Things We Do For No Reason

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Learning Objectives

- Discuss the fact that in medicine, we frequently order tests or give treatments that aren’t supported by science or medical literature.

- Explain the importance of keeping current with medical science and of continuing to question established diagnostic and treatment criteria.

- Identify some methods of separating “traditional” medical practice from “best” practice.

- I have no conflicts of interest or financial concerns to disclose.
DOGMA

- a principle or set of principles laid down by an authority as incontrovertibly true (google.com)

- Synonyms- blind faith, invincible conviction, unquestioning belief, certainty

- Is there a place for “dogma” in medicine?
My resident told me, and hers told her, and the resident before her and the attending before him all said...

“Urban legend” is dangerous but rampant in the world and in medicine. Many of the things we do are for no reason, or at least not backed up by evidence, science, or literature.

“We’ve always done it this way...”
The most dangerous phrase in the language is "we've always done it this way."
“Evidence-based medicine is the best medicine.”

-- Mike Sewell
SHOW ME THE MONEY!!!
Avoiding NSAIDS in fracture patients

- Orthopedics sometimes propagates this myth, and it came from studies on rat models.

- No statistically significant association between NSAID exposure and nonunion in humans has been identified, and meta-analysis shows no increased risk of nonunion with NSAID exposure.

- NSAIDs decrease inflammation and pain and decreased opioid use, improve mobility, and hasten overall recovery.

#TWDFNR

- Tony Breu, MD
- VA Boston Healthcare System
- Brown University
- Society of Hospital Medicine
#TWDFNR

- Journal of Hospital Medicine
- Choosing Wisely: Things We Do For No Reason
- Choosingwisely.org (ABIM)
- #medtwitter
- #TWDFNR
TWDFNR has been presented at many places in many formats:
- Emory University
- Brown University
- Rutgers University
- University of Maryland
- Johns Hopkins (Delaware ACP State Chapter meeting)
- Virginia Commonwealth
- University of Oregon
- University of Texas - Southwestern
- LSUHS
Pt w history of alcohol abuse, cirrhosis, and grade II esophageal varices

Admitted for treatment of alcohol withdrawal

Reports dark-colored stools a week prior to admission

Repeat hemoglobin is stable.

What should be done next?
The US Preventive Services Task Force and the American College of Gastroenterology recommend fecal occult blood testing (FOBT) as one method for colorectal cancer (CRC) screening in average risk populations.

False Positive FOBT
- ingested blood via extra-intestinal sources
- intestinal mucosal inflammation
- clinically insignificant GI blood loss due to medications (e.g., aspirin, NSAIDs)
- ingestion of meats, fruits, or vegetables (broccoli, cauliflower)

False Negative FOBT
- Slow or intermittent bleeds
- Vitamin C
FOBT in hospitalized patients

- False positive results leave a quandary for GI consultants and result in unnecessary procedures and prolonged LOS.
- Clinical picture is a much better tool in an inpatient setting.
- FOBT really has **NO PLACE** in a hospital setting


Recommendations

- FOBT should not be performed to diagnose UGIB.

- The best diagnostic tools are a good history, physical examination, and visual inspection of the stool.

- Deferring FOBT to the ambulatory setting may improve test performance characteristics.

Pt with known cirrhosis due to Hepatitis C and alcoholism

Alteration in mentation

No overt signs or symptoms of infection

Exam normal except for somnolence, disorientation to space and time, asterixis, and ascites

Lab normal except for an elevated BUN, low platelets

What is the next step?
Ammonia levels in patients with CLD do **NOT** reliably diagnose HE.

- Sensitivity: 47.2%
- Specificity: 78.3%
- PPV: 78.3%
- NPV: 48.6%
- Overall Diagnostic Accuracy: **59.3%**, a little better than a coin flip!

Ammonia in Hepatic Encephalopathy

- Following NH3 levels to determine resolution?
- Patients with HE sometimes have normal values.
- NH3 has never been shown to correlate with severity of HE.
- NH3 may still be elevated 48 hrs after normalization of neurologic status.
- Serial measurements of ammonia in patients with CLD are not useful. Improvement based on serial exams.

RECOMMENDATIONS

- HE is a diagnosis of exclusion and is made on clinical grounds.

- Do not check serum ammonia levels in patients with CLD to diagnose HE, to assess the severity of HE, or to determine whether HE is resolving.

- Use clinical evaluation to determine the severity and course of HE and treatment, NOT ammonia levels

66 yo man with HTN, hospitalized for a transient loss of consciousness

Had been outside on hot day, felt dizzy before LOC

No chest pain, diaphoresis, dyspnea, seizures, slurred speech

Cardiac and neurologic exams normal

Labs and ECG normal

What happens next?
Carotid US is NOT indicated in the workup of syncope in adults unless there is reason to suspect concomitant TIA or CVA.

Carotid hypersensitivity can cause syncope, but this is diagnosed by physical exam, not by US. Carotid stenosis very rarely causes syncope in absence of CVD.

The yield of carotid US in syncope is very low, but the cost is high (including downstream costs) and benefit does not outweigh risk and/or cost.

Transthoracic echo has an extremely low diagnostic yield in patients with no cardiac history and a normal physical examination and ECG.

- % of patients with a normal cardiac history, examination, and ECG with new, significant abnormalities on echo
  - 0% in 3 studies (n = 340)
  - 2% in 1 study (10/488 patients)
  - 2.1% in 1 study (1/47 patients)
  - 4.2% in 1 study (8/192 patients)


Syncope – Carotid US and Echo

- The diagnostic yield of echo is higher in pts with:
  - positive cardiac history
  - abnormal ECG
  - abnormal physical exam suggestive of structural heart disease
  - abnormal cardiac biomarkers


RECOMMENDATIONS

- Carotid artery ultrasound should not be done for syncope in the absence of other neurologic symptoms.

- Perform echo on patients with syncope and a history of cardiac disease, exam suggestive of structural heart disease or congestive heart failure, or abnormal ECG.

- All patients with syncope should receive a complete history, physical exam, orthostatic vital signs, and ECG.

67-year-old man is hospitalized with CAP

Hx of HTN, takes amlodipine and chlorthalidone as an outpatient

Hospital day two, B/P 192/95 on a scheduled vital signs check

No other symptoms, on his home B/P med regimen

Nurse asks about adding "as-needed" antihypertensive medications

What happens next?
Assumption: If one does not treat immediately, something bad (i.e., end-organ damage) will occur over the next few hours.
Reality (or at least what happens in an intern’s head):

1) If I don’t prescribe something, this patient’s blood pressure is going to stay up and this nurse is going to keep calling me (and document in the record that I am ignoring it) every hour or two until I do something.

2) Even UpToDate notes that "potential legal ramifications partially motivate lowering the blood pressure over several hours.”

In hypertensive urgency, rates of adverse events at seven days are low, even with extreme blood pressure elevation.

58,836 patients found to have blood pressures meeting the criteria for hypertensive urgency.

For SBP<220, rates of MI or CVA/TIA in first seven days were 0.1% in those sent home and 0.5% in those sent to hospital.

For SBP>220, rates were 0.1% for those sent home and 0% for those sent to hospital.

“Patients with markedly elevated BP but without acute target-organ damage usually do not require hospitalization”, and “there is no evidence to suggest that failure to aggressively lower BP is associated with any increased short-term risk to the patient who presents with severe hypertension.” – JNC-7

“Unfortunately, the term ‘urgency’ has led to overly aggressive management of many patients with severe, uncomplicated hypertension. Aggressive dosing with intravenous drugs or even oral agents, to rapidly lower BP is not without risk.” - JAMA


SUMMARY OF RECOMMENDATIONS

- Ensure that patients do not have symptoms and/or signs of end-organ damage
- Search for causes of treatable HTN in hospitalized patients: pain, nausea, withdrawal syndromes, and missing medications
- If no symptoms and/or signs of end-organ damage, allow rest, followed by reassessment.
- Do not give IV or immediate-acting oral antihypertensive medications to acutely lower blood pressure.
50 yo man with cellulitis right shin
- Redness, warmth, pain, and swelling, but no history of VTE
- No indwelling hardware in his RLE
- No shortness of breath or chest pain
- Admitted for IVF and IV cefazolin

What is the next step?
Cellulitis – Blood Cultures and LE Venous Doppler

- Ultrasound is ordered for up to 73% of patients with a cellulitis diagnosis.

- 2013 meta-analysis of 9 studies
  - cellulitis patients with concurrent DVT
  - total DVT (3.1%) and proximal DVT (2.1%)


Prospective cohort study of 200 patients with cellulitis
- Wells score with D-dimer testing overestimated the DVT risk

Among patients with a high-risk Wells score, a positive D-dimer result, or both—only 1 (0.5%) was diagnosed with ipsilateral DVT after ultrasound testing.

Retrospective study of 757 patients admitted for cellulitis

- 553 had blood cultures performed
- Specific microbial strain was isolated in 11 cases
- 9 cases grew Gm+ organisms already covered with current antimicrobial therapy
- 2 cases had risk factors for a more complicated infection such as an indwelling catheter or hardware

Cellulitis – Blood Cultures and LE Venous Doppler

- Prospective study 50 adults with cellulitis
- Blood cultures were positive in 2 patients
  - 1 Group A streptococci
  - 1 Staphylococcus
  - Both covered by current antimicrobials

Bottom Line:
Blood cultures are of little value in determining the microbial origin of acute cellulitis and no patient in either study required change in antimicrobial therapy based on culture results.
RECOMMENDATIONS

- Do not routinely perform ultrasound in cases of cellulitis.
- Consider US if there is:
  - a hx of VTE, immobility, thrombophilia, CHF, CVA w hemiparesis
  - trauma or recent surgery
  - Lack of response to antibiotics
- Do not routinely perform blood cultures on patients with cellulitis.
- Consider blood cultures if there is hardware or suspicion of sepsis or other concurrent infection.

Giving O2 to patients who aren’t hypoxic

**Current “Dogma”** – Give oxygen to non-hypoxic patients who have dyspnea, COPD, sickle cell disease, chest pain, acute MI, or CVA.

**Where it comes from** – My resident does it, and it just makes sense, right? They are suffering from a problem caused by decreased oxygen or perfusion, so increasing pulse ox or PaO2 has to help. Right?
Giving O2 to patients who are not hypoxic

Current Recommendation – Patients without hypoxia have very few indications for oxygen: Pneumothorax, CO poisoning or methemoglobinemia, cluster headaches, etc. Giving oxygen to patients with acute CVA provides no benefit and giving oxygen to patients with acute MI may WORSEN outcomes!

Science Behind It –
Avoiding contrast-enhanced CT scans in patients with shellfish allergies

- Current “Dogma”: Patients with shellfish allergies can’t get IV contrast or need steroids and antihistamines prior to contrast.

- Where it comes from: Shellfish and contrast both contain iodine.

- Current recommendation: For patients who require IV contrast media for CT scans, the American Academy of Allergy, Asthma, and Immunology recommends not routinely pretreating with corticosteroids and antihistamines for patients with a history of seafood allergy. The American College of Radiology recommends pretreatment with corticosteroids only for those patients who have previously experienced moderate to severe reactions to IV contrast.
Avoiding contrast-enhanced CT scans in patients with shellfish allergies

Science behind it:


Getting Daily Labs on Hospitalized Patients

- **Current “Dogma”** – Labs get ordered as DAILY and just propagate throughout hospital stay.

- **Where it comes from** – We need to keep up with acute changes in status during the hospitalization, and I don’t want to get yelled at.

- Excess labs increase costs, force workup associated with unrelated findings, and decrease patient satisfaction.
Getting Daily Labs on Hospitalized Patients

- **Current Recommendation** –
  - Approach each patient daily and decide what tests are needed. If the results of the test are not going to impact you diagnosis or treatment plan, don’t order the test!

- **Science Behind It** –


Prescribing Docusate for Constipation in Hospitalized Adults

- **Current “Dogma”** – Put all hospitalized patients on docusate so they don’t get constipated from immobilization, illness, and other medications.

- **Where it comes from** – Doctors have been doing it since the 1930s and studies from the 1960s showed that it might work.
Prescribing Docusate for Constipation in Hospitalized Adults

McGill University Health Centre in Montreal, Canada reported that docusate was the most frequently prescribed laxative, accounting for 64% of laxative medication doses, with associated costs approaching $60,000 per year.

<table>
<thead>
<tr>
<th>First Author</th>
<th>Year Published</th>
<th>Sample Size (n)</th>
<th>Patient Population</th>
<th>Intent of Therapy</th>
<th>Site of Care</th>
<th>Docusate Dose</th>
<th>Comparator</th>
<th>Duration</th>
<th>Brief Summary</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>Hyland(^a)</td>
<td>1968</td>
<td>15</td>
<td>Geriatric patients in hospital with chronic constipation</td>
<td>Treatment</td>
<td>Hospital</td>
<td>Docusate sodium 100 mg tid</td>
<td>Placebo with crossover</td>
<td>Four weeks, then four weeks crossover</td>
<td>Increase in bowel movements with treatment</td>
<td>19 patients excluded because of placebo response</td>
</tr>
<tr>
<td>Goodman(^b)</td>
<td>1976</td>
<td>34</td>
<td>Prophylaxis for inpatients on “chronic medical service”</td>
<td>Prophylaxis</td>
<td>Hospital</td>
<td>Docusate sodium 100 mg bid</td>
<td>Control</td>
<td>26 days</td>
<td>No difference in frequency of bowel movements</td>
<td></td>
</tr>
<tr>
<td>Fair(^c)</td>
<td>1978</td>
<td>46</td>
<td>Institutionalized patients with chronic constipation</td>
<td>Treatment</td>
<td>Nursing home</td>
<td>Docusate sodium 100 mg daily, docusate sodium 100 mg bid, docusate calcium 240 mg daily</td>
<td>Placebo period for each arm</td>
<td>Two weeks placebo, three weeks treatment</td>
<td>An increase in frequency of bowel movements with docusate calcium 240 mg, but no change in quality. Increase in bowel movements in other arms did not meet statistical significance</td>
<td></td>
</tr>
<tr>
<td>Chapman(^d)</td>
<td>1985</td>
<td>12</td>
<td>Healthy patients with ileostomies and healthy controls</td>
<td>Prophylaxis</td>
<td>Ambulatory</td>
<td>Docusate sodium 100 mg tid</td>
<td>Control with crossover</td>
<td>Four days</td>
<td>No difference in stool weight, frequency, water content, or transit time</td>
<td></td>
</tr>
<tr>
<td>Castle(^e)</td>
<td>1991</td>
<td>15</td>
<td>Elderly veterans in nursing home on bowel regimen</td>
<td>Treatment</td>
<td>Nursing home</td>
<td>Docusate calcium 240 mg bid</td>
<td>Placebo with crossover</td>
<td>Three weeks then two weeks crossover</td>
<td>No difference in stool frequency, need for additional laxatives, or patient’s subjective experience</td>
<td></td>
</tr>
<tr>
<td>McRorie(^f)</td>
<td>1998</td>
<td>170</td>
<td>Chronic idiopathic constipation</td>
<td>Treatment</td>
<td>Ambulatory</td>
<td>Docusate sodium 100 mg bid</td>
<td>Psyllium 5.1g bid</td>
<td>Two weeks placebo, two weeks treatment</td>
<td>Psyllium increased stool weight and frequency; docusate had no change</td>
<td>Industry sponsored</td>
</tr>
<tr>
<td>Tsuru(^g)</td>
<td>2013</td>
<td>74</td>
<td>Hospice patients</td>
<td>Prophylaxis and treatment</td>
<td>Inpatient hospice</td>
<td>Docusate sodium 200 mg bid</td>
<td>Placebo</td>
<td>10 days</td>
<td>No difference in stool frequency, volume, or consistency</td>
<td>All patients received seromucides</td>
</tr>
</tbody>
</table>
Prescribing Docusate for Constipation in Hospitalized Adults

▶ **Current Recommendation** –

▶ Use laxatives with proven efficacy (such as polyethylene glycol, lactulose, psyllium, or sennosides) for treatment or prophylaxis of constipation instead of using docusate.

▶ **Science Behind It** –


Telemetry when patients don’t need it
Making patients NPO for no reason
Neuroimaging for hospitalized patients with delirium
Routine replacement of peripheral IVs every 3 days
Probiotics in patients with Clostridioides difficile infection
Sliding scale insulin in hospitalized patients
Failure to question a PCN allergy
Routine overnight vital sign checks
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- Neutropenic Diet
- Hospitalization for the evaluation of low risk chest pain
- Bridging anticoagulation around surgery or procedures
- Against Medical Advice Discharges
- Giving 2 units PRBC to stable anemic patients instead of 1 unit
- Contact Precautions for MRSA and VRE
- Prealbumin levels to diagnose malnutrition in hospital
Urine eosinophils for acute interstitial nephritis
Urinary fractional excretion indices in the evaluation of acute kidney injury
Serum and RBC folate testing on hospitalized patients
Nebulized bronchodilators instead of metered-dose inhalers for obstructive pulmonary symptoms
SCDs for patients on medical wards
Routine Pre-op labs
Routine Chest Radiographs after Uncomplicated Thoracentesis

IVC Filter placement in patients with VTE and no contraindication to anticoagulation

Discontinuing Buprenorphine When Treating Acute Pain

Routine Echocardiography in Hemodynamically Stable Patients with Acute Pulmonary Embolism

Vitamin D screening

Routine coverage of anaerobes in aspiration pneumonia
The use of thickened liquids in hospitalized patients with dysphagia
Blood cultures in hospitalized patients on antibiotics
Checking and following BNP in patients with known LVSF
Use of antipsychotic meds in hospitalized patients with acute delirium
Ordering T3 and T4 when TSH alone is appropriate
Routine lipid screening
Testing serology for H. pylori instead of stool antigen or breath test

Testing for amylase instead of lipase for acute pancreatitis

Getting hypercoaguability workup in face of acute clot

Treating abnormal INRs when inappropriate

Procalcitonin testing outside of protocols

Testing for C. diff inappropriately

Ordering broad respiratory panels
The use of thickened liquids in hospitalized patients with dysphagia

Blood cultures in hospitalized patients on antibiotics

Checking and following BNP in patients with known LVSF

Use of antipsychotic meds in hospitalized patients with acute delirium

Routine premedication before transfusion
Neuroimaging for hospitalized patients with delirium

- **Current “Dogma”** – When a patient in the hospital develops delirium, they need a stat CT brain.

- **Where it comes from** – Delirium can be caused by intracranial processes, and we don’t want to miss anything.
Neuroimaging for hospitalized delirium patients
RECOMMENDATIONS

- Perform neuroimaging if:
  - history of fall or head trauma in the preceding two weeks
  - any new focal neuro abnormalities on neurologic exam
  - patient is receiving systemic anticoagulation
  - sudden decline in the level of consciousness
  - persistence despite addressing identified factors
  - suspicion for embolic or metastatic processes

Science Behind It –

Routine replacement of peripheral IVs every 3 days

- Current “dogma” – replace peripheral IVs every 3 days, regardless of how well it functions or what it looks like clinically.

- Where it comes from – CDC recommendations based on studies from the 1970s

- Current recommendation - According to the CDC: “No recommendation is made regarding replacement of peripheral catheters in adults, only when clinically indicated.”
Routine replacement of peripheral IVs every 3 days

Science behind it – Catheters left in place longer than 3 days but with good function and no signs of complication had no higher incidence of phlebitis or local or bloodstream infection.


Using probiotics in patients with Clostridioides difficile infection

► **Current Dogma** – Give probiotics to patients with C. diff infections to promote recovery and prevent recurrence.

► **Where it comes from** – People have been doing it for years, and it just makes good sense, right?

► **Current Recommendation** – No probiotic agent has shown reliable or reproducible efficacy in preventing CDI. Current treatment guidelines recommend against the routine use of probiotics in C diff infections.
Using probiotics in patients with Clostridioides difficile infection

Science Behind It –


Current “Dogma” – Hold oral agents and long acting insulin when patients are hospitalized and use only short acting insulin on sliding scale.

Where it comes from – Oral agents and long acting insulin promote hypoglycemia in hospitalized patients (particularly sulfonylureas).
SSI alone has never been shown to prevent hyperglycemia in hospitalized patients.

Current guidelines from American Diabetes Association and American Association of Clinical Endocrinologists for hospitalized patients who require insulin:

- Recommend against the prolonged use of SSI as monotherapy (category A recommendation).
- Support the use of basal plus correctional insulin with the addition of nutritional insulin for patients who are eating (category A recommendation).
Current Recommendation –

Instead of SSI monotherapy for hospitalized patients who require insulin, add basal and prandial insulin, using a weight-based approach if necessary for insulin-naive patients.

Science Behind It –


Failure to question a penicillin allergy

- **Current “Dogma”** – Withhold penicillin, cephalosporins, aztreonam, and monolactams from anyone with a reported penicillin allergy.

- **Where it comes from** – Cross reactivity reported and anaphylaxis is scary.
10% of the adult population 15% of hospitalized adults report PCN allergy, but about 90% of all patients reporting a PCN allergy can tolerate PCN antibiotics.

Patients labeled as PCN allergic—whether correctly or incorrectly—have poorer outcomes as noted by increased rates of serious infections and tend to have longer hospital stays.
RECOMMENDATIONS

- Obtain drug allergy history
- Update the medical record if you can confirm a patient has since tolerated PCN or a PCN derivative to which they were previously allergic.
- Perform PST if PCN allergy history is unclear
- If skin test negative, try supervised oral challenge to PCN/PCN derivative.
- Test PCN-allergic patients preemptively who are at high risk of requiring PCN/PCN derivative antibiotics (surgery, transplant, oncology, and immunosuppressed patients)
Failure to question a penicillin allergy

► Science Behind It –

Renee S Kleris, MD, MPH, Patricia L Lugar, Md, MS, Things We Do For No Reason: Failing to Question a Penicillin Allergy History. Published online first March 20, 2019. DOI: 10.12788/jhm.3170


How to keep up?

- Medscape – It’s free!
- ACP Journal Club
- SHM – Today’s Hospitalist, Internal Medicine News
- NEJM Journal Watch
  - This one comes with inexpensive CME and ABIM MOC points!