitals** regarding the transfer process.

Failure to do so can actually result in a deficiency during a site visit. (Psst! Pay attention, referring hospitals if you want to start getting feedback). Sometimes the feedback is verbal, either in person or by phone. Many receiving centers send written letters outlining care and care issues. But unfortunately, some don't do it at all, or very inconsistently.

Harborview Hospital in Seattle is a very busy Level I center, with nearly 6,000 trauma admissions per year. More than half of their patients come from a huge catchment area including Washington state, Wyoming, Alaska, Idaho, and Montana. The amount of work to provide proper feedback on over 3,000 patients annually can be overwhelming.

They implemented a "U-link" program that provided access to patient chart info for the hospital sending each patient. It was HIPAA compliant, and login information was sent within 72 hours of patient arrival.

Here are the factoids:

- 90 referring hospitals set up the U-link system
- Care transcripts, radiology reports, and discharge summaries were the most frequently viewed items
- The most desired feedback was on over- or under-resuscitation (89%), injuries (84%), appropriateness of transfer (78%), and deviation from ATLS protocols (76%)
- Information was used for **education** (100%), **systems analysis** (99%), and **performance improvement** (PI, 92%)

**Bottom line: Your referral partners crave feedback on the patients they send! Develop a system that guarantees it on each patient at a reasonable time after admission. You may not be able to link them into your medical record, but you can certainly send out informational letters and email!**

*Reference: Optimizing feedback from a designated Level I trauma/burn center to referring hospitals. JACS 220(1):99-104, 2015.*

**Check out the sample feedback form on the next page. Download a Word document version to customize at <http://bit.ly/trauma-fb>**



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**Your Hospital Logo here**

**Trauma Patient Status Report**  
**CONFIDENTIAL**  
**NOT FOR GENERAL POSTING**

**Admit Date:**

**Age:**

**Referring hospital:**

**Arrival time:**

**Procedures completed:**

**Reports or Films sent:** (yes/no/details)

**For your PI process:**

- 1.
- 2.

**Transportation service used:**

**Transport Type:** (air/ground)

**[Your hospital name] Hospital:**

**Arrival time:**

**Trauma Team Activation:** (yes/no)

**Studies from referring facility sent and used:**

**Attending Physician:**

**Injuries:**

**Procedures performed:**

**Consultants:**

**Status and Disposition:** (narrative of events over first 24-48 hours)

*If you have any questions regarding the care of your patient please contact us. We are always trying to improve our referral process and your feedback is appreciated. Thank you for the referral!*

**Your TPM name**  
**Trauma Program Manager**  
**Your TPM Phone #**  
**[Your TPM email address](#)**

**Your TMD name**  
**Trauma Medical Director**  
**Your TMD Phone #**  
**[Your TMD email address](#)**