ORTHODOX JEWISH NURSES ASSOCIATION

THE OJNA JOURNAL

Issue 12 | Fall 2023

Emergency Medicine

Burn Injuries

Massive Transfusions

Fluid Resuscitation

OJNA Mission Statement:

The Orthodox Jewish Nurses Association was founded in 2008 by Rivka Pomerantz, BSN, RN, IBCLC. It seeks to provide a forum to discuss professional issues related to Orthodox Jewish nurses and arrange social and educational events. We strive to meet the needs of our members, promote professionalism and career advancement, and be a voice for Orthodox Jewish nurses across the world.

Contact us at info@jewishnurses.org

Follow us!

Orthodox Jewish Nurses Association

Orthodox Jewish Nurses Association (OJNA)

@ojnassociation

www.jewishnurses.org

TABLE OF CONTENTS:

EMEREGENCY MEDICINE

Editor's Note

The emergency or trauma nurse is probably the most well-known of nurses. TV shows and movies often showcase and glamorize the emergency room (ER) nurse; the drama, the pace, the relationships, the flashing lights. There is good reason for the glory. Emergency nurses face life and death every shift, often doing so against a racing clock, with an ever changing patient population and within a chaotic clinical environment. Many emergency nurses thrive in this adrenaline driven environment. They feed off the thrill of saving lives and making a visible difference, the autonomy, the challenge of problem solving, and the camaraderie generated in this unpredictable environment.

At the same time, there is a dark shadow that underlies the allure of the emergency nurse. Violence against healthcare workers is rising, and emergency care providers bear the brunt of this violence. Nearly 50% of ER physicians report being assaulted and 70% of ER nurses have been on the receiving end of physical violence. The number is higher when verbal abuse is included in the calculus. To further heighten the problem, ER nurses may not always identify violence as such. Especially when the violence is committed by a patient under the influence of drugs or alcohol, or by a patient with mental illness or impaired cognition, nurses often underwrite the assault as unintentional and therefore "part of the job". Thus the violence experienced by emergency nurses is likely even higher than reported.

Why might acts of workplace violence be higher in the ER than in other healthcare settings? Unlike many inpatient settings, the ER is a public, open environment, and functions 24 hours a day. Environmental factors such as overcrowding and long weight times exacerbate the stresses many patients are already dealing with, and patient factors such as pain, fear, and frustration can incline a patient towards aggression. Nursing factors may be involved as well. Nurses are the "gatekeepers" of the emergency room, and often the first provider patients and families come across. With a larger proportion of nurses being female, smaller stature and strength increase their vulnerability as well.

Whatever the cause, violence against emergency workers has far reaching effects. Not only does it directly harm the nurses experiencing it, but it also affects patient care, contributes to burnout and therein increases nurse turnover, which then further stresses the ED environment.

In recent years, efforts to decrease assaults and protect ER healthcare workers have been launched. The Emergency Nurses Association (ENA) and American College of Emergency Physicians (ACEP) jointly launched the "No Silence on ED Violence" campaign in 2019, which aims to "support, empower, and provide the resources… to effect safety improvements" by engaging governmental agencies, organizations and the public to target this rising epidemic. It is a start, although a lot more needs to be done.

We are proud of our emergency and trauma nurses, and we join our voices to the many others advocating for change.

Have a wonderful - and safe - summer,

Chaya Milikowsky

References:

[1] Blackmore, A. (2023). Addressing burnout in emergency nursing: Self care strategies for stress management. Health eCareers. https://www.healthecareers.com/career-resources/nurse-wellbeing/burnout-in-emergency-nursing-self-care-strategies

[2] Emergency Nurses Association. (2023). Workplace Violence https://www.ena.org/quality-and-safety/workplace-violence

[3] Hou, Y., Corbally, M., Timmins, F. (2022). Violence against nurses by patients and visitors in the emergency department: A concept analysis. J Nurs Manag 30(6):1688-1699. doi: 10.1111/jonm.13721

[4] Phillips, K., Knowlton, M., Riseden, J. (2022). Emergency department nursing burnout and resilience. Adv Emerg Nurs J. 44(1):54-62. doi: 10.1097/TME.0000000000000391

[5] Rozo, J. A., Olson, D. M., Thu, H., Stutzman, S.E. (2017). Situational factors associated with burnout among emergency department nurses. Workplace Health & Safety 65(6):262-265. doi:10.1177/2165079917705669

THIS ISSUE AT A GLANCE:

Sedation **does not equal analgesia.**

page 14

this book will make you reflect on your own experiences and **remind you why you chose this career**

How do ER staff **maintain sanity?**

page 24

WHEN YOU WANT TO DO SOMETHING,

YOU NEVER KNOW WHAT IS POSSIBLE,

AND ANYTHING CAN HAPPEN

page 22

oncology patients in the ED create a **high-risk, complex, multifaceted concern** with potential for poor outcomes

page 8

Caring for patients with sepsis almost always involves fluid resuscitation page 13

A thorough knowledge of both halacha and medicine is required to appropriately help those with serious illnesses on Shabbos.

page 25

TBIs involve a **complex physiological process** that occurs in multiple stages

page 11

MTPs help patients **survive devastating blood loss and hemorrhagic shock**

page 6

Burn injuries are among the **most common and serious injuries**

page 15

Suicide firearm death rate is eleven times higher in the U.S. than in other high-income countries.

page 4

CLEARLY ARTICULATE HOW THESE CONFLICTS ARISE AND IMPACT YOUR ABILITY **TO OBSERVE YOUR FAITH WHILE FULFILLING YOUR PROFESSIONAL OBLIGATIONS** page 27

RESEARCH RECAP

Ariela Kauffman, MSN, RN, PHN-BC, CMSRN | Staff Writer

U.S. Racial and Sex-based Disparities in Firearm-Related Death Trends

America has the highest rate of firearms ownership globally, with one third of American households having a firearm in their home. While mass shootings make headlines, most gun-related deaths are suicides and homicides. There are two firearms-related suicides for every firearms-related homicide in the U.S., and 73% of all homicides are related to firearms. Most victims of firearm homicides are young Black males.

The high lethality and availability of firearms make them a particularly dangerous method of attempted violence. A cross-sectional study published in PLoS ONE in 2022 investigated the trends and disparities in U.S. firearm suicide and homicide mortality from 1981-2020 (YPLL-75).

Data was collected between 1981 and 2020 from the Centers for Disease Control and Prevention (CDC) WISQARS database, which provides data on fatal injury reports and years of potential life lost, already coded and available to the public. Data from the U.S. population was adjusted by age and were divided by race and sex for analysis.

Increases in homicide and suicide between 2011 and 2020 most heavily impacted minority populations. The racial group that consistently ranked the highest in firearm-related homicides was the Black population, with death rates seven times higher than the White population (age-adjusted). Firearm homicide mortality rates were five times higher in Blacks than the racial groups with the next highest homicide death rates: American Indians and Alaskans. The U.S. overall homicide death rate is 7.5 times higher than that of other high-income countries, with drive-by firearm homicide death rates 25 times higher than other high-income countries. The study also found a recent spike in firearm homicide death rates in 2019 and 2020, particularly affecting Blacks and males.

Firearm-related suicide death rates were highest among Whites, which was double that of the Black population. Suicide death rates increased between 2019 and 2020. Men had a firearm suicide rate that was seven times higher than women. Globally, firearm suicide death decreased slightly while at the same time, in the U.S., the firearm suicide death rates increased. This is concerning as the suicide firearm death rate is eleven times higher in the U.S. than in other high-income countries. The increase in suicide rates from 2019-2020 indicates there may have been more firearm ownership and violence during the coronavirus pandemic.

All data collected suggests that firearm suicide and homicide deaths were more prevalent among white and black men compared to females. Additionally, during the last decade of the study, firearm homicide and suicide death rates increased for American Indians and Alaskan Natives, having the second-highest rates for both ethnic groups despite being a smaller proportion of the U.S. population.

This study demonstrated that Black and White men were most impacted by firearm deaths for both homicide and suicide death rates. Sex disparities were more significant than racial disparities. These results suggest that prevention efforts should focus on reaching specific demographic sectors and articulating the urgency of mitigating firearms-related deaths in the US.

Many advocate for background checks for gun purchases, which includes checks for restraining orders, fugitive status before selling firearms, checks on mental health status, and history of misdemeanors. States that check for these items have lower firearms-related death rates.

Reference:

Young, L. J., & Xiang, H. (2022). U.S. racial and sex-based disparities in firearm-related death trends from 1981–2020. PLoS ONE, 17(12): e0278304. https://doi.org/10.1371/journal.pone.0278304

Aspirin or Low-Molecular-Weight Heparin for Thromboprophylaxis After a Fracture

While most hospitalized patients receive some kind of venous thromboembolism prophylaxis, it is well known that those with orthopedic trauma are more at risk of this potentially fatal complication. The evidence-based clinical recommendation is to provide post-op anticoagulation to reduce the risk of death and other complications. Recent findings from meta-analyses indicate that aspirin may be as effective as low molecular weight heparin for patients undergoing joint arthroplasty. This, in combination with the fact that patients prefer aspirin, indicates a need for further study. Oral aspirin costs less and is easier to administer when compared to subcutaneous injection of low molecular weight heparin, also known as Lovenox. In hospitalized patients, oral medications are less often subject to refusal by patients and non-administration by nurses, as compared to injectable thromboprophylaxis drugs.

PREVENT CLOT, Prevention of Clot in Orthopedic Trauma, was a randomized controlled trial conducted at 21 trauma centers in the U.S. and Canada to determine if oral aspirin is as effective as Lovenox in thromboembolic outcomes in patients with orthopedic trauma.

A randomized study collected data from 12,211 adults who either sustained a fracture in any extremity and had to be treated operatively, or those with pelvic and acetabular fractures (who were treated both operatively and non-operatively). Participating patients were randomly selected to be administered 30 mg of low molecular weight heparin (Lovenox) twice a day or 81 mg of aspirin twice a day while in the hospital. After hospital discharge, patients continued to receive their thromboprophylaxis according to the clinical protocols of each hospital. The median duration of thromboprophylaxis post-hospital discharge was 21 days.

The primary outcome studied was death from any cause 90 days post-op, and secondary outcomes were nonfatal pulmonary embolism, deep-vein thrombosis, and bleeding complications. Secondary safety outcomes included bleeding events, wound complications, and surgical-site infections. All trial outcomes were evaluated at 90 days after randomization and were collected via an interview with the patient that was performed by the clinical research team dur-

(continued on following page)

ASPIRIN

(continued from previous page)

ing a clinical appointment or via telephone.

The mortality rate was 0.78% in the aspirin group and 0.73% in the low-molecular-weight–heparin group. Deep-vein thrombosis occurred in 2.51% of patients in the aspirin group and 1.71% of patients in the low-molecular-weight–heparin group usually within 16 days of randomization. The incidence of nonfatal pulmonary embolism was equal in both groups (1.49%). Bleeding complications and other serious adverse events were similar in the two groups as well.

Study findings suggest that thromboprophylaxis with aspirin was noninferior to low-molecular-weight heparin for the prevention of fatal events in patients with orthopedic trauma. This finding was consistent for outcomes of death related to pulmonary embolism and nonfatal pulmonary embolism. A very slight inscrease in the risk of DVTs was seen in the aspirin group, however this was deemed to have less clinical significance and often required no treatment. The study found no evidence of additional safety risks associated with aspirin thromboprophylaxis.

This study concluded that using aspirin as thromboprophylaxis was similar in effectiveness to the use of low molecular weight heparin for the prevention of death from any cause for patients suffering after pelvic or acetabular fractures, with and without surgery.

Aspirin is as safe and effective as low molecular-weight heparin in preventing fatal thromboembolism after orthopedic trauma.

Reference:

University of Maryland School of Medicine. (2023, January 18). Aspirin as effective as blood thinner injections to prevent deadly complications in patients hospitalized with bone fractures: Multi-center trial of more than 12,000 orthopedic trauma patients likely to change standard of care. ScienceDaily. Retrieved from www.sciencedaily.com/releases/2023/01/230118195700.htm. Originally published in New England Journal of Medicine 2023; 388:203-213: doi: 10.1056/NEJMoa220597

Head Injury and Long-term Mortality Risk in Community-Dwelling

Traumatic brain injuries (TBI) occur when an external physical force causes disruption in normal brain function and includes a primary and secondary phase. The primary injury is a direct result of the forces of the injury and affects the brain tissue. The secondary injury occurs over time and can affect a wide range of physiological processes. Some of these include blood-brain barrier dysfunction, edema, ischemia, and intracranial hypertension. Since mortality risk in the months after a TBI increases, investigators wanted to determine the long-term survival rate of those with TBI compared to the rest of the population in a recent study published in JAMA Neurology.

Participants included those with a self-reported history of a head injury and were recruited from communities in Minnesota, Maryland, North Carolina, and Mississippi. Investigators followed participants semi-annually with in-person visits. Head injury was defined by self-report and by data from emergency department visits and inpatient hospitalizations. Data collection included the month and date of each head injury, classified by the number of head injuries,using a time-varying variable, and then subset the injuries via ICD 9 and 10 codes based on severity classifications from medical records. Previous research has indicated that head injury is associated with significant short-term morbidity and mortality, but long-term survival and mortality among community-dwelling adults was unknown. This study aimed to investigate this gap. The cohort was followed over 30 years.

More than 13,000 participants were included in the study, and 2,402 had at least one head injury, while 512 had two or more head injuries. When comparing cause-specific mortality among those with and without head injury, the most common causes of death were neoplasm, cardiovascular disease, and neurologic disorders. Among those with a head injury, the cause of death was usually neurologic disorder and unintentional injury or trauma. Neurodegenerative diseases such as Parkinson's disease and dementia comprised a greater proportion of overall deaths among those with head injury than those without.

. Based on three decades of longitudinal follow-up, head injury was associated with decreased long-term survival time in a dose-dependent manner and a twofold increase in all-cause mortality risk. Subsequent head injuries further increase the risk of mortality. As far as severity, those with moderate, severe, or penetrating head injuries had a higher association with all-cause mortality.

These findings were consistent with previous studies indicating that the long-term survival of TBI patients is decreased as compared to the general population. The estimated median survival post-head injury is 4.7 years. These results are usually concentrated among older adults since one-third of TBI-related hospitalization and deaths occur in adults aged 75 years or older. The study found that cause-specific mortality, specifically neurological and unintentional trauma causes of death, were more frequent among individuals with a head injury, as were neurodegenerative diseases. Perhaps those with neurodegenerative disease are more likely to fall and sustain head injuries.

The study results highlight the importance of public health measures that prevent head injuries, and quick clinical intervention post-head injury to reduce morbidity and mortality soon after injury.

Limitations of the study included the inability to generalize findings to other U.S. regions and that self-reports were generated by those who require medical attention or had associated loss of consciousness, and that the data did not distinguish primary versus secondary phases of head injury.

Reference:

Elser, H., Gottesman, R. F., Walter, A. E., Coresh, J., Diaz-Arrastia, R., Mosley, T. H., & Schneider, A. L. C. (2023). Head injury and long-term mortality risk in community-dwelling adults. JAMA Neurology, 80(3), 260-269. https://doi.org/10.1001/jamaneurol.2022.5024

Massive Transfusion Protocol

By Tobi Ash, MBA, BSN, RN | *Staff Writer*

Blood transfusions

Blood transfusions are a fairly common medical procedure and are considered typically safe. Like any medical intervention, there are multiple complications a healthcare professional needs to be aware of and treat [1]. While fresh whole blood is thought of as the standard ideal for transfusion, blood is usually stored in components. These include packed red blood cells (PRBC), fresh frozen plasma (FFP), platelet concentrates, individual factor concentrates, and cryoprecipitate. A standard blood transfusion is typically one unit of PRBCs at a time [2].

FFP has specific and limited indications for use as it helps replace lost coagulation factors. It is used in cardiopulmonary bypass, decompensated liver disease, acute disseminated intravascular coagulation, and extracorporeal pulmonary support techniques. It is also used in massive transfusion protocols [3]. FFP was used together with vitamin K for warfarin-induced life-threatening hemorrhage. Today, prothrombin complex concentrate is often used instead [4].

Platelet transfusion is useful for platelet dysfunction or deficiency such as bone marrow failure. It is also used for massive transfusions where platelets are less than 50 X 10/L or where thrombocytopenia contributes to hemorrhaging [5].

Cryoprecipitate is made from FFP but is frozen and thawed multiple times to produce concentrated clotting factors including Factor VIII, von Willebrand factor, and fibrinogen. A cryo transfusion is typically used for dysfibrinogenemia or fibrinogen deficiency in massive bleeding, injury, invasive procedures, or acute disseminated intravascular coagulation [6].

Difference between a massive transfusion and a massive transfusion protocol

A massive transfusion was commonly defined for use on a patient who needs 10 units of PRBCs or the replacement of one entire blood volume in a 24 hour period. Currently, it is regarded that the transfusion of more than four units of PRBCs in an hour when the need for ongoing transfusions is apparent or the replacement of 50% of the total blood volume in three hours activates a massive transfusion protocol (MTP) [7].

Patients who may benefit from a massive transfusion include those with traumatic injuries, obstetric emergencies, certain surgeries, and gastrointestinal bleeding [8].

In the past, hemorrhaging patients were reactively treated, and assessment of their laboratory results directed treatment such as crystalloids, PRBCs, and coagulation factors based on those values. Today, MTPs are initiated proactively and manage blood transfusions in hemorrhaging patients. MTPs interrupt the devastating trifecta of acidosis, coagulopathy, and hypothermia that develop with massive transfusions by managing and addressing significant blood loss and improving patient outcomes [7].

About 10% of massive transfusions are administered to those who undergo military trauma, and about 3-5% are those who experience civilian trauma. Although the incidence of patients requiring massive transfusions is low, mortality for these patients is high [8].

There are multiple criteria to consider when initiating an MTP including acid-base balance, volume status, bleeding management, coagulation abnormalities, and tissue oxygenation [7].

The goal of an MTP is to limit hypoperfusion to vital organs and its associated complications [8].

The history of MTP

Healthcare professionals who treated traumatic war injuries requiring massive blood transfusions found early administration of FFP improved patient survival. Further studies in the early 2000s showed that using FFP and RBC transfusion improved survival rates [9]. While the ideal is to transfuse fresh whole blood, the time needed to ascertain blood type and other safety factors is too long, and this results in substantial depletion of coagulation factors. Giving platelets, coagulation factors, and PRBCs preserves the constitution of blood [7].

Activating an MTP

An MTP is activated in response to massive bleeding, and many facilities have a single MTP guideline used for traumatic hemorrhage in the ER and trauma unit, for operative bleeding, gastrointestinal bleeding, and obstetric hemorrhage. However, not every patient who is bleeding requires an activation of an MTP [8].

A facility that does not have a written policy of when to activate an MTP in the absence of traumatic, surgical, or obstetric bleed, can encourage their health care employees to use clinical judgment by assessing the following [10]:

- Patient stability
- Type of bleeding
- How rapid is the bleeding and expected trajectory of the bleeding?
- Is the patient in hemorrhagic shock?

Effect of an MTP

It is critical to ascertain and control the source of bleeding. Depending on the situation, surgical packing, interventional radiology, or a surgical repair may be needed while the MTP is activated or ongoing [10].

Patients that are on oral anticoagulants such as warfarin require immediate reversal with a prothrombin complex concentrate. These patients may still require an MTP. Patients with platelet dysfunction are commonly given desmopressin emergently [10].

Besides acute blood loss, there is hypovolemic shock with hemorrhage. An MTP helps to expand the intravascular volume and ensure oxygen delivery to the tissues. In addition, patients with significant blood loss tend to be acidotic, as prolonged hypoperfusion leads to acidosis, and a low pH reduces the activity of coagulation factors. This compounds coagulopathy by delaying and thinning fibrin clot formation [8].

(continued on following page)

(continued from previous page)

Patients with acute blood loss or decreased blood volume are more vulnerable to hypothermia. A body temperature of 34 degrees celsius affects coagulation by reducing the enzymatic activity of coagulation proteins and platelet plug formation. At 30 degrees celsius, approximately 50% of platelets show reduced activation [8].

Administering volume expanders to a hypothermic and acidotic patient may lead to severely altered hemostasis. Continued bleeding creates a vicious positive feedback loop, increases hypothermia and acidosis, and further consumption of coagulation factors [8].

In most facilities, once an MTP is activated, the blood bank provides swift and timely delivery of all the required blood components. This streamlines the process of decreasing dependency on lab testing and the need for communication between the lab, blood bank, and medical team [10].

Most MTP have a predefined ratio of components to include FFP, cryoprecipitate, platelets, and PRBC [11].

While an MTP can be given in a peripheral intravenous catheter, it is preferable to use large central access such as a hemodialysis catheter, or multi-lumen access catheter (MAC) with a level one pressure infuser to increase the flow rate. The presence of an arterial catheter is ideal because it provides blood pressure monitoring as well. In certain situations, it may be optimal to place a femoral central line and arterial line right next to each other on the same side (aka the "dirty double"). With a rapidly exsanguinating patient, it is challenging to place 100% sterile central or arterial lines, and in such cases, semi-sterile lines can be placed with the goal of removing them within 24 hours. In many cases, bleeding will have been controlled and the patient will not require the use of a long term central or arterial line [10].

Post-MTP care

During a massive transfusion, adjusting blood components related to lab values is almost impossible. By the time lab results are available, they will already be obsolete. Once the MTP is completed, one would need to check labs and adjust as needed. Post-MTP evaluation includes checking the patient's temperature, blood pressure, ECHO to check volume status, and specific labs including a complete blood count (CBC), international normalized ratio (INR), partial thromboplastin time (PTT), prothrombin time (PT), fibrinogen, and electrolytes including ionized calcium and potassium [10].

While the process is not perfect, MTPs help patients survive devastating blood loss and hemorrhagic shock. As nurses, it is important to note that a MTP varies across medical facilities, and it is important to familiarize yourself with your institution's protocols and guidelines to ensure the best outcome for your patient.

Massive Transfusion Protocol Checklist [10]

Labs (order them, but do not delay treatment while you wait)

- Type & crossmatch
- CBC, INR, PT, PTT, fibrinogen (TEG if available)
- Electrolytes such as calcium, magnesium, and phosphorous, ionized calcium
- Venous or arterial blood gas if there is concern for significant acidosis

Activate MTP and communicate with the blood bank

- Triggers for initiation and termination are clinical
- Designate a specific person to call the blood bank immediately

Consider additional fibrinogen (e.g., cryoprecipitate)

- Consider a 1:1:1:1 ratio of PRBC, FFP, platelets, and cryo
- Fibrinogen may be especially important in obstetric hemorrhage

Calcium

- 1-2 gram calcium chloride or 3-6 grams calcium gluconate per MTP round (6 units PRBC)
- Follow ionized calcium if possible, target normal to mildly elevated calcium levels (e.g., ~1-3 mM)

Tranexamic acid (TXA)

- Consider 1 gram IV, if difficulty achieving hemostasis
- May continue infusion at a rate of 1 gram over 8 hours—especially in obstetric or early traumatic hemorrhage

Intravenous desmopressin (DDAVP)

- Consider using for renal failure, or antiplatelet drugs
- Dose is 0.3 mcg/kg (max 21 mcg) IV

Review anticoagulant medications and consider reversal

- Warfarin reversal
- Dabigatran reversal
- Xaban reversal
- Thrombolysis reversal
- Heparin reversal
- Antiplatelet reversal

Avoid acidosis

- For intubated patients, adjust the ventilator to optimize pH

Avoid hypothermia

- Use warmed fluids if possible
- Follow temperature readings and consider pre-emptive warming (e.g., heated air and blankets)

Hemodynamics

- Target lower than typical mean arterial pressure, pending source control
- Stop MTP when patient is hemodynamically stable

References:

[1] Lotterman, S., & Sharma, S. (2022). Blood transfusion. *StatPearls [Internet]*. https://www.ncbi.nlm.nih.gov/books/NBK499824/

[2] Carson, J. L., Triulzi D. J., & Ness, P. M. (2017). Indications for and adverse effects of red-cell transfusion. *New England Journal of Medicine, 377*(13), 1261 1272. https//pubmed.ncbi.nlm.nih.gov/28953438/

[3] Müller, M.C., Arbous, M.S., Spoelstra-de Man, A. M., Vink, R., Karakus, A., Straat, M., Binnekade, J. M., de Jonge, E., Vroom, M. B., & Juffermans, N. P. (2015). Transfusion of fresh-frozen plasma in critically ill patients with a coagulopathy before invasive procedures: A randomized clinical trial (CME). *Transfusion, 55*(1), 26-35. https://pubmed.ncbi.nlm.nih.gov/24912653/

[4] Tran, H. A., Chunilal, S. D., & Tran, H. (2014). An update of consensus guidelines for warfarin reversal. *The Medical Journal of Australia*, *200*(2), 82. https://pubmed.ncbi.nlm.nih.gov/24484098/

[5] Squires, J. E. (2015). Indications for platelet transfusion in patients with thrombocytopenia. *Blood Transfusion, 13*(2), 221-226. https://pubmed.ncbi.nlm.nih.gov/25369586/

[6] National Clinical Guideline Centre & National Institute for Health and Care Excellence (NICE). (2015). Cryoprecipitate: thresholds and targets. *NICE Guideline, No. 24*, 264–274. https://doi.org/https://www.ncbi.nlm.nih.gov/books/NBK327570/

[7] Patil, V., & Shetmahajan, M. (2014). Massive transfusion and massive transfusion protocol. *Indian Journal of Anaesthesia*, *58*(5), 590-595. https://doi.org/10.4103/0019-5049.144662

[8] Jennings, L. K., & Watson, S. (2021). Massive transfusion. *StatPearls [Internet]*. https://www.statpearls.com/point-of-care/39308#ref_30197000

[9] Riskin, D. J., Tsai, T. C., Riskin, L., Hernandez-Boussard, T., Purtill, M., Maggio, P. M., et al. (2009). Massive transfusion protocols: The role of aggressive resuscitation versus product ratio in mortality reduction. *Journal of the American College of Surgeons, 209*(2), 198–205. https://pubmed.ncbi.nlm.nih.gov/19632596/

[10] Farkas, J. (2021). Massive transfusion protocol (MTP). Internet Book of Critical Care (IBCC). https://emcrit.org/ibcc/mtp/

[11] Nunez, T. C., Young, P. P., Holcomb, J. B., & Cotton, B. A. (2010). Creation, implementation, and maturation of a massive transfusion protocol for the exsanguinating trauma patient. *Journal of Trauma and Acute Care Surgery, 68*(6),1498–505. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136378/

Urgent or Emergent: The Complexities of Emergency Care for the Oncology Patient

By Yocheved Weinreb, MSN, RN, OCN | *Staff Writer*

Oncology patients are facing increasingly complex medical conditions and treatment regimens and, counter to what you may think, there has been a shift in how their care is delivered. Historically, the majority of oncology care focused on inpatient-based care to manage complicated therapies and side effects. However, the past 20-30 years has seen an increase in all aspects of oncology care delivery moving to the ambulatory setting—including infusion, radiation, surgery, bone marrow, and stem cell transplants. It is now estimated that greater than 80% of oncology care is taking place outside of the acute care setting [1]. Despite the advancements in research and technology making this possible, the increasing complexity and outpatient treatments may also be contributing to an escalation in visits to the emergency department (ED) and unplanned hospitalizations for oncology patients due to cancer-related complications. It may be because adverse effects of treatment are now occurring at home as opposed to a hospital unit. Commonly, oncology patients present to the ED for fever, pain, nausea/vomiting, dehydration, and dyspnea [2,3]. The majority of cancer patients will experience at least one emergency during the course of their disease [4]. Analysis of ED usage over a seven year period found patients in active treatment for cancer accounted for 4.2% of visits and were much more likely to result in an admission—59.7% compared to 16.3% for non-cancer related visits [5]—and more likely to be admitted to an intensive care unit [6]. Whatever the cause of this increase, the variable setting of an emergency room is not the ideal situation for this unique and vulnerable population. These considerations have created a need for healthcare facilities to strategize and put measures in place to effectively, efficiently, and safely deal with the rise in emergency room visits for patients with cancer.

It is clear that unplanned ED visits and subsequent hospitalizations are not ideal for oncology patients. Aside from the possibility of compromising quality of care and putting them further at risk for suboptimal outcomes, it also increases their already considerable financial burden [6] and places a burden on the healthcare system with, what may be, inappropriate utilization of resources [7]. The question arises—are these visits reducible or, even, preventable? This question has led to a search for alternate settings for delivering optimized care. This issue is currently receiving a lot of attention since the Department of Health and Human Services has identified these visits and hospitalizations as avoidable due to a gap in care of patients with cancer. In response, the Centers for Medicare and Medicaid Services has developed a new quality measure, OP-35, to evaluate providers based on ED visits and admissions for patients receiving cancer treatment [7]. One way a number of hospitals treating oncology patients have attempted to address the question and mitigate risks is to establish some kind of urgent care facilities dedicated to their oncology population and staffed with oncology trained clinicians. The goal of these clinics/units is to optimize care by anticipating and providing for their patients' emergent needs and reducing the need for visits to the ED and hospitalization [8]. For best practice, facilities will include access to radiology services, laboratory services, pharmacy services, and infusion services and provide care around the clock [3]. Without access to sufficient services, patients may still get referred to the ED and the efficiency of maintaining an all-hours oncology urgent care facility is called into question [2].

Other strategies aim to address symptoms while the patient is at home before they become emergent and therefore avoid ED visits and hospitalizations. A telephone triage system manned by oncology nurses following a standardized set of assessments and a clinical decision making tree has been effective in reducing ED visits and initial data from a newer approach—digital symptom monitoring and management—seems promising. Digital symptom monitoring and management is all remotely monitored by a separate team (also oncology clinicians) in partnership with the oncology care team. The novelty is the identification of patients at high risk for potentially preventable acute care visits and a daily symptom assessment query via an app on the phone, tablet, or computer. The care team is alerted to address any issues based on patients' answers each day. The working theory is that the daily contact allows for closer "observation" and earlier recognition of needs that may be addressed before they become emergent [7].

While prevention is always better, and addressing the needs of the patient with cancer outside of the ED seems to be the ideal, there is no way to completely

(continued on following page)

(continued from previous page)

eliminate ED visits for all oncology patients. It still remains that early recognition and appropriate treatment of oncologic emergencies is vital to restoring and maintaining immediate and long-term quality of life for this population. The question then becomes what is the best way to care for patients with cancer when they do land in the ED? Due to the vulnerable and immunocompromised nature of this population, some EDs have dedicated oncology spaces. This provides isolation and some protection for these patients [4]. Some EDs have collaborated with their hospital's oncology team and implemented a dedicated clinical pathway for oncology patients admitted to the ED. This dedicated clinical pathway includes an oncology resident in the ED facilitating and coordinating care for all oncology patients admitted to the ED, thereby reducing their time spent in the ED and improving overall outcomes [9].

In summary, oncology patients in the ED create a high-risk, complex, multifaceted concern with potential for poor outcomes. However urgent or emergent issues are addressed, telephone triage, telehealth and digital symptom monitoring and management, dedicated oncology urgent care clinics, close collaboration between the emergency medicine team and the oncology team, or a combination of any of these strategies, there is a clear benefit of improvement in all quality indicators when implementing some kind of strategy to mitigate risks when caring for oncology patients with urgent or emergent needs.

References:

[1] Pirschel, C. (2019). The vital role of oncology nursing in ambulatory care, ONS Voice. voice.ons.org/news-and-views/the-vital-role-of-oncology-nursing-in-ambulatory-care

[2] Majka, E. S. & Trueger, N. S. (2023). Emergency department visits among patients with cancer in the U.S., JAMA Network Open, 6(1). https://doi.org/10.1001/jamanetworkopen.2022.53797

[3] Fleming, C. & Kelly D. (2022). Oncology urgent care clinics: Understanding utilization and best practices. Journal of the Advanced Practitioner in Oncology, 13(3). https://doi.org/10.6004/jadpro.2022.13.3.17

[4] Sadik, M., Ozlem, K., Huseyin, M., AliAyberk, B., Ahmet, S., & Ozgur, O. (2014). Attributes of cancer patients admitted to the emergency department in one year, World Journal of Emergency Medicine, 5(2). https://doi.org/10.5847/wjem.j.issn.1920-8642.2014.02.001

[5] Battaglia, G. (2018). New strategies emerge for urgent care in oncology, OncLive, 19(8). onclive.com/view/new-strategies-emerge-for-urgent-care-in-oncology.

[6] Lash, R. S., Hong, A. S., Bell, J. F., Reed, S. C., & Pettit, N. (2022). Recognizing the emergency department's role in oncologic care: a review of the literature on unplanned acute care, Emergency Cancer Care, 1(6). https://doi.org/10.1186/s44201-022-00007-4

[7] Daly, B., Michaelis, L. C., Sprandio, J. D., Kapke, J. T., Narra, R. K., Malosh, E., Zervoudakis, A., Holland, J., & Zablocki, M. (2020) From theory to practice: Implementation of strategies to reduce acute care visits in patients with cancer, 2020 ASCO Educational Book. https://doi.org/10.1200/EDBK_281139

[8] Sedghi, T., Canavan, M., Gross, C. P., Davidoff, A. J., Gould Rothberg, B. E., Strait, M., Sinanis, N., & Adelson, K. B. (2019). Impact of an oncology urgent care clinic on emergency department rates, Journal of Clinical Oncology, 37(15) suppl. https://doi.org/10.1200/JCO.2019.37.15_suppl.6615

[9] Legramante, J. M., Pellicori, S., Magrini, A., Frittelli, T., Formica, V., & Roselli, M. (2018). Cancer patients in the emergency department: A "nightmare" that might become a virtuous clinical pathway, Anticancer Research, 38(11). https://doi.org/10.21873/anticanres.12998

Alcohol and Benzodiazepine Withdrawal

By Scott Topiol, MSN, RN, CEN, PHN, MICN

The Case

An emergency medical services (EMS) crew arrives at your busy emergency department (ED) with a 31-year-old female having an "anxiety attack." The paramedics report being called to a residential alcohol treatment center because the patient was not feeling well. She is tearful and tremulous. Her initial vital signs are blood pressure 144/89; heart rate 110/bpm; respirations 24/min; pulse oximetry 99%; temperature 99.8F (37.7C). The EMS crew tells you they frequently get called to the same treatment center for patients experiencing anxiety or minor vital signs changes.

Background

According to the National Institutes of Health (NIH), an estimated 16.6 million Americans suffer from alcohol use disorder (AUD) [1]. Of those, half will experience alcohol withdrawal syndrome (AWS) at some point in their lifetime, with 5% developing life-threatening delirium tremens (DT). With treatment, the fatality rate from DTs has fallen significantly to 3 – 5%. Untreated, nearly 20% of people that experience delirium tremens will die [2].

A Car Without Brakes

The brain and nervous system can be thought of as a complex highway where electrical signals are constantly moving. To maintain order and balance, the system needs both accelerators and brakes. In the context of the nervous system, excitatory neurotransmitters act like accelerators while inhibitory neurotransmitters act like brakes.

N-methyl-D-aspartate (NMDA) is one of the body's major excitatory neurotransmitters. When released, NMDA plays the role of the gas pedal increasing the activity of neurons and stimulating the brain. On the other hand, gamma-aminobutyric acid (GABA) is the body's main inhibitory neurotransmitter. GABA acts like a brake pedal reducing the sensitivity of neurons and making them less likely to fire. Just as one would not want to drive a car that was all gas and no brakes, maintaining balance between excitatory and inhibitory neurotransmitters is crucial.

Alcohol causes central nervous system (CNS) depression by increasing the activity of GABA (applying the brakes) while simultaneously decreasing the activity of NMDA (letting off the gas). When alcohol is consumed for brief periods of time, the balance between GABA and NMDA is restored quickly. However, in the case of chronic alcohol usage, the body compensates for its depressant effects by decreasing GABA (less brakes) and increasing NMDA (more gas) [3]. When a person's alcohol level is abruptly reduced, this compensatory mechanism is suddenly unopposed. The result? Extreme stimulation as the gas pedal gets stuck at full throttle and the brakes go out.

A common misconception is that individuals cannot develop AWS unless their blood alcohol concentration reaches near zero. It is very important for healthcare professionals to recognize that AWS occurs as the result of a relative decrease, rather than a complete absence, of serum alcohol. This means serious and life-threatening symptoms can occur even if the patient is not completely sober.

AWS Recognition and Progression

6 Hours After the Last Drink: Tremors

Early recognition of AWS is key to preventing symptom progression. For most patients, symptoms start about six hours after their last drink [4]. Early AWS symptoms may include anxiety, headache, nausea, vomiting, insomnia, mild tremors, tachycardia, and mild hypertension.

The presence of tremors is common during alcohol withdrawal but can sometimes be difficult to detect. One simple technique for identifying subtle withdrawal tremors is to ask the patient to stick out their tongue and observe for fasciculations. It is impossible to feign a tongue tremor, and some believe that its presence is a more sensitive finding than a hand tremor [5].

8 – 12 Hours After the Last Drink: Hallucinations

Alcohol hallucinosis usually occurs at least eight hours into withdrawal. This

(continued on following page)

stage is characterized by the presence of hallucinations in addition to other symptoms. These hallucinations can be visual or auditory as well as gustatory (taste) and olfactory (smell). Individuals often report seeing animals in the room (stereotypically, pink elephants). Formication, the sensation of bugs crawling on the skin, is also common [3].

During the alcohol hallucinosis stage, the individual remains fully aware of their surroundings and maintains an otherwise normal mental status. This is the key distinction between hallucinosis and the more serious alcohol delirium.

12 – 24 Hours After the Last Drink: Seizures

Withdrawal seizures most commonly occur 12 to 24 hours after the last drink, but some individuals may seize just a few hours after stopping their alcohol intake. When seizures do occur, they are usually tonic-clonic in nature and are usually brief, lasting only a few minutes, and often occurring in clusters. Withdrawal seizures are thought to occur as a result of the removal of the inhibitory effects of GABA in the brainstem [3].

24 – 72 Hours After the Last Drink: Delirium Tremens

Alcohol delirium, better known as delirium tremens or DTs, typically begins about 24 to 72 hours after the last drink though for some it can occur in as little as eight hours [4]. This stage is characterized by acute delirium or psychosis, agitation, and severe autonomic excitability (i.e., tachycardia, hypertension, diaphoresis). It can sometimes be difficult to differentiate alcohol hallucinosis from delirium tremens since hallucinations may occur during both. The easiest way to tell the two apart is to remember that during alcohol hallucinosis the victim maintains normal cognition and in alcohol delirium they do not.

Delirium tremens is a medical emergency and those experiencing it require aggressive treatment and close monitoring often in the intensive care unit. Cardiac dysrhythmias and respiratory collapse may occur leading to cardiac arrest and death. Early recognition and treatment of AWS can help prevent the onset of delirium tremens.

CIWA-Ar: A Screening Tool

One of the most common tools for determining the risk and severity of alcohol withdrawal is the Clinical Institute Withdrawal Assessment for Alcohol Scale-Revised (CIWA-Ar). The CIWA-Ar is a 10-item scale that is scored based on the patient interview and physical examination. Many institutional AWS protocols and guidelines rely on serial CIWA-Ar assessments to guide treatment [6].

While helpful, the CIWA-Ar is not without its drawbacks. Performing a CIWA-Ar assessment is often time-consuming taking anywhere from 5 to 10 minutes to perform on average. The tool also requires that the patient be able to cooperate with the assessment and therefore cannot be used for severely ill patients or those that are sedated or intubated.

In one study, it was found that the CIWA-Ar was less likely to be utilized for patients of Black race in the ICU compared to other groups. In fact, once these study findings were adjusted, the only two significant risk factors for inadequate CIWA-Ar assessments were intubation and Black race [7].

Treating Alcohol Withdrawal

Benzodiazepines are the treatment of choice for managing AWS, including delirium tremens [8]. These medications increase the inhibitory effects of the GABA receptor by acting as GABA agonists (applying the "brakes"). Benzodiazepines reduce the severity of symptoms including the frequency of seizures, prevent the development of delirium, and reduce hospital length of stay [4].

Diazepam is widely considered the agent of choice, although there is no clear evidence supporting one benzodiazepine over another. The preference for diazepam is due to its rapid onset, predictable side effect profile, and relatively long half-life (30 – 200 hours). Diazepam does, however, produce active metabolites that must be processed by the liver. Consider using shorter-acting medications, such as lorazepam which does not produce an active metabolite, to reduce the incidence of adverse effects, including the potential for hepatic encephalopathy if significant liver dysfunction is present [9].

Active Seizures

Diazepam is the preferred first-line agent for withdrawal seizures, with a typical dose of 5 to 10 mg IV every 5–10 minutes as needed. Due to its short half-life, midazolam should be reserved only for patients requiring immediate seizure control that do not have established IV access as it can be given via either the intranasal (IN) or intramuscular (IM) routes [4].

Most AWS seizures will respond favorably to benzodiazepines, however some patients may develop recurrent or refractory seizures. Consider the addition of phenytoin or fosphenytoin in such cases. For seizures that do not respond to second-line agents, phenobarbital, valproic acid, propofol, and pentobarbital may be considered [4]. Monitor and manage the patient's airway and ventilatory status while using sedation agents. Continuous waveform capnography (end-tidal CO_2) is a particularly helpful tool to use for this purpose.

Wernicke's Encephalopathy

Wernicke's Encephalopathy (WE) is a serious neurological condition that results from a deficiency of thiamine (vitamin B1). Since the human body cannot synthesize thiamine, it must be obtained through diet. Malnutrition is common among individuals that chronically consume large amounts of alcohol. In addition to poor dietary intake, alcohol negatively affects gastrointestinal absorption further contributing to the development of WE.

The signs and symptoms of WE can be difficult to discern from those of acute alcohol intoxication or withdrawal and include confusion, visual changes, poor coordination, muscle weakness, and memory loss. If untreated, these symptoms will become permanent, resulting in a condition known as Korsakoff's syndrome [10].

Empiric treatment to prevent WE is recommended. Dosing protocols vary by institution, but a common approach is to give 100 mg of thiamine via slow IV push. For suspected WE, 200–500 mg of thiamine every eight hours for 72 hours may be considered [11].

Because Wernicke's is generally considered a condition that only affects those that use alcohol, it is believed that up to 80% of cases may go undiagnosed [10]. Any patient with inadequate nutritional intake or a malabsorption disorder is at risk of becoming thiamine deficient. Conditions such as Crohn's disease, pyloric stenosis, peptic ulcers, chronic diarrhea, and bariatric surgery can reduce thiamine absorption leading to WE. Many cases are only found upon postmortem examination. Consider obtaining a thiamine level for any patient with risk factors and unexplained cognitive or neurological changes.

Benzodiazepine Withdrawal

Alcohol is not the only substance that can lead to life-threatening

(continued on following page)

(continued from previous page)

withdrawals. Benzodiazepines are among the most prescribed classes of drugs in the United States and have many of the same effects on the body as alcohol. As GABA agonists, abruptly stopping a benzodiazepine after prolonged use will result in withdrawal symptoms that are virtually indistinguishable from AWS.

Benzodiazepine withdrawal should be treated in the same manner as AWS with short-acting benzodiazepines followed by a gradual taper used to treat withdrawal signs and symptoms. These withdrawals can be especially difficult to treat, as they often last considerably longer than AWS, lasting anywhere from one to three weeks [12].

Case Conclusion

The patient reports that she had her last drink about 12 hours ago right before she checked into the rehab center. While being triaged, she experiences a tonic-clonic seizure that lasts approximately two minutes. You administer an ordered 5 mg dose of diazepam IV and after a brief postictal period, she tells you that she is seeing animals in the room and feeling like bugs are crawling all over her. After an additional dose of diazepam, she reports improvement in her symptoms. You administered a dose of IV thiamine as prophylaxis against Wernicke's encephalopathy and maintain close cardiac monitoring. She is admitted to the ICU with a diagnosis of alcohol withdrawal syndrome where she is cared for under your facility's alcohol withdrawal protocol.

Key Points

- Alcohol withdrawal syndrome (AWS) is a potentially life-threatening condition caused by a rapid decrease in the plasma alcohol level as compared to the patient's baseline.
- Symptoms start as early as six hours after the last drink and include anxiety, headache, nausea, vomiting, insomnia, mild tremors, tachycardia, hypertension, hallucinations, and seizures.
- If untreated, AWS may lead to alcohol delirium also known as delirium tremens (DT) about 24 to 72 hours after the last drink. DTs are characterized by significantly altered mental status/delirium and autonomic excitability with a fatality rate of up to 20%.
- Benzodiazepine therapy is the primary treatment for AWS with diazepam due to its long half-life, although there is currently no strong evidence to support the use of one benzodiazepine agent over another.
- Thiamine (Vitamin B1) deficiency is common among those who chronically consume large quantities of alcohol and may lead to Wernicke's Encephalopathy. Empiric parenteral thiamine replacement should be considered for patients in this group regardless of symptoms.
- Withdrawal from benzodiazepines (i.e., alprazolam, lorazepam, clonazepam, diazepam) is virtually identical to alcohol withdrawal in its presentation and risk of death.

Scott Topiol, MSN, RN, CEN, PHN, MICN, is a board-certified emergency nurse and a nurse educator for a large metropolitan fire department. He is also an active Hatzolah member and military reservist. Scott lives in Los Angeles with his wife and three children and is currently pursuing a graduate certificate in global health and global health engagement from Uniformed Services University.

Hospital Management of Traumatic Brain Injuries (TBIs): A Brief Overview

By Simone Shafiro

Traumatic brain injuries (TBI) are a categorization of impact-related injuries that cause varying levels of brain damage. TBIs encompass a spectrum of severity ranging from minor concussions to profound brain damage and are the leading cause of mortality and morbidity among young adults [1]. TBIs can have significant short-term and long-term effects on a person's physical, cognitive, and emotional well-being. Currently, the Brain Trauma Foundation (BTF) is responsible for establishing management guidelines. Understanding the nursing implications of TBI management is crucial in ensuring improved patient outcomes in the hospital setting.

Pathophysiology

TBIs involve a complex physiological process that occurs in multiple stages. Initially, the direct impact and disruption of blood flow causes metabolic disturbances similar to ischemia. This leads to the accumulation of lactic acid, increased cell membrane permeability, and swelling. Insufficient anaerobic metabolism depletes adenosine triphosphate (ATP) stores which are essential for maintaining balance through membrane ionic pumps [2,3].

The subsequent stage, secondary injury, is characterized by continuous depolarization of cell membranes, excitotoxicity (excessive release of excitatory neurotransmitters like glutamate and aspartate), and the activation of calcium and sodium channels. This triggers the activity of enzymes like lipid peroxidases, proteases, and phospholipases. Consequently, apoptosis is initiated resulting in the breakdown of cell membranes and cell death [2,3].

Systemic inflammation that follows a TBI can contribute to additional organ dysfunction. The surge of catecholamines such as adrenaline after a TBI has the potential to elevate cytokine levels, exacerbating issues related to the endocrine system, respiration, and the heart. Despite the disruptive effects of TBIs on many vital organ systems, renal and hepatic complications are less common in TBI cases [3].

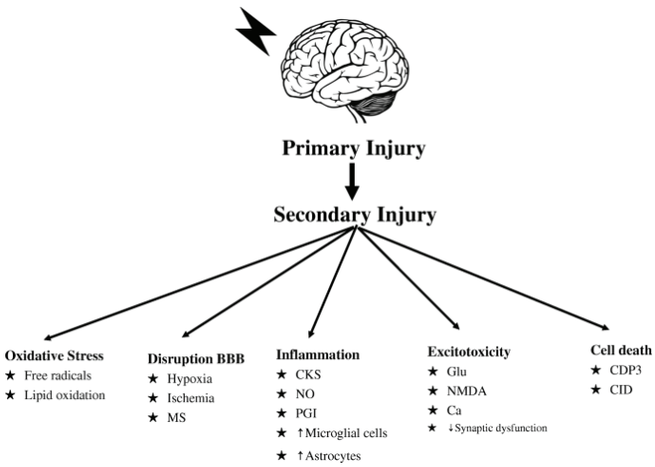


Figure 1: Categorization of Secondary Injury Pathophysiology [1]

(continued on following page)

(continued from previous page)

Diagnosis and Identification

Within 48 hours of the initial injury, a definitive Glasgow Coma Scale (GCS) score must be established. This score indicates the patient's level of consciousness through various physiological indicators. According to the BTF's updated 2016 guidelines, the current GCS rankings are 13 to 15 for mild brain injury, 9 to 12 for moderate brain injury, and 3 to 8 for severe brain injury [4].

Another diagnostic test that may be used is the computerized tomography (CT) scan. CT scans can detect intracranial hematomas, edema, and possible skull fractures. A magnetic resonance imaging (MRI) scan may also be used for TBI patients. With MRIs, smaller injuries can be located, such as contusions and gliosis. However, MRIs alone are not recommended as a method of TBI identification and diagnosis [5].

In 2018, the Food and Drug Administration (FDA) approved the UCH-L1 and GFAP biomarkers blood test. This test detects the two proteins, UCH-L1 and GFAP, that are released by the brain into the bloodstream during a mild concussion, or mTBI. The use of UCH-L1 and GFAP biomarker blood tests may be used to assess the necessity of a possible CT scan [6].

Monitoring Options

The BTF's updated TBI monitoring recommendations are placed on a scale based on the quality of the evidence currently available. Level I recommendations were derived from a high-quality body of evidence. In contrast, level IIA recommendations were based on a moderate-quality body of evidence, and level IIB and III recommendations were formulated using a low-quality body of evidence.

In addition to utilizing a GCS score, continuous monitoring of intracranial pressure (ICP) for two weeks after the initial event is considered a level IIB recommendation. Currently, this is the most recommended monitoring option to decrease the incidence of in-hospital and post-injury mortality [4]. When monitoring ICP scores, treatment is recommended above an ICP of 22 mmHg as these are associated with increased mortality [1].

Cerebral perfusion pressure (CPP) monitoring, in conjunction with intracranial pressure (ICP) monitoring, is currently recommended at a level IIB. The current recommended treatment threshold for CPP monitoring is 60 or 70 mmHg to decrease mortality in TBI patients [1]. Other options for advanced cerebral monitoring, such as jugular bulb monitoring of arteriovenous oxygen content difference (AVDO2) and brain tissue oxygen monitoring (PbtO2), are graded as level III and may be used to assess long-term post-injury outcomes [4].

Treatment and Management Interventions

Decompressive craniotomy is the primary intervention recommended to lower ICP scores and shorten intensive care stays. Despite its use in decreasing ICP, the procedure has not been shown to improve outcomes six months post-injury based on regular GCS score monitoring [1]. Based on the current evidence available, the BTF grades decompressive craniotomy at a level IIA.

Hyperosmolar therapies such as mannitol and hypertonic saline (HTS) have also been recommended for the reduction of ICP. The current recommended dosage of mannitol is 0.25 to 1 g/kg and should only be used once a baseline ICP score is established, especially for patients with ongoing neurological decline [4]. Despite some evidence suggesting the benefits of using hyperosmolar therapies, the BTF currently grades the treatment option as a level IIB and acknowledges that additional research must be conducted to understand the implications of its use further.

Graded as a level III because of its narrow therapeutic uses, cerebrospinal fluid (CSF) drainage may also be used to decrease ICP in patients with severe TBIs. Based on current guidelines, CSF drainage may be considered for use within 12 hours of the injury for patients with an initial GCS <6 [4].

According to current guidelines from the BTF, ventilation therapies, are classified as level IIB recommendations. Hyperventilation is utilized in such cases to reverse brain and cerebrospinal fluid (CSF) acidosis and manage ICP levels [4]. However, it is important to note that excessive cerebral vasoconstriction resulting from hyperventilation may lead to cerebral ischemia. Therefore, prolonged prophylactic hyperventilation with a target arterial partial pressure of carbon dioxide (PaCO2) of ≤25 mm Hg is not recommended.

The use of barbiturates for anesthesia, analgesia, and sedation is also currently classified as a level IIB recommendation. The use of propofol sedation is recommended for the management of ICP, although it has not demonstrated improvement in 6-month mortality outcomes [4]. Thiopental, on the other hand, has shown beneficial effects on cerebral blood flow (CBF) and cerebral metabolic rate (CMRO2). Despite this, thiopental can induce hypotension and counteract the reduction in ICP and CPP [1]. Although dexmedetomidine and ketamine have been found to have positive effects on the recovery of TBI patients, it is worth noting that they are not currently included in the BTF guidelines [1].

The administration of steroids is not recommended as a treatment strategy for improving outcomes or ICP in TBI patients. In fact, in patients with severe TBI, the use of high-dose methylprednisolone has been found to be associated with increased mortality and is considered to be contraindicated [1].

The BTF has established guidelines concerning patient nutrition, which recommend initiating feeding within the first week after the injury to achieve basal caloric replacement. It is suggested that patients should receive adequate nutrition by the fifth day post-injury, and no later than the seventh day, as this approach has been associated with decreased mortality rates [1].

Alongside treatment options for TBI patients, the BTF has put forward recommendations for prophylactic interventions. Prophylactic hypothermia, administered within 2.5 hours of injury and limited to a short-term period of 48 hours, is not recommended for improving outcomes in patients with a diffuse injury [1]. Once bleeding is stabilized, low-dose unfractionated heparin or low molecular weight heparin may be considered for use. However, it should be noted that the use of anticoagulation agents such as heparin can increase the risk of bleeding [4]. In patients requiring mechanical ventilation, early tracheostomy placement is recommended to reduce the risk of ventilator-acquired pneumonia (VAP) [1].

For preventing late post-traumatic seizures (PTS), the prophylactic use of phenytoin or valproate is not recommended. However, phenytoin is recommended for reducing the incidence of early PTS within seven days of injury, when the potential benefits outweigh the associated complications. There is currently insufficient evidence to support the use of levetiracetam over phe-

(continued on following page)

(continued from previous page)

nytoin in preventing early PTS and toxicity [6].

On the whole, TBI management is constantly evolving with ongoing advancements in our understanding of TBI pathophysiology and the development of new treatment options. The recommendations for TBI management are continually being updated based on the latest research findings and clinical evidence. Therefore, it is paramount for nurses and other healthcare providers to stay abreast of these changes and remain knowledgeable about recommended treatment and management strategies. By staying up-to-date and implementing evidence-based practices, nursing professionals can contribute to improved patient outcomes and provide the highest quality of care to individuals with traumatic brain injuries.

References:

[1] Farrell, D., & Bendo, A. A. (2018). Perioperative management of severe traumatic brain injury: What is new? *Current Anesthesiology Reports*, *8*(3), 279–289. https://doi.org/10.1007/s40140-018-0286-

[2] Ng, S. Y., & Lee, A. Y. (2019). Traumatic brain injuries: Pathophysiology and potential therapeutic targets. *Frontiers in Cellular Neuroscience*, *13*. https://doi.org/10.3389/fncel.2019.00528

[3] Kinoshita, K. (2016). Traumatic brain injury: Pathophysiology for neurocritical care. *Journal of Intensive Care*, *4*(1). https://doi.org/10.1186/s40560-016-0138-3

[4] Carney, N., Totten, A. M., O'Reilly, C., Ullman, J. S., Hawryluk, G. W. J., Bell, M. J., Bratton, S. L., Chesnut, R., Harris, O. A., Kissoon, N., Rubiano, A. M., Shutter, L., Tasker, R. C., Vavilala, M. S., Wilberger, J., Wright, D. W., & Ghajar, J. (2016). Guidelines for the management of severe traumatic brain injury, Fourth edition. *Neurosurgery*, *80*(1), 6–15. https://doi.org/10.1227/neu.0000000000001432

[5] Alexander, D. N., & Wong, E. C. (2021). Imaging in moderate to severe traumatic brain injury. *Manual of Traumatic Brain Injury*. https://doi.org/10.1891/9780826147684.0021

[6] Khellaf, A., Khan, D. Z., & Helmy, A. (2019). Recent advances in traumatic brain injury. *Journal of Neurology*, *266*(11), 2878–2889. https://doi.org/10.1007/s00415-019-09541-4

Simone Shafiro is a nursing student at Molloy University in Rockville Centre, New York. Simone currently works in a cardiac-surgical intensive care unit as a nursing assistant and is an aspiring critical care nurse. Simone lives in Brooklyn, NY, where she dedicates her free time to gardening and reading.

Fluid Resuscitation in Sepsis: Too Much of a Good Thing?

By Estie Mermelstein, MSN, FNP-BC, RN | *Staff Writer*

The cholera epidemic of 1829-1830 prompted some of the first intravenous (IV) crystalloid infusions to treat hypovolemic shock. Dr. W. B. O'Shaughnessy administered IV fluids to patients suffering from hypovolemic shock as a result of excessive, watery diarrhea—a cholera trademark. An 1832 edition of the Lancet reported his experiments of "the injection into the veins of tepid water, holding a solution of the normal salts of the blood" [1]. Several rather crude experiments using IV fluids followed with mixed results. While there were positive outcomes with IV fluid therapy—the first documented treatment of postpartum hemorrhage with IV saline in 1882—patients also died from sepsis due to unsterile IV insertions or from hemolysis due to unbalanced IV fluid components [1].

IV fluid administration was only performed by physicians until the 1940s when, during World War II, nurses were trained to insert IVs and administer fluids for more efficient, expedient medical treatment on the battlefield [2]. Today, it can be hard to find physicians (besides anesthesiologists) who are comfortable starting an IV, and they usually defer to a nurse! IV fluid therapy has come a long way since then as well, and its resuscitative role in the treatment of sepsis and septic shock has grown more nuanced.

Sepsis is a dysregulated host response to microbial infection, manifesting with a varied list of clinical symptoms that indicate a systemic effect, including elevated or decreased temperature, tachycardia, tachypnea, altered mental status, significant edema, ileus, oliguria, decreased capillary refill or mottling, and numerous abnormal laboratory findings [3]. When organ failure is also present, the patient has moved to severe sepsis, and when there is hypotension despite adequate fluid resuscitation, the patient has developed septic shock [3].

A main clinical component of sepsis is intravascular volume depletion due in part to decreased oral intake, sepsis-induced vasodilation, and capillary leakage. While the classic understanding is that administration of fluids will remedy this issue and maintain oxygen delivery to organs, recent studies have shown that this thinking is overly simplistic [4]. Many factors influence oxygen tissue delivery besides fluid volume, and each patient has a different hemodynamic response to IV fluids based on their heart's physiologic function. Recent studies have reported that almost half of septic patients do not improve after fluid bolus administration [4].

Fluid administration as a treatment for sepsis emerged as a major player after the landmark Early Goal-Directed Therapy (EGDT) trial in 2001, which reported a 16% decrease in mortality for septic patients who had received more IV fluids compared with controls [5]. As a result, IV fluid administration became a mainstay of sepsis treatment, and the current Surviving Sepsis Campaign (SSC) Guidelines compiled by the Society of Critical Care Medicine and the European Society of Intensive Care Medicine recommend early administration of a 30 mL/kg IV fluid bolus for patients with septic shock-induced hypotension [4]. However, liberal fluid replacement, which prioritizes cardiac output and end-organ perfusion, is not necessarily beneficial to patients with septic shock compared to more conservative fluid replacement which prioritizes optimizing pulmonary function with the goal of ventilator weaning.

A 2016 retrospective analysis of 609 patients with acute respiratory distress syndrome (ARDS) found that conservative fluid management led to a decreased mortality rate compared to liberal fluid management [6]. In light of recent studies that paint a more complex picture of fluid administration, a more conservative bolus of 20mL/kg may be more beneficial, while continuing to monitor patients' respiratory and hemodynamic function [2]. After initial resuscitation, continuing to administer IV fluids might lead to fluid overload and organ damage, and the current SSC guidelines recommend continually monitoring hemodynamics to guide therapy [4].

When deciding to replace fluids, it is important to know the characteristics of the different IV fluids available, which can be divided into crystalloids and colloids.

Crystalloid fluids are either isotonic, hypertonic, or hypotonic.

(continued on following page)

(continued from previous page)

Isotonic crystalloids have a similar tonicity to plasma and are therefore often used in septic shock treatment. Isotonic crystalloid solutions are either balanced or unbalanced. Normal saline is unbalanced since its chloride concentration is about 50% greater than the chloride content of plasma. Lactated Ringers is balanced with a chloride concentration similar to plasma since it includes an organic anion to act as an acid-base buffer such as lactate. Studies have shown that using fluids with high chloride concentrations for fluid resuscitation can cause hyperchloremic metabolic acidosis, decreased renal perfusion, acute kidney injury, altered inflammatory cascade, and reduced arterial blood pressure compared to balanced fluids [7]. Therefore, balanced isotonic crystalloids are considered first-line therapy for septic shock. Hypotonic and hypertonic crystalloid solutions are not usually used in sepsis since they do not closely resemble plasma.

Colloids consist of large molecules that do not permeate capillary membranes, pulling fluid into vasculature to expand volume. Albumin is one type of colloid which has shown promising effects in treatment of septic shock patients. A 2014 meta-analysis of randomized controlled trials found that patients with septic shock had a significantly decreased 90-day mortality when treated with IV albumin compared to those only given crystalloid (p value =.03) [8]. However, the fact that there is not enough definitive evidence of its benefit coupled with its high cost makes it an unpopular choice in clinical settings. The Surviving Sepsis Campaign recommends administering albumin to shock patients who need "substantial amounts of crystalloids," but does not specify how much albumin to administer, at what concentration, and whether to target a specific serum albumin level [2]. To try to correct for the high cost of albumin, semisynthetic colloids were developed including gelatins, dextrans, and hydroxyethyl starch (HES), but these products have been linked to adverse effects and increased mortality and should be avoided [4].

Caring for patients with sepsis almost always involves fluid resuscitation, and many additional factors besides the type of IV fluid

will come into play such as cardiac function, comorbidities, and electrolyte imbalances, to name a few. Bringing nursing knowledge of the different types of IV fluids and the adverse effects of fluid overload to the healthcare team allows a nurse to positively impact their patient's health.

References

[1] Foëx, B.A. (2003). How the cholera epidemic of 1831 resulted in a new technique for fluid resuscitation. *Emergency Medicine Journal*, *20*, 316-318. http://dx.doi.org/10.1136/emj.20.4.316

[2] *The history of IV therapy.* (n.d.). IVWatch. https://www.ivwatch.com/2020/11/10/the-history-of-iv-therapy/

[3] Lever, A., & Mackenzie, I. (2007). Sepsis: definition, epidemiology, and diagnosis. *BMJ (Clinical research ed.)*, *335*(7625), 879–883. https://doi.org/10.1136/bmj.39346.495880.AE

[4] Brown, R. M., & Semler, M. W. (2019). Fluid management in sepsis. Journal of Intensive Care Medicine, 34(5), 364–373. https://doi.org/10.1177/0885066618784861

[5] Rivers, E., Nguyen, B., Havstad, S., Ressler, J., Muzzin, A., Knoblich, B., Peterson, E., Tomlanovich, M., & Early Goal-Directed Therapy Collaborative Group. (2001). Early goal-directed therapy in the treatment of severe sepsis and septic shock. The New England Journal of Medicine, 345(19), 1368–1377. https://doi.org/10.1056/NEJMoa010307

[6] Semler, M. W., Wheeler, A. P., Thompson, B. T., Bernard, G. R., Wiedemann, H. P., Rice, T. W., & National Institutes of Health National Heart, Lung, and Blood Institute Acute Respiratory Distress Syndrome Network. (2016). Impact of initial central venous pressure on outcomes of conservative versus liberal fluid management in acute respiratory distress syndrome. Critical Care Medicine, 44(4), 782–789. https://doi.org/10.1097/CCM.0000000000001555

[7] Semler, M. W., Self, W. H., Wanderer, J. P., Ehrenfeld, J. M., Wang, L., Byrne, D. W., Stollings, J. L., Kumar, A. B., Hughes, C. G., Hernandez, A., Guillamondegui, O. D., May, A. K., Weavind, L., Casey, J. D., Siew, E. D., Shaw, A. D., Bernard, G. R., Rice, T. W., & SMART Investigators and the Pragmatic Critical Care Research Group. (2018). Balanced crystalloids versus saline in critically ill adults. The New England Journal of Medicine, 378(9), 829–839. https://doi.org/10.1056/NEJMoa1711584

[8] Xu, J. Y., Chen, Q. H., Xie, J. F., Pan, C., Liu, S. Q., Huang, L. W., Yang, C. S., Liu, L., Huang, Y. Z., Guo, F. M., Yang, Y., & Qiu, H. B. (2014). Comparison of the effects of albumin and crystalloid on mortality in adult patients with severe sepsis and septic shock: A meta-analysis of randomized clinical trials. Critical Care, 18(6), 702. https://doi.org/10.1186/s13054-014-0702-y

Common Sedation Agents in Critical Care Settings

By Yedidya K. Dear, BSN, RN-BC, CSRN, PMGT-BC, CPhT

Fentanyl/Sublimaze – Opioid Agonist [1,2,3]

Induction Dosage: Low dose–minor surgery—2 mcg/kg. Moderate dose–major surgery—2–20 mcg/kg. High dose–major surgery—20–50 mcg /kg.
Maintenance Dosage: 0.5 to 10 mcg/kg/hour infusion
Mechanism of Action: Binds to opiate receptors in the central nervous system (CNS), altering the response to and perception of pain. Produces CNS depression. Fentanyl is hepatically metabolized via the CYP450 enzyme system, specifically CYP3A4. The drug has a half-life of 3 to 7 hours. Excretion is 75% in the urine and 9% in feces.
Antidote: Nalaxone/Narcan or Nalmefene/Revex

Midazolam/Versed – Benzodiazepine [1,3]

Induction Dosage: 300–350 mcg/kg
Maintenance Dosage: 0.02 to 0.1 mg/kg/hour infusion, non-weight based: 2 to 8 mg/hour
Mechanism of Action: Mediated by gamma aminobutyric acid (GABA), an inhibitory neurotransmitter. Almost exclusively metabolized by the liver, metabolized by cytochrome P4503A4 enzyme system. Metabolites are excreted in urine.
Antidote: Flumazenil/Romazicon

Dexmedetomidine/Precedex – Alpha2-Adrenergic Agonist [1,3]

Induction Dosage: 1 mcg/kg over 10 minutes if hemodynamically stable, usually not given.
Maintenance Dosage: 0.2 to 1.5 mcg/kg/hour. Initiate at 0.2 mcg/kg/hour and titrate every 30 minutes
Mechanism of Action: Acts as a relatively selective alpha-adrenergic agonist with sedative properties. Mostly metabolized by the liver, some metabolism by the P450 enzyme system. Metabolites are mostly excreted in urine.
Antidote: Supportive care and close monitoring

(continued on following page)

Etomidate/Amidate – Imidazole Non-Barbiturate Hypnotic [1,3,]

Induction Dosage: 0.2 and 0.6 mg/kg
Mechanism of Action: Etomidate interacts with GABA receptors by binding directly to specific sites and increasing the affinity of the inhibitory neurotransmitter GABA. Etomidate is primarily excreted renally.
Antidote: Supportive care and close monitoring

Propofol/ Diprivan – Short Acting Hypnotic [1,3,5]

Induction Dosage: 40 mg every 10 sec until induction achieved (2–2.5 mg/kg total)
Maintenance Dosage: 5 to 50 mcg/kg/minute
Mechanism of Action: While the mechanism of action for propofol is poorly understood, it is believed to have some effects on GABA-mediated chloride channels in the brain. Primarily renally excreted.
Antidote: Supportive care and close monitoring

Hydromorphone / Dilaudid - Opioid Agonist [1,3,6]

Maintenance Dosage: 0.5 to 3 mg/hour
Mechanism of Action: Binds to opiate receptors in the central nervous system and level medulla affecting respiratory drive. Metabolized by the hepatic system.
Antidote: Nalaxone/Narcan or Nalmefene/Revex

Ketamine / Ketalar - Nonbarbiturate Dissociative Anesthetic [3,6,7]

Induction Dosage: 1 to 4.5 mg/kg
Maintenance Dosage: 0.05 to 0.4 mg/kg/hour
Mechanism of Action and Excretion: Ketamine is a noncompetitive N-methyl-D-aspartate (NMDA) and glutamate receptor antagonist. Metabolized by the hepatic system.
Antidote: Supportive care and close monitoring

Key Reminders:

Refer to your state board of nursing for scope of practice in critical care settings to administer IV push, IV bolus, and initiate sedation and anesthesia-like drugs.

Due to the decrease in blood pressure when patients are given sedation and paralytics, have push dose pressors available and discuss with the provider if it is warranted prior to intervention.

It is critical to administer sedation before administering paralytics.

Sedation does not equal analgesia.

References:

[1] Intravenous* sedative and analgesic dosing regimens for managing pain, agitation, and delirium in the intensive care unit. (2023). UpToDate. Retrieved July 11, 2023 from https://www.uptodate.com/contents/image?imageKey=PULM%2F79667

[2] Ramos-Matos, C. F., Bistas, K. G., & Lopez-Ojeda, W. (2023). Fentanyl. StatPearls. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK459275/

[3] Vallerand, A. H. (2018). Davis's Drug Guide for Nurses (16th ed.). F. A. Davis Company.

[4] Williams, L. M., Boyd, K. L., & Fitzgerald, B. M. (2023). Etomidate. StatPearls. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK535364/

[5] Folino, T. B., Muco, E., Safadi, A. O., & Parks, L.J. (2023). Propofol. StatPearls. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK430884/

[6] Abi-Aad, K. R, & Derian, A. (2023). Hydromorphone. StatPearls. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK470393/

[7] Rosenbaum, S. B., Gupta, V., Patel, P. & Palacios, J. L. (2023). Ketamine. StatPearls. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK470357/

By the age of 19, Yedidya K. Dear, BSN, RN-BC, CSRN, PMGT-BC graduated in 2021 as the youngest graduate nurse to acquire his Bachelor of Science in Nursing (BSN) at Chamberlain University College of Nursing. He has been working as a travel ICU registered nurse. He is currently furthering his education in order to achieve his future goals of becoming a Doctor in Nursing Practice with a focus in acute care & family practice.

Burn Injuries - Evaluation and Treatment

By Nir Rosenberg, MD, MBA

Burn injuries are among the most common and serious injuries, ranging from minor and superficial burns to life-threatening injuries. It is estimated that almost every person will sustain some form of burn during his or her life, luckily most of them of minor severity that can be treated successfully by simple measures. Burns injuries differ from other forms of trauma in their increased length of rehabilitation phase, many times much longer than the acute phase of treatment. There are many people alive today who survived serious burn injuries and remain with the deformities of those burns sustained many years ago.

Burn injuries are most common among toddlers and children mainly due to their lack of danger awareness. A toddler entering the kitchen would most probably pull the electrical cord dangling from the kitchen counter without realizing that it is attached to a kettle with boiling water inside. Another age-related population with increased incidence of burn injuries are young adults because of risk-taking behaviors and occupational hazards of working with fire, hot liquids, or chemical substances.

Most burn injuries occur at home, mainly in the kitchen and bathroom, from home appliances and cooking instruments. During my medical residency, I witnessed many burns of various severity sustained from boiling pots and pans left without adult supervision. For this reason and due to the severity of many burn injuries, awareness and preventive measures are so important and valuable, much more than treating a burn once it has occurred.

Burns are caused by contact with a hot surface or boiling liquid, or due to exposure to fire. Less common are burns caused by chemicals and electrical current. Although less prevalent, these burns are usually more severe and many times are associated with additional injuries, including systemic and toxic absorption of the chemical substance or associated skeletal and cardiac injuries during electrical injuries. For these reasons, these burns should be treated in specialized burn centers with experienced healthcare providers.

Contact between the skin and the hot source causes immediate cell injury and denaturation of the proteins comprising the skin and subcutaneous tissues. In most burns, the outer epidermal and the inner dermal layers are involved by the burn. The severity of injury is directly proportional to the temperature of the heat source and the duration of exposure. Combining these two parameters, a patient exposed to a less hot source but with prolonged duration can sustain a burn with the same severity as a patient exposed to a hotter source with shorter duration.

The depth of the burn injury is determined by the thickness of the dermis involved. The dermis contains, along with collagen and elastin fibers, blood vessels and nerve endings, the skin appendages including hair follicles, sweat gland, and sebaceous glands. These dermal elements are lined by epidermal cells and are thus the source for regeneration of the burn wound during the process

(continued on following page)

(continued from previous page)

of secondary intention healing (also called spontaneous regeneration).

Burn injury's depth is classically classified into three distinct degrees:

A first-degree burn involves only the outer epidermal layer, with the most common etiology being sunburn. The skin is red, warm, and tender to touch. There are no blisters, and resolution occurs within a few days with no residual scarring. There is however an increased future risk for the development of skin cancer in older age if sunburns will continue to occur.

In second-degree burns, in addition to the epidermis, a partial thickness of the dermis is also injured by the heat, causing the formation of fluid-filled blisters—the hallmark of partial thickness burns. The burn wound displays varying degrees of pink and red colors, it is moist and painful to touch because of exposure of the nerve ending to the outer surface. Most second-degree burns heal spontaneously with proper wound care, depending on the amount of dermis left at the wound base. The more intact dermis, with its skin appendages, the quicker the recovery and with less residual scarring. As the burn deepens, there is less dermis with its accompanying skin appendages, and the healing process takes much longer with the possibility of hypertrophic scarring. These deeper second-degree burns sometimes require bringing healthy skin grafts for repairing the burn wounds and shortening the length of recovery.

A third-degree burn, or full-thickness injury, involves the entire thickness of the epidermis and dermis, with no residual dermal layer left for wound healing. The most common etiology of these burns is exposure to fire. These wounds have a leathery appearance, with colors ranging from white and gray, to black. The injured skin is non-elastic and painless because of destruction of the dermal nerve endings. Since there are no dermal sources for wound regeneration, these deep burns always necessitate debridement (removal of the burn wound eschar until reaching a healthy and viable tissue) and skin grafting.

In an even more severe injury, a fourth-degree burn, deeper structures including fascia, muscles, and sometimes bones, are involved and the result is a serious injury to the function and appearance of the organs involved. The etiology of these serious injuries is prolonged exposure to fire or high-voltage electrical injuries.

In addition to the depth of the burn injuries, another indicator of severity is the overall surface of the burn. The surface is calculated as a percentage of the body surface and is therefore termed Total Burn Surface Area (TBSA). There are many methods to calculate the surface of a burn, and the most clinically valuable method is a written chart dividing the body regions and determining the relative percentage of every region together with the varying proportions according to the patient's age (infants for example have a relatively larger head in comparison to adults) - see appendix 1.

Summing all the various areas of burned body regions will give the overall percentage of burn injury. The accurate estimation of the burn surface area is highly important for calculating the amount of fluids required in the resuscitation phase of treatment, determining the nutritional needs of the patients, estimating the amount of skin grafts needed for burn wound reconstruction, and for predicting the overall prognosis of the injured burn patient.

Another distinct and highly important parameter in determining the severity of the burn are the specific body areas involved, with burns of the face, neck, hands, toes, and genitalia considered more complicated from both a functional and a cosmetic perspective, even with a smaller surface area.

In addition to the cutaneous damage, second and third-degree burns of more than 10% body surface area result in systemic disturbances, with every body system involved. The most significant systemic consequence is cardiovascular, with the movement of fluids and proteins out from the vascular space and into the interstitial space. These changes result in hypovolemia, and even hypovolemic shock with increased heart rate and a reduction in blood pressure and body organs perfusion, beginning with the skin, gastrointestinal system, and the kidneys. These disturbances begin immediately after the burn injury occurred and continue during the first few days thereafter. These major hemodynamic

(continued on following page)

(continued from previous page)

changes necessitate intravenous fluid resuscitation with a large volume of a balanced electrolyte solution to restore the depleted intravascular volume. There are many formulas to calculate the amount of fluids needed for volume replacement, but the accurate volume of intravenous fluid is determined by the patient's clinical response to therapy.

Another common and severe complication of major burns is infection, including burn wound infection, pneumonia (more prevalent in mechanically ventilated patients), and urinary tract infection. The increased incidence of infections in burn patients is the result of the injured skin, serving as a port of entry for pathogens, and due to the decreased overall function of the immune system. Therefore, when treating burn patients, applying strict infection prevention measures is highly important. However, there is no indication for preventive systemic antibiotic therapy, unless there is clear clinical and laboratory evidence of infection.

In many patients who sustain flame injuries, especially in a closed-space environment, inhalation injury occurs with a combination of upper airway thermal injury, carbon monoxide intoxication, and toxic substances inhalation injury. In the immediate phase of inhalation injury, obstruction of the upper airway due to edema and increased airway secretions can occur with suffocation and hypoxemia within minutes unless intervention to keep the airway open. In many inhalation injuries, endotracheal intubation must be performed immediately. In the following days after inhalation injury, pulmonary insufficiency and respiratory distress can progress, necessitating mechanical ventilation until the airway edema subsides and the patient can breathe spontaneously. These severe respiratory injuries are a major source of increased morbidity and worsening prognosis in burn patients.

Regarding burn wound treatment, all first degree-burns and many second-degree burns, especially the superficial ones, heal by secondary intention, with epithelialization from the remaining dermal skin appendages. The regenerating epidermal cells surface the wound, usually taking up to three weeks. During this process, various dressings, many of them having antibacterial activity, are applied over the wound, usually once or twice a day, until full epithelialization.

In deeper second-degree and third-degree (full thickness) burns, there are not enough skin appendages to carry the healing process, and we should cover the debrided burn wound with skin grafts. These grafts of epidermis and partial thickness of the dermis are taken from the patients themselves (and are therefore called "autografts") and laid over the burn wounds after surgical or pharmacological debridement. The donor areas, from which the skin grafts are taken, heal by spontaneous epithelization usually within two weeks, and can even be used for repeated takes of skin if necessary. In major burns with vast surface area, the full reconstruction of the burn wound necessitates more than one surgery, covering partial surfaces of the wounds in each surgery. These surgical procedures of debridement and skin grafting can cause hypothermia and severe blood loss, and therefore should be performed by highly skilled medical teams in specialized burn centers.

Wound dressings changes are the best opportunity to promote and follow the healing process of the burns, detect and treat wound infection early, and perform various rehabilitation activities.

When evaluating and treating burn injuries, experience is highly important, and therefore nurses are in the best position for this. As a resident in plastic surgery, I have learned so much how to accurately diagnose the severity of burn injuries and perform the proper and most efficient wound dressings by working many hours together with the highly dedicated and experienced nurses in the department and the Intensive Care Unit, changing dressings and observing the dynamics of the burn injuries over time.

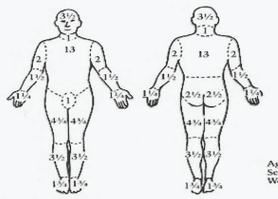
The complete and effective treatment of a burn patient is a multidisciplinary team effort, joining together physicians, nurses, physical therapists, occupation therapists, dietitians, and psychologic therapists, to address the various physical and emotional aspects of burn treatment.

Once the patient is stable, free from infections, and the burn wounds are completely healed, these patients begin the lengthy rehabilitation phase. The purpose of this phase is to restore the burn patients back to their family, friends, and working environment in the best possible condition. Many times, these patients require specialized pressure dressings to improve hypertrophic scarring, continued physical and occupational therapy to restore joints' range of movement, gait, and daily activities. Psychological therapy is highly important to assist in overcoming the emotional disturbances of severe burn injuries, including self-esteem and social relationships.

In summary, burn injuries are very common, with various degrees of both local and systemic severity. Applying timely and proper treatment measures can overcome many of the complications and consequences of burn injuries, with prevention being the most effective means in reducing both the incidence and the severity of burn injuries.

Appendix 1- Burn Surface Area Chart

Appendix 1- Burn Surface Area Chart



Area	Birth–1 yr	1–4 yr	5–9 yr	10–14 yr	15 yr	Adult	Partial thickness 2°	Full thickness 3°	Total
Head	19	17	13	11	9	7			
Neck	2	2	2	2	2	2			
Anterior trunk	13	13	13	13	13	13			
Posterior trunk	13	13	13	13	13	13			
Right buttock	2½	2½	2½	2½	2½	2½			
Left buttock	2½	2½	2½	2½	2½	2½			
Genitalia	1	1	1	1	1	1			
Right upper arm	4	4	4	4	4	4			
Left upper arm	4	4	4	4	4	4			
Right lower arm	3	3	3	3	3	3			
Left lower arm	3	3	3	3	3	3			
Right hand	2½	2½	2½	2½	2½	2½			
Left hand	2½	2½	2½	2½	2½	2½			
Right thigh	5½	6½	8	8½	9	9½			
Left thigh	5½	6½	8	8½	9	9½			
Right leg	5	5	5½	6	6½	7			
Left leg	5	5	5½	6	6½	8			
Right foot	3½	3½	3½	3½	3½	3½			
Left foot	3½	3½	3½	3½	3½	3½			
						Total			

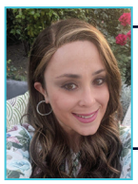
Dr. Nir Rosenberg is an Israeli board-certified plastic surgeon and a dedicated lecturer at the Israel School of Nursing. He has a master's degree in business administration (MBA) in healthcare innovation and recently co-founded a nurse-led innovation center at Assuta Medical Center promoting innovation and entrepreneurship by nurses in Israel.

Member Milestones

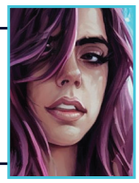
TO HAVE YOUR MILESTONE FEATURED IN OUR NEXT JOURNAL, SCAN THE QR CODE HERE AND FILL OUT THE FORM!

An active emergency nurse who also teaches triage, SHELLEY COHEN, MSN, RN, CEN, has had the privilege to be involved as both a contributor and reviewer of both the original and second edition of Rapid Access Guide for Triage and Emergency Nurses: Chief Complaints with High-Risk Presentations (Visser, Montejano, 2023). The second edition was released at the end of May 2023.

YEDIDYA DEAR, BSN, RN-BC, CSRN, PMGT-BC, passed his board certification for pain management in April 2023. He also accepted a fellowship position at Children's Medical Center of Dallas level 1 pediatric trauma ICU in July 2023.



SERACH GOLDISH, LPN, passed the NCLEX-PN last year and started working in an LTC facility in September 2022.



GOLDY LANDAU, MSN, RN, graduated from Johns Hopkins with a Masters in Nursing, and started her dream job in the pediatric emergency department in January 2023.

BRIAN MANDEL, RN, graduated from Broward College with his Associate Degree in Nursing in May 2023. He passed his NCLEX-RN exam in June 2023.

STEVEN SCHWARTZ, BSN, RN, started a new position working in the Endoscopy Suite at White Plains Hospital in May 2023. He previously worked in the Pediatric ED.

SCOTT TOPIOL, MSN, RN, CEN, MICN, was honored by the Los Angeles County Board of Supervisors as the Los Angeles County Fire Department Nurse of the Year for 2023 in May 2023.

HERSHY KRAUSZ, BSN, RN, graduated Long Island University's BSN program with honors, and passed the NCLEX. He received the "Michelson award of community action and service" from the school dean, and he is starting at his dream job in the emergency room at Maimonedes Medical Center in September.

SHIREL TOREN-AYASH, BSN, RN, graduated in May 2023 with a 4.0 GPA. She was also accepted into Nova Southeastern University's DNP program.

OJNA BOARD LEADERSHIP UPDATES:

The board members of the OJNA continue to work on organizational growth and development, fundraising, strengthening OJNA committees, and growing our reach across the United States, Canada, Israel, England, and beyond. The organization continues to expand and improve member resources and services, and host virtual and in-person events.

On June 15, OJNA president Toby Bressler represented OJNA at the annual ANA conference in Washington D.C. Thank you for representing us and advocating for Orthodox Jewish Nurses across the country.

Chapter Events

On June 14, the New Jersey chapter held an educational event at ETC Steakhouse on the topic of Gaucher Disease. They had a great turnout of RNs and NPs who enjoyed an interesting lecture by Dr. Stuart Ditcheck, great food, and networking. Thank you Shevi Rosner for organizing this event and Sanofi for their sponsorship.

Philly held a similar educational event at Citron and Rose restaurant on June 28. It was well attended by RNs and advanced practice providers. Thank you to Malka Feibush who arranged this event and to Sanofi for their sponsorship.

The Los Angeles chapter had a gathering on August 1st at Charcoal Bar and Grill to learn about Gaucher Disease from Dr. Jeremy Lorber. Thank you Malka Heyman, our LA rep, for arranging and to Sanofi for their sponsorship.

Our chapter liaisons have recently been meeting together to evaluate the needs and interests of their chapters. Understanding what kind of events each individual city appreciates most will help us provide you with the programming you most seek. We are excited to see the ideas and plans they are generating, and cannot wait to share the plans with you in the near future!

Remember, OJNA can help with planning, funding, advertising, and logistics. If your area does not have an OJNA chapter yet, reach out to us at info@jewishnurses.org to become your local liaison!

Annual Conference

OJNA's annual conference took place this past spring in New York City on May 3. With over 100 in attendance in person and via zoom, the conference was enjoyed by participants, speakers, and vendors! It was great to see old friends and meet new members. Thank

(continued on following page)

you to the conference committee members who spent hours and invested so much of themselves to make this event a success; board members Toby Bressler, Ross Polonetsky, and Chaya Milikowsky, as well as Hannah Bodenstein and Simone Shafiro. Laura Silverstein and Sarah Bracha Cohen jumped onboard the committee in the final stretch and helped propel the conference to the finish line.

We are grateful to our sponsors and vendors, Madison Programs, Sanofi Genzyme, Matnas Chaim, Takeda Pharmaceuticals, and Touro University. We also appreciate the help of the Frisch nursing club student volunteers. We hope they were inspired through our conference to continue their pursuit of nursing.

It is difficult to encapsulate the spirited atmosphere that pervaded our conference; a perusal of those photos will give you just a glimpse of the camaraderie, sense of purpose and unity, and genuine excitement we experienced together.

It was fascinating to hear the different perspectives on current trends in nursing education presented by a prestigious panel of nurse educators. We appreciate that Mary Ellen Luczan MS, RN, PMHCNS; Aliza Ben Zacharia PhD, DNP, ANP, FAAN; and Colleen Kumar PhD, RN, CNE gave their time to share their experience and expertise with us. It was fascinating to hear about the idea of milk sharing, and how it presents in the Orthodox Jewish community. Laura Candelaria, PhD, MS, RN, FNP gave us a holistic and patient-centered view of informal milk sharing in our own community, and how we can advocate for safe practices. We then learned, from Barbara Glickstein, RN, MPH, MS, FAAN, about the power we as nurses have to harness our voices, and how to do so effectively. It was a call to action, to use our voices and expertise to enact the changes we want to happen.

OJNA treasurer Ross Polonetsky led the group in a game of Kahoot where, in an informal and fun setting, we learned about some of the costs associated with healthcare. After a delicious lunch from Bagel Nosh we were privileged to hear from Rabbi Gershon Schaffel on the topic of mental health in halacha. He discussed issues that touch the confluence of medicine and halacha, the very cornerstone of what makes the OJNA unique. We then enjoyed a wide-ranging panel that featured a number of OJNA members who work in non-traditional nursing roles. It was eye opening to learn about nursing career options that are not at the bedside, and about the paths necessary to work towards those careers. Thank you Estie Mermelstein, Hannah Bodenstein, Ariel Greenberg, and Chanie Fingerer for sharing your unique nursing pathways! And finally, we heard a social work perspective on medically fragile children from Esti Goldschmidt of Chai Lifeline.

We are already looking forward to next year's conference! As is always the case, we appreciate the feedback we receive after each OJNA event. Some of you provided very useful feedback, and we would like to remind you that the best way to ensure that OJNA serves your needs and the needs of our community of nurses is by joining our committees and actively helping guide future events. We would love to hear from and work with you!

Event for Male Nurses

Our male members attended a successful inaugural event on August 2 at a BBQ and Night Out in Brooklyn, NY. The event included a lavish BBQ, wine bar, cocktails with a mixologist, photo wall, and OJNA caps and t-shirts. Over 50 guys attended and had an amazing time networking with one another. Special thank you to the organizing committee Hershy Krausz, Yehuda Shoob, Ross Polonetsky, and Shevi Rosner for your time and dedication. Thank you Chemed Health, Lease Rite, Deal Med, P4P Professionals, and United Uniforms for your sponsorship and support. The guys can't wait for next year's event!

Call to Action

OJNA seeks paying members who are interested in getting more involved in OJNA. Volunteering and involvement in OJNA benefits your resume, clinical ladder portfolio, your overall career, and provides tremendous satisfaction in giving back to the Jewish nursing world across the United States, Canada, Israel, and beyond. If you are not yet an OJNA member, go to https://jewishnurses.org/#join to sign up.

We Are Seeking the Following:

* Strong writers and editors to join the journal committee. This involves a commitment to write or seek out articles for our biannual journal and to be involved in the journal planning process. Committee members must be responsive to email and Whatsapp communication.

* Articles for our upcoming journals. Write about a personal experience, disorder, treatment, case study, or anything related to the journal theme, or a musing of your own topic!

* Nurse milestones highlighting your recent nursing achievements, such as awards, degrees, certifications, new jobs, etc., to be included in upcoming journals along with your photo.

* Committee chairs are needed to run OJNA's committees and continue OJNA programming.

* Mentors are needed for the new graduate mentorship program. Mentors work with mentees for about six months and ease their transition into the world of nursing. It is an extremely rewarding and beautiful way to pay it forward.

* Do you have experience in human resources or as a manager? Join our team of resume reviewers and assist us in reviewing resumes for OJNA members. We are always looking to increase our number of reviewers.

Please email info@jewishnurses.org if you are interested in joining any of these initiatives and to become more involved in OJNA today!

NURSES TO KNOW

By Tziporah Newman, BSN, RN

Anna Weisberg, BSN, RN, AA SANE

Sexual Assault Nurse Examiner (SANE)

Briefly share your professional career up until this point.

I graduated with my BSN in 2015 and worked on a med-surg floor for about a year and a half. I then transferred to the emergency department (ED) in 2017, where I have worked since. I completed my SANE certification in 2020. My main role is as a staff nurse in the ED, and I act as a SANE on a case by case basis.

What prompted you to become a SANE nurse? Was this something you had wanted to pursue or happened by chance?

It kind of happened by chance. We only had one SANE nurse in our department and were looking for someone else to take the course. After learning more about what SANE nurses do I decided to pursue it.

Describe the role of a SANE nurse.

The most common thing people think of when it comes to SANE nursing is collecting evidence. While it may take several hours to complete, collecting evidence is actually only a small part of what I do. When caring for a survivor of sexual assault, SANE nurses focus on being there for the patient during a most difficult time by providing trauma-informed care. This includes addressing injuries or other medical needs such as sexually transmitted infections (STI) and pregnancy prevention when indicated, providing outpatient resources, getting the patient set up with follow up care (both medical care and psychological support), and ensuring the patient is being discharged to a safe environment. We are specially trained to properly collect evidence using an evidence collection kit, utilize forensic photography and other tools, document, and work together with law enforcement.

How does one become a SANE nurse? Are there any specific courses or certifications that are needed?

Many SANE programs require ED experience. Our hospital system recently opened up training to include labor and delivery nurses. My training included 40 hours of didactic training followed by hands-on experience. I completed my clinical log which included several peer reviewed cases and skills assessments.

What is the benefit of having a SANE nurse care for a survivor of sexual assault that presents to the ED?

One advantage is that we are trained to assess for injuries and collect evidence performing a speculum exam. This allows the patient to be seen by fewer providers thus reducing the number of times they have to repeat their story. We are experienced in caring for survivors of sexual assault, trauma informed care, educated on available resources, and are trained to assess for signs of domestic violence.

Any advice for a nurse that is caring for a survivor in a healthcare setting?

It is of the utmost importance to treat all patients with understanding and respect. Remember to explain each step of a procedure before proceeding and get continued consent along the way. I try to allow the patient to help whenever possible, for example, having a patient swab themselves when appropriate.

Has your cultural background as an Orthodox Jewish nurse helped you become a more compassionate SANE nurse?

My Jewish upbringing has helped me care for survivors of sexual assault more compassionately and sympathetically. It is taught from an early age to treat others as we would want to be treated ourselves or our loved ones. We learn to act with love and understanding and to never judge others.

If you would like to be profiled in future issues of The OJNA Journal, send a short paragraph detailing your background and role to info@jewishnurses.org.

CAREERS TO CONSIDER

Sexual Assault Nurse Examiner (SANE)

Tziporah Newman, BSN, RN

Job Description / Basic Responsibilities [1-4]

- Provide comprehensive health care for sexual assault and abuse victims.
- Treating patients holistically; ensuring the psychological aspects are addressed in addition to the physical.
- Assess each patient and provide developmentally- and culturally-appropriate care.
- Create a safe place for the patient by explaining every step (trauma-informed care) and obtaining consent prior to starting and continuing the forensic examination, including collecting specimens. The aim is to reduce the risk of triggering the victim by allowing the victim control over the situation and narrative.
- Forensic examination includes:
  - Genitoanal physical assessment
  - Photographing injuries to the body such as scratches, bruises, and bite marks. This most likely will include the genitoanal region
  - Administering medications such as antibiotics and emergency contraception as needed
- Collect specimens such as swabbing the victim's mouth, obtaining urine samples, obtaining hair samples from the scalp and pubic region, blood samples, swabbing the rectum, vagina, cervix, or penis.
- Educate on sexually transmitted infections, pregnancy prevention, outpatient resources, legal resources.
- Work collaboratively with the interprofessional team and law enforcement.
- Ensure the patient has a safe place to go upon discharge.
- May be called to testify as a witness in court.

Educational Requirements: [1, 4]

- Minimum of RN licensure
- SANE training must meet International Association of Forensic Nurses (IAFN) guidelines and consists of both classroom and in-person training.
- There are two board certifications available through the IAFN:
  - Sexual Assault Nurse Examiner-Adult/Adolescent (SANE-A)
  - Sexual Assault Nurse Examiner-Pediatric (SANE-P)
- Eight states have their own specific criteria and certification in order to become a sexual assault nurse.

Recommended Experience: [4]

- Preferably 2 years clinical experience
- SANE candidates should have worked in an area that utilizes advanced assessment skills such as the ED, ICU, etc.

Salary [5] $93,000-$150,000 with an average pay of $118,094

Work Environment [2,5]

- Emergency Departments
- Medical Examiner offices
- Correctional Facilities
- Law Enforcement Agencies
- Shelters and Advocacy Centers

Suggested Skills

- Compassion
- Attention to detail
- The ability to stay calm, cool, collected during high-intensity moments
- Non-judgemental
- Gentle and sensitive care

References:

[1] Office for Victims of Crime. (n.d.). SANE program development and operation guide. ovcttac.gov. Retrieved June 29, 2023, from https://www.ovcttac.gov/saneguide/introduction/what-is-a-sane/

[2] Gaines, K. (2021, June 7). How to become a sexual assault nurse examiner (SANE). Nurse.org. https://nurse.org/resources/SANE-nurse/

[3] Nursing@Georgetown, the online MSN program from the School of Nursing & Health Studies. (2019, September 16). From forensics to advocacy: The importance of sexual assault nurse examiners. Online.nursing.georgetown.edu. https://online.nursing.georgetown.edu/blog/sane-nurse-guide/

[4] International Association of Forensic Nurses. (2012). Sexual assault nurse examiner. Forensicnurses.org. https://www.forensicnurses.org/page/AboutSANE

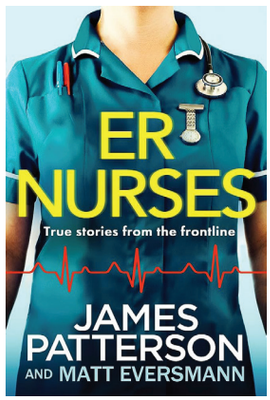
[5] Registered Nurse, SANE Salaries. Glassdoor. (2023, June 14). https://www.glassdoor.com/Salaries/sane-nurse-salary-SRCH_KO0,10.htm

[6] U.S. Department of Justice Office on Violence Against Women. (2018). National training standards for sexual assault medical forensic examiners. https://www.justice.gov/ovw/page/file/1090006/download

OJNA RECOMMENDS: BOOK PUBLICATION

E.R. Nurses

Author: James Patterson and Matt Eversmann
Book review by Rivka Leichter, CRNP, FNP-C



This book sparked my interest from the title alone and it did not disappoint. Patterson puts into words the true and raw essence of nurses as they save lives day in and day out, no matter the obstacles in their way. This book does not read like a novel, it is a multitude of individual first-hand accounts by various health care workers reminiscing about experiences that shaped their careers. Despite the title, the essays are not just by emergency room nurses; there are stories from paramedics, intensive care nurses, and psych nurses as well.

This book is written for the mature/adult audience. These stories are raw and not for the faint of heart. There are curse words and graphic descriptions of birth, hope, death, trauma, illness, racism, and violence. We hear about working in New York City during the height of COVID from Angela and Jennifer. Nurses like Katie tell us how they bent hospital rules to give families time with their dying loved ones. This book tells the tales of nurses who showed compassion to their patients when they needed it most and how they kept doing their job despite being treated poorly by patients or not being supported by hospital administration.

The final section of the book focuses on the rare moments in our careers that make all the hard times worth it. Shannon tells of the time she encountered a patient's family in the grocery store and they thanked her for being so compassionate to their mother when she would come into the hospital. Jody reflects on how the "thank-yous" she has received from patients over the years are memorable and what keeps her motivated to come to work every day.

It is easy to assume that it was very easy for me to relate to the book because of my experience in the ER. However, any nurse or healthcare professional, for that matter, will likely find more than one excerpt that speaks to them or is reminiscent of what he or she has experienced in their career. There were many moments in reading the book that I asked myself if I would have done the same if I was in that situation. Would I have chosen to put my job at risk just to do what I know is best for my patient? Whether we work in a hospital, outpatient clinic, or are on the administrative side, we all have had patient encounters that stick with us and have shaped the way we care for our patients and their families. If nothing else, this book will make you reflect on your own experiences and remind you why you chose this career.

Rivka Leichter, FNP-BC, MSN, RN, has been a nurse practitioner in radiation oncology at the University of Maryland Medical Center since November 2021. Prior to that position, she worked as an ER nurse at Medstar Union Memorial Hospital in Baltimore, MD, for close to 13 years. She is passionate about patient-centered care and maintaining a positive and non-toxic work environment. Rivka is also an ACLS instructor with Star Beat, a medical education program in Maryland. She lives in Baltimore with her husband and three children.

INTERVIEW

With Judge Ruchy Freier and Her Daughter Leah Freier-Levine

By Dina Bressler, BSN, RN | *Staff Writer*

Ruchie Freier is among the most well-known chassidish women in the secular world. She became a lawyer in her 30s after working as a legal secretary and paralegal, and then went on to become a civil court judge, and more recently, acting New York Supreme Court Justice, all while raising her *frum* (religious) family. But in addition to her legal and political accomplishments, Judge Freier has established many *chessed* organizations to include Chasdei Devorah, B'Derech, and the all female ambulance corp Ezras Nashim. OJNA journal staff spoke with Judge Freier's daughter Leah, who is also the COO of Ezras Nashim, to gain a personal picture of their journey and drive.

Judge Ruchie Freier has been involved in pro-bono community volunteer work since she became an attorney. "People told me I would never be successful. When I started law school, I was in a liberal academic environment, and I wanted to remain *frum* with my values. I made a promise to myself that I would volunteer to help people when I graduated."

In the summer of 2011, she received a call from an emergency medical technician (EMT) who was hosting a meeting for a group of women who wanted to join Hatzalah (Jewish volunteer emergency services). "Initially I thought it was a bunch of *chassidish* women trying to make trouble," she thought. "They asked me to be part of the women's division and explained the origin of the first female Hatzalah."

Many of the women in New Square plan to deliver their babies at Manhattan hospitals, and oftentimes they end up delivering en route. The women from this community were embarrassed that their *Skver chassidish* neighbors and family friends would be the ones assisting them during this time. Women from Boro Park heard about the group of *Skver* women seeking to join Hatzalah, and wanted to do the same. They tried to get the original *Skver* women to join, but after two years they remained unsuccessful. Out of all the women that were called to help out, Judge Freier was the only one who responded.

After doing some research and listening to the women's stories, Judge Freier realized that going to law school and all her accomplishments thus far would be especially worthwhile if this endeavor was successful. She noted, "When I first got involved I didn't realize I would get so much opposi-

(continued on following page)

(continued from previous page)

tion. It seems almost obvious that a modest woman would want a modest birth. The *rebbes* of the community were supportive of the initiative, however they did not want to get involved in any of the politics. Organizations who saw the women attempting to join Hatzalah kept saying we should, "start our own [organization]." That is what galvanized the creation of the all-female NYS Certified Basic Life Support First Response organization, Ezras Nashim. "Knowing what to do during an emergency is so important. Some people learn it from their own life experiences. But learning it when you are young and have the opportunity is something you'll never regret."

Judge Freier started 10 years ago with a Basic Life Support First Response Unit (BLS-FR), and since 2021 has obtained an ambulance and licenses to support a first response team with big plans for the future.

Leah Freier-Levine has her own reasons for joining Ezras Nashim and becoming an EMT. "In case of an emergency, as a mother, it's important to understand healthcare and emergency management. I worked for Ezras Nashim for recruitment and fundraising, and I realized that being an EMT would make such a difference in all the technical work and understanding the process." Years later, Leah still hears stories of how the small acts of kindness performed on the job made all the difference. Leah recalls a particular story of a complex patient who required transport out of the state. During the process, Ezras Nashim was unsure if they would be able to help, but provided support and a listening ear. In the end, the organization assisted in the transport and the feedback was astounding. "She said that while so many organizations ignored her and didn't respond once they knew they were unable to help her, Ezras Nashim was there for her during a vulnerable period, and she was able to speak with real people. She felt acknowledged and heard… These are the kinds of stories that make all the difference, and make the job truly worth it." Judge Freier adds, "Sometimes, you need to give patients their space. You don't always need the full story to help give someone the best care possible."

"My mother is the director, and I'm the COO," notes Leah. "We need to communicate often, at least twice a day. It's amazing working with her. We plan together, and it's one of the best parts of my job. The more I work with her, the more I'm amazed. She's one of the most special women I know. How she interacts with people is incredible to see."

If you had told Judge Freier 15 years ago that she would be driving an ambulance, she would tell you that you are having a strange dream. She recalls when she first began on her journey, "I always did social justice, and I understood the concept of helping people with no voice. And yet, here I was, with no aspirations for medicine volunteering to be an EMT… I've learned that when you want to do something, you never know what is possible, and anything can happen." Judge Freier adds, "The amount of *chessed* (acts of kindness) you can do during an emergency is amazing. When you help people, there are often no words. Being there for a patient when there is no one else who would do it is the greatest feeling. One of the *rabbanim* said that women are not exempt from *pikuach nefesh* (saving a life). The *Mishna* says "*l'fum tzara agra*" meaning things that are really good take hard work. From patient care, interacting with providers, and many other angles, there is so much to learn. Healthcare workers, especially nurses, can understand what this means and what it takes to give of yourself to help others."

Leah, how did you decide to join your mother's venture and become COO of Ezras Nashim?

Leah: "After I came back from seminary, I was a teacher and taught middle school math and history. I had no intention to join Ezras Nashim, especially because I had seen how difficult it was for my mother to get it off of the ground, and the real hardships she dealt with.

But one *shabbos* I overheard my mother tell my father that the insurance bill for an ambulance had come in and she didn't know how she was going to pay it. I felt so bad for her. Because my mother was a judge at that point, she wasn't allowed to engage in recruitment or fundraising so she really had no options to raise funds to cover the costs of the ambulance. I was engaged at that point, and as a *zchus* (merit) for myself I told my mother that I would take upon myself to raise the money. I went to friends, asked for *maaser*, but it wasn't easy and I met a lot of resistance and ridicule.

Around that same time, 93Queens, the film about Ezras Nashim, came out, and I began going to screenings and Q&As with my mother. When people would come over to speak with us I began asking for donations to help cover our costs. By the time I got married, I had raised more than the necessary amount. At that point my mother said, "Leah, you are with us to stay!".

I started out by doing Q&A at the film screenings, which was easy because I already knew the answers having lived with it from day one. Eventually, I took over the emails and realized that many women wanted to become EMTs, so I worked on creating an EMT course. I then branched out to social media, the schedule and before I knew it, I was pretty much running the operation."

What's one piece of advice you would give to your younger self about working in the healthcare industry?

Leah: "Have a good work life balance. At this point I've figured it out. I'm still not perfect, but I'm much better than before. This job is 24/7, but forcing myself to disconnect and give my family some time is helpful. Even if I told myself this advice 5-6 years ago it may not have helped, but over time, the experience has taught me a lot and I've learnt a lot.

You don't have to finish everything all the time. At some point you call it a night. You have to do your best and say okay, I did enough and whatever is going to be is going to be. It is not healthy to push yourself and stay awake until 3 am every night making sure things are perfect."

What do you do to relax after a stressful day?

Judge Freier: "I'm often on call and never put a device down. Even when I sleep, it's often interrupted. But Shabbos for me is when I recharge. Friday night and Shabbos afternoon is when there is nothing on my plate and I can relax."

What changes would you like to see in the nursing and healthcare fields in the future?

Judge Freier: "From my perspective I want to see more women involved. Women have been conditioned to think that men are the ones who are EMTs. Women are often caregivers and we shouldn't discount what that can add to an emergency situation. Once I was in shul in the bungalow colony and there was a *simcha* (celebration), and a baby was choking. The women were holding the baby in the wrong position. All I did was reposition the baby and thrust the back,

(continued on following page)

INTERVIEW WITH JUDGE FREIER
(continued from previous page)

and the baby was okay. Something as simple as holding a baby the right way can make the biggest difference. More women should be trained to be present in emergencies. There's no reason it can't be for everyone.

I even took my mother with me during my EMT training. So now we are a three generation EMT family. It was such a good experience. To see the past and future generations working together and making an impact makes it all worthwhile and it's a wonderful feeling.

People in the medical field work very hard. I live in the non-medical world, and there is so much value in what every person contributes as an individual. People don't always show appreciation and they sometimes leave and don't remember your name, but that doesn't mean that your work isn't held in high regard. More often than not, even the smallest thing can leave a large imprint and impact someone's experience."

How has your Jewish identity impacted your approach to the field?

Leah: "Being a Jewish woman impacts me all the time. Because I am *frum* and *chassidish,* I feel that I have a big responsibility. Many of the donors and media channels ask me questions and it is some people's first exposure to a *chassidish* woman. So it is important for me to be careful. Who I am can paint a picture in people's minds. A lot of the people I work with get invited into my home, and many of the non-Jewish and non-religious people interact for the first time with a *chassidish* man (my husband), and it often leaves an impression on them on how they see the *chassidish* community."

Judge Freier: "If I wouldn't be religious I wouldn't survive. Having Hashem in my mind gives me a sense of purpose. Being at an emergency means I am meant to be there. It is not about ego and training, but about doing a *mitzvah* and being there for a reason… Faith gives me the strength to go in and face any situation."

MUSINGS

Life of an Emergency Room Worker

By Chaya F. Friedman, RRT-NPS

Emergency medicine. The emergency room (ER) is a world of its own. It is a place unfathomable by those who do not live in the trenches. Its engine is fueled by flagrant stupidity, flamboyant ineptitude, and exquisite and incomprehensible self-destructive behavior. Additional players are absolutely tragic poverty and utter pathos. The sexual assault nurse examiner (SANE) nurse is by far not the only one who deals with breathtaking tragedy, though he or she is the obvious health care professional who comes to mind.

Take the following scenario. The respiratory therapist (RT) comes to draw a blood gas, usually a STAT order that does not leave much time for pre-gaming and chart reading. Outside the patient's ER cubbyhole, she finds a mom. Mom is still wearing scrubs and an ID indicating her own status as a healthcare provider. RT asks mom for basic information and is told, "My son died 11 days ago of an overdose and his brother is in there flipping out."

RT finds a man of approximately age 30 sobbing hysterically on a stretcher. Tat sleeves peek out of his johnny gown. Another brother is awkwardly trying to soothe him.

Per the brother, the patient is a recovering heroin addict who "fell off the wagon" from the grief due to the loss of his brother. "I'm clean for seven years," the soother relates.

How does one process this? How does one understand how a perfectly "normal" mother deals with a problem of this magnitude.

What about the genius who tried to get rid of bed bugs with extermination spray intended for outdoor use—in the process nearly exterminating himself.

The grandma with craterous bedsores whose adoring family has not seen her in four years and does not answer the phone about advance directives.

The young adults whose overdose is mourned not only as a life lost but as a life wasted.

The endless stream of prisoners with their rookie cop escorts, whose incomprehensible and unforgivable actions make you want to slap them upside the head. Instead, you start an IV, hang fluids, or prepare them for surgery.

The parents whose story about what happened to the baby just does not add up.

Or the addict, who is greeted—by name—by the ER staff due to the frequency of her visits.

Or perhaps consider the residents of what we call Alcohol Alley, the friendly drunks who come "dry out" on an almost nightly basis. The denizens of this area are so familiar with ER protocol that they pull their masks over their eyes to block out the light.

Consider the man who comes in with maggots crawling out of his leg wound, so poor is the care he is getting at home, yet his loving children insist he must be a full code.

Perhaps the hardest patients to handle are the shift-change nursing home dumps.

Hospital shifts and nursing home shifts do not synchronize, at least not in my area.

Skilled nursing facilities (SNF) are frequently understaffed and suboptimal care is not unusual. Patients with cardiac arrests tend to come in from these facilities often during the 10 pm hour and the 6 am hour. Some theorize that nurses rounding just prior to the end of the shift leads to discoveries that may have been going on for many hours.

Summer brings in patients who experienced near drownings. These cases are life destroying and often fatal. These patients drain the ER of its epinephrine supply. A perfectly healthy, beautiful child lying on the stretcher motionless and waiting for the medical examiner can really suck the air out of a room.

Car accidents, domestic violence, and gang warfare. Each destroys young lives in its own horrible way.

How do ER staff maintain sanity? I do not refer to vodka, junk food, and crass jokes. I mean real sanity, not simply coping mechanisms. How do these individuals go home to their families, cook dinners, fold laundry, and look under the beds for missing shoes?

In my experience, the key is to suspend judgment. To leave the condemnation in your locker near your car keys and view each and every person as a baby who once had boundless possibilities, who once knew the love of a mother, whose soft papery skin was caressed and whose innocence opened hearts and made strangers smile. Then—and only then—can quality healthcare be provided.

Chaya Friedman, RRT-NPS, is an emergency room respiratory therapist (RT) in the Greater New York Metropolitan area. Prior to her work as an RT, she spent many years teaching high school students.

HALACHA COLUMN

Shabbos Emergencies

By Rabbi Elyakim Milikowsky

One of the features of being part of a family with a nurse are the unexpected Shabbos visitors, as friends and neighbors turn to their local health care professional to answer questions about appropriate treatment for any and all maladies and injuries. While this article will not be able to provide the mastery of the entire gamut of up to date medical literature as well as *hilchos* Shabbos (Sabbath laws) that are necessary to fully answer these questions, we will provide an overview of the basic rules that apply to *refuah* (healing) on Shabbos, as well as a review of available resources.

There are two factors that must be considered when discussing treating a sick person on Shabbos: the degree of sickness that person is suffering from and the degree of prohibition that effective treatment would entail. We will delineate the different aspects of each of these factors in turn.

There are four primary halachic categories of *cholim* (sick people) that are relevant for *hilchos* Shabbos. In ascending order of severity they are:

- *Meichush b'Alma - someone who is suffering from an illness that is a mere discomfort*
- *Choleh kol gufo - someone who is sick to the point that his entire body is affected*
- *Choleh with sakanas ever - someone who is sick to the point that he is in danger of losing a limb*
- *Choleh sheyesh bo sakana - someone who is sick to the point that his life may be in danger*

Possible prohibitions that could be encountered in treating an ill person are:

- *Melacha d'oraysa* - an action that transgresses one of the categories of creative work prohibited by the Torah on Shabbos
- *Melacha d'rabbanan* - an action that transgresses a Rabbinic extension of one of the categories of creative work prohibited by the Torah on Shabbos
- *Gezeira mishum shechikas samimanim* - a specific Rabbinic decree to forbid taking medicine on Shabbos because medicine is commonly prepared by grinding herbs, one of the categories of creative work prohibited by the Torah on Shabbos
- *Techum Shabbos* - traveling beyond the boundaries permitted on Shabbos
- *Muktzah* - moving or using items that are forbidden on Shabbos
- *Amira l'akum* - instructing a non-Jew to perform work forbidden on Shabbos
- An additional factor that is relevant is that when a *melacha* is done with a *shinui* (in an abnormal manner) it is a lesser prohibition

The first rule for treating a sick person on Shabbos is that when a person's life is in danger (*pikuach nefesh*) or even just a possibility that a life is in danger (*safek pikuach nefesh*), all prohibitions, no matter the severity, are waived. However, notwithstanding this rule, further clarification is required to determine what illnesses and injuries qualify as *pikuach nefesh*. Clearly severe chest pain is a case of *pikuach nefesh*, but what about dehydration or diarrhea? A deep cut to an artery is certainly life threatening, but is a shallow cut or a fracture? Do we listen to the patient or the doctor when they disagree about the severity of the situation? How about if professionals disagree?

And even in those cases adjudged to be *pikuach nefesh*, there is much that is important to know to treat the patient in the proper way on Shabbos. If time is of the essence there is one preferred method of treatment, while if there is no immediate danger another pathway may be recommended. In some cases it is preferred for an adult Jew to perform the otherwise prohibited act, while in other cases it may be better to ask a non-Jew to perform the act. A thorough knowledge of both *halacha* and medicine is required to appropriately help those with serious illnesses on Shabbos.

At the other end of the spectrum, the general rule is that when one is suffering from a *meichush b'alma*, mere discomfort, no prohibitions are waived. No medicine may be taken, no *muktzeh* items may be used, a non-Jew may not be asked to help in ways prohibited to a Jew and of course no *melacha* may be done. However there is an important exception to this rule—young children who are suffering distress are considered to be *cholim*, sick people, and will therefore have leniencies that do not apply to adults in a seemingly similar situation.

Once one has left the category of mere discomfort and been classified as a *choleh*, then treatment becomes permitted. There are several levels of *choleh* and various factors that can affect which prohibitions are waived and in what manner. Each case must be evaluated individually to determine whether the patient is a full fledged *choleh* whose sickness affects his entire body, or is he just a *choleh b'miktzas*, partially sick? Is a limb in danger? Can the loss of that limb lead to potential danger to life?

Some further questions that can arise are: must the patient currently be sick or is an incipient illness sufficient to allow prohibitions to be waived? Is mental illness different than physical illness? Do the same leniencies apply for a dying patient? Can measures be taken that are not therapeutic but only intended to relieve discomfort? How can one bandage a wound or burn? These and many other questions can be encountered by a nurse on any given Shabbos.

The answer to all of these questions is beyond the scope of this article, however we would like to recommend two english *seforim* (textbooks) that can be a tremendous resource for anyone, and especially health care professionals.

For those who would like to do a deep dive into the subject, "Halachos of Refuah on Shabbos" is a *sefer* published by Feldheim and written by Rabbi Yisroel Pinchos Bodner and Rabbi Daniel B. Roth, MD. This *sefer* provides an in depth treatment of the underlying halachic material with extensive hebrew footnotes as well as an encyclopedic medical handbook listing hundreds of illnesses and their treatments as permitted on Shabbos.

Another resource that can be helpful is "A Guide to Refuah on Shabbos" by Rabbi Avrohom Yaged, based on the halachic decisions of Rabbi Yaakov Forcheimer and the medical input of Dr. Reuven Shanik. This book, recently published by Artscroll, provides practical *halachos* for common medical situations with concise footnotes that point to the original sources. It is well organized and contains an index of dozens of common conditions making it, as its name indicates, a great option for those who want a general understanding of the topic and clear direction for medical questions that arise on Shabbos.

Rabbi Milikowsky is a rebbe and administrator at the Yeshiva of Greater Washington in Maryland. While not a nurse himself, he is married to one for many years and talks about creating an OJNSA for spouses.

ANA Event

NJ Event

California Event

Annual Conference

Philadelphia Event

Men's BBQ

LEGAL

Navigating Dress Accommodations for Orthodox Nurses in the Medical Field

By Joey Aron, Esq

Orthodox Jewish nurses face a unique challenge in balancing their religious beliefs with professional dress standards in the medical field. This article aims to provide practical guidance on dress accommodations, the legal framework protecting your rights, the importance of safety considerations, and the significance of cooperative dialogue. By understanding the process and approaching it professionally, you can navigate dress accommodations while honoring your faith, maintaining a safe work environment, and fostering a cooperative atmosphere.

Understanding Your Rights and Safety Considerations

As an Orthodox Jewish nurse, you are protected by federal, state, and local laws that require employers to make reasonable accommodations when work requirements conflict with sincerely held religious beliefs (See e.g. Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e et seq.; Article 15, Section 296(11) of the New York State Executive Law and Section 8-107(1)(a) of the New York City Administrative Code). These laws safeguard your right to practice your faith while pursuing your nursing career. However, it is crucial to recognize that safety is paramount in healthcare settings. Employers must ensure that any dress accommodation addresses safety concerns and aligns with professional standards to protect both patients and staff.

Demonstrating Conflict and the Importance of Cooperative Dialogue

When requesting a dress accommodation it is essential to demonstrate the conflict between your religious beliefs and the existing dress code requirements. Clearly articulate how these conflicts arise and impact your ability to observe your faith while fulfilling your professional obligations. Engaging in cooperative dialogue with your employer is crucial for fostering understanding and finding practical solutions that meet both your religious needs and safety considerations.

The Significance of *Tznius* in the Orthodox Jewish Community

In the Orthodox Jewish community, the concept of *tznius* (modesty) plays a central role. Dress accommodations for Orthodox Jewish nurses often revolve around adhering to modesty guidelines. *Tznius* encompasses various aspects, including the length of skirts, sleeves, and the requirement to cover one's hair. Communicating the significance of *tznius* to your employer can help them understand the religious basis for your requested accommodation and facilitate a more empathetic and constructive dialogue.

Case Examples and Legal Protections

Numerous laws and legal cases have established the rights of individuals to religious dress accommodations in the workplace highlighting the obligation of employers to reasonably accommodate religious practices unless it poses an "undue hardship" on the employer (EEOC Compliance Manual Section 12, Religious Discrimination; Abercrombie & Fitch Stores, Inc. v. Equal Employment Opportunity Commission, 575 U.S. 768 (2015)). Other federal, state, and local laws also provide protection against religious discrimination and require employers to engage in an interactive process to find suitable accommodations. Understanding these legal precedents can strengthen your position when requesting a dress accommodation.

Protection Against Retaliation

It is important to note that the law also prohibits employers from retaliating against employees who request religious accommodations even where they are ultimately deemed not entitled to an accommodation so long as the request was made in good faith. If you experience any form of retaliation or discrimination due to your request, you have legal recourse to address such actions. It is always a good idea to familiarize yourself with the specific protections provided by federal, state, and local laws to safeguard your rights during this process.

Approaching the Request

When initiating a conversation about dress accommodations, approach your employer professionally and respectfully. Highlight the religious significance of the requested accommodation and explain how it aligns with your sincerely held beliefs. Emphasize your commitment to maintaining safety standards and express your willingness to collaborate in finding a solution that respects both your faith and the requirements of your profession.

Tips for Making a Request

Document Your Request: Keep a paper trail of all communication related to your dress accommodation request. This will serve as evidence of your proactive approach and can be useful if any issues arise in the future.

Consult an Attorney if Necessary: While it may be a good idea to consult with an attorney familiar with employment law and religious accommodations, remember that you may know the work dynamic best. Trust your intuition and rely on your knowledge of your workplace to guide your approach.

Be Prepared to Discuss Alternatives: Recognize that your employer may not grant the exact accommodation you request, nor are they obligated to. Stay open-minded and be willing to discuss alternative options that still allow you to practice your faith while maintaining professional and safety standards.

Highlight the Benefits: Explain how accommodating your religious dress requirements can contribute to a more inclusive and diverse workplace. Emphasize the positive impact it can have on patient care while fostering a sense of cultural sensitivity and respect.

Maintain a Positive Attitude: Approach the conversation with a positive attitude focusing on finding a mutually beneficial solution. A little humor can go a long way in easing tension and fostering a collaborative atmosphere.

Navigating dress accommodations as an Orthodox nurse requires a thorough understanding of your rights, safety considerations, cooperative dialogue, and legal protections. By approaching the conversation professionally, demonstrating the conflict between your religious beliefs and work requirements, and exploring alternative solutions, you can navigate this process successfully. Remember to maintain a positive attitude, document your requests, and seek guidance when necessary. By doing so, you can ensure that your religious needs are respected while maintaining a safe and inclusive work environment.

Joey Aron, Esq, is the founding attorney of Aron Law, PLLC, a boutique law firm in Brooklyn, NY, where he focuses on Freedom of Information Law (FOIL) litigation and matters pertaining to religious discrimination.

Orthodox Jewish Nurses Association Inc.
411 Hempstead Turnpike, Suite 200
West Hempstead, NY 11552

Non-Profit Org.
US Postage
PAID
Great Falls, MT
Permit #128

layout & design: coloryourdesignportfolio.com

MEET THE TEAM:

Chaya Milikowsky, MS, AG/ACNP-BC, RN, received her Master of Science in Clinical Nurse Leadership from the University of Maryland School of Nursing in 2010, after which she went directly into critical care nursing. In 2015 she earned a post-master's certificate as an Adult/Geriatric Acute Care Nurse Practitioner and Clinical Nurse Specialist from the University of Maryland School of Nursing. She splits her time between working for inpatient hospice and the MICU at University of Maryland Medical Center. She lives in Silver Spring, Maryland, with her husband and children.

Tobi Ash, MBA, BSN, RN, received her Bachelor of Science in Nursing from Barry University in 1998, her Master of Business Administration from Nova Southeastern University in 2001, and is completing her Ph.D. at Walden University. Tobi is the Director of Women's Health Care at Nano Health Associates in Miami Beach. She is a member of Sigma Theta Tau International Honor Society of Nursing and served the nurse position on the Health Care Advisory Committee for the City of Miami Beach for two consecutive terms. She sits on the boards of the Greater Miami Jewish Federation, LimmudMiami, EMES Initiative, NCSY Southern Region, Miami Beach Garden Club, and Helping Hands, and is the former chair of Ohel South Florida Advisory Board. She lives in Miami, Florida.

Dina Bressler, BSN, RN, WTA, graduated from Touro College's Nursing Program in June of 2020. She currently works in Brooklyn, New York, as an Assistant Nurse Manager for the Mount Sinai Health System while pursuing her MSN/MBA degree at the Johns Hopkins School of Nursing and Carey School of Business.

Sarah Bracha Cohen, MSN, RN, CNL, received her Bachelor of Arts in Health Sciences from Hebrew Theological College in 2013 and her Master of Science in Nursing and Clinical Nurse Leader from the University of Maryland School of Nursing in December 2017. She is a member of Sigma Theta Tau International Honor Society of Nursing, the Honor Society of Phi Kappa Phi, the American Nurses Association, the Association of Women's Health Obstetric and Neonatal Nurses, and the American Society for Reproductive Medicine. She has worked as a fertility nurse and a surgical services nurse, and recently began working as a mother-baby nurse. Sarah Bracha lives in Miami where she is the Florida OJNA Chapter Representative.

Ariela Kauffman, MSN, BSN, PHN, RN-BC, CMSRN, received a BA in Liberal Studies, BSN, and her MSN in Nursing Education in 2012. She holds Board Certification in both Adult Medical-Surgical and Gerontology, and is a member of the Academy of Medical Surgical Nurses. She serves on the MSNCB Item Review committee, which creates the exam for board certification and recertification. She currently works as a CN III at Cedars Sinai Medical Center and lives in Los Angeles, CA with her four children.

Estie Mermelstein, MSN, FNP-BC, is a family nurse practitioner and medical writer. After receiving her Bachelor of Science in Nursing in 2013 from NYU College of Nursing, she worked as a labor and delivery nurse at NYU Langone Medical Center. She then received her Master of Science in Nursing from Columbia University School of Nursing and became board-certified as a family nurse practitioner in 2018. Estie worked as a family NP in an adult primary care practice, then combined her nursing and writing background as a medical writer for Haymarket Media, Inc.

Tziporah (Tzippy) Newman, BSN, RN, received her Associate Degree in Nursing from Middlesex County College and Bachelor of Science in Nursing from Thomas Edison State College. She works as a field nurse with medically fragile children. She previously worked as a director of nursing for a home health care agency, supervising and teaching nurses and home health aides. She is a member of the American Nurses Association, the New Jersey State Nurses Association, and the Society of Pediatric Nurses. She is a co-chair of the Highland Park Mental Health Commission, and actively volunteers for Chai Lifeline and Bikur Cholim.

Shevi Rosner, MSN, RNC, received her Bachelor of Arts from Hunter College, Bachelor of Science from Columbia University, and Master of Science in Nursing Education from Ramapo College. She is dual certified in pediatrics and NICU, and has worked in Morgan Stanley Children's Hospital of New York Presbyterian since 2007. She is also a professor at Ramapo College and Long Island University schools of nursing. She is the past President of the Orthodox Jewish Nurses Association and a volunteer for the Academy of Neonatal Nursing. She is a member of the New York State Nurses Association and Academy of Neonatal Nursing. She lives in New Jersey with her husband and children.

Yocheved Weinreb, MSN, RN, OCN, received her Bachelor of Science in Nursing Magna Cum Laude from New York University in 2011; her Master of Science in Nursing Education from Chamberlain University in 2021; and is a graduate of the Mount Sinai Emerging Leaders program. Her memberships include the Oncology Nursing Society, Infusion Nurses Society, and the Association for Nursing Professional Development. She started her nursing career as a bone marrow transplant nurse leading to a career devoted to oncology nursing. She has worked in nursing leadership, infusion, and palliative care for the oncology patient. She is currently the Oncology Nurse Education Manager at Mount Sinai West and Morningside. She lives in Passaic, New Jersey.