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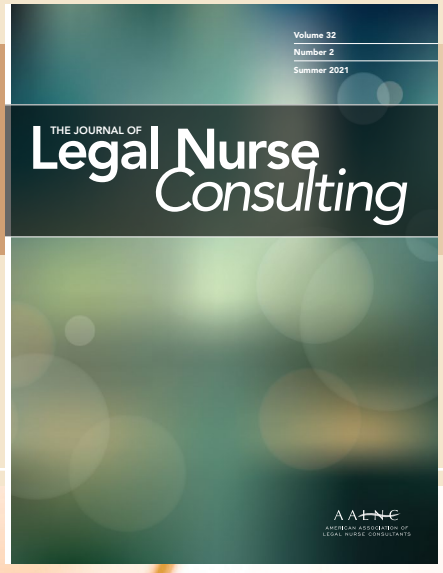

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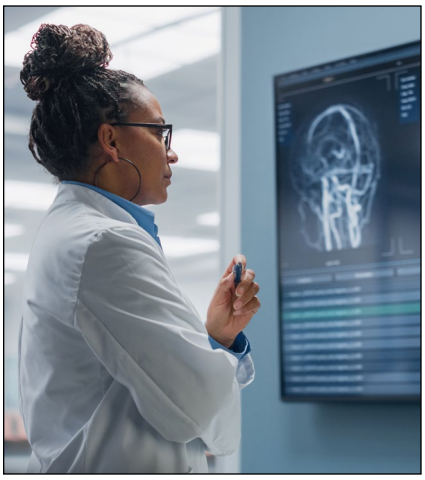

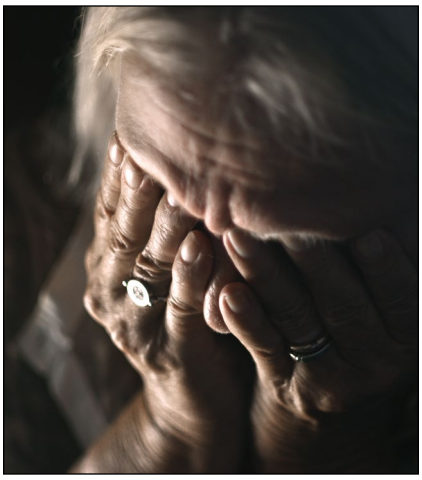


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PURPOSE

The purpose of the *Journal* is to promote legal nurse consulting within the medicallegal community; to provide novice and experienced legal nurse consultants (LNCs) with a quality professional publication; and to teach and inform LNCs about clinical practice, current legal issues, and professional development.

MANUSCRIPT SUBMISSION

The *Journal* accepts original articles, case studies, letters, and research. Query letters are welcomed but not required. Material must be original and never published before. A manuscript should be submitted with the understanding that it is not being sent to any other journal simultaneously. Manuscripts should be addressed to JLNC@aalnc.org. Please see the next page for Information for Authors before submitting.

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We send all submissions blinded to peer reviewers and return their blinded suggestions to the author. The final version may have minor editing for form and authors will have final approval before publication. Acceptance is based on the quality of the material and its importance to the audience.

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The Journal of Legal Nurse Consulting (JLNC), a peer reviewed publication, is the official journal of the American Association of Legal Nurse Consultants (AALNC). We invite interested nurses and allied professionals to submit article queries or manuscripts that educate and inform our readership about current practice methods, professional development, and the promotion of legal nurse consulting within the medical-legal community. Manuscript submissions are peer-reviewed by professional LNCs with diverse professional backgrounds. The *JLNC* follows the ethical guidelines of COPE, the Committee on Publication Ethics, which may be reviewed at: http://publicationethics.org/resources/code-conduct.

We particularly encourage first-time authors to submit manuscripts. The editor will provide writing and conceptual assistance as needed. Please follow this checklist for articles submitted for consideration.

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- Manuscript length: 1500 – 4000 words
- Use Word© format only (.doc or .docx)
- Submit only original manuscript not under consideration by other publications
- Put title and page number in a header on each page (using the Header feature in Word)
- Place author name, contact information, and article title on a separate title page, so author name can be blinded for peer review
- Text: Use APA style (Publication Manual of the American Psychological Association, 7th edition) (https://owl.english.purdue.edu/owl/resource/560/01/)
- Legal citations: Use The Bluebook: A Uniform System of Citation (15th ed.), Cambridge, MA: The Harvard Law Review Association
- Live links are encouraged. Please include the full URL for each. Be careful that any automatic formatting does not break links and that they are all fully functional.
- Include a 100-word abstract and keywords on the first page
- Write the manuscript in third person only. If you feel an exception is warranted for the topic of your manuscript, please contact the Editor to discuss.
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- Each table, figure, photo, or art should be submitted as a separate file attachment, labeled to match its reference in text, with credits if needed (e.g., Table 1, Common nursing diagnoses in SCI; Figure 3, Time to endpoints by intervention, American Cancer Society, 2003)

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Lisa Mancuso,
BSN, RN, CCRN, CLCP, LNCC

President, AALNC

President's Update

0800: s/p treadmill, weights, and a hot shower. Sitting at the kitchen island, enjoying my coffee, and checking emails.

0809: Drip, drip, drip...coming from the living room (WTF??) and getting louder with each sip of Jamaica Blue Mountain.

0811: Moving furniture, taking down artwork, pulling back the area rug, scrambling for towels and beach blankets, calling for my husband to help me (otherwise known as screaming like a maniac). Oops, he's on a Zoom with his work team. Sorry; not sorry... I'll spare you the rest of the painful timeline, which is still ongoing as I write this, 9 days later.

We have a beautiful new house, only 3 years old. Water lines should not be giving way. I remember when we bought the house, I said to my father-in-law: "This is great!! We'll be dead before we even need to think about replacing the roof."

I've had the dubious pleasure of meeting all manner of construction specialists this week. All of them (really, **ALL** of them!) told me that new construction homes are notoriously built "only to code." (*"They don't make 'em like they used to, ma'am."*) The plumber said it best: "Ya know, it's like this: It looks like a Ferrari, but it's built like a Ford."

His comment made me think about my legal nurse consulting practice in a couple of different ways. When I first started, I worked as a testifying expert. I was opining on nursing standards of care. As we all know, standard of care is "what a reasonably prudent person would do under same or similar circumstances." It's not the best care possible, it's not "super-duper" care; it's the minimum care required to safely take care of a patient. After my recent home experience, "standard of care" now reminds me of building codes—it's like PEX pipes—*"it's okay, it gets the job done, but it's not like it's copper, ma'am."*

Now I mainly work behind-the-scenes. My work products reflect my standards. I want to surpass the "standard of care," and I have the privilege to be able to do this in my independent practice. I've reviewed a lot of work products over the past year. I am frequently surprised at the lack of attention to detail from some LNCs. Sometimes there are glaring errors, but more often it's smaller issues associated with punctuation, grammar, spelling, and organization. *"It gets the job done, ma'am,"* but is that how you want to present yourself to your clients?

Yesterday I attended a virtual meeting hosted by the Pittsburgh Chapter of AALNC. Stephanie Kress gave a presentation using an amazing chronology she wrote that helped

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"Mediocrity will never do. You are capable of something better."

– Gordon B. Hinckley

Editor's Note

Shawna M. Butler,
DNP, JD, RN, CPHRM

Editor, JLNC

Dear readers and colleagues,

It can be hard to stay positive when there is so much tragedy in the world. Globally and across the United States, it seems as though we never really processed living through a pandemic not seen in any of our lifetimes and that has continued on for years. This impacted healthcare clinicians in additional ways and we were all expected to move right on relatively quickly. At one point it seemed promising momentarily as we began to highlight the moral injury, compassion fatigue and burnout that many of us have experienced but then society along with the healthcare industry moved right on to the next hot topic.

In February, there was an extremely tragic case of a Massachusetts woman who allegedly ended the lives of her three young children and then attempted to end her own life. Some reports indicate she was experiencing postpartum depression and/or psychosis. Reportedly, she had been seeking intensive treatment and made family arrangements to accommodate her needs. Despite seeking help and appearing to have supportive family and resources, this unimaginable outcome still occurred. It turns out, she was also a nurse. By some accounts, she was a wonderful nurse and loving mother and wife. It is such a heartbreaking outcome. While we do not know the details of her personal life and struggles, it struck me that she was a woman who possibly worked as a nurse through the early pandemic days and had a baby during that time as well along with having two other children to care for as well. One cannot know the pain that woman may have been experiencing.

While we do hear more and more about mental health in the media has it actually changed the stigma? Has society evolved? Has it led more individuals to seek care? Has it actually improved access to care? And when it does are we getting the care we need or care that is competent?

The United States Senator John Fetterman recently checked himself in to a facility seeking care for mental health issues. If more leaders are open and candid about issues such as these, we can possibly make some progress in this arena. Instead of hiding mental health issues and sweeping them "under the rug" perhaps the turn of tides of awareness and openness can lead to better care and less stories of tragedies and suicides. It is a sign of strong leadership to openly seek treatment and discuss it to normalize this can happen to a significant portion of our population. It allows others to know they are not alone. It can happen to anyone.

Continuing to be open about mental illness can hopefully lead to more empathy as opposed to judgment. Not acknowledging moral injury and harmful workplaces can also lead to a crescendo effect where things get worse. Utilizing available resources such as employee assistance programs, peer support programs and other community groups while not perfect can be one small step. Advocating for ethical public policy that increases access to care and funding for research and services is another important step clinicians can take as well.

If you or someone you know is struggling or in crisis, contact 988 by telephone call or text. You can also chat at Lifeline (988lifeline.org).

Thank you,

Shawna Butler

Shawna M. Butler, DNP, JD, RN, CPHRM

Treating by the Numbers:

A Look into Triage Assessment and the Use of the Emergency Severity Index (ESI)

Marilyn McCullum, BSN, RN, CEN

Keywords: triage, intake, ESI, severity, acuity, emergency room, nurse, undertriage, overtriage, vital signs, resources, algorithm, psychiatric emergency, adverse reaction, waiting room

In the emergency department, patients are scored on an Emergency Severity Index based on their acuity. Resources such as staffing, tests, and beds are allocated based on the number given by the triage nurse. Undertriage and overtriage are not uncommon, and legal nurse consultants must be savvy with how the ESI scale works, how it is applied in triage, what the differences are between numbers, and how those differences can impact patients.

When a patient walks into the emergency room seeking medical care, one of the first points of contact is with a nurse. This nurse may be known as the triage nurse or intake nurse. The objective of this nurse is to assign the person a score based on their level of acuity or how sick they are. In the emergency room, there is a scoring guide known as the ESI (Emergency Severity Index) that is "a five-level triage algorithm that

provides clinically relevant stratification of patients into five groups from 1 (most urgent) to 5 (least urgent) on the basis of acuity and resource needs." ("Emergency Severity Index (ESI): A Triage Tool for Emergency Department," 2020.) The ESI is the most widely used triage algorithm in emergency rooms in the United States, accounting for 82% of departments surveyed in 2012 (Singer, et al, 2012). The guidelines are focused, well-defined, and organized in a flowchart that the nurse may easily utilize during the triage process.

Triage systems were developed to rank patients for treatment in situations where there is a shortage of resources and high demand (Simon Junior, et al, 2022). Nurses who learn the skill of triage must be both rapid and accurate in their triage practices, because triage designations in many emergency departments impacts the patient flow in the department, location of where the patient receives care, nursing assignments, and/or provider assignments (Chmielewski & Moretz, 2022). There are risks of assigning a less acute designation than what is indicated, known as undertriage. Patients who are undertriaged are at risk for worsening outcomes while waiting to be evaluated by a provider. The opposite, overtriage, assigns a more acute designation than what is indicated. Overtriage may limit bed availability for potentially-arriving critical patients (Gilboy, et al, 2020). Inaccurate triage, whether under- or overtriage, may lead to increased morbidity and mortality (Hinson, et al, 2018).

The 5-level ESI scoring tool has been evaluated in multiple countries, and it is regarded as a strong, reliable, and accurate guide that has consistent correlations to hospitalization, ED length of stay, and mortality (Gilboy et al., 2020). It has been shown to be well-translated into other languages and to perform well in multiple populations, such as the pediatrics population (Gilboy et al., 2020).

To preserve its excellence, initial education, validation, and ongoing quality assurance programs must be used. Without a rigorous educational program to implement and re-educate nurses on correct usage, this powerful tool loses its potency. When triage inaccuracies are studied, probable causes include a lack of ongoing triage quality programs, a general lack of education regarding appropriate use of the scoring guide, triaging "to the department" instead of to the patient, and triage bias (Wolf, Delao, et al, 2018), including implicit bias. Implicit bias may be evidenced on the basis of race (Puumala, et al., 2014), ethnicity (Zhang, et al., 2020), older age (Grossman, et al., 2012), and stereotypical bias (Barnett, et al., 2020), to name a few. When emergency departments with high triage inaccuracies were evaluated, findings indicated that there was a lack of appropriate triage policies and procedures in place within the emergency department (Worth, et al, 2019).

What does triage entail? The initial facet of triage is from across the room before the nurse touches the patient. The triage nurse studies the patient's mental status to determine if the person is awake, alert, drowsy, or comatose, their mobility status to determine if they are ambulatory, have an abnormal gait, use accessory aids such as walkers, or if a body part is flaccid, and their skin color to gauge if it is flushed, pale, dry, or diaphoretic. Any outliers may also be noted at this point, such as use of medical devices, any foreign objects penetrating the body, and general activity (such as actively vomiting). This initial assessment takes mere seconds for the experienced triage nurse.

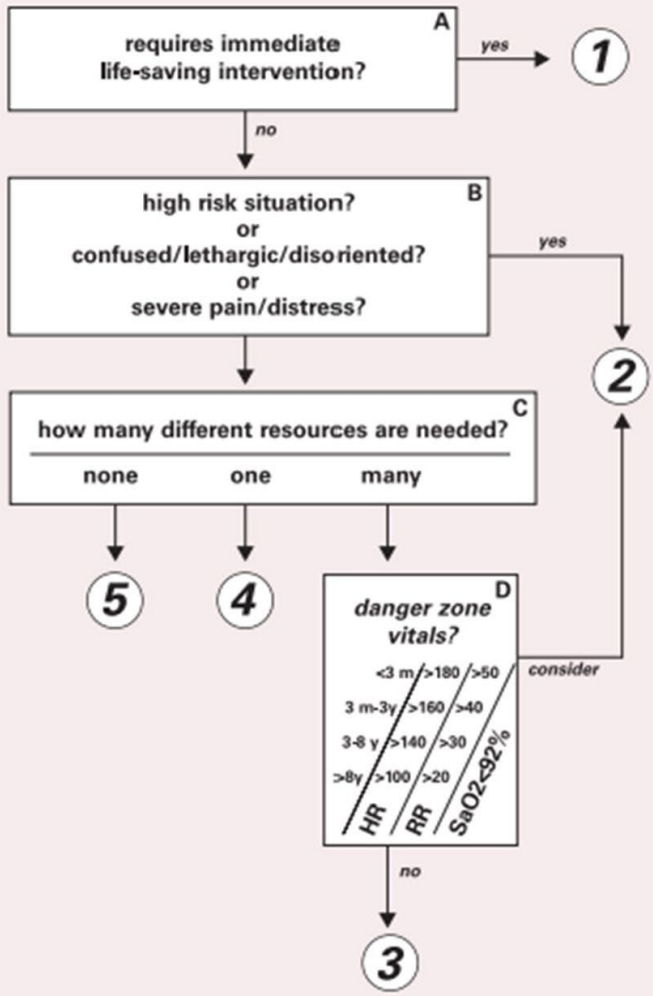
The next step of the triage assessment involves getting the history of the illness as well as vital signs. Vital signs play an important role in triage, as they assist in determining the patient's ESI score. Vital signs include obtaining a temperature, heart rate, respiratory rate, blood pressure, and oxygen saturation. If there are any "danger zone" vital signs noted, the ESI triage level will increase.

Scoring a patient based on the ESI requires a nurse with experience working in the emergency department who understands the flow of the department. It is also a skill that necessitates additional on-the-job training in order to become competent as well as continuing (such as annual) education to discourage complacency and triaging to the department's needs. The triage nurse begins the scoring by following the ESI algorithm.

The initial question on the algorithm asks if the patient requires life-saving medical intervention. Trauma patients who are profusely bleeding and patients who are blue because they cannot breathe are examples of patients who fit this criterion. This is considered an ESI Level 1, and they require immediate medical intervention by the ED providers and nurses. Other types of patients

The 5-level ESI scoring tool has been evaluated in multiple countries, and it is regarded as a strong, reliable, and accurate guide that has consistent correlations to hospitalization, ED length of stay, and mortality (Gilboy et al., 2020).

ESI Triage Algorithm



A. Immediate life-saving intervention required: airway, emergency medications, or other hemodynamic interventions (IV, supplemental O2, monitor, ECG or labs DO NOT count); and/or any of the following clinical conditions: intubated, apneic, pulseless, severe respiratory distress, SPO_2<90, acute mental status changes, or unresponsive.

Unresponsiveness is defined as a patient that is either:
(1) nonverbal and not following commands (acutely); or
(2) requires noxious stimulus (P or U on AVPU) scale.

B. High risk situation is a patient you would put in your last open bed.

Severe pain/distress is determined by clinical observation and/or patient rating of greater than or equal to 7 on 0-10 pain scale.

C. Resources: Count the number of different types of resources, not the individual tests or x-rays (examples: CBC, electrolytes and coags equals one resource; CBC plus chest x-ray equals two resources).

Resources	*Not Resources*
• Labs (blood, urine) • ECG, X-rays • CT-MRI-ultrasound-angiography	• History & physical (including pelvic) • Point-of-care testing
• IV fluids (hydration)	• Saline or heplock
• IV or IM or nebulized medications	• PO medications • Tetanus immunization • Prescription refills
• Specialty consultation	• Phone call to PCP
• Simple procedure ≥1 (lac repair, foley cath) • Complex procedure ≥2 (conscious sedation)	• Simple wound care (dressings, recheck) • Crutches, splints, slings

D. Danger Zone Vital Signs
Consider uptriage to ESI 2 if any vital sign criterion is exceeded.

Pediatric Fever Considerations
1 to 28 days of age: assign at least ESI 2 if temp >38.0 C (100.4F)

1-3 months of age: consider assigning ESI 2 if temp >38.0 C (100.4F)

3 months to 3 yrs of age: consider assigning ESI 3 if: temp >39.0 C (102.2 F), or incomplete immunizations, or no obvious source of fever

who may fit this criterion include those who are intubated, apneic, pulseless, in severe respiratory distress, have an acute mental status change, or are unresponsive. The immediate life-saving interventions may include care such as establishing an airway, administering emergency medications, or other hemodynamic interventions. It is important to note that an IV, supplemental oxygen, cardiac monitoring, and labs are not considered life-saving interventions when considering this criterion.

If the answer to the first question is that the patient does not require life-saving medical intervention, the nurse moves down the algorithm to the second question, which asks if the patient is in a high-risk situation, confused, lethargic, disoriented, or in severe pain/distress. If the answer to this query is yes, the patient is an ESI 2. There is a common rule to follow: this is the patient to whom the triage nurse would give their last open bed, potentially ahead of patients who have already arrived who are classified as an ESI 3. Classification of severe pain/distress is a delicate topic, and it requires the nurse's clinical observation and/or a pain score rating of 7 or higher on a scale of 0-10. Nonverbal pain indicators may be present such as grimacing, guarding the location of pain, pursed lips, furrowed brow, grinding teeth, clenched hands, rapid breathing, irritability, and/or tense muscles.

If the patient does not fall into the ESI 1 or 2 categories, the next step in the algorithm is to determine how many resources will likely be required during the patient's stay in the emergency department. To be considered an ESI 3, the patient must require 2 or more resources during their stay. An ESI 4 requires one resource, and an ESI 5

requires no resources. It is essential that the triage nurse has a strong background in emergency medicine to be able to accurately gauge the number of resources that a patient needs. Resources include labs, EKGs, radiologic studies (x-rays, CT scans, ultrasounds, MRI scans), intravenous (IV) fluids, intramuscular (IM) and IV medications, specialty consults, and procedures (simple procedures such as repairing a laceration and urinary catheter placement as well as complex procedures such as conscious sedation). When counting resources, the nurse should count the number of different types of resources, not each test. For example, if multiple x-rays are ordered, that is still considered one resource. If labs and an x-ray are ordered, that is considered two resources. Most patients who present to the emergency department are an ESI Level 3.

Being able to accurately count the number of resources utilized within the emergency department requires explicit training and competencies to reinforce the initial training. The ESI algorithm has a list of interventions that are not considered resources, so the triage nurse should not be including these resources when differentiating between ESI Levels 3, 4, and 5. The following are not considered resources: a history and physical including a pelvic exam, a saline lock or heplock, oral medications, an IM tetanus immunization, prescription refills, a phone call to the patient's primary care provider, simple wound care (dressing and recheck of wounds), and application of crutches, splints, and slings.

One additional consideration that affects the ESI level is review of the vital signs. As the nurse follows the algorithm, they may note that the patient does not fall into the previous criteria to be considered an ESI Level 2, and they require two or more resources, which, if following the algorithm, defines them as an ESI Level 3. However, during their vital sign assessment, the nurse may note "danger zone" vital signs that would warrant the nurse wanting to utilize their last open bed in a hypothetical situation, and the ESI algorithm recommends "uptriaging" the patient that has exceeded any vital sign criterion. The algorithm accounts for this by listing danger zone vital signs:

- For any patient, an oxygen saturation of less than 92%
- For children less than three months old, a heart rate greater than 180 beats per minute (bpm) and/or a respiratory rate greater than 50 times a minute
- For children three months to three years old, a heart rate greater than 160 bpm and/or a respiratory rate greater than 40 times a minute
- For children 3-8 years old, a heart rate greater than 140 bpm and/or a respiratory rate greater than 40 times a minute
- For patients 8 years or older, a heart rate greater than 100 bpm and/or a respiratory rate greater than 20 times a minute
- Pediatric Fever Considerations:
  - 1 to 28 days of age: assign at least ESI 2 if temp >38.0 C (100.4F)
  - 1-3 months of age: consider assigning ESI 2 if temp >38.0 C (100.4F)
  - 3 months to 3 years of age: consider assigning ESI 3 if: temp >39.0 C (102.2 F), or incomplete immunizations, or no obvious source of fever

Legal nurse consultants (LNCs) who opine on emergency department cases should be well-versed in the implementation and use of the ESI system, and they must realize that there may be hospital-specific protocols in place to address specific patient populations.

One such patient population is the psychiatric population. The ESI tool does not account for any psychiatric emergencies, such as suicidal ideation. Over the years, there has been an increase in both the number and duration of psychiatric patients in emergency departments nationwide (Stamy, et al, 2021), so emergency departments are often inundated with psychiatric patients. Emergency department nurses must be vigilant about establishing the presence of risk factors associated with the patient's psychiatric emergency. The ESI algorithm does not assess psychiatric risk factors, so a facility-specific protocol may be established for the triage nurse to follow in these cases, such as an automatic ESI 2 for any patient presenting with suicidal or homicidal ideation, as these patients pose a higher risk to self and others during their stay.

The geriatric population is another category that may not be accurately triaged by using the ESI algorithm, mostly related to their non-specific complaints (Malinovska,et al, 2019). This patient population tends to be "undertriaged;" that is, classified lower than what they should be on the ESI scale (Rashid, et al, 2021). These patients are at a higher risk of an adverse event or deterioration of their medical status while they wait to be seen by a provider.

LNCs who evaluate cases that have an emergency department visit should always review the triage process. It is pertinent to check what ESI level the patient was given, because in situations where the demand is high and resources are scarce, the difference between an ESI Level 2 and an ESI Level 3 can be a considerable wait time to see a provider. When a person doesn't fit into any emergent (ESI 1 or 2) category of the ESI algorithm, they are often relegated back to the waiting room until a bed opens in the emergency department. In cases where patients must wait for hours, the LNC should request the

protocols regarding vital signs, because most facilities have ESI-specific vital sign reassessment protocols in place. Though a patient may be in the waiting room, this should not exclude them from a vital sign recheck as well as a quick reassessment to ascertain if their condition has changed.

Many facilities have areas designated for "rapid care" or "fast track" patients; namely, those who are ESI 4 and 5, because the assumption is that these patients require one or no resources; therefore, their stay in the emergency department will be concise. Thus, it is imperative to correctly differentiate which patient is truly an ESI 3 requiring multiple resources versus which patients are ESI 4 and 5 and can be seen in the rapid care area. Overtriage of a patient who should be an ESI 4 or 5 may mean a longer wait to be evaluated by a provider while undertriage of a patient may lead to a rapid care space being occupied for much longer than was expected.

Triage, as mentioned above, is a skill that must be deliberately learned, rechecked with competencies, and honed with practice. When faced with a line of patients waiting to see a provider and knowing the emergency department is full, the adept triage nurse will quickly and accurately sort these patients into appropriate categories to ensure the safest and timeliest care possible. With proper use of the ESI algorithm, triage nurses can effectively manage patient flow that is conducive for optimum operation of the emergency department while minimizing risks of patient adverse events.

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FAST Team

Tom Gottschalk, CPA, CFE

Keywords: elder abuse, physical abuse, neglect, financial exploitation, older adults, vulnerable adults

This article addresses the ability of local prosecutors and law enforcement agencies to create a multi-disciplinary team to expedite the investigation and prosecution of elder abuse cases. This approach was pioneered in the 1980's in California via creation of FAST (Financial Abuse Specialist Teams) teams that would concurrently gather and evaluate evidence for financial exploitation of older adults, permitting an expedited investigation and prosecution of these crimes. Many jurisdictions recognized that this approach could be applied to other forms of elder abuse, utilizing medical, financial, and legal experts to address not only financial exploitation, but also elder neglect and physical abuse.

According to the US Census Bureau, the most rapidly growing segment of the population are adults 65 and older, reflecting an aging of the US population. The first Baby Boomers reached 65 years old in 2011, said Dr. Luke Rogers, chief of the Census Bureau's Population Estimates Branch (DeMatteo, 2022). Since that time there has been a rapid increase in the size of the 65 plus population, which grew significantly since 2010. No other age group saw such a fast increase (DeMatteo, 2022).

Not only are Americans 65+ becoming a growing demographic, according to a Federal Reserve Bank study from 2020, they hold a disproportionate amount of household wealth:

Age of Head of Family	Median net worth	Average net worth
35	$13,900	$76,300
35-44	$91,300	$436,200
45-54	$168,600	$833,200
55-64	$212,500	$1,175,900
65-74	$266,400	$1,217,700
75+	$254,800	$977,600

Source: The Federal Reserve (via DeMatteo, 2022)

In addition, a significant proportion of older adults are partially or fully dependent on the care provided by others – typically family members, paid third parties, or both. The combination of accessible financial assets, and full or partial dependency on others make older adults vulnerable to financial exploitation. Other types of elder abuse involving neglect and physical abuse have vectors into situations involving financial exploitation.

A good start would be to discuss the three types of elder abuse:

1) Physical abuse
2) Neglect
3) Financial exploitation

Most states incorporate these distinctions into their criminal statutes. In terms of severity, physical abuse is typically treated as the most severe form of elder abuse, followed by neglect, then financial exploitation. Since the early 2000's, states have trended towards more severe penalties for all types of elder abuse. Tracking the evolution of individual states efforts to make penalties for elder abuse more severe is beyond the scope of this article, however, there is an online tool from the US Department of Justice available to articulate elder abuse statutes for each state. Addressing elder abuse in the criminal justice system has emerged as both a priority, and a challenge among law enforcement agencies and for prosecuting attorneys. This coincides with awareness efforts nationally to bring attention to the effects of elder abuse in an effort to improve the low reporting rate of these crimes. Law enforcement agencies have strived to improve their investigative and evidence gathering techniques to support the higher priority these crimes are given for investigation. In addition, it has been found that a multi-disciplinary approach to investigating elder abuse cases speeds the investigation and improves the quality of evidence being provided for prosecution.

This article discusses a multi-disciplinary approach to investigating crimes against older adults, and the tools needed to implement a comprehensive investigation when crimes against older adults are committed. To understand the value of the use of a multi-disciplinary approach to investigating an elder abuse case, it would be useful to understand the normal investigative process when these crimes are reported. Elder abuse is normally reported to the state Adult Protective Service, or directly to law enforcement. Typically, the case is then assigned to a detective, whose most recent work experience likely has been working in the department's patrol or traffic units. Many officers' academic background is criminal justice, and not specialized in investigating specific crimes such as elder abuse. Unassisted, detectives often rely on their own past experience in investigating similar crimes, or seek advice of colleagues with experience in investigating elder abuse. Often, prosecutors will provide guidance on the types of evidence needed to obtain a successful prosecution of the offense. The detective then develops an investigative plan or strategy involving interviews of witnesses, accumulation of documentary evidence in the form of medical and financial records, and the development of an understanding of the fact circumstances involving the case. Once completed, the investigative file is submitted to prosecutors for evaluation, and if appropriate, criminal prosecution. In summary, a detective without outside expertise will develop an investigative plan based on:

- Their own prior investigative experience
- Expertise developed within their specific law enforcement agency, and
- Guidance from prosecutors in the form of evidentiary requirements

This process is typical of the investigation of all crimes, not just elder abuse. What distinguishes elder abuse from most other crimes is the reliance on medical evidence for demonstrating the vulnerability of the victim, any injury suffered by them, or conditions that either facilitate or mask the commission of the crime. For example, many financial exploitation cases will make use of medical records that show cognitive impairment of the victim to demonstrate vulnerability to deception used to take assets from the victim. Sometimes medical records can be used to demonstrate a pre-existing condition or injury or condition that disproves what would otherwise be considered an apparent case of neglect or physical abuse.

Beginning in the early 1980's, the San Diego (California) District Attorney's office began making use of an innovative approach to investigating crimes against elders. Given the need for specialized knowledge of certain areas of medicine and family law as it pertains to older adults, the prosecutors at the San Diego District Attorney developed a multi-disciplinary approach to investigating crimes against the elderly. Then, as now, the majority of elder abuse cases involved financial exploitation of the elderly victim. Suspects investigated or charged with financial exploitation almost always use a defense that the victim had consented to the transfer. That created a burden for law enforcement and prosecutors to examine whether the victim had the mental capacity to consent to the transfer of assets alleged to be financial exploitation. That burden, along with questions dealing with family-elder law, created challenges that required specialized knowledge normally not within the purview of law enforcement officers and prosecutors.

The multidisciplinary approach developed by the San Diego District Attorney was to create a team of specialists that could address these challenges. They named teams dedicated to investigating elder financial exploitation "FAST" teams:

F Financial
A Abuse
S Specialist
T Team

These teams are comprised of:

- Social worker – typically from the state Adult Protective Service ("APS"). APS social workers comprise the "front line" of response to elder abuse allegations, and have a priority of ensuring the safety and well-being of the victim.
- A medical professional to review medical records, primarily for issues that could be identified as impacting the cognitive ability of victims. Most suspects will tell investigators that the victim consented to whatever transfer of funds or other assets that lie at the heart of the financial exploitation. The ability to assess the mental capacity to consent to those types of transactions is a critical piece of the overall evidentiary puzzle.
- A family law attorney is available to look at wills, trusts, and related documents, as well as any changes effected. A family law attorney is a critical member of the team because most financial exploitation cases involve family members, and involve legal and other devices used in estate planning. These devices are also often tools used by outsiders to effect changes in estate planning to facilitate transfers to them at the expense of family members or intended beneficiaries of the victim's estate. They will document their assessment of compliance with the directives of the will or trust, and deviations noted.
- The prosecuting attorney assigned to the case provides guidance with respect to evidentiary issues and litigation strategy. If the team finds prosecutable evidence, the prosecutor, typically an Assistant District Attorney ("ADA"), will develop case presentation for court.
- Lead investigator – this is typically the detective initially assigned to the case. Their job will be to work with other team members for collection of evidence and their evaluations. Their report will tell the story of the case using their own narrative, as well as supplemental narratives from witnesses and other sources of information. The lead investigator serves to coordinate the work of the team, and to systematically review the accumulated evidence collected by the team.

The effectiveness of FAST teams quickly demonstrated their value in conducting a comprehensive investigation of elder financial exploitation cases, and were adapted to investigate other types of elder abuse as well. For elder neglect cases, the medical professional will evaluate the physical condition of the victim during the period of alleged neglect. This evaluation normally includes a comparison of their physical condition (weight, hygiene, and other indicators of adequate care) to what would be expected given their medical history, and ability to self-care, or direct their care to caregivers under normal circumstances. They look at whether treatment or medications were omitted or withheld from the victim needed to maintain their physical and mental health.

One of the biggest challenges in assembling a FAST team to investigate an elder abuse case is finding a member with the medical expertise to assess medical records obtained via a subpoena.

Many times, elder neglect accompanies their financial exploitation because the "caregiver" charged with care of the victim are not qualified to provide care – they have positioned themselves as caregivers as a means of gaining access to assets held by the elderly victim. Another common reason that the elderly victim suffers neglect is because the "caregiver" wishes to minimize care expenses in order to preserve the assets of the victim so the suspect can convert those assets to personal use.

FAST teams are less often deployed to investigate physical abuse cases. Often, the injuries of the victim, by time they are discovered and reported, are present and obvious to medical service providers after the victim is presented for treatment. When elderly victims are discovered by friends or relatives to have suffered physical injury, law enforcement and the criminal justice system tends to move quickly based on the medical evidence present at the discovery of the abuse. The generation of concurrent medical records upon discovery of abuse is oriented towards the documentation of the physical abuse of the victim, making use of a FAST team less necessary.

For jurisdictions wishing to employ a FAST team approach to investigating elder abuse cases, one of the first questions is where the members of the team are going to come from. Some members of the team are easily recruited when their job entails investigating allegations of elder abuse. For example, social workers with APS are ordinarily tasked with investigating allegations of elder abuse, and refer cases to law enforcement when they believe that elder abuse has taken place. Similarly, lead investigators for FAST teams are normally law enforcement officers assigned to investigate allegations of elder abuse. Similarly, prosecuting attorneys assigned to prosecute a given elder abuse case are going to do their part in contributing to a FAST team elder abuse investigation.

One of the biggest challenges in assembling a FAST team to investigate an elder abuse case is finding a member with the medical expertise to assess medical records obtained via a subpoena. Often, the medical professional with the expertise to contribute to a successful FAST team investigation possess skills that are in demand outside of their role in a criminal investigation. Most often, medical professionals with the ability to contribute to the FAST team are:

- Physicians
- Nurse practitioners
- Registered nurses

Jurisdictions wishing to develop a FAST team approach to elder abuse investigations need to develop a funding source to hire someone with the necessary expertise, or to develop a pool of volunteers committed to investigating elder abuse cases.

The type of medical professional to serve on a FAST team depends on the availability of those professionals locally. The selection process should be geared towards a professional with a background in gerontology or geriatrics.

In terms of a family law professional, sometimes there are prosecutors that have a background in family law that can be recruited to serve on a FAST team. There are other times where the attorney engaged by the victim can be recruited to serve on the FAST team. Their inclusion is ideal since they were likely involved in many of the planning discussions and creation of relevant documents such as trusts, wills, and other estate planning documents.

A good example of a FAST team involved the investigation of the exploitation of an elderly, adult, "Delores". She was a resident of Johnson County, Kansas, and was recently widowed. Delores had considerable net worth after the death of her husband, and her son made a commitment to Delores that he would take care of her and make sure she would not be sent to a care facility if there were any practical means to care for her at home. The son lived in Florida and moved Delores to live with him and his family in his home. The son moved his mother in with his family, and devised a care schedule so that Delores would not be left in the house alone, and was able to situate Delores comfortably in his Florida home. Within several weeks of Delores moving into her son's home, she was visited by her former neighbor and family friend, "Jeanne". Jeanne was a divorcee who had lived close to Delores when Delores lived with her husband in Kansas.

Unbeknownst to Delores' son, Jeanne was telling Delores that her son was planning on abandoning Delores in a nursing home, and that she had brought a "rescue team" to Florida to bring Delores back to live with Jeanne in Kansas. Jeanne promised Delores that she would provide care for Delores in Jeanne's own home, and would only ask for reimbursement of expenses directly related to Delores' care. Based on the narrative Jeanne provided to Delores, Delores informed her son that she was moving back to Kansas to live with Jeanne. Delores accused her son of planning to abandon her in a care facility, and insisted that she would prefer to live in her old neighborhood in Jeanne's home. The son acquiesced to his mother's demands, but insisted that he would maintain contact with her and be available should Delores need him. The son was angry at being accused of planning to abandon his mother, but believed his mother genuinely missed living in her old neighborhood. Under the circumstances, he did not feel he could prevent his mother from moving back to Kansas to live with Jeanne. Within several weeks, Jeanne, along with two men she had befriended, "John Wayne" and "Rick", came to Florida and brought Delores back to Jeanne's house in Kansas. Within a month of Delores' move back to Kansas, her son learned through his access to financial records that there was a large payment to a care facility near Jeanne. Further, he discovered that her funds were being rapidly depleted via checks and electronic transfers to accounts he was not familiar with.

Acting on his suspicions that Jeanne was not acting in his mother's best interests, Delores' son called the Kansas Adult Protective Service (APS) to see if they could check on the welfare of Delores. He informed them of the depletion of "Delores" financial assets. Kansas APS conducted a preliminary investigation to verify that Delores' funds were missing and visited her at the skilled nursing facility. Delores lacked the cognitive ability to describe what had happened to her funds, and was confused as to why she was in a "rest home". Kansas APS referred the case to the Johnson County Kansas District Attorney, who opened an investigation into the disposition of funds taken from Delores. The District Attorney had previously met a group of registered nurses who had a forensic nursing practice, and when he contacted them to get some direction on how to understand Delores' mental state, they volunteered to help.

The contact information for the forensic nurse team was provided to the lead criminal investigator, who then initiated the process of obtaining subpoenas for Delores' medical and financial records. Once those records were obtained, the investigator and forensic nurse team set about examining those records while an attorney versed in family law from Kansas APS began a review of Delores' family trust and other estate planning documents. An APS social worker made regular visits to Delores, and determined the skilled nursing facility where Delores was placed was adequate to her needs.

The forensic nurse team developed a time line of measurements of Delores' cognitive ability documented in her medical records. That time line was compared with a time line of significant financial transactions that demonstrated that Jeanne had almost completely

depleted Delores' financial assets within 90 days of moving Delores back to Kansas. It also showed that the account was accessed by Jeanne through the use of a Power of Attorney (POA) that Delores signed shortly after returning to Kansas with Jeanne. That POA, which designated Jeanne as Delores' representative ("attorney-in-fact"), was used by Jeanne to access and deplete numerous financial accounts held by Delores.

When the lead investigator and forensic nurse team compared the time lines, they were able to determine that the POA signed by Delores was dated well after numerous notes of dementia and lack of mental capacity had been noted in Delores' medical records. The family law attorney from APS found that the transactions undertaken by Jeanne were contrary to Delores' explicit directives that all funds she held were to be used for her care, and when she died, to be passed on to her son in Florida.

When confronted with the evidence found by the FAST team, Jeanne told investigators that Delores had consented to the transfer of funds to Jeanne in order for Jeanne to pay for Delores' care. Within 48 hours of the interview with investigators, Jeanne transferred Delores to a dilapidated skilled nursing facility in a nearby town in Missouri in an attempt to thwart the investigation. The authority of the Johnson County District Attorney, and that of the court orders obtained did not apply outside the state of Kansas. However, Kansas APS worked with the Missouri Department of Health and Senior Services to facilitate Delores' transfer back to the original skilled nursing facility in Kansas. The Johnson County District Attorney filed criminal charges against Jeanne and her two male accomplices. The trio was convicted of financial exploitation of a dependent adult, and sentenced to short jail terms. In addition, they were ordered to repay the funds taken from Delores. Delores' health suffered a significant decline during this ordeal, and passed away several months after the conviction of Jeanne, John Wayne, and Rick.

The simultaneous use of the social worker, family law attorney, and forensic nurse team with the efforts of the investigator and prosecutor significantly accelerated the timeline in which Delores could be provided appropriate care, and preserve her relative well-being. The provision of the timeline of cognitive observations in the medical records in an understandable manner made a tremendous impact on law enforcements' ability to intervene in the crimes being committed against Delores. The cognitive timeline proved very useful in the court hearings that led to the trio's conviction, and helped lead the trio to plead guilty to financial exploitation charges in lieu of a jury trial.

The author, a former investigator for the Johnson County Kansas District Attorney, has participated in, or observed the operation of FAST teams in three different jurisdictions. The two jurisdictions outside of Johnson County Kansas made use of grant funds to hire the medical professionals needed to complete the team. Those two jurisdictions both hired physicians to review the medical records of the victim, and to assist in the investigation. The author's personal observation was that physicians on the FAST teams spent less time working with the team and engaged other members far less. In addition, the forensic nurse team that the author worked with on Delores' case were more approachable by other members of the team, and more flexible in how they presented their findings. Most FAST cases investigated after the case involving Delores relied on nurses to make a professional review of medical records associated with those cases. In some cases where the victim resided in a care facility, the medical social workers at the facility volunteered to review medical records and develop appropriate timelines and other investigative documents.

In conclusion, the success in prosecuting the criminals that financially exploited Delores led the Johnson County District Attorney to form a FAST team on almost all elder abuse cases. Law enforcement agencies in the county came to rely on the medical professionals who volunteered to the FAST team program to assess evidence on other types of elder abuse, not just financial exploitation. The FAST team approach in Johnson County, Kansas led to closer coordination of elder abuse investigations between the District Attorney and local law enforcement agencies. It met the goal of expediting investigation and prosecution of elder abuse crimes, and motivated law enforcement agencies to more aggressively pursue investigations of these cases.

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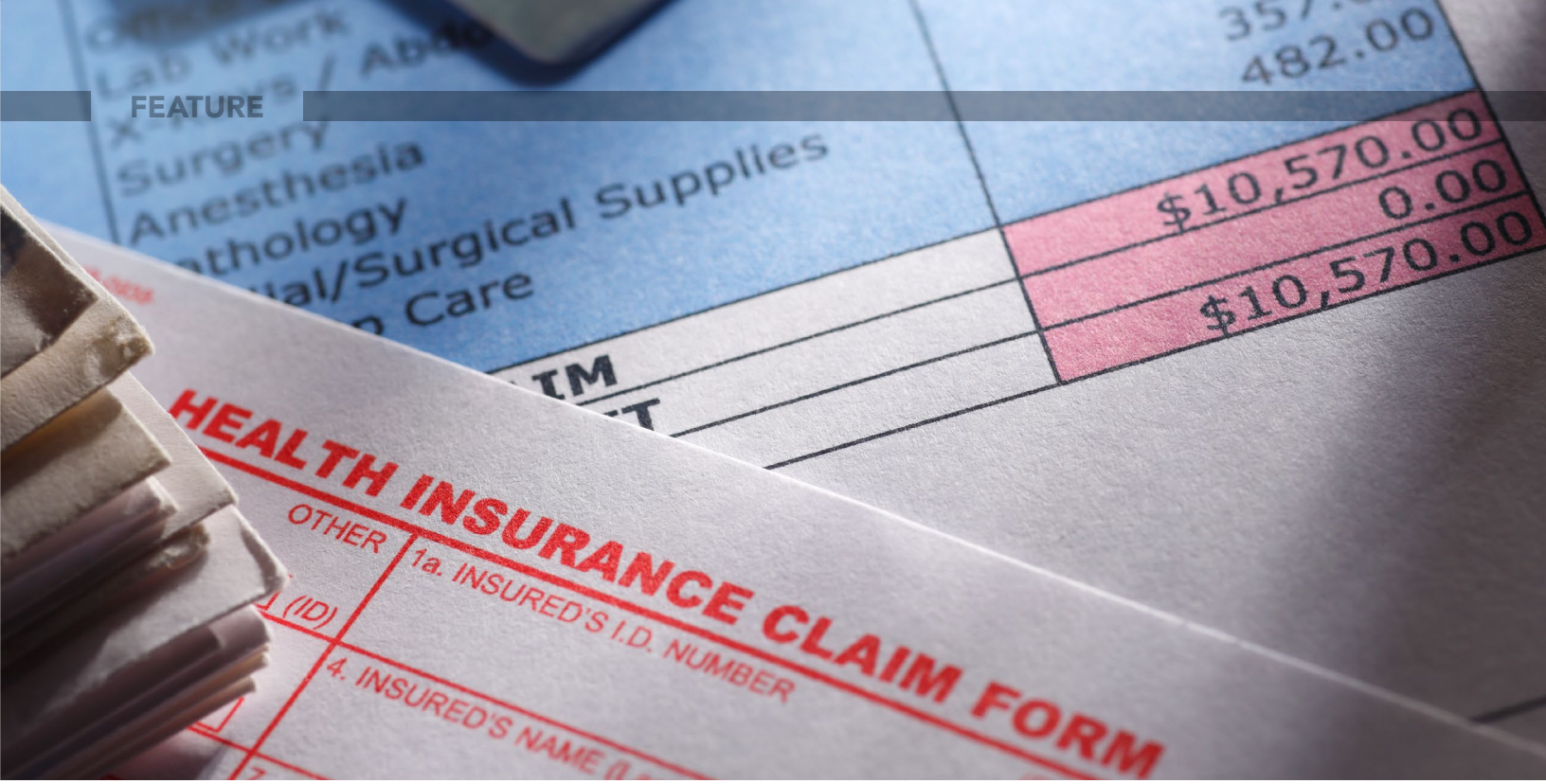

Clinical Validation, Overbilling, and Medical Necessity

Francine Barsaloux, MBA, BSN, RN, CMSRN

Keywords: Clinical Validation, health plan, medical necessity, overbilling, physician advisor, clinical documentation improvement, evidence-based guidelines.

The legal nurse consultant (LNC) and nurse subject matter expert (SME) are utilized by attorneys, healthcare systems, and insurers to optimize case outcomes. Nurses, through the medical record audit process, use their clinical experience, education, and knowledge in conjunction with research to ensure diagnoses are clinically accurate, overbilling has not occurred, and medical necessity was appropriately vetted.

INTRODUCTION

Clinical Validation is a separate process from a traditional diagnosis-related group or "DRG validation". Clinical Validation is a review of a case to determine whether or not the patient possessed the medical conditions that were documented (Centers for Medicare & Medicaid Services [CMS], n.d., p. 23). "Clinical validation is beyond the scope of DRG (coding) validation, and the skills of a certified coder. This type of review can only be performed by a clinician or may be performed by a clinician with approved coding credentials." (CMS, n.d., p.23). Examples would be a physician or nurse. One example of a clinician with coding credentials would be a nurse who has a certified coding specialist (CCS) certification through the American Health Information Management Association (AHIMA). Clinical validation requires a clinician or a clinician with coding credentials, but it is not necessary for the clinician to have coding experience, as the medical record is typically checked for coding errors by a certified coder prior to being passed on to the clinician for clinical validation.

The role of the nurse in clinical validation can be quite complex. Nurses are hired by insurers, healthcare facilities, healthcare informatics companies, and various other entities to perform clinical validation audits and appeal audits. These audits may be performed concurrently or retrospectively. The goal of

clinical validation is to ensure that the clinical indicators for the diagnosis are documented and that overpayment has not occurred. Physician advisors are consulted to approve any diagnosis denial.

The nurse uses evidence-based practice guidelines to determine if the patient possessed the diagnosis. Typically, most insurers have their own set of clinical criteria that they require the patient to meet before paying for a diagnosis. The clinical criteria used by insurers vary, for instance, some insurers pay for sepsis if sepsis 2 criteria were met, while others will only pay if sepsis 3 criteria were met.

Overbilling not only drives healthcare costs up, but also brings the medical necessity of tests, procedures, length of stay, the use of medical supplies, and medication administration into question.

KEEPING HEALTHCARE COSTS DOWN

Clinical Validation helps keep healthcare costs down by denying claims that are not clinically valid. Certain diagnoses that are more vulnerable to clinical validation are those that are a major complication or comorbidity (MCC) or complication or comorbidity (CC). These diagnoses include acute respiratory failure, congestive heart failure, acute kidney injury (AKI), acute tubular nephrosis, sepsis, severe protein-calorie malnutrition, and many more.

These diagnoses are thought to require more resources from the healthcare team, so they generate a higher reimbursement. Acute kidney injury (AKI) is one diagnosis in particular that gets coded inappropriately. A patient may come in with dehydration, require fluid resuscitation, and have a small bump in serum creatinine (SCr), however, this does not clinically support a diagnosis of AKI when the clinical criteria for the diagnosis are not met.

Clinical practice guidelines are established by organizations such as Kidney Disease: Improving Global Outcomes (KDIGO). The purpose of clinical guidelines is not to be a check box system for the diagnosis of a disease process. Rather, clinical guidelines are used to assist the physician in accurately diagnosing a condition. Clinical guidelines do not typically change rapidly and sometimes it takes decades for them to change. An example is the KDIGO 2012 clinical practice guidelines for AKI; this is the most recent and widely accepted set of clinical criteria for AKI (Goyal et al., 2022).

According to KDIGO (2012), AKI is defined by an increase in SCr by ≥ 0.3 mg/dl (≥ 26.5 lmol/l) within 48 hours; or an Increase in SCr to ≥ 1.5 times baseline, which is known or presumed to have occurred within the prior 7 days; or urine volume < 0.5 ml/kg/h for 6 hours (KDIGO, 2012). While the patient may have had dehydration, it is not appropriate to upcode dehydration to AKI when clinical criteria do not support the diagnosis of AKI.

THE CONTROVERSY

Health plans are not always transparent about which clinical criteria they are using for a particular diagnosis. Moreover, health plans sometimes change the clinical criteria required to reimburse a diagnosis without notifying the facility or health system. This leads to expensive peer-to-peer evaluations of cases that sometimes lead to litigation. It is important for healthcare systems to ensure that clinical validation audits and the specific scope of those audits are outlined in the contract entered into by both parties. Moreover, the clinical criteria used for each diagnosis should be outlined within the contract and subject to change when new evidence-based practice becomes available. This enables both the healthcare system and the health plan to operate in the realm of transparency and agreement for reimbursement.

THE ROLE OF THE LNC IN CLINICAL VALIDATION AND MEDICAL NECESSITY

Medical necessity is an area of opportunity for the LNC to assist their attorney clients in identifying negligence. For instance, just because surgery is elective and consented to by a patient, does not necessarily mean that the surgery should be performed. The variables that come into consideration include co-morbidities and risks to the patient's life. Considerations should be made for the patient's specific health history and weighed against the risks of the surgery. Elective surgery does not necessarily equate to less risk of death. Patients will often seek out second opinions from physicians that will agree to perform surgery after they have already been denied surgery by other surgeons. The importance of thoroughly reviewing a patient's medical records for doctor shopping is incredibly important in a medical necessity case. This helps the LNC identify how many physicians are involved, how many denied the surgery, and whether or not the performing surgeon was aware of the prior denials.

Clinical validation is another area of opportunity for the LNC to assist their attorney clients in identifying overbilling, unnecessary tests, and procedures. LNCs can help identify overbilling for diagnoses that are not clinically supported in the medical record as well as help identify missed diagnoses. Sepsis is one example. The patient may have been septic and a sepsis protocol was not initiated, or the patient may have had SIRS criteria, but not meet those criteria for a diagnosis of sepsis.

There is a set of clinical criteria for every diagnosis and the LNC is essential to identify those. The set of clinical criteria used for any given diagnosis depends on many factors including societal guidelines and how widely those guidelines are used. The LNC can research clinical guidelines and find

out the gold standard, if there is one, for any given diagnosis. For example, the gold standard for diagnosing acute hypoxemic respiratory failure is arterial blood gas (ABG) (Shebel et al., 2022). In a case in which acute hypoxic respiratory failure is not appropriately diagnosed, it would be imperative that the LNC check to see if an ABG was ordered. Also, important to note is that not all diagnoses have gold standards and some diagnoses have more than one societal guideline. Therefore, it would be important to know the most widely used clinical criteria used for case-specific diagnoses.

The nurse consultant with clinical validation audit experience has the knowledge to quickly and efficiently identify areas of concern within medical records. This is primarily learned through on-the-job training and experience with medical record audits. The primary goal of the clinical validation is to find out if the patient possessed the given diagnosis. More importantly, does the clinical documentation support the diagnosis? Many, if not all healthcare systems have clinical documentation improvement (CDI) programs and nurses are typically integral to the success of those programs. Many nurses often obtain clinical documentation certifications through the Association of Clinical Documentation Integrity Specialists (ACDIS).

The LNC can assist the attorney-client in identifying the gold standard for any given diagnosis, and whether or not clinical guidelines were appropriately followed. The goal of the LNC is to translate complex clinical information into an easy-to-understand format, it is not to opine on physician standard of care. The summary and organization of medical records by the LNC allows the information to be presented to the physician advisor in a manner that adds value to the case while simultaneously keeping the budget for the case on target.

CONCLUSION

Attorney-clients save money when they utilize the LNC to review cases for medical necessity, clinical validation, or negligence of any kind, as physician advisors are more expensive to hire. The LNC further assists their attorney clients in identifying potential expert witnesses and preparing preliminary case-finding reports in detail to optimize the budget for a case. Physician advisors and potential expert witnesses can better hone in on the pertinent details of the case, rather than sifting through thousands of pages of medical records. The value of the time and money-saving organization of a case by the LNC cannot be overstated.

Additionally, nurses today are looking for new ways to move beyond the bedside. LNC and nurse consulting work are avenues that can open up entrepreneurial opportunities for nurses. Attorney clients are just one side of the coin. Health systems and health plans often hire nurse consultants to get a fresh perspective on the needs of their organizations. This allows the organization to utilize the consultant as a subject matter expert on an as-needed basis without incurring the cost of a full-time employee. The profession of nursing has been expanding beyond the bedside more rapidly than ever in recent years and will continue to do so. Nurses spend a tremendous amount of time obtaining their education and gaining clinical experience at the bedside. That clinical experience eventually turns into something they can utilize to unlock the freedom of entrepreneurship.

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Kounis Syndrome:

An Unusual Heart Attack

Michael W. Farrar, MD, FACC, FASE

Keywords: Kounis Syndrome, Insect sting, Bee sting, Wasp sting, Takotsubo cardiomyopathy

Kounis syndrome is a rare condition and represents an allergic acute coronary syndrome. There are many potential precipitating causes, but it is infrequently recognized or diagnosed. Most physicians and health care providers are unaware of the condition. It is important to recognize it when present because it may alter the standard treatment of coronary atherosclerotic lesions or acute myocardial infarction. A case report with discussion of a probable case of Kounis syndrome is presented.

A 58-year-old male was working as a roofer in central Missouri and was pulling up shingles when he was stung on the back of the neck by a yellow jacket wasp. He continued to work but fifteen minutes later stood up abruptly, suddenly lost consciousness and slid down the roof face-first. He fell ten to fifteen feet onto the grass head-first and was unresponsive. 911 was called and he was found by paramedics to be in ventricular fibrillation. He was resuscitated and defibrillated multiple times. He was taken to a nearby hospital where his electrocardiogram showed an acute inferior wall myocardial infarction with right ventricular involvement.

Despite an acute cervical spine fracture and other orthopedic injuries, he was

taken to the cardiac catheterization lab where he was found to have an acutely occluded proximal right coronary artery with thrombus formation. The right coronary artery was successfully opened with three bare metal coronary stents. He was also noted to have severe three-vessel coronary artery disease. His left ventricular ejection fraction by echocardiography was 20-25%, and there was associated right ventricular dysfunction.

He had a prolonged hospitalization with recurrent ventricular arrhythmias, cardiogenic shock, pulmonary edema with respiratory failure and prolonged mechanical ventilation and paroxysmal atrial fibrillation. Despite the above, he recovered completely from a cardiac standpoint with a normal left ventricular ejection fraction by echocardiography three months later. Ultimately, he underwent successful coronary artery bypass graft surgery. Prior to this event he seldom saw a physician and smoked a pack of cigarettes daily. He was also diagnosed with hypertension during his hospitalization, which was thought to be long-standing.

Had the patient's yellow jacket wasp sting not been witnessed it is likely that it would have been assumed that this patient suffered from a garden-variety inferior wall myocardial infarction secondary to plaque rupture and superimposed thrombus formation. This shows why it is important to review and analyze patients/ medical records extensively to help identify the true root cause of the diagnosis and whether the proper course of treatment was prescribed. Legal Nurse Consultants (LNCs) can be instrumental in this. However, given the temporal proximity of the wasp sting in relation to the timing of the myocardial infarction, this case most likely represents a case of Kounis syndrome.

Kounis syndrome is an allergic acute coronary syndrome that usually results from insect stings, bites, or food or drug exposures. It was first described by Drs. Kounis and Zavras in 1991 and labeled as allergic angina and allergic myocardial infarction. The syndrome's pathophysiology is through mast cell activation with the release of inflammatory cytokines such as histamine, tryptase, chymase, platelet-activating factor, prostaglandins, and leukotrienes. This results in coronary artery vasospasm and/or atheromatous plaque erosion or rupture (Kounis, 1991).

Kounis syndrome has been further divided into three different types. Type I Kounis syndrome has normal coronary arteries with superimposed coronary artery spasm. Type II Kounis syndrome occurs in patients with inactive preexisting atheromatous coronary artery disease, in whom the allergic reaction leads to plaque rupture or erosion with thrombus formation. The patient in the case presentation most likely suffered from Type II Kounis syndrome. Type III Kounis syndrome is acute coronary artery stent thrombosis secondary to an allergic reaction (Clemen, 2021).

The yellowjacket wasp is a generic name for a variety of wasps, yellowjackets and hornets, members of the insect order Hymenoptera. 94.5 % of people are stung by a Hymenoptera insect during their lifetime. Almost all suffer typical local symptoms but 5-15% suffer local allergic reactions and 3-8.9% sustain systemic allergic reactions, of which 10% are life-threatening. Kounis syndrome and Takotsubo cardiomyopathy represent rare cardiac complications of Hymenoptera insect stings. Brown et al. (2004) performed a diagnostic insect challenge study in healthy volunteers with known hypersensitivity to the Australian Jack Jumper Ant (M. pilosula). 9.5% of the volunteers had chest pain and electrocardiographic changes compatible with myocardial ischemia after having been stung (Kounis, 2021).

Medical conditions that can precipitate Kounis syndrome include angioedema, bronchial asthma, urticaria, food allergies, exercise-induce anaphylaxis, mastocytosis, serum sickness, intracoronary stents and intracardiac prosthetic devices used for closure of patent foramen ovale. Environmental exposures that have been identified causing Kounis syndrome include ant, bee, wasp and jellyfish stings, grass cutting, millet allergy, poison ivy, eating shellfish, viper venom, limpet ingestion, poisoning, diesel fume exposure, sarin poisoning and fly carvaria sting. A variety of medications causing Kounis syndrome include analgesics, anesthetic agents, anticholinergic agents, non-steroidal anti-inflammatory drugs, antineoplastic agents, contrast media, corticosteroids, muscle relaxants, proton pump inhibitors, skin disinfectants, thrombolytics and anticoagulants, as well as a variety of miscellaneous drugs (Almeida, 2016).

The diagnosis is relatively easy in the case presented above, given the witnessed wasp sting right before the myocardial infarction. However, in many cases, Kounis syndrome is diffi-

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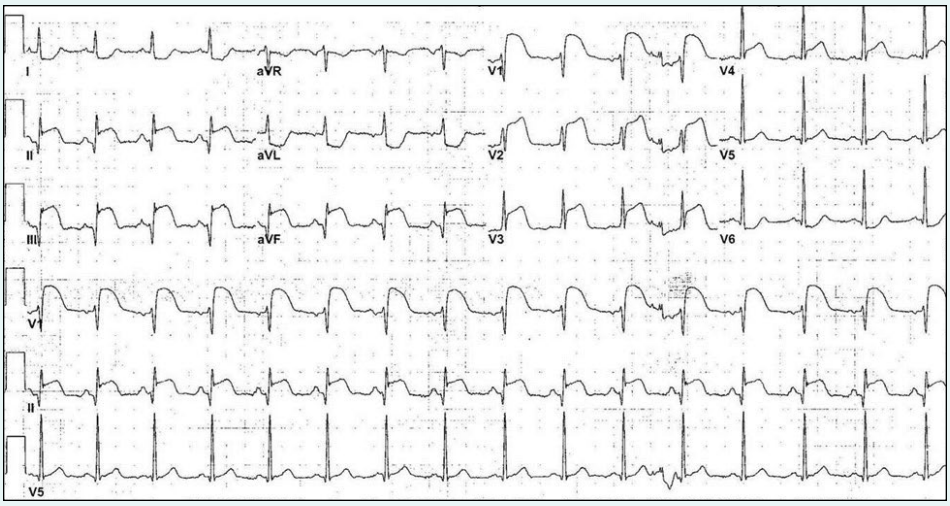

Expert interpretation of the ECG: Acute Inferior wall myocardial infarction with reciprocal changes and right ventricular involvement. (From personal collection of author)

cult or nearly impossible to diagnose unless a very detailed history is taken and there is a high index of suspicion. Kounis syndrome is likely underdiagnosed in clinical practice as most health care providers are unaware of the syndrome (Merino Garcia, 2018). This is where extensive analysis of symptoms, review of records and possible legal analysis including LNC evaluation would come in useful to identify causes.

Symptoms of Kounis syndrome are nonspecific and include chest pain, dyspnea, faintness, nausea, vomiting, syncope, diaphoresis, pallor, palpitations, hypotension and bradycardia. However, the presence of pruritis and urticaria in a patient with ischemic chest pain or myocardial infarction should alert one to the diagnosis (Kounis, 2019).

Blood tests to aid in the diagnosis include a complete blood count looking specifically at eosinophilia. Troponin levels may be elevated but are not specific for Kounis syndrome. Histamine, chymase and tryptase serum levels may be helpful. However, serum histamine has a half-life of only eight minutes and may be missed. Serum tryptase has a half-life of 90 minutes and has a 73% sensitivity and 98% specificity for the diagnosis of anaphylaxis. Other testing that has been performed includes total immunoglobulin E (IgE) levels, specific IgE measurements, levels of thromboxane, leukotrienes and prostaglandins, C-reactive protein, tissue factor, tumor necrosis factor, interferon and interleukin-6 levels (Lopez, 2010).

Kounis syndrome, for reasons not entirely clear, usually affects the right coronary artery. It has been reported in children after bee stings or ampicillin administration. It may be accompanied by anaphylaxis, with systemic vasodilatation, decreased venous return, depressed cardiac output, hypotension, coronary hypoperfusion and worsened ischemia. In these cases, morphine, a drug historically used in the treatment of myocardial infarction, should be avoided as it can stimulate histamine release and exacerbate the pathological cascade. Fentanyl is a better choice than morphine for pain relief. Beta-blockers may exacerbate coronary spasm when it is present. Corticosteroids, antihistamines, nitrates, calcium blockers and sulfite-free epinephrine may all be necessary for treatment (Kounis, 2013).

Symptoms of Kounis syndrome are nonspecific and include chest pain, dyspnea, faintness, nausea, vomiting, syncope, diaphoresis, pallor, palpitations, hypotension and bradycardia.

Type III Kounis syndrome has been described following the implantation of bare metal stents and stents with polymer coating, paclitaxel stents, and rapamycin stents.Patients with patch test reactions to nickel and molybdenum have a higher rate of stent thrombosis. Reactions after drug-eluting stent implantation may be local or generalized. Type III Kounis syndrome can also present with a variety of symptoms, including rash, itching, hives, dyspnea, fever, atypical chest pain, hypertension or hypotension, arthralgias, joint swelling and anaphylaxis. Fatal stent thromboses have been reported. Kounis syndrome has also been reported after aspirin and clopidogrel use. Autopsy reports of patients with Type III Kounis syndrome report inflammatory cells in all three vascular layers with eosinophilic infiltrates and poor intimal healing (Kounis, 2013).

Strategies to prevent Type III Kounis syndrome include avoiding drug-eluting stents in atopic individuals and skin testing prior to drug-eluting stent placement in these patients. However, this is obviously impractical in emergent situations. Desensitization strategies, steroid administration, use of immunosuppressive agents and impregnation of stent polymer with mast cell stabilizers have all been proposed to prevent Type III Kounis syndrome (Kounis, 2013)

In summary, Kounis syndrome is a rare condition but likely under-recognized

and under-diagnosed. It may result in significant morbidity, as in our case report, and may be fatal. Recognition is important because it may alter the treatment of complicated myocardial infarction and of the approach to a patient who is to receive a coronary stent. Physicians and health care providers need to be aware of this rare but serious condition.

GLOSSARY

Chymase: Human chymase is a potent and specific angiotensin II forming serine proteinase.

Eosinophilia: An increase in the number of eosinophils in the blood, occurring in response to some allergens, drugs, and parasites, and in some types of leukemia.

Hymenoptera: The orders Hymenoptera includes Apis species, i.e., bees (European, African), vespids (wasps, yellow jackets, hornets), and ants.

Intimal healing: Intimal healing is related to restoration of endothelial cell cover. In a study involving a rabbit aorta, intimal thickening reached a maximum well before reendothelization was complete.

Leukotrienes: The leukotrienes are a family of biologically active molecules, formed by leukocytes, mastocytoma cells, macrophages, and other tissues and cells in response to immunological and nonimmunological stimuli. They exhibit a number of biological effects such as contraction of bronchial smooth muscles, stimulation of vascular permeability and attraction and activation of leukocytes.

Limpet ingestion: The limpet, phylum Mollusca, is one of the most frequent sea mollusks in the Canary Islands. Limpet IgE hypersensitivity reactions have been described.

Mastocytosis: a disorder characterized by mast cell proliferation and accumulation within various organs, most commonly the skin.

Molybdenum: The chemical element atomic number 42, a brittle sliver-gray metal of the transition series, used in some alloy steels. It's a common by-product of tungsten and copper mining. The most common source of exposure is by eating foods such as legumes (beans, peas, lentils, etc.), nuts, grains, leafy vegetables, cauliflower, and liver.

M. pilosula: Myrmecia pilosula; a species of ants (Australia jack-jumper ants).

Paclitaxel stent: Paclitaxel inhibits vascular smooth-muscle-cell proliferation and reduces neointimal mass. Local delivery of paclitaxel through a coronary stent has been shown to reduce restenosis rates and percent diameter stenosis and to produce other angiographic benefits compared with bare-metal stents.

Rapamycin stent: Rapamycin, an immunosuppressant drug that demonstrates antiproliferative properties and inhibits smooth muscle cell migration may deter the intimal hyperplasia that occurs during spontaneous closure and after-stent implantation of the arterial duct.

Takotsubo cardiomyopathy: A sudden, transient cardiac syndrome that involves dramatic left ventricular apical akinesis and mimics acute coronary syndrome. It is also known as stress cardiomyopathy and "broken heart syndrome".

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A Case of Peripartum Sepsis

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Keywords: Sepsis, lactate, Early Warning System (EWS), MEWT, CAUTI

Maternal sepsis is the primary cause globally of maternal morbidity and mortality. Sepsis can lead to serious complications including multi-organ failure. Sepsis is difficult to identify in the pregnant and postnatal populations. Nurses working in labor and delivery are encouraged to undergo training to recognize the early warning signs of sepsis and to notify and mobilize specialty teams. Early intervention and the use of Rapid Response Teams (RRT) improves patient outcomes and saves lives.

Maternal sepsis is globally the number one cause of maternal morbidity and mortality (Maternal infections in health facilities 2020). Patients with sepsis die from global tissue hypoxemia, leading to cardiovascular and/or multi-organ failure. The time of sepsis identification to the initiation of life-saving hemodynamic support with intravenous (IV) fluids and antibiotics is key to survival. Sepsis is difficult to identify in the pregnant and postnatal populations due to the normal physiological changes in pregnancy. Guidelines state that these patients need urgent assessment and treatment, including initial fluid resuscitation while pursuing source control, obtaining further laboratory results, and attaining more precise measurements of hemodynamic status. Nurses working in labor and delivery are encouraged to undergo training to recognize the early warning signs of sepsis and to notify and mobilize specialty teams. Early intervention and the use of Rapid Response Teams (RRT) improves patient outcomes and saves lives (Stevens, 2022).

AN OBSTETRICS SEPSIS STORY

Fiona B. was a 28-year-old gravida 1 para 0 who lived two hours from the closest hospital with her husband, Jed. She called her obstetrician (OB) 12 hours following discharge from the Postpartum unit. Fiona reviewed her discharge paperwork which listed signs and symptoms of reportable concerns

and recommendations to seek care if present. She complained of feeling "very tired." Her complaints included lethargy, fever, chills, and back pain for the last 6 hours. She was instructed by the OB service to visit the Emergency Department (ED).

On arrival, Fiona informed the triage nurse that she had just had a baby. Her vital signs upon arrival were 108/58 BP, pulse 101, respiratory rate 22 with an oral temperature of 100.1° F.

The triage nurse placed Fiona in an ED bed and notified the nurse and the ED MD. Upon ED MD assessment, it was noted that Fiona had right-sided costovertebral angle (CVA) tenderness. Her urine analysis (UA) dip showed 2+ bacteria and protein. She denied any headache or blurry vision, and her deep tendon reflexes (DTRs) were normal. Her lung sounds were clear. The ED MD reached out to Fiona's Obstetrician for consultation.

The ED physician's orders included. CBC, CMP, and a urinalysis (UA)

- Chest x-ray and an ultrasound (US) of the abdomen
- Blood and urine cultures
- IV saline lock
- Encourage oral intake
- Tylenol 650 was ordered PO q6 hrs. prn fever greater than 100.4

Fiona was readmitted to the Postpartum unit for observation for 24 hours and arrived onto the Postpartum unit a little after midnight. On arrival to the Postpartum unit, a set of vital signs was obtained and placed in the EHR.

- Temp- 100.9
- O^2 sat 95%
- BP 95/51
- HR 112

The OB was notified by the RN and ordered a bolus of 500 ml. of NS fluid and to repeat a set of VS following the bolus. Following the fluid bolus an hour later, the certified nursing assistant (CNA) obtained a second set of vital signs, which were recorded in the Electronic Health Record (EHR)

- Temp -100.9
- O^2 sat 93%
- B/P 89/43
- HR 119

A "Best Practice Alert" triggered the bedside RN that Fiona's vital signs were not within normal limits, and the RN promptly reassessed Fiona and notified the Rapid Response Team (RRT). After assessing Fiona, the RRT nurse placed a call to the OB and initiated "Standardized Procedures for Nurse Initiated Orders," started a second line, ordered lactate, and arterial blood gases (ABGs), initiated a fluid bolus, and placed Fiona on oxygen, via nasal cannula.

While waiting for the OB to respond, VS are measured every 5 minutes. Twenty minutes had passed since a call to the OB had been placed. Fiona's O^2 saturation was steadily worsening. The RRT RN replaced the nasal cannula with a non-rebreather at 15 L. Fiona had become increasingly altered and confused. The RRT RN placed a code call.

The last set of vital signs before the code was paged overhead are documented as

- O^2 sat 84% on 15 L non-rebreather
- B/P 68/39
- HR 138

Upon the ED team arrival 5 minutes later, Fiona had a pulse but was obtunded; she was being ventilated via a bag-mask device by a member of the RRT. The decision was made to intubate by the emergency department physician. The lactate results were received, and the emergency department physician ordered broad-spectrum antibiotics. Hyperlactatemia in sepsis and septic shock occurs because of tissue hypoperfusion leading to global tissue hypoxia and accelerated anaerobic glycolysis (Ryoo & Kim, 2018). Blood and urine cultures were still pending so to expedite treatment a broad-spectrum antibiotic was ordered. Antibiotics were started 20 minutes following the order. Two liters of NS had been infused, and another 1000 ml of NS was ordered to infuse over 30 minutes. A foley catheter was placed by the nursing staff, and the emergency department physician inserted a central line in anticipation of the need for vasopressor administration.

This activity is designed to increase knowledge and skills in maternal sepsis. Nurses need to be able to recognize early warning signs of sepsis and mobilize specialty teams to improve patient outcomes and save lives.

Upon completion of the learning activity the learner will be able to:

a. Understand the physiology and early warning signs of maternal sepsis.
b. Know how the standard of care for mobilizing Rapid Response Teams.
c. Assist attorneys with review and expert testimony with maternal sepsis cases.

The author, reviewers, and nurse planners all report no financial relationships that would pose a conflict of interest.

This activity has been awarded 1 Contact Hour of credit. The activity is valid for credit until March 1, 2026.

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Fiona was stabilized and transferred to the Intensive Care Unit (ICU).

Her treatment included:

- Admit to Critical care
- Sepsis management
- IV normal saline (NS) for a total of 30 ml/kg within three hours, then 125 ml/hr
- Broad spectrum antibiotics
- Vital Signs per Critical Care Guidelines
- Strict I/O
- Norepinephrine to keep mean arterial pressure (MAP) > 65
- Serial lactate levels until lactate is less than 2
- Am, CMP, CBC with Diff,
- Titrate ventilator settings q6 hour per arterial blood gas (ABG)
- Consult with Maternal Fetal Medicine

Fiona required blood products and vasopressors to maintain a MAP > 65. Fiona was successfully extubated on day six. She remained in the ICU over the next few days due to concerns related to respiratory distress. Despite the administration of diuretics, Fiona's urinary output was of concern. She was diagnosed with acute kidney damage related to sepsis. Before discharge home, a temporary dialysis catheter was placed aseptically per interventional radiology, and after spending 11 nights in the hospital, Fiona was discharged home.

The pathogen responsible for her infection was E Coli, the organism frequently responsible for sepsis in OB patients (Shields et al., 2021). Dialysis was initiated with the prediction that her kidneys would heal. Despite utilizing a breast pump, she was unable to provide breast milk for her newborn. Baby girl Sarah was exclusively formula fed. After six months of dialysis, Fiona's kidney function improved to the degree that dialysis was discontinued. She was followed closely by a nephrologist who informed her she would likely need a kidney transplant in the future.

Jed's sister, an RN in an acute care setting, encouraged Fiona to consult with an attorney regarding her care. She could not understand how a "healthy young woman could become so ill after an uncomplicated delivery." She believed Fiona should have been tested for a UTI before discharge. Jed and Fiona agreed and retained an attorney.

Concerns for her health, trauma from the ICU stay, and feelings of loss and guilt related to lack of breastfeeding and bonding with Sarah led Fiona and Jed to therapy. Jed found Fiona fragile and depressed, despite medications. Both complained of loss of intimacy in the marriage.

Fiona's attorney contacted a labor and delivery expert witness to review the case. He asked her opinion on breaches in the standard of care related to her labor and delivery stay and the readmission to the postpartum floor.

LNC CONSIDERATIONS

Sepsis is a medical emergency. It is a potentially life-threatening condition that occurs when the body's response to an infection damages its own tissues.

Sepsis is a medical emergency. It is a potentially life-threatening condition that occurs when the body's response to an infection damages its own tissues.

Sepsis may progress to septic shock very quickly. This dramatic drop in blood pressure can lead to severe organ problems and death. (CDC, 2022) The "sepsis bundle" has been central to the implementation of the Surviving Sepsis Campaign (SSC) from the first publication of its evidence-based guidelines in 2004 to its recently updated version in 2019. As with acute myocardial infarction and stroke, early identification and appropriate initiation of the sepsis bundles saves lives early and improves outcomes (Levy, Evans, & Rhodes, 2018). Physiologic adaptations to pregnancy often mask signs and symptoms of deterioration related to sepsis (Phelan, 2018).

The expert witness reviewed the records from the two hospital stays and the pertinent hospital policies and procedures related to the care.

THE FIRST ADMISSION

The standard of care was met during the labor and delivery stay. Vital signs were taken per policy and remained within normal limits. The catheter associated urinary tract infection (CAUTI) prevention order set was adhered to while the catheter was in place. Frequent perineal hygiene care and foley care and maintenance were documented. There was no policy for testing for infection prior to discharge and no symptoms of infection before discharge. Documentation included that Fiona and Jed had been provided education and an informational flyer on post-birth warning signs and verbalized the knowledge prior to discharge. It addressed the danger signs of sepsis and other postpartum complications and encouraged families not to hesitate or delay in notifying the physician. The Association of Woman's Health Obstetrics and Neonatal Nurses (AWHONN) recommends discharge education to patients and family members to facilitate early treatment of sepsis (2022). The expert found this

discharge teaching exceeded the standard provided by similar hospitals.

THE SECOND ADMISSION

During the second hospital stay, the Postpartum nurse was alerted by the Maternal Early Warning Trigger in the EHR that the patient was deteriorating and quickly and appropriately escalated concerns to the RRT team. While it is true that Fiona's condition deteriorated rapidly, this is not uncommon in sepsis. Healthy OB patients may tolerate sepsis well initially and then progress quite dramatically (CMQCC, 2022).

Early warning system (EWS) scores are tools hospital care teams use to recognize the early signs of clinical deterioration and to act on these scores to intervene early. These early markers are easily captured using clinical data in the Electronic Health Record (EHR). The institution of EWS over the last ten years in the general population throughout many United States hospitals has shown an impressive decrease in morbidity and mortality rates. This finding inspired population-specific healthcare organizations such as AWHONN to collaborate with and endorse efforts to develop an EWS tool specifically designed for the pregnant population. Tools such as the Maternal Early Warning Triggers (MEWT) use routinely available clinical data such as vital signs and lab values to alert clinicians to intervene in patients at risk for deterioration. (Parfitt, 2019). The use of EWS tools empowers staff nurses and, in some hospitals, a family member, to summon a designated group to evaluate signs of a worsening condition critically and quickly. Steps can be taken to avoid the worst outcomes, including transferring the patient to an intensive care unit if necessary (IHI, 2022).

Standardized procedures for nurse-initiated orders for the Rapid Response RN enable prompt initiation of diagnostic tests and implementation of interventions. These policies are written by individual facilities and are intended to treat specific clinical conditions when cardiac arrest is not the identified emergency, and a physician is not present or immediately available to intervene. Failing to treat and/or delay could lead to further deterioration in a patient's condition. RNs who function under Standardized Procedures are specially educated to do so and must meet facility-specific education, training, and competency (BRN, 2022).

The expert felt that the appropriate and timely initiation of the Standardized Procedures by the Rapid Response Nurse had a profound impact on the overall patient outcome and could find no delays in care or missed opportunities or errors within the initiation of the "sepsis bundles."

Pregnant women are at higher risk for UTIs than the general population due to the relaxation of smooth muscle and dilation of ureters which may allow bacteria to migrate from the bladder to the kidney (Gupta, 2022). Fiona had no history of frequent UTIs and denied urinary symptoms during her first admission.

CONCLUSION

Pregnant and postpartum women are vulnerable to sepsis because of alterations in the immune system. Typically,

Early warning system (EWS) scores are tools hospital care teams use to recognize the early signs of clinical deterioration and to act on these scores to intervene early. These early markers are easily captured using clinical data in the Electronic Health Record (EHR).

younger and healthy they can tolerate sepsis longer than older, sicker patients. However, they may rapidly become critically ill. Early recognition and implementation of sepsis bundles improve outcomes and preserve organ function.

The MEWT is specific to the pregnant population; it considers the normal physiological changes in pregnancy.

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More resources:

Sepsis Alliance https://www.sepsis.org/

Surviving Sepsis Campaign (SSC), https://www.sccm.org/Clinical-Resources/Guidelines/Guidelines/Surviving-Sepsis-Guidelines-2021

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Traumatic Brain Injuries and the Criminal Defense Case

Justine Hanna, RN, BSN, RNC-NIC and Keli Heskett, RN, BSN, CEN, LNC

Keywords: Criminal defense, defending TBI, analysis of TBI, legal nurse consultants, TBI, subject matter experts, traumatic brain injury, concussion, brain injury

When evaluating Traumatic Brain Injuries (TBIs), no two clients nor cases are the same. Cases complicated by a TBI require even greater attention to detail in the analysis of medical records. These details include an understanding of the neuropsychiatric sequelae that comes from the TBI, which include mood disorders, major depression, mania, psychosis, anxiety, post-traumatic stress disorder (PTSD), and personality changes (McGarity et al., 2019). The legal nurse consultant (LNC) who assists attorneys with TBI cases must use a systematic approach to assist the attorney clients. The LNC must know how to decipher medical records to illustrate the severity of the injuries, potential complications, and anticipated pitfalls that inherently accompany the analysis of TBIs. This article will provide the LNC with pearls for understanding the implications of traumatic brain injuries.

INTRODUCTION

According to the Centers for Disease Control and Prevention (CDC, 2022), there were over 223,000 TBI-related hospitalizations in 2019 and over 64,000 deaths. With these startling statistics, it is unsurprising that LNCs are asked to review cases complicated by traumatic brain injury. Such cases require specific attention to detail in the analysis of medical records and an understanding of the TBI's neuropsychiatric sequelae, such as mood disorders, major depression, mania, psychosis, anxiety, post-traumatic stress disorder (PTSD), and personality changes. (McGarity et al., 2019).

The CDC reported that 25 - 85% of all individuals involved with the criminal justice system report a history of a TBI (CDC, 2022). Those involved with the criminal justice system are more likely to have suffered a TBI than the general population. TBIs appear to be associated with an earlier incarceration age, increased violence risk, and more convictions (Williams et al., 2018). LNCs who work on criminal defense cases may be asked to analyze these cases. Criminal defendants must be evaluated for a history of TBIs that have occurred before the event in which they are the defendant. Analysis of a traumatic brain injury from a criminal defense perspective requires changing the typical approach an LNC takes when evaluating a case. This article discusses a systematic and creative approach to evaluating an interesting, albeit challenging, criminal defense case. The names, dates, and unique identifiers have been removed to maintain confidentiality.

TRAUMATIC BRAIN INJURY OVERVIEW

The first step in evaluating a case complicated by a traumatic brain injury is to reach out to an expert when the case is received. While some TBI cases do not require in-depth knowledge of pathophysiology, neuropsychiatric sequelae, and behavioral changes that are often seen in a traumatic brain injury, many cases require familiarization with said inner workings, and expert consultation is always preferred. Numerous medical journals, textbooks, reputable websites, and podcasts are available for reference on traumatic brain injuries. Several of these are included in the references at the end of this article.

Expert Consultation

Consultation with an LNC experienced with TBI review is a great place to start when evaluating any case complicated by a TBI, especially one involving a criminal defense case. Several factors may impact the evaluation, such as specific state or federal laws and statutes, accessibility of all pertinent medical records, and the individual's ability to pay for the evaluation and expert consultation. Providing the attorney-client with brilliant yet affordable physician experts can be challenging, so be prepared to interview many. Be clear with the physician expert regarding the type of case, as some experts shy away from criminal cases. It is the attorney's responsibility to provide the expert with additional case details. Think outside the box regarding physician experts for the TBI case. Examples of experts commonly consulted are Neurologists, Neuropsychologists, Epilepsy Specialists, Neuroscientists, Physical and Occupational Therapists, Forensic Psychiatrists, Forensic Psychologists, Neuroradiologists, and Neurocritical care specialists.

Definition

A TBI occurs when a sudden trauma causes damage to the brain. This damage may occur due to an assault, injury, or other penetrating or closed brain injury. It is also defined as an alteration in brain function or other evidence of brain pathology caused by an external force (Dulla & Pitkänen, 2021). The initial brain injury is referred to as the primary brain injury. The subsequent cascade of molecular injury mechanisms initiated during the initial trauma and continuing for a few hours or days after the primary injury are called secondary brain injury. Secondary brain injury can devastate many individuals causing electrolyte imbalances, inflammatory responses, and mitochondrial dysfunction. It is hypoth-

This activity is designed to increase understanding of the implications of traumatic brain injuries. Nurses need to be able to decipher medical records to illustrate the severity of TBIs, potential complications, and anticipated pitfalls that inherently accompany the analysis of TBIs to assist attorneys with TBI cases.

Upon completion of the learning activity the learner will be able to:

a. Understand the neuropsychiatric sequelae that come from TBI.
b. Decipher medical records to illustrate the severity of the injuries, potential complications, and challenges with analysis of TBIs.
c. Assist attorneys with TBI cases using a systematic approach.

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TBI Severity Table		
Mild	**Moderate**	**Severe**
GCS 14-15	GCS 9-13	GCS <9
Brief alteration of consciousness, feeling dazed.	Loss of consciousness > 30 minutes; less than one day	Loss of consciousness > 1 day
Difficulty with attention / memory	Acute confusion for up to one week	Confusion lasting over one week
Blurred vision / Fatigue	Nausea or vomiting	Dilation of one or both pupils
Post-traumatic amnesia < 24 hours after injury	Post-traumatic amnesia > 24 hours after injury	Post-traumatic amnesia > 24 hours after injury
Normal Imaging	Normal or abnormal imaging	Injuries visible on CT or MRI

Figure 1

esized that secondary brain injury occurs because of impaired cerebral autoregulation, which leads to cerebrovascular congestion and malignant cerebral edema with increased intracranial pressure (Evans & Furman, 2022).

Symptoms of a brain injury may include cognitive deficits, motor deficits, communication and language deficits, perceptual or sensory deficits, functional deficits, social difficulties, regulatory disturbances, and personality or psychiatric changes (Johns Hopkins, 2022). The extent to which a primary and secondary brain injury has occurred must be considered when evaluating a case complicated by a traumatic brain injury.

Glascow Coma Scale		
Eye Response	Open spontaneously	4
	Open to verbal command	3
	Open in response to pain	2
	No response	1
Verbal Response	Talking / Orientated	5
	Confused speech / Disorientated	4
	Inappropriate words	3
	Incomprehensible sounds	2
	No response	1
Motor Response	Obeys commands	6
	Localizes pain	5
	Withdraws from pain	4
	Abnormal flexion	3
	Extension	2
	No response	1

Figure 2

Categories of Traumatic Brain Injury

Traumatic brain injuries are classified as mild, moderate, and severe based on severity and clinical indexes at the presentation time. These clinical indexes include the Glasgow Coma Scale (GCS), loss of consciousness, and post-traumatic amnesia (PTA). The GCS objectively describes the extent of impaired consciousness in acute medical and trauma patients. It was first published in 1974 at the University of Glasgow by Neurosurgery professors Graham Teasdale and Bryan Jennett (Teasdale et al., 2014).

The Mayo Classification System for Traumatic Brain Injury Severity is often used to distinguish moderate to severe brain injuries as there can be limitations in some of the severity indicators, such as neuroimaging, which may underestimate the amount of damage in a diffuse axonal injury (Powell et al., 2019). The Mayo Classification for TBI Severity includes the above indicators, i.e., loss of consciousness, GCS, PTA, and abnormalities on neuroimaging, and also includes the presence of skull fractures (Powell et al., 2019). This system was developed because single indicators can be unreliable. For example, early sedation following a TBI can decrease the GCS score due to the effects of sedation and not the injury from the TBI. Systemic or psychological shock and polytrauma-associated organ failure have also extended the PTA period. Figure 1 contains common symptoms of mild, moderate, and severe brain injuries.

Evaluation Tools

There are numerous evaluation tools an LNC may come across when evaluating a TBI case. These assessment tools may be combined with other assessment tools or classification systems. Below are some of the most common evaluation tools for examining a TBI's extent, effects, and lifetime impact.

- **Mini-Mental Exam (MME)** - The Mini-Mental State Examination (MMSE) is the best-known and the most often used short screening tool for providing an overall measure of cognitive impairment in clinical, research, and community settings (Arevalo-Rodriguez et al., 2021).
- **Montreal Cognitive Assessment (MoCA)** - Highly sensitive tool for early detection of mild cognitive impairment.
- **Abbreviated Westmead Post Traumatic Amnesia Scale (A-WPTAS)** - When combined with the GCS, it is an objective measurement of post-traumatic amnesia (Ontario Neurotrauma Foundation, 2022).
- **Rancho Levels of Cognitive Functioning** - The Rancho Levels of Cognitive Functioning consists of 8 levels and is a clinical tool to describe the cognitive and behavioral patterns found in individuals with brain injuries recover. This aids healthcare

professionals in planning future treatment for the individual.

- **Disability Rating Scale (DRS) -** Measures functional change during recovery, rating the person's disability level from none to extreme. The DRS assesses cognitive and physical function, impairment, disability, and handicap.
- **Functional Independent Measure (FIM) -** Measures a person's level of independence in activities of daily living. Scores can range from 1 (complete dependence) to 7 (complete independence).
- **Nexius II Criteria -** Neuroimaging (CT) is indicated for a significant skull fracture, scalp hematoma, neurologic deficit, altered level of alertness (GCS ≤14), abnormal behavior, coagulopathy, or persistent vomiting.
- **Glasgow Coma Scale -** The Glasgow Coma Scale (GCS) estimates coma severity based on eye, verbal, and motor criteria. Typically the first assessment is made to determine the extent of the brain injury. Serial assessments are performed per the hospital's protocol and can be administered by the Registered Nurse or Physician. A GCS score alone cannot diagnose nor predict the extent of a TBI but is utilized as a gauge to determine the extent of the primary and secondary injuries.

Location of Injury

The location of the brain injury is one of the most important factors when evaluating a TBI case. This information will guide the analysis of symptomatology the client may or may not be exhibiting. For instance, if the individual has an injury to the frontal lobe, symptomatology may include movement issues, personality changes, and problem-solving difficulties. Injury to the temporal lobe may result in memory and language difficulties, and injury to the cerebellum may cause the individual to have issues with balance or coordination of movement. Identification of the location of the injury is an essential step in the systematic analysis of a traumatic brain injury. When evaluating a criminal case, the location of the injury may assist in explaining the behavior for which an individual is unaware or unable to control.

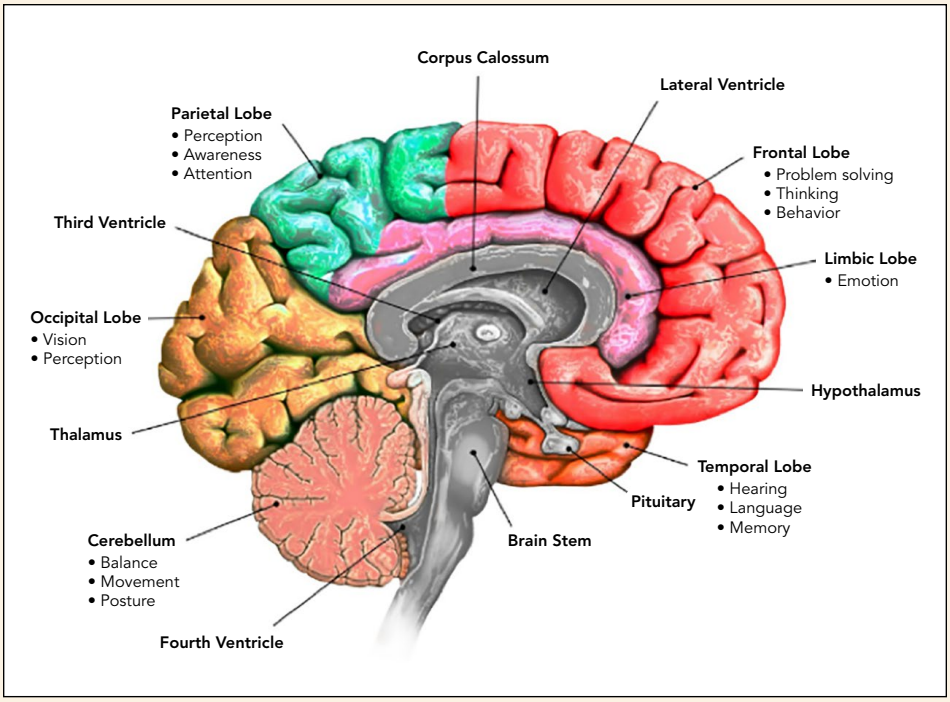

Figure 3

COMPLICATIONS OF A TRAUMATIC BRAIN INJURY

Concussion

The hallmark symptoms of a concussion, sometimes referred to as a mild TBI or mTBI, are confusion and amnesia. Confusion and amnesia may be short or long-lasting and typically dissipate within a few days to a few months.

Amnesia

Individuals with moderate to severe traumatic brain injuries often suffer from long- and short-term memory problems. They may not remember the incident or events leading to the incident that caused the brain injury. This loss of memory from the traumatic brain injury, known as post-traumatic amnesia (PTA), can last weeks to months, depending on the severity of the injury (Hart & Sander, 2018). PTA is the interval from injury until the individual is oriented and can form and later recall new memories (Hart & Sander, 2018). Amnesia almost always involves loss of memory of the traumatic event. It frequently includes loss of recall of the events immediately before (retrograde amnesia) and after (anterograde amnesia) the head trauma (Evans & Whitlow, 2022). An individual diagnosed with amnesia due to head trauma may not be the most reliable witness to the events surrounding the traumatic event. Careful analysis of the individuals' orientation, location of brain injury, and memory recall at the time of the event and post-event should be considered by the LNC.

Medications Administered

Medications administered during the initial brain injury and after that may affect memory and cause lasting cognitive impairment in the aged brain (Wu et al., 2019). Although sedatives, general anesthetics, and opioid pain medication may be necessary during treatment and

There are numerous evaluation tools an LNC may come across when evaluating a TBI case. These assessment tools may be combined with other assessment tools or classification systems.

stabilization, these medications may affect memory processing, formation, and recollection (Wu et al., 2019). The LNC should carefully analyze the medications administered and the administration time frame.

Compounding Effects of a Traumatic Brain Injury

A subset of patients who experience a traumatic brain injury suffers from Post-Concussive Syndrome (PCS), which manifests as a diverse group of symptoms, including dizziness, headaches, blurred vision, fatigue, memory, and emotional and behavioral problems (Evans, 2022). Most of these brain injuries are classified as mTBIs. It is important to note that there does not have to be a loss of consciousness for PCS to occur.

Several studies have illustrated that traumatic brain injuries lead to significant loss of brain volume, which causes progressive loss of brain tissue volume, also known as atrophy, which continues for many years post-injury. Patients with traumatic brain injury showed lower gray and white matter volume in multiple brain regions compared to controls at baseline. Gray matter functions to receive information and regulate outgoing details, while white matter transmits signals to the brain, spinal cord, and body regions. Simply put, the effects of a traumatic brain injury are long-lasting. There is no documented correlation between atrophy and time since injury or age at baseline. According to Brain: A Journal of Neurology (Cole et al., 2018), traumatic brain injury leads to a significant loss of brain volume, triggers progressive neurodegeneration, and is related to cognitive impairments and poorer functional outcomes. This study also found that the individuals with lower gray and white matter volume had poor memory performance and recall. A complete brain injury evaluation requires a review of all neuroimaging, including structural imaging (voxel-based morphometry) and functions imaging such as CT scan, MRI, PET scan, or Diffusion Tensor Imaging (DTI).

HOW A TRAUMATIC BRAIN INJURY COMPLICATES THE CRIMINAL DEFENSE CASE

Although injuries sustained and the severity of the TBI are a large part of the case evaluation, special attention must be given to the areas of the brain affected by the brain injury, the degree to which the individual suffered from PTA, and any cognitive-altering medications administered during the acute event and in the days after. Injuries to the cerebral cortex, specifically the frontal lobes, are often the areas most affected by injury to the brain. As previously discussed, this brain area is responsible for advanced functions such as thought processing, reasoning, emotions, behavior, and sensations (Evans & Whitlow, 2022). The LNC must carefully analyze the data in the medical record, paying particular attention to any aberrant behaviors that may indicate a TBI. Figure 4 lists several neuropsychiatric issues that frontal lobe injuries may present.

Presentation of Frontal Lobe Injuries May Include:

Cognition

- Impaired temporal discrimination for recency and time span
- Impaired ability to sustain attention
- Difficulty in the reversal of perspective
- Defects in planning behavior

Affect

- Flat, blunt, or labile affect
- Low frustration tolerance
- Changes in personality
- Marked perseveration
- Impaired self-control
- Incompetent or ineffectual behavioral productions

Social-Interpersonal Behaviors

- Inability to obtain/maintain employment
- No maintenance of word flow or difficulty turning off verbiage
- Insensitivity toward others
- Impaired ability to modulate emotional response during sustained social interaction. (Harold v. hall, disorders of executive functions, civil and criminal law applications, 1993)

Figure 4

Case Study Background

Mr. Y, a 24-year-old man, was charged with aggravated assault of an associate and was facing the possibility of twenty years in prison. Mr. X, the plaintiff in this case, was a 52-year-old man found in a retail parking lot in broad daylight, in and out of consciousness, with multiple traumatic wounds to his head and face. Mr. X's injuries were so severe that they required emergent intubation and air ambulance evacuation to the closest trauma center. Mr. X spent the next seventeen days in intensive care, seven of those intubated and sedated. He then went on to spend an additional nine days

in a step-down unit. Mr. X was discharged to a comprehensive brain injury rehabilitation and support facility, where he remained for three months. Between days fourteen and seventeen of his hospitalization, Mr. X was interviewed by police, who identified Mr. Y as his attacker. Mr. Y was arrested and charged with aggravated assault. At this point, we were retained for evaluation of the traumatic brain injury and expert witness location.

The Legal Nurse Consultant Perspective

Evaluation of the medical records for Mr. X was conducted using the methodology mentioned above. Reviewing the EMS and flight records first, Mr. X had a GCS of 6 on scene, spoke incoherently, and was not oriented to person, place, time, or event. Mr. X was given Fentanyl, Ketamine, and Rocuronium for sedation, paralysis, and pain management.

Upon arrival at the trauma center, neuroimaging showed that Mr. X had skull fractures in the temporal and parietal bones with a large acute subdural hematoma in the frontal lobe. Mr. X's images also revealed previous neurosurgery with unknown etiology. Mr. X's TBI was classified as severe by the resident Neurosurgeon and confirmed by the Mayo Head Injury Classification System. On day nine, Mr. X began to speak; however every question he was asked, he would answer with the name of his cat. Mr. X's GCS scores ranged from 12-14 for the duration of his inpatient hospital stay. Mr. X also showed signs of aggression, had frequent bouts of crying, or screaming, and displayed bizarre and unsafe behavior, which required physical restraints for his protection on numerous occasions.

The secondary brain injury was evident on day five when Mr. X's electrolytes became abnormal, and he went into renal failure. On day fifteen, the speech therapist documented that "client retains less than 75% of short-term memory questions and less than 50% of long term". By day seventeen, Mr. X became oriented to self only. Numerous medical providers caring for Mr. X during the inpatient hospital stay documented that "Mr. X has no recollection of events leading to assault." The last documented assessment of Mr. X was before discharge on day 36; "Mr. X's GCS was 14, short-term and long-term memory retention slightly improved, oriented to person, place, and time, and with assistance, he could complete most ADLs".

Information and evidence were pieced together using a systematic approach to complete a compelling narrative of Mr. X's TBI. Several expert physicians opined on the severity of Mr. X's TBI and PTA and determined that his memory recall was unreliable due to the severity of his injury. During the trial, it was revealed that Mr. Y was indeed on scene; however, in the role of a rescuer, not an assailant. A combination of PTSD and dissociative amnesia caused Mr. X to incorrectly identify Mr. Y as his assailant. Mr. X had noted that Mr. Y was the last face he had remembered seeing. Through the systematic analysis of Mr. X's TBI and expert witness testimony, counsel for Mr. Y secured a not-guilty verdict.

SUMMARY

Cases complicated by traumatic brain injuries require a systematic approach and understanding of the neuropsychiatric sequelae, the severity of the injury, potential complications, and anticipated pitfalls that inherently accompany the analysis of traumatic brain injuries. Using a systematic approach will allow the LNC to review both plaintiff and defense cases, assisting the attorney in understanding the complexities of the case and developing a successful strategy for litigation.

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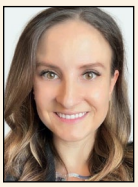

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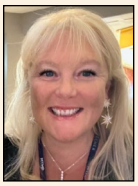

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Diagnostic Overshadowing

Sandy Gardner, RN, BSN, CNLCP, LNC

Keywords: Diagnostic, Overshadowing, Disability, Ableis, ADA

Diagnostic overshadowing mistakenly attributes symptoms to a person's disabilities. It stems from bias and discrimination. The Joint Commission considers diagnostic overshadowing a sentinel event when a patient is harmed. There are several steps that can be taken to prevent this from occurring and causing harm to the disabled patient. There are also implications for the LNC to focus on when reviewing cases.

Diagnostic overshadowing means attributing new symptoms to an existing problem rather than a new or possible comorbid condition. Diagnostic overshadowing has been described as symptoms of physical ill health mistakenly attributed to a mental or behavioral problem as being inherent in the person's learning disabilities or needs (Blair, 2023).

Ross, Levtan, and Szyszko first used the term "diagnostic overshadowing" in 1982 to describe the tendency to assess individuals with intellectual disabilities less accurately or consistently. The results of this risky practice can be disastrous for the patients experiencing this. It can mean misdiagnosis and potential harm to individuals with intellectual/mental disabilities and others. People with disabilities have a higher occurrence of physical health problems and lower incidence of diagnosis and treatment. Most of the time it stems from discrimination and stigma (Molloy, 2021).

Individuals that have a diagnosis of mental illness or disability are not the only marginalized group that is vulnerable to this risk. Those with diagnoses of autism, mobility and neurological deficits, history of substance abuse, low literacy, and those are Lesbian, Gay, Bisexual, Transgender or Queer/Questioning (LGBTQ) and others are also at risk of diag-

nostic overshadowing (The Joint Commission, 2022).

WHY IT IS IMPORTANT TO ADDRESS

People with disabilities can sometimes have different means of communicating compared to non-disabled individuals. If someone exhibits new behaviors or current symptoms are worsening or becoming unmanageable or uncomfortable, there may be physical health issues that need to be investigated (DDDS Nurse Consultant Resource Guide, 2014). Clinicians may be overwhelmed and pushed to rush through appointments meaning possible less accurate and thorough assessments of the disabled patient. Things may get missed. In only 36% of encounters with disabled individuals, the medical provider went away understanding the patient's concerns (The Joint Commission, 2022). A recent study found that about one-third of United States physicians do not know their legal requirements and duties under the Americans with Disabilities Act (ADA) (Rossetti, 2021).

Title II of the ADA applies to health services by state and local governments; Title IV of the ADA relates to public accommodations which cover private health care services. Clinicians working in private or public healthcare facilities are to treat people with reasonable accommodations in place as necessary to fit the clinical presentation and history to the appropriate diagnosis and treatment of that particular patient (Rossetti, 2021). Diagnostic overshadowing affects all concerned because the patients are misdiagnosed, and the medical team and facility can be responsible for not providing the best care to their patients, which could lead to complaints, investigations, patient safety investigations by internal agencies and possibly even a lawsuit (DDDS Nurse Consultant Resource Guide, 2014).

As an example, in Schramm vs. Montage Health (2019) the plaintiff Kelly Schramm sued the Community Hospital of the Monterey Peninsula (CHOMPS). She alleged she was transferred to another facility against her will after an assault. No rape kit was administered, and she was not given proper attention because she had been diagnosed with bipolar disorder in the past. She felt they jumped to attributing her current concerns to past admissions related to her bipolar disorder. She was transferred to another hospital and when she attempted to leave, she was unlawfully detained which caused further harm (Schramm vs. Montage Health, 2019).

PREVALENCE

According to The Joint Commission (2022), diagnostic overshadowing is so harmful that it is considered a sentinel event. Over one billion people are estimated to have a disability. This represents about 15% of the world's population with up to 190 million (3.8%) of those 15 years old and older often requiring healthcare services. Pregnant women with disabilities have a higher risk of complications and 11 times the risk of maternal death. Those with disabilities have shorter life expectancies and having a disability is the strongest independent predictor for COVID-19 infection and the second strongest predictor for COVID-19 death. Americans with a disability are more than three times as likely to have arthritis, diabetes, or a heart attack, are five times more likely to experience stroke, Chronic Obstructive Pulmonary Disease (COPD), depression, be obese and have unmet medical, dental and prescription needs (The Joint Commission, 2022).

Diagnostic overshadowing is not a problem specific to the United States. A report published by the Joint Committee on Human Rights in the United Kingdom states individuals with disabilities are denied fundamental human rights by the public health service (Ali, 2008). This led to an investigation of the deaths of six individuals with disabilities and concluded that their physical medical needs had not been met due to poor practices and that ultimately their deaths were preventable (Ali, 2008).

RECOGNIZING AND ADDRESSING DIAGNOSTIC OVERSHADOWING

The Joint Commission (2022) suggests the following to recognize and address diagnostic overshadowing:

1. Start with the schools. Educational institutions should design training programs to identify the increased risk for diagnostic overshadowing and create education programs specifically dedicated to care of those with disabilities.
2. Use better listening and interviewing techniques for better patient interaction. Allow the patients to freely express themselves and pay close attention to non-verbal cues as well. It may be necessary to include family members and friends with the patient's consent.
3. Collect data about pre-existing conditions and health disparities during intake and create an alert for this

A report published by the Joint Committee on Human Rights in the United Kingdom states individuals with disabilities are denied fundamental human rights by the public health service

information in the patient's Electronic Health Record (EHR).

4. Pay attention to what the patient is telling you now (in the present) and look beyond the previous diagnoses to overcome cognitive bias. Listen to the here and now not the past.

5. Review policies and procedures and train staff on their responsibilities under the ADA.

When a patient is seeking medical help and they are told "it is all in your head" or it is implied to be something not related to physical needs but more mental, they are often referred to a mental health professional or they are not offered any diagnostic tests, this becomes diagnostic overshadowing and ultimately leads to both physical and mental consequences for the patient seeking help. (Mental Health Legal Advisors Committee, 2022).

IS THERE ANY WAY TO COMBAT IT?

According to the Mental Health Legal Advisors Committee, there are some steps that can be taken during the session with the physician: If you feel you are a victim, use the term "diagnostic overshadowing" so they know where you are and be very precise and detailed about your symptoms. Take a trusted family member or friend with you and if the provider refuses to order additional tests, ask why. Do not be afraid to seek a second opinion and find a doctor that will listen to you. Another question to ask the provider is if they would be providing different care if you did not have a mental or disability diagnosis.

IMPLICATIONS FOR THE LNC

Diagnostic overshadowing is sometimes difficult to discern. As nurses working with people with disabilities, we need to be able to identify specific signs and symptoms of the disability and compare this to the patient's baseline status so we know when there are deviations or changes that are new. Is the medical provider dismissing the patient's complaints or acting like they cannot be bothered? Did the medical providers look at anything else beyond the disability? What tests and procedures were ordered to determine if a physical issue is the problem? The medical provider should do a "deep dive", looking at the patient's complaints, their medical history, family history, activity level, and dietary preferences to find the root cause of what is happening. Did the providers document and address any differential diagnoses? Did the providers suggest an appropriate specialist? We know our own bodies best and if someone with a disability who cannot speak, they should bring an advocate for them if at all possible. That person should be well versed in their diagnoses, care needs, baseline and new symptoms. As clinicians, we must pay attention to these changes in health status.

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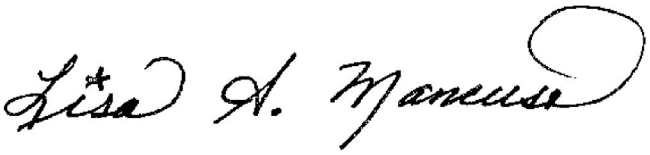
her attorney client succeed at trial. The detail in her work product was very impressive; I am not surprised her attorney client won. (And what a personal achievement for Stephanie!)

Writing a quality work product can be a challenge for even the most seasoned LNC. Consider using all the tools we have available to us. As a member of AALNC, take advantage of our affinity partnerships with discounts on products such as WordRake. Your excellent work product is not only your best marketing tool; it elevates the entire LNC profession.

Here's to happy writing and building a community of LNC Ferraris!



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