How to Stay Out of the Courtroom

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Clinical Asst. Professor, Michigan State University
College of Osteopathic Medicine
No Conflicts of Interest
• AMA/Refusals-Shared Decision Making
• Signing does not = Editing the record
• Discharge instructions gone bad
• Nursing-Physician discrepancies
• Altering or Changing a Record
• Residents: A human shield?
• Macros & Drop Down Boxes
• Informed Consent, When?
• Copy Cat (copy and paste)
• Knee Effusion Confusion

• Document for the Miss
• “Offering” Admission
• Documenting Errors
• Anger Management
• Stealthy Toxicology
• Rad Discrepancies
• Attestation Issues
• Stoned on Sepsis
• Rapid Fire Risk

Choose Your Risk
Informed Consent: Beyond Signing a Form

By Kevin Klauer, DO, Chief Medical Officer, TeamHealth, Knoxville, TN

Informed consent is critically important with respect to patient autonomy and individual choice. However, the purpose and intent often are lost and relegated to nothing more than signing a form. The informed discussion is critical to the informed consent process and meeting the applicable standard of care for obtaining informed consent. Thus, the content of that discussion is more important than a signature on a form, which frequently doesn’t include enough details about the information shared with the patient. The concept of shared decision-making adds complexity to the idea of informed consent.

Shared decision-making and informed consent are related conceptually, but distinctly different in effect. They both address the necessary focus on patient autonomy and patient-centered care. However, merely including patients in the decision-making process (when appropriate) and conversing with a patient about treatment options is no surrogate for informed consent and its required elements. Ideally, shared decision-making is used when reasonable treatment options exist for a specific
CONSENT FOR ADMINISTRATION OF TISSUE PLASMINOGEN ACTIVATOR (t-PA) AND CONTINUUM OF CARE

I understand that my diagnosis is: ____________________________________________

This requires the following medical service: Intravenous Tissue Plasminogen Activator (t-PA) Infusion

There is a treatment for your stroke called rt-PA that must be given within three hours after the stroke started. It is a ‘clot buster’ drug that can lead to a complete or near-complete reversal of a stroke in about one of every three patients treated. However, it has a major risk, since it can cause severe bleeding in the brain in about one of every fifteen patients. If bleeding occurs in the brain, it can be fatal. Overall, we feel the potential benefits of this treatment outweigh the risks.

My physician has explained the procedure and has answered all my questions.

I understand that there are risks with this procedure. These risks include but not limited to: severe bleeding, hypertension, allergic reaction and have been explained to my satisfaction. I also understand that there are rarer complications, including death, which may not have been specifically mentioned, that may also occur. I accept these risks.

The expected results such as complete or near-complete reversal of a stroke after the procedure have been explained. No warrantee or guarantee has been made as to the result or cure.

Alternate methods of treating my condition have been explained to me, including no treatment, and the consequences and expected results of these alternatives have been described to my satisfaction.

I consent to the administering of anesthetics as are necessary up to and including general anesthesia.

I authorize additional services as necessary. Pathology, Radiology including additional surgery. The Pathologist may use discretion to dispose of any submitted tissue or memban.

Patient’s Signature ___________________________ Date/Time ________________

Witness

Date/Time ________________

☐ Patient is unable to sign ___________________________ Reason: ___________________________

Date/Time ________________

Guardian ___________________________ Date/Time ________________ Relationship ___________________________

Other Person ___________________________ Date/Time ________________ Relationship ___________________________
Case Study: The Telephone Consult

- September 30, 2012: ED Visit #1
- 1225: 47 year old female presented to the ED
- CC/HPI: She complained of a severe headache, dizziness, nausea, vomiting and photophobia. She denied blurred vision or other neurological complaints. The headache had been intermittent for one month. She rated her pain as a 10 out of 10.
- P.E.: Normal exam
Medical Legal Case

• Tx: Hydromorphone and Ondansetron IV
• Diagnostics
  – Labs: NL
  – CT:

  “Sellar/suprasellar mass suspicious for pituitary macroadenoma. Suprasellar component displaces optic chiasm and floor or 3rd ventricle. “MRI with dedicated pituitary mass protocol may be helpful in further characterization.” No cervical or carotid artery stenosis. Compression of paraclinoid ICA B/L between the mass in the anterior clinoid processes.”
Medical Legal Case

- Telephone consult: Neurosurgeon on call
- The report was read to the neurosurgeon
  “Do you want an MRI?” “No. She can follow up in my office in 1 week.”
- October 2, 2012: ED Visit #2
- Patient presented via EMS after being found unresponsive with severe focal neurological deficits
- Dx: Ischemic stroke & Acute adrenal crisis
- Tumor resected
- Permanent, severe neurological sequelae
- She cannot live independently
Medical Legal Case

• Telephone consult: Neurosurgeon on call
• The report was read to the neurosurgeon
  “Do you want an MRI?” “No. She can follow up in my office in 1 week.”
• October 2, 2012: ED Visit #2
• Patient presented via EMS after being found unresponsive with severe focal neurological deficits
• Dx: Ischemic stroke & Acute adrenal crisis
• Tumor resected
• Permanent, severe neurological sequelae
• She cannot live independently
Offering v. Recommending

- 55 y/o female presents with chest pain
- Charting: Reproducible chest pain
- “ECG” normal
- Offered admission and declined: No documentation
“We found that only about one-quarter of hospitals had policies regarding the use of the copy-paste feature in EHR technology, which, if used improperly, could pose a fraud vulnerability.”
Nursing-Physician Discrepancies
The AMA/Refusals
Shared Decision Making

- 47 y/o male presents to the ED complaining of headache and neck pain
- CT of the brain is performed
- He is offered an LP to “rule out meningitis”
- The physician stated:
  “_________________________________________

- Informed refusal?
The AMA/Refusals
Shared Decision Making

• 47 y/o male presents to the ED complaining of headache and neck pain

• CT of the brain is performed

“I doubt you have meningitis. But, if we want to be certain we should do a spinal tap.”

• Informed refusal?
The AMA/Refusals
Shared Decision Making

• 49 y/o male presented to the ED with 10 min duration of chest pain.
• ECG and enzymes negative
• Admission recommended and declined X2
• Admission recommended to spouse and discussed with husband
• The record:
  “________________________________________________________
  _________”
• Informed Refusal?
The AMA/Refusals
Shared Decision Making

- 49 y/o male presented to the ED with 10 min duration of chest pain.

- ECG and enzymes negative

- Admission recommended and declined X2

- Admission recommended to spouse and discussed with husband

- The record:

  _______________________________________

- Informed Refusal?

  “Pt. advised admission recommended X2. He was alert & oriented x4 and had the capacity to consent and refuse. We discussed the possibility of acute coronary syndrome, the risks of treatment and non-treatment and the possibility of death. His wife was present and wanted him admitted. She was enlisted to try and convince him.”

  “If I’m gonna die, I’d rather do it at home with my boys!”

- Informed Refusal?
Altering or Changing a Record

Falsified Documentation

Providers are reminded that deliberate falsification of medical records is a felony offense and is viewed seriously when encountered. Examples of falsifying records include:

- Creation of new records when records are requested
- Back-dating entries
- Post-dating entries
- Pre-dating entries
- Writing over, or Adding to existing documentation (except as described in late entries, addendums and corrections)

Corrections to the medical record legally amended prior to claims submission and/or medical review will be considered in determining the validity of services billed. If these changes appear in the record following payment determination based on medical review, only the original record will be reviewed in determining payment of services billed to Medicare. (CMS-Noridian)
If documentation is delayed...
Accuracy
Credibility
Spoliation?
Anger Management

Emotion has no place in the medical record. Simply Stick To The Facts!
Signing Does Not = Editing

Editing portions of the medical (excluding addressing blanks) may subject you to the expectation that you have edited the entire record.
ADDENDUM: Billing coders have asked me to do a procedure note.

Again, the original dictation was read. The second page of the dictation under ED course outlines the procedure. Again, I will re-read what has already been dictated for their benefit.

“DX STATES ACUTE RECTAL PACING WITH NO MENTION OF IT IN THE DICTATION. PLEASE CLARIFY.”
Documenting Errors
“Medical Decision Making/Management: Her wet prep is negative. Here beta level here is 356. Which is unlikely to be seeing anything on ultrasound. This is doubling normally as we would expect with a normal intrauterine pregnancy at this point, and I think her risk for her having ectopic is low. The patient will be discharged to follow up with her gynecologist in a day or so.”
Discharge Instructions Gone Bad
Attestations

Appropriate attestations are of value. However, attestations designed for self-protection do not insulate the physician from liability. They tend to increase exposure via finger pointing.
Stones & Sepsis
The Undeniable Link

Myths
Rooted in culture, based on tradition
<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Clinical Presentation</th>
<th>PMHX</th>
<th>VS</th>
<th>Diagnostics</th>
<th>Disposition</th>
<th>Follow-Up</th>
<th>Complications</th>
<th>Settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 y/o</td>
<td>Female</td>
<td>Left flank pain</td>
<td>None</td>
<td>Normal</td>
<td>POC UA: Mod RBCs and + WBCs, CT 7 mm proximal ureteral stone with staghorn calculus. 2/10 pain discharged. No Rx for antibx.</td>
<td>F/U: 2 days: T 102.4, BP 84/62, HR 10</td>
<td>Died 3 days later</td>
<td>Settled: $600,000</td>
<td>Additional Hx: Prior history of UTI-Proteus</td>
</tr>
<tr>
<td>37 y/o</td>
<td>Female</td>
<td>Left flank pain</td>
<td>None</td>
<td>Normal</td>
<td>Formal UA: Lg blood, 11-20 WBCs, 4+ bact, CT 3 mm UPJ stone. 5/10 pain discharged. Rx for Ciprofloxacin</td>
<td>ED: 1 days: T 105, BP 80/50, HR 142</td>
<td>Multiple limb amputation</td>
<td>Settled: $1,000,000</td>
<td></td>
</tr>
<tr>
<td>46 y/o</td>
<td>Female</td>
<td>Right flank pain</td>
<td>None</td>
<td>Normal</td>
<td>Formal UA: Lg blood, 5-10 WBCs, + Nitrite, few bact, pH 8.0, CT 5 mm distal ureteral stone. 2/10 pain discharged. No Rx for antibx.</td>
<td>ED 2 days: T 102.4, BP 92/54, HR 126</td>
<td>4 limb amputation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MYTHS IN EMERGENCY MEDICINE
Rooted in culture, based on tradition

by KEVIN M. KLAUDER, DO, EJD, FACEP

Kidney Stones, Beyond the Pain
The momentum of kidney stone patients' "expulsion" from the emergency department has never been greater. Big stones? No problem. Obstruction? No problem. Infection? That's the problem. Some of these patients may require admission.

A recent interesting malpractice claim trend has prompted a reassessment of outpatient management of nephrolithiasis. Females with an active ureteral stone with obstruction and, in most important, possible urinary tract infection (UTI) have returned with pyelonephritis and sepsis, suffering horrific outcomes. Urinary symptoms, other than those associated with acute urethral obstruction, are often absent in these patients.

Although few recommendations deserve inclusion of an "always" or "never," this trend at least deserves some consideration in our approach to certain cases.

In England and Wales, 91 percent of deaths from nephrolithiasis were associated with kidney and ureteral stones, compared to lower tract stones, which accounted for 7.9 percent of deaths. Although the raw numbers aren't alarming—mainly 9.4 deaths per year from ureteric stones (140 deaths total) and 39.3 deaths per year from urolithiasis (1,934 deaths total)—their report of increasing trends in developed nations is concerning. Although men had a higher incidence (3.5:1) of stones compared to women, mortality was significantly higher in females (5.5:1).

Equal by worth, some unseeks accounts for 25 percent of adults septic cases.

"This too shall pass," a quote dating back to 1839, fits well with regard to stone size. It has been taught that stones ≥5 mm are unlikely to pass spontaneously. That's a reasonable guideline, but what difference does it really make? If patients are pain-free or their pain can be controlled with oral analgesics, there are no indications for admission (eg, pyelonephritis, solitary kidney, etc.), and follow-up is available, then stone isn't critical for the disposition decision. Jenndberg et al reported multiple CT-based variables that may predict stone passage. Although limited by the study's retrospective design and nonstandardized follow-up, their conclusion suggests our 5 mm line in the sand is less than clear. The spontaneous passage rate in 20 weeks was 312 out of 392 stones, 98.4% in 6 mm, 98.5% in 13 mm, 87.6% in 14 mm, and 12% in 3, 13.6 m, and 39.6 in 13 and 39.6 in 13 mm.

Stone size appears to be relegated to an academic discussion with limited relevance to emergency medicine.

Hydronephrosis is practically synonymous with obstruction and is expected with active ureteral stones. However, an active stone that is unlikely to pass may prolong the duration of associated ureteral obstruction. In the context of possible infection, obstruction is important.

Uncomplicated UTIs can almost universally be treated without hospitalization. UTIs in the context of nephrolithiasis with obstruction, however, are complicated. Appropriate diagnosis is critical.

Although admission may be unnecessary, noting the potential for poor outcomes, even with a seemingly benign presentation, mandates something more than the standard approach for those without possible UTI. Thus, initiation of antimicrobials, phone consultation, confirmed close follow-up, and, in some cases, admission, are all reasonable considerations.

The limitations of uria, leucocytosis, and the presence white blood cells (5/μl) via dipstick or formal urinalysis may lead to dismissing positive findings. In asymptomatic patients without a stone, a wait-and-see approach is appropriate for nondefinitive findings. However, with an obstructive stone, any one being positive should prompt recognition in the medical record, the ordering of a culture, and consideration of the above strategies.

Watch the pH. Some organisms are urease-producing, reducing urea, which has an antibacterial effect, and will increase ammonia levels. This effect has been found in more than 200 bacterial species, including Ureaplasma urealyticum, Propionibacterium, K. heidelberg, and Pseudomonas. The alkaline environment promotes formation of struvite-magnesium ammonium phosphate (infected stones) and apatite-calcium phosphate stones. Also, staghorn calculi are frequently composed of these two types. UTI may be causative, not an incidental finding, with nephrolithiasis.

Pain, some suggest greater mortality from struvite and staghorn stones, as they cannot be treated with antimicrobials alone.

Being mindful of possible infection associated with acute nephrolithiasis may improve outcomes and will significantly reduce your professional liability risk.

Editor's Note: Visit ACEPNow.com to view the references for this article.

DR. KLAUDER is an ACEP Board member; chief medical officer—hospital-based services; chief risk officer, and executive director—patient safety organization at TeamHealth; ACEP Now medical Editor-in-Chief; and clinical assistant professor, University of Tennessee and Michigan State University College of Osteopathic Medicine.
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Although few recommendations deserve inclusion of an “always” or a “never” in this trend at least deserves some consideration in our approach to certain cases.

In England and Wales, 91 percent of deaths from nephrolithiasis were associated with kidney and ureteral stones, compared to lower tract stones, which accounted for 29 percent of deaths. Although the raw numbers aren’t alarming—mean 0.4 deaths per year from ureteric stones (140 deaths total) and 130.3 deaths per year from stone passage (5.5/1)—equal by worst-case, sepsis accounts for 25 percent of adult sepsis cases.

“This too shall pass,” a quote dating back to 1892, fits well with regard to stone care. It has been taught that stones ≥5 mm are unlikely to pass spontaneously. That’s a reasonable guideline, but what difference does it really make? If patients are pain-free or their pain can be controlled with oral analgesics, there are no indications for admission (eg, pyelonephritis, solitary kidney, etc.), and follow-up is there isn’t critical for the disposition decision. Jendravetz et al reported multiple CT-related variables that may predict stone passage. Although limited by the study’s retrospective design and nonstandardized follow-up, their conclusion suggests our 5 mm line in the sand is less than clear.

The spontaneous passage rate in 20 weeks was 92% of 392 stones, 98% in 8 weeks, 98% in 13 mm, 89% in 14 mm, 67% in 15 mm, 33% in 16 mm, and 35% in 15 mm. Stone size appears to be related to an academic discussion with limited relevance to emergency medicine.

Hydrothorax is practically synonymous with obstruction and is expected with acute renal stones. However, an active stone that unlikely to pass may prolong the duration of associated urologic obstruction. In the context of possible infection, obstruction is important.

Uncomplicated UTIs may almost universally be treated without hospitalization. UTIs in the context of nephrolithiasis with obstruction, however, are complicated. Appropriate diagnoses are critical.

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The limitations of infrared, leukocyte eosinophils, and the presence of white blood cells (0.1 g/dL) via dipstick or formal urinalysis may lead to dissimulating positive findings. In asymptomatic patients without a stone, a wait-and-see approach is appropriate for nondiagnostic findings. However, with an obstructive stone, any one being positive should prompt recognition in the medical record, the ordering of a culture, and consideration of the above strategies.
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Watch the pH. Some organisms are urease-producing, reducing urea, which has an antibacterial effect, and will increase ammonia levels. This effect has been found in more than 200 bacterial species, including Ureaplasma urealyticum, Proteus, Klebsiella, and Pseudomonas. The alkaline environment prompts formation of struvite-magnesium ammonium phosphate (infected stones) and apatite-calcium phosphate stones. Also, staghorn calculi are frequently composed of these two types. UTI may be causative, not an incidental finding, with nephrolithiasis. Further, some suggest greater mortality from struvite and staghorn stones, as they cannot be treated with antimicrobials alone.
Risk Reduction Recs

1. Infection + Obstruction = Admission & Urgent Decompression
2. Urinary pH is not a wasted test.
3. Subtle signs of UTI shouldn’t be dismissed.
4. Chicken v. Egg: UTI first?
The Controlled Substance Act of 1970 reads in part as follows:

Sec. 304. (a) A registration pursuant to section 303 to manufacture, distribute, or dispense a controlled substance may be suspended or revoked by the Attorney General upon a finding that the registrant
(1) has materially failed any application pursuant to or required by this title or title III,
(2) has been convicted of a felony under this title or title III or any other law of the United States, or any State, relating to any substance defined in this title as a controlled substance or
(3) has had his State license or registration suspended, revoked, or denied by competent State authority and is no longer authorized by State law to engage in the manufacturing, distributing, or dispensing of controlled substances.

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<td>RESEARCHER</td>
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YOUR INSTITUTION
1 MAIN STREET
TOWN, STATE XXXXX

THIS CERTIFICATE IS NOT TRANSFERABLE ON CHANGE OF OWNERSHIP, CONTROL, LOCATION OR BUSINESS ACTIVITY
“The hospital’s Governing Body must ensure that all practitioners who provide a medical level of care and/or conduct surgical procedures in the hospital are individually evaluated by its Medical Staff and that those practitioners possess current qualifications and demonstrated competencies for the privileges granted.”

Re: CMS
"Access to PDMP information is determined by state law. All states with a PDMP allow prescribers, and most allow pharmacists, to obtain prescription history information on patients under their care."

Re: samhsa

Re: CMS
“Access to PDMP information is determined by state law. All states with a PDMP allow prescribers, and most allow pharmacists, to obtain prescription history information on patients under their care.

Failure to Dx an EMC may = Failure to fulfill the MSE

Re: CMS

Re: CMS
Medical Legal Case

- September 2, 2012: ED Visit #1
- 0500: 26 y/o female presented to ED
- CC: Vomiting for 1 hour
- HPI: “I took 5 Tylenol instead of 2.” Complained of a headache which has resolved (2015)
- BP: 106/58, HR: 72, RR: 16, T: 97.8
- PMHx: Former traumatic brain injury with 5 craniotomies, Seizure disorder (Tegretol)
- P.E.: Well appearing, benign abdominal examination
Management

- Diagnostics NL: CBC, BMP, UHCG, Urinalysis, Tegretol level
- Treatment: IV NS 500 ml/hr, Zofran 4 mg IVP
- Discharge: 87 minutes after arrival
- Dx: Viral syndrome, FU with primary care
Medical Legal Case

• September 4, 2012: ED visit #2
• BP: 106/72, HR: 84, RR: 18, T: 97.8
• CC: Nausea and Vomiting for 3 days
• P.E.: Well nourished, Alert, NAD
  – ABD: Benign, Normal BS, Non-tender
• AAS: Moderate stool
• Laboratory …
• Treatment: IVF, MS, Ondansetron
• N-Acetyl Cysteine: 245 ml per hour
Outcome

- Hepatorenal failure developed, but resolved weeks later.
Stages NAPQI Toxicity

Stage 1:
- Nausea & vomiting, abdominal pain, sweating, general discomfort, pale color
- Liver function tests may be normal
  Days: 0-1

Stage 2:
- Liver injury develops
- Upper right quadrant pain
- Rise in liver function tests (ALT, AST, bilirubin, INR)
  Days: 1-3

Stage 3:
- Hepatotoxicity peaks
- Rapid & severe hepatic failure
- Encephalopathy & hypoglycemia
- Glucose, lactate, & phosphate abnormalities
- Coma & death
  Days: 3-5

Stage 4:
- Recovery stage for those who survive stage 3
  Days: 5-8
Acetaminophen Metabolism

- Acetaminophen is metabolized through 3 different pathways:
  - 42% to 67% undergoes glucuronidation and is excreted in urine
  - 26% to 36% undergoes sulfation and is excreted in urine
  - 5% to 8% passes through the cytochrome P-450 pathway producing a potentially hepatotoxic metabolite, N-acetyl-p-benzoquinone imine (NAPQI)
Risk Reduction Recs

1. Don’t over-rely on levels
2. Toxidrome + known ingestion = Cause and effect
3. Think about cytochrome p450 inducers
4. Consider chronic ingestions
5. Histories, particularly in tox, can be unreliable
6. Rule of 150
Medical Legal Case

• March 18, 2016 at 0910
• 65 y/o male presented to the ED
• CC: Headache
• Triage: “10” “Never experienced a HA like this before”
  – EP: Hx confirmed!
• HPI: He reported a “stressful day and a sudden onset of HA with stiffness to the back of neck.”
• BP: 182/80, HR: 72, RR: 16, T: 99.4, SaO₂: 98%
• PMHx: HTN, A-fib
• P.E.: Normal
Medical Legal Case

- March 18, 2016 at 0910
- 65 y/o male presented to the ED
- CC: Headache
- Triage: “10” “Never experienced a HA like this before”

**Meds:** Metoprolol and Warfarin!

- BP: 182/80, HR: 72, RR: 16, T: 99.4, SaO₂: 98%
- PMHx: HTN, A-fib
- P.E.: Normal
Medical Legal Case

• Pertinent Diagnostics
  – CT of the Brain: Negative
  – INR: 2.5

• Next Steps …?

1. Defer the LP?
2. Do the LP?
3. Use a resident as a human shield?
Medical Legal Case

- Resident attempt: “Unsuccessful”
- Attending attempt: “Bloody tap”
  - “Sent for analysis” – No analysis performed
- Hospitalist and Intensivist contacted
  - Will be admitted
  - Boarding overnight!
- Cardiology fellow and Neurologist: Phone consult
  - Discontinue (not reverse) anticoagulation
  - LP via fluoroscopy in the morning
- LP not performed: CTA performed instead: Negative for SAH
Medical Legal Case

Outcome

• Following the CTA on March 19, the patient began experiencing back pain.
• MRI performed
  "Extensive epidural hematoma in the lumbar spine"
• Surgical decompression performed on that day
• Post-op: Paraplegia which did not resolve
• 4 days post-op, the EP went to the room to apologize …
• … including an admission of fault
**Lumbar Puncture in Patients on Anticoagulants**

**Table 3** Recommendation for performing lumbar puncture (LP) in patients treated with oral anticoagulants.

<table>
<thead>
<tr>
<th>Warfarin (Marevan® or Coumadin®)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High thrombotic risk</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency LP</strong> – Perform LP</td>
<td></td>
</tr>
<tr>
<td><strong>Elective LP</strong> – Replace warfarin (bridging therapy) 5 days prior LP:</td>
<td></td>
</tr>
<tr>
<td>Normal renal function – replace with therapeutic LMW heparin and perform LP 12 hours after the last dose</td>
<td></td>
</tr>
<tr>
<td>Impaired renal function – replace with therapeutic unfractioned heparin and perform LP 6 hours after the last dose</td>
<td></td>
</tr>
<tr>
<td>Low thrombotic risk</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency LP</strong> – Consider rapidly reversing warfarin effect and perform LP as soon as INR is 1.5 or bellow</td>
<td></td>
</tr>
<tr>
<td><strong>Elective LP</strong> – Discontinue warfarin for 5 days before LP</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOACs (Dabigatran-Pradaxa®, Rivaroxaban-Xarelto®, Apixaban-Eliquis®)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High thrombotic risk</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency LP</strong> – Perform LP (postpone one day if possible)</td>
<td></td>
</tr>
<tr>
<td><strong>Elective LP</strong> – Replace (bridging) NOAC for at least 1 day with normal renal function and 3 days with impaired renal function.</td>
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</tr>
<tr>
<td>Normal renal function – replace with therapeutic LMW heparin and perform LP 12-24 hours after the last dose</td>
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</tr>
<tr>
<td>Impaired renal function – replace with therapeutic unfractioned heparin and perform LP 6 hours after the last dose</td>
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<tr>
<td>Low thrombotic risk</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency LP</strong> – Perform LP (postpone one day if possible)</td>
<td></td>
</tr>
<tr>
<td><strong>Elective PL</strong> – Discontinue NOAC for 1 day if normal renal function and 3 days with impaired renal function.</td>
<td></td>
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</tbody>
</table>

NOACs: new oral anticoagulants; LMW: low molecular weight.
**Risk Reduction Recs**

1. Document the risk benefit analysis of procedure v. bleeding risk.
2. Document the consideration of reversal.
3. Consult prior to the procedure.
4. Get your consults in writing (when possible).
5. Know your state’s “apology law.”
   1. Expression of sympathy only; or
   2. Admission of fault (not admissible in this case)
Medical Legal Case

- September 9, 2014
- 77 year old female presented to the ED
- CC: “Three days ago, I tripped and fell and hurt my head, back and ribs.”
- Exam: Consistent with complaints (PA-only)
- Diagnostics (Rad Interp): CT brain (SD), LS Spine (ND), CT LS spine (SD), CXR & rib details (ND)
- Dx: “Mild compression Fx L2”
- Discharge: F/U in two days, Rx for Percocet
Final Interpretation: “15 mm nodule right mid lung field. CT recommended.”

- The patient followed up with her physician 1 week later without issues.
- Dx with lung cancer and brain metastases on December 15, 2016.
- Died on March 4, 2017.
Error and discrepancy in radiology: inevitable or avoidable?

Adrian P. Brady

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Abstract
Errors and discrepancies in radiology practice are uncomfortably common, with an estimated day-to-day rate of 3–5% of studies reported, and much higher rates reported in many targeted studies. Nonetheless, the meaning of the terms “error” and “discrepancy” and the relationship to medical negligence are frequently misunderstood. This review outlines the incidence of such events, the ways they can be categorized to aid understanding, and potential contributing factors, both human- and system-based. Possible strategies to minimise error are considered, along with the means of dealing with perceived underperformance when it is identified. The inevitability of imperfection is explained, while the importance of striving to minimise such imperfection is emphasised.

Definition of error/discrepancy
It was recently estimated that one billion radiologic examinations are performed worldwide annually, most of which are interpreted by radiologists [1]. Most professional bodies would agree that all imaging procedures should include an expert radiologist’s opinion, given by means of a written report [2]. This activity constitutes much of the daily work of practising radiologists. We don’t always get it right.

Although not always appreciated by the public, or indeed by referring doctors, radiologists’ reports should not be expected to be definitive or incontrovertible. They represent clinical consultations, resulting in opinions which are conclusions arrived at after weighing of evidence [3]; “opinion” can be defined as “a view held about a particular subject or point; a judgement formed; a belief” [4]. Sometimes it is possible to be definitive in radiological diagnosis, but in most cases, radiological interpretation is heavily influenced by the clinical circumstances of the patient, relevant past history and previous imaging, and myriad other factors, including biases of which we may not be aware. Radiological studies do not come with inbuilt labels denoting the most significant abnormalities, and interpreting them is not a binary process (normal vs abnormal, cancer vs “all-clear”).

In this context, defining what constitutes radiological error is not straightforward. The use of the term “error” implies that there is no potential for disagreement about what is “correct”, and indicates that the reporting radiologist should have been able to make the correct diagnosis or report, but did not [3]. In real life, there is frequently room for legitimate differences of opinion about diagnoses or for “failure” to identify an abnormality that can be seen in retrospect. Expert opinion often forms the basis for deciding whether an error has been made [3], but it should be noted that “experts” themselves may also be subject to question (“An expert is someone who is more than fifty miles from home, has no responsibility
<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Ref</th>
<th>Material</th>
<th>Key points</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>Forrest et al.</td>
<td>[12]</td>
<td>Retrospective review of previous chest x-rays (CXR) in patients subsequently diagnosed with lung cancer</td>
<td>False-negative rate of 40%</td>
<td>Lesions visible but not reported on prior studies</td>
</tr>
<tr>
<td>1983</td>
<td>Mulhm et al</td>
<td>[13]</td>
<td>Lung cancers detected by plain radiography screening</td>
<td>90% of cancers detected visible in retrospect on prior radiographs going back months or, in some cases, years (53 months in one case)</td>
<td></td>
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<tr>
<td>1993</td>
<td>Harvey et al.</td>
<td>[14]</td>
<td>Review of prior mammograms in patients in whom impalpable breast cancer subsequently diagnosed by mammography</td>
<td>Evidence of carcinoma identifiable on prior studies in 41% when blindly reinterpreted, and in 75% when reviewers were aware of subsequent findings</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>Quekel et al.</td>
<td>[15]</td>
<td>Non-small cell lung cancer diagnosed on plain CXR</td>
<td>19% missed diagnosis rate</td>
<td>16-mm median diameter of missed lesions, median delay in diagnosis of 472 days</td>
</tr>
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<td>1990, 1994</td>
<td>Markus et al., Brady et al.</td>
<td>[16, 17]</td>
<td>Barium enema</td>
<td>Average observer missed 30% of visible lesions</td>
<td>Supposed gold standard of colonoscopy also subject to error</td>
</tr>
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<td>1999</td>
<td>Robinson</td>
<td>[18]</td>
<td>Emergency dept. plain radiographs</td>
<td>Major disagreement between two observers in 5–9% of cases</td>
<td>Estimated error incidence per observer of 3–6%</td>
</tr>
<tr>
<td>1997</td>
<td>Tudor et al.</td>
<td>[19]</td>
<td>Plain radiographs</td>
<td>Mean accuracy: 77% without clinical information, 80% with clinical information. Modest improvements in sensitivity, specificity and inter-observer agreement with clinical information</td>
<td>Five experienced radiologists reported mix of validated normal and abnormal studies 5 months apart. No clinical information on first occasion, relevant clinical information provided on second occasion</td>
</tr>
<tr>
<td>2008</td>
<td>Siewert et al.</td>
<td>[20]</td>
<td>Oncologic CT</td>
<td>Discordant interpretations in 31–37%, with resultant change in radiological staging in 19%, and change in patient treatment in up to 23%</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>Briggs et al.</td>
<td>[21]</td>
<td>Neuro CT &amp; MR</td>
<td>13% major &amp; 21% minor discrepancy rates (undercalls, overcalls &amp; misinterpretations)</td>
<td>Specialist neuroradiologist second reading of studies initially interpreted by general radiologists</td>
</tr>
</tbody>
</table>
Berlin quotes a Wisconsin (USA) appeals court decision which helpfully teases out some of these points:

“In determining whether a physician was negligent, the question is not whether a reasonable physician, or an average physician, should have detected the abnormalities, but whether the physician used the degree of skill and care that a reasonable physician, or an average physician, would use in the same or similar circumstances... A radiologist may review an x-ray using the degree of care of a reasonable radiologist, but fail to detect an abnormality that, on average, would have been found... Radiologists simply cannot detect all abnormalities on all x-rays... The phenomena of “errors in perception” occur when a radiologist diligently reviews an x-ray, follow[s] all the proper procedures, and use[s] all the proper techniques, and fails to perceive an abnormality, which, in retrospect is apparent... Errors in perception by radiologists viewing x-rays occur in the absence of negligence” [6].

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1. Appropriate well-defined supervision is key
   a. Self-serving attestations can get you into trouble
2. Know hospital/support service policies
3. Discrepancies? These will happen, what you do about them is what’s important
4. Take discrepancies seriously!

*Risk Reduction Recs*
Medical Legal Case

• 6/25/15: ED Visit
• 1925: 20 year old female presented via EMS CC: Rt knee pain
• HPI: Walking up a hill and fell injuring her knee. Unable to ambulate
• ROS: Paresthesia below the right knee
• PMHx: None
Medical Legal Case

- P.E.: 5’5”, 312lb. V.S. NL and stable
- “Pedal pulses strong and equal bilaterally, Capillary refill < 2 seconds, Extr: Pink, warm and dry” RN: Decreased sensation below knee
- Tx: 2 Percocet, IV access
- Diagnostics: AP/Lateral radiographs Rt. Knee
- Large effusion
Medical Legal Case

- 2201: Closed reduction per EP
- “Neurovascularly intact post procedure”
  - Confirmed in nursing note
- “Too obese for crutches and knee immobilizer”
- Rx for Percocet and a walker
- Follow up: “Ortho next week”
- Discharged at 2308.
- “Pain level low and only aching”
Medical Legal Case

- 6/28/15: Ortho follow up appt.
- Severe knee pain “Since the injury”
- Anesthesia of the right leg and foot drop
- CTA: “No flow beyond the popliteal artery.”
- 6/29/15: OR
  - Transected Popliteal A.
  - Bypass performed
- Four compartment fasciotomy for compartment syndrome
- Discharged: 7/20/15
Medical Legal Case #2

• 1/17/16: ED Visit
• 1622: 34 year old male presented to the ED via EMS.
• CC: Rt knee pain “10”
• HPI: 3 ft. fall from a ladder and twisted his leg
• ROS: Decr ROM, pain and paresthesia of the Rt leg
• PE: 5’7”, 300 lb, No deformity, Pulses intact, Cap refill < 3 sec on the Lt and > 3 sec on the Rt.
Medical Legal Case #2

- Tx: Hydromorphone 1 mg IVP x3
- Diagnostics: CT of Rt Knee
  "Large prepatellar effusion and an area of large, dense irregular fluid posterior to the knee."
- Dx: "MCL tear"
- Rx: Vicodin and Ibuprofen
- Knee immobilizer and crutches
- FU with orthopedist tomorrow
Medical Legal Case #2

• 1/18/16: Ortho Appt
• Dx: Compartment syndrome
• 4 compartment fasciotomy performed & a fem pop bypass.
• 1/22/16 …
Low-Velocity Knee Dislocations

Background: Knee dislocations from minor trauma have been reported sparsely in the literature. The consensus is that these injuries tend not to be associated with neurovascular compromise.

Purpose: To present a series of atraumatic knee dislocations in obese and morbidly obese patients and to compare operative versus conservative treatment.

Study Design: Case series; Level of evidence, 4.

Methods: This study included 19 patients (21 knees) who presented with knee dislocation from a low-velocity or ultra low-velocity incident. Charts, radiographs, and magnetic resonance images (MRIs) were reviewed, and patients were reviewed based on their latest follow-up. We included patients in our database from 2001 to 2011 and compared knees of patients who had ligament repair or reconstruction (9 total knees) versus nonoperative treatment (12 total knees). Range of motion, activity levels, and knee laxity information were collected as outcome measures to compare operative and nonoperative results.

Results: The mean age at presentation was 30.3 years (range, 15-74 years), with 5 men and 14 women. The average body mass index (BMI) was 41.4 kg/m² (range, 30-64.4 kg/m²), with an average follow-up of 31 months (range, 12-72 months). Five patients (27%) had a popliteal artery injury, and 7 (44.4%) had a peroneal nerve injury at presentation. Four had a vascular repair, 1 had an amputation, and 3 of 7 patients had return of peroneal nerve. Ligament reconstruction was performed on 9 individuals. The average operating time for ligament reconstruction was 183% of that with injury-matched normal-weight patients. Eight operative patients who complied with therapy had an average range of motion of 91.4° (range, 60°-110°). The nonoperative patients had an average range of motion of 60.45° (range, 0°-120°). Two of these patients later required a total knee arthroplasty (3 total knee arthroplasties overall).

Conclusion: Knee dislocations from minor falls occur in obese patients and are often accompanied by neurovascular complications. While surgical reconstruction is more time consuming and more difficult than that in normal-weight individuals, it may be preferable to nonoperative treatment.
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Popliteal Artery Injury Associated with Blunt Trauma to the Knee without Fracture or Dislocation.

Blunt trauma to the lower extremity has been associated with a 28% to 46% rate of injury to the popliteal artery in the form of transection, occlusion, laceration, perforation, arteriovenous fistula, or intimal injury

Figure 1. Ecchymosis, hemorrhagic bullae, and cyanosis posterior of the left knee and crus.

**DDx: Knee Injury & NL X-ray**

1. Quadriceps tendon rupture
2. Patella tendon rupture
3. Lateral tibial plateau fracture
4. Knee dislocation with spontaneous reduction
5. Locked knee
6. Compartment syndrome

**Pulses NL**

5-15% of occult Popliteal a.

Injuries

“Even if they have palpable peripheral pulses and a normal ABI, speak to your orthopedic surgeon, considering a CT angiogram to rule out a popliteal injury, and admit.”
Risk Reduction Recs

1. Consider occult popliteal a. injury in obese pts with knee injuries
   “A low-energy mechanism such as stepping off a curb in patients with a body mass index greater than 40 accounts for a significant proportion of missed occult knee dislocations.”
2. NL X-rays and + pulses = Nothing definitively ruled out
3. ABIs are better than nothing, but barely
4. CTA and admit
Apology Laws

- 39 states have apology laws
- “Thirty-six states, the District of Columbia and Guam have provisions regarding medical professionals making apologies or sympathetic gestures. Of these states, six states have provisions that specifically relate to accidents.”
  - Dresser R. The Limits of Apology Laws; Hastings Center Report, Volume 38, Number 3, May-June 2008 pp. 6-7
  - Limited Protection
TO: The Secretary
Through: DS ____
COS ____
ES ____

FROM: Administrator

DATE: May 20, 2014

SUBJECT: Appropriate Medical Malpractice Payment Reporting to the National Practitioner Data Bank (NPDB) in Light of Recent Medical Malpractice Reforms in Massachusetts and Oregon – DECISION

ISSUE

The purpose of this memo is to ask you for a decision regarding whether payments made under Massachusetts’s and Oregon’s state medical liability laws are required to be reported to the NPDB as medical malpractice payments. HRSA supports the objectives of these reform models, but recognizes that there are potential implications for medical malpractice reporting to the NPDB. This memo also seeks a decision regarding these requests regarding whether payments from verbal demands for restitution must be reported to the NPDB.

A decision on whether payments made under these alternative models are reportable to the NPDB as medical malpractice payment reports could influence other states as they develop similar models. A decision to require broad reporting could be viewed as inconsistent with the Administration’s efforts to encourage states to reform their malpractice laws and improve patient safety by fostering disclosure of errors. In contrast, a decision to limit reporting might be viewed as being in conflict with the NPDB’s statutory intent of full reporting of actions and consistent reporting across states.

BACKGROUND

Medical Malpractice Reforms and Departmental Initiatives. Although the Massachusetts and Oregon medical malpractice reform models are the only two existing models of their type, based in legislation, other states (including Florida and Georgia) are examining similar models for future implementation.

Within the Department, the Agency for Healthcare Research and Quality (AHRQ) has played a central role in encouraging medical liability reform. Specifically, in September 2009, President Obama directed the establishment of an initiative that would help states and health care systems test models that meet the following goals:
Apologize Prior to the Claim!

**NPDB’s Medical Malpractice Reporting Requirements.** A payment made by an insurance company, hospital, or other third party, on behalf of a health care practitioner in settlement of a claim or judgment made against that health care practitioner, is reportable to the NPDB. The key elements for determining if a medical malpractice payment is reportable are:

1) Payment made;
2) By a third party;
3) For the benefit of a health care practitioner; and
4) Against whom a medical malpractice claim or judgment was made.

Federal law requires that all payments made on behalf of a practitioner be reported, regardless of the standard of care or whether the practitioner is found to be responsible for the injury or whether a systems error caused the injury. The NPDB statute and regulations make no mention...