



Considerations and Recommendations for Palliative Care Management in the Geriatric Trauma Population

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Abstract

Purpose of Review To explore the utilization of palliative care consultation (PCC) and management in geriatric trauma patients, through the lens of trauma-informed care (TIC) and identify areas to improve palliative care utilization in this growing population.

Recent Findings PCC is often obtained in a delayed fashion, often beyond the recommended 72-hour time frame. There is a wide variability in early palliative care (EPC) utilization, despite its benefits of reducing hospital and ICU LOS, reduced costs, and improved patient satisfaction. To assist in prognostication, the Palliative Performance Scale, Trauma-Specific Frailty Index and Geriatric Trauma Outcome Score can be employed. These scoring systems can guide clinicians in obtaining EPC and frame the conversation based on projected outcomes. TIC and palliative conversations have many overlapping concepts, and PCC with a focus on TIC allows for treatment of the whole person. There are racial, socioeconomic, geographic, age-related, and sexual identity-related disparities in PCC. PCC perception may contribute to some of these disparities, especially when considering provider perception.

Summary The authors recommend continued education for clinicians and hospital staff on determining the utility of EPC in geriatric trauma patients. Employing “The Surprise Question” and concepts discussed in the TQIP Best Practice and AAST Guidelines can assist in ensuring patients receive care aligned with their personal goals and wishes. Even if PCC isn’t obtained, a discussion about goals of care and appointment of surrogate decision maker should be conducted.

Keywords Palliative care consultation · Geriatric trauma · Frailty · Trauma-Informed Care

Introduction

Traumatic injuries can be life altering events for patients of any age, regardless of mechanism. However, in the geriatric population, these events can be particularly devastating superimposed on pre-existing conditions [1]. The 2015 National Institute of Aging report suggests that the number of older adults worldwide is anticipated to double from 8.5% to 17% by 2050 [2]. Within this population the prevalence of frailty is substantial, with 15% of older adults (65 years and older) in the United States identified as frail and 45% identified as pre-frail; the current worldwide incidence of frailty is reported to be 43.4 cases per 1000 person years [3]. The prevalence of frailty increases by age cohort, with 8.9% of patients aged 65–69 and 37.9% of those older than 90 years old identified as frail. Worsening frailty is associated with cognitive decline, worse health outcomes, and increased mortality [3].

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In helping patients and family members navigate the complexity of trauma care, palliative care consultations (PCC) can facilitate medical decisions and interventions to align care with a patient's goals [1, 4]. The leading cause of trauma in geriatric patients is ground-level falls, which can lead to significant traumatic injuries, especially blunt chest trauma [5]. Although the potentially devastating impact of traumatic injuries in the geriatric population is well recognized, the care of these hospitalized patients is quite variable. The literature demonstrates PCC improves symptom management and patient satisfaction, in addition to being associated with fewer non-beneficial interventions such as tracheostomy placement, percutaneous endoscopic gastrostomy placement, and prolonged ventilator support [6]. A study of the National Inpatient Sample demonstrated an increase in the use of palliative care from 2.9% in 2016 to 3.7% in 2020 [7]. However, palliative care is still substantially underutilized and inaccessible to much of the population; a retrospective review identified the 6-month mortality of all hip fractures, both operative and nonoperative, was 7.3%, and 1.8% of the sample population died in the hospital without PCC [7]. Despite the growing focus on implementing palliative care in the geriatric trauma population, there is still wide variability of its implementation, especially in the LGBTQ+ community and other minorities [7–9]. Other risk factors associated with a lower utilization of palliative care include race, age, socioeconomic status, fewer comorbidities, male gender, smaller hospital size, rural setting, and geographic location [7, 10].

Unfortunately, palliative care specialists are often involved too late in the patient's admission, with the average PCC occurring 5.3 days after admission [11]. There are multiple benefits to earlier involvement in palliative care, including a significant reduction in potentially inappropriate interventions, length of stay, and total hospital costs [11, 12]. Even in hip fractures, which are generally recommended for repair within 24–48 h of admission, early palliative care can contribute by optimizing pain control, supporting early mobilization, and addressing polypharmacy [10].

The 2018 National Consensus Project highlights the main principles of palliative care, including patient centered care, promotion of psychological safety, transparency of choices, and collaborative decision making [13]. These principles are similarly reflected in trauma-informed care (TIC) with focus on principles of safety, trustworthiness, choice, and collaboration [14]. The implementation of these interventions can range from individual steps, such as seeking permission before physical touch to help restore a patient's sense of control; to systemic steps, such as modifying environmental and interpersonal causes of re-traumatization. In the context of palliative care, this can assist patients in regaining a

sense of autonomy over treatment decisions when participating in goals of care discussions. Furthermore, this may help reduce the patient's impaired engagement with the healthcare system and assist in the patient's emotional and clinical recovery [14]. Palliative care should be utilized as an adjunct to other medical treatments that align themselves with the patient's wishes rather than hospice care, especially in the geriatric population, some of whom may have presented with advance directives [12]. This review will examine the use of early palliative care as a method to implement trauma-informed care to enhance patient care in a consistent manner, despite the unique circumstances of complex geriatric trauma patients admitted to the intensive care unit (ICU).

Impact of Early vs. Late Palliative Care Involvement

Multiple studies have demonstrated the benefits of palliative care regardless of the age group. Still, it remains underutilized in the trauma population. A retrospective study that showed only 4% of patients over 65 with traumatic brain injuries (TBIs) had a PCC [15]. However, palliative interventions were pursued in TBI patients in at least 70% of patients aged 75 or older with Glasgow Coma Scale (GCS) 3–8, worsening computed tomography (CT) scan findings, or evidence of cerebral edema on initial CT imaging [16]. Echoing these findings, it has been suggested that PCC often doesn't occur until the patients are actively dying [17]. When it is utilized, it is often utilized late in a patient's hospital course; one study noted an average of 6.83 days post-admission for PCC [9], while another demonstrated an average of 8.6 days [15]. The necessity of early consultation for palliative care may be nebulous initially due to the difficulty in determining a patient's prognosis and inability to predict complications during the patient's hospital course.

This trend is contrary to the current recommendations in several guidelines. The 2017 American College of Surgeons (ACS) Trauma Quality Improvement Program (TQIP) Palliative Care Best Practice Guideline describes opportunities other than end-of-life care for the early involvement of palliative care, describes tools for delivering bad news, and provides a timeline for early palliative care. It recommends screening hospitalized trauma patients for palliative care needs within 24 h of admission and a first structured meeting to ideally occur within 72 h of admission and every 3–5 days thereafter [18]. The 2023 World Society of Emergency Surgery (WSES) guidelines build on this framework, supporting the use of several scores to assist in prognostication such as the Palliative Performance Scale and the FRAIL score, as well as identifying barriers to the implementation of early palliative care such as resistance by families

and miscommunication regarding prognosis [19]. The 2024 American Association for the Surgery of Trauma (AAST) Critical Care Committee and Palliative Care Committee clinical consensus guideline similarly supports the initial 24-hour screening proposed in the ACS guideline but also advocates for a prioritization of primary palliative care to remove barriers, such as lack of specialist availability. The guideline further emphasizes the urgency of palliative care, by recommending that goals of care should be clarified within 24 h of admission if feasible, before operative intervention, and no later than 72 h after admission [20].

Other studies have further examined early palliative care (EPC), defined as within 72 h of hospitalization, vs. late palliative care (LPC) and found that increased costs were offset by EPC or even reduced by EPC [11, 15, 21]. When comparing EPC and LPC in adult trauma patients, early consultation resulted in shorter hospital length of stays, less ventilator days, reduced rates of invasive procedures, and lower costs [11, 19, 21, 22]. The median cost reduction demonstrated by Spencer et al. was \$35,511 per patient, which is a clinically significant reduction for both the medical system and patients [11, 15]. Similar differences were seen when comparing early vs. late palliative consultations in the geriatric population; early consults also showed significantly shorter ICU stays (3 days vs. 6 days), hospital days (3 days vs. 11 days), and ventilator days [15]. Interestingly, a difference in mortality was not seen [21, 23], highlighting that early palliation does not equate to hospice, but rather seeks to prioritize a patient's quality of life following traumatic injuries.

Frailty and Prognosis

Within the geriatric population, pre-injury levels of frailty and baseline functional status have been demonstrated to be better predictors of patient outcomes than the severity of the injury itself [24]. Although specific metrics such as CT-observed sarcopenia and American Society of Anesthesiologist (ASA) Physical Status Classification System can be used to assist in predicting patient mortality, they may be difficult to use initially to estimate expected functional outcome [19]. Accurate prognostication of not just mortality, but also functional and likely discharge outcomes are critical aspects of the palliative care conversation. The 2023 WSES guidelines on the management of trauma in elderly patients recommends assessing frailty in all elderly trauma patients, as approximately 80% of geriatric trauma patients have at least one chronic disease, contributing to increased frailty [19].

The Palliative Performance Scale (PPS) encapsulates significant predictors of function such as frailty and cognitive status and has been prospectively validated to predict functional outcomes at one year [6, 19, 25]. PPS can be quickly calculated bedside, and is based on five domains:

ambulation, activity and evidence of disease, self-care, intake, and consciousness level; please see Table 1. Each of these domains is scored and correlates with a percentage level in increments of 10, with a score $\leq 70\%$ acting as an independent predictor of mortality, poor functional outcome, and discharge to dependent care in patients 55 years or older [24]. Low PPS patients also demonstrate failure to improve over 6 months-post discharge, demonstrating its ability to predict short- and long-term outcomes in geriatric trauma patients [27].

The Trauma-Specific Frailty Index (TSFI) consists of 15 variables that can identify patients who are frail, prefrail or non-frail and was developed in 2014 [26]. Similar to the Palliative Performance Scale, it consists of 5 domains: Comorbidities (Cancer, Coronary Heart Disease, and Dementia), Daily activities, Health Attitude, Function (sexually active), and Nutrition (albumin level). The total score is divided by 15 and gives the TSFI, with >0.25 representing a frail patient, $0.13\text{--}0.24$ representing a prefrail patient, and ≤ 0.12 representing a non-frail patient, please see Table 1. A multi-institutional study of trauma centers demonstrated that frail patients were associated with increased odds of mortality, major complications and discharge to a skilled nursing facility (SNF) [28].

The Geriatric Trauma Outcome Score (GTOS) is another scoring system utilized to determine the risk of mortality in this population: it utilizes age, ISS and blood transfusion within the first 24 h as variables. The GTOS has been shown to accurately predict mortality better than any of its individual variables in a review of the National Trauma Data Bank [29]. In 2017, Cook et al. formulated the GTOS II to determine unfavorable discharge with the same variables as GTOS I [30]. The GTOS III model was formulated in 2019 utilizing age, ISS, PRBC transfusion within the first 24 h, low GCS (≤ 10), and discharge disposition (SNF, long-term acute care hospital, inpatient hospice or mortality) [31]. Please see Table 1 for these equations. This scoring system and subsequent iterations recognizes the effects that older age, increased injury severity, transfusion requirements, decreased GCS and discharge to other specialized care facilities have on the prognostication of elderly trauma patients, and correlates to PCC utilization in trauma patients [19, 32]. Although these equations may not have all the information readily available at the bedside, several variables can be discerned within the first 24 h and can guide discussions with patients and their families early in the hospital course.

Trauma-Informed Care and Psychosocial Considerations

Both emotionally and physically harmful events can have lasting adverse effects on patients, resulting in posttraumatic stresses on a patient's social, emotional,

Table 1 This data is mandatory. Please provide**Palliative Performance Scale [25]**

%	Ambulation	Activity Level and Evidence of Disease	Self-Care	Intake	Level of Consciousness
100	Full	Normal/No disease	Full	Normal	Full
90	Full	Normal/Some disease	Full	Normal	Full
80	Full	Normal with effort/Some disease	Full	Normal or reduced	Full
70	Reduced	Can't do normal job/Some disease	Full	Normal or reduced	Full
60	Reduced	Can't do housework/Sig-nificant disease	Occasional Assis-tance Needed	Normal or reduced	Full or confusion
50	Mainly sedentary	Can't do any work/Exten-sive disease	Considerable Assis-tance Needed	Normal or reduced	Full or confusion
40	Mainly in bed	Can't do any work/Exten-sive disease	Mainly Assistance	Normal or reduced	Full or drowsy or confusion
30	Bed-bound	Can't do any work/Exten-sive disease	Total Care	Reduced	Full or drowsy or confusion
20	Bed-bound	Can't do any work/Exten-sive disease	Total Care	Minimal	Full or drowsy or confusion
10	Bed-bound	Can't do any work/Exten-sive disease	Total Care	Mouth Care Only	Drowsy or coma

Trauma Specific Frailty Index [26]

Comorbidities

Cancer History	Yes (1)			No (0)	
Coronary Heart Disease	MI (1)	CABG (0.75)	PCI (0.5)	Medication (0.25)	None (0)

Dementia	Severe (1)	Moderate (0.5)	Mild (0.25)	No (0)
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Daily Activities

Help with grooming	Yes (1)			No (0)
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Help with managing money	Yes (1)			No (0)
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Help doing housework	Yes (1)			No (0)
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Help toileting	Yes (1)			No (0)
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Help walking	Wheelchair (1)	Walker (0.75)	Cane (0.5)	No (0)
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Health Attitude

Feel less useful	Most of the time (1)	Sometimes (0.5)		Never (0)
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Feel sad	Most of the time (1)	Sometimes (0.5)		Never (0)
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Feel effort to do everything	Most of the time (1)	Sometimes (0.5)		Never (0)
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Feel lonely	Most of the time (1)	Sometimes (0.5)		Never (0)
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Falls	Within last month(1)	More than 1 month ago (0.5)		Never (0)
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Function

Sexually Active	Yes (0)			No (1)
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Nutrition

Albumin	<3 g/dL (1)			>3 g/dL (0)
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SCORE	TSFI=Score/15	0-0.12=Nonfrail	0.13-0.25=Prefrail	>0.25=Frail
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Geriatric Trauma Outcome Score I (predicts mortality) [29, 30, 31]

Age + (2.5 x ISS)+22 (if PRBC transfused within 24 h of admission)

Geriatric Trauma Outcome Score II (predicting unfavorable discharge)

Age + (0.71 x ISS)+8.79 (if PRBC transfused within 24 h of admission)

Geriatric Trauma Outcome Score III (predicts mortality)

Age + (0.806 x ISS) + 5.55 (if PRBC transfused within 24 h of admission) + 21.69 (if GCS ≤ 10) + 34.36 (if discharged to SNF, LTACH, inpatient hospice)

physical or spiritual wellbeing. Individuals with a history of posttraumatic stress often find themselves seeking further healthcare services in the future. The often-invasive nature of US health care systems puts this population

at risk for what has been called “re-traumatization,” or rather re-experiencing of the earlier trauma symptoms [14]. Patients with pre-existing comorbid conditions are at particular risk for re-traumatization given the need for

repeat visits to the health care system for management of chronic medical issues. Re-traumatization becomes an even more prevalent issue in the geriatric trauma population due to their higher baseline comorbid conditions and puts patients at an even higher risk for posttraumatic stress, up to 60–70% [14]. Posttraumatic stress associated with one's healthcare system experience can not only affect patients during the recovery at home but also dissuade them from seeking further outpatient or inpatient hospital care. Improving the geriatric trauma patient experience in the healthcare system and alleviating the logistical burdens of posttraumatic stress disorder (PTSD) on the health care system requires additional considerations to reduce the risk of re-traumatization.

As a result of the above phenomena, healthcare systems have aimed to adopt TIC models to improve care delivery to these select patients. These models emphasize the recognition of trauma symptoms and response to these symptoms with interventions that reduce the risk of re-traumatization. Although TIC models have some similarities amongst the tenants of palliative care (patient centered care, promotion of psychological safety, transparency of choices, collaborative decision making), there are some distinct ways in which palliative care providers can respond differently when integrating TIC. The Substance Abuse and Mental Health Services Administration (SAMHSA) Trauma Informed Care model additionally includes attention to creating safety; trustworthiness and transparency; peer support; collaboration and mutuality; empowerment, voice, and choice; and attention to cultural, racial, historical, and gender issues [33]. For each TIC principal, palliative care social workers can explore with the patient how to prepare for moments where they may be reminded of prior trauma or experience a heightened fear response.

Implementation of TIC into palliative care discussions allows clinicians to better understand their patients' needs and allow patients and their family members to better understand their goals of care. However, this requires specific training, which can be obtained through educational videos [34]. Trauma-informed palliative care also considers the effects of PTSD from previous traumatic experiences as well as more temporally recent traumatic experiences, and assessment of traumatic experiences is recommended in palliative care consultation [35]. In this way, PCC can treat the whole person, both medically and psychosocially [4].

Equity and Disparities in Access for Palliative Care Utilization

While we discuss the benefits of palliative care through a variety of lenses, we recognize that the availability and delivery of such care is not equal for all patients. Much like

regular healthcare, differences exist when comparing palliative care amongst majority and minority groups. A cohort study of the National Inpatient Sample from 2016 to 2020 found patients diagnosed with a hip fracture had significant variability in palliative care utilization: Black patients had a 27% reduced odds of receiving a PCC compared to White patients [7]. Similar to this trend in palliative care utilization, hospice utilization is more common in White patients compared to Black and Hispanic patients [36]. Black, Hispanic and Asian American patients are more likely to die in the hospital and receive life-sustaining treatments at the end-of-life [37]. Patients 85 and older who fall are almost 3 times more likely to receive palliative care consults, despite the mortality rate being clinically similar (2–3%) between 65 and 74, 75–84, and 85 + age groups [38]. While this disparity may seem reasonable due to advanced age, it still demonstrates a trend of involving palliative care without equity amongst the geriatric trauma population.

Disparities for palliative care utilization also exist based on location and socioeconomic status of the patients. In rural hospitals, patients with heart failure are less likely to be referred for end-of-life care, especially in isolated rural hospitals [39]. This correlation was also present in lower socioeconomic regions as well, with patients in the most deprived neighborhoods to have acute hospital-based care within the last 3 months of life, with fewer PCC [40]. Even factors such as the ACS trauma designation can impact PCC; patients seen at a level III center were less likely to have withdrawal of life-supporting treatment and worse outcomes, highlighting the need for education and access to palliative care services [22, 41].

With regards to sexual identity and orientation, difficulty with end-of-life care can arise with something as fundamental as the definition of family. Same-sex marriages were not legally recognized until recently in the United States. This correlated to difficulty in defaulting to a surrogate decision maker in the absence of advanced directives or power of attorney paperwork. To further complicate end-of-life care, geriatric LGBTQ+ patients have a higher chance of being unpartnered, not have biological children, and live alone compared to the general population [8]. Members of the LGBTQ+ community often have chosen families, but these are not legally recognized as default surrogate decision makers, which complicates their experiences further [40]. Even if LGBTQ+ patients are referred for PCC, they may face discrimination or biases due to lack of training in treating LGBTQ+ patients [42].

System Models and Clinical Strategies

Despite ongoing studies that suggest known benefits to the use of palliative care services in trauma, national

data still demonstrates that PCC use is persistently low amongst the trauma population. Studies show that less than 5% of geriatric patients presenting with primary diagnosis of geriatric trauma receive PCC [7]. In general, surgical patients are less likely to receive PCC compared to medical patients, largely due to systemic and educational barriers [1]. When considering the mortality of geriatric trauma is up to 10% while inpatient and up to 22.6% within 5 years of the traumatic injuries [31], this integration of palliative care becomes an obvious choice. Palliative care involvement for geriatric trauma patients has increased to 6.3% of Medicare patients, demonstrating recognition of the proven benefits of this integration [43]. Certain demographics have been shown to increase the rate of PCC: older age, female sex, white race, and higher socioeconomic status [7].

To bridge the systemic and educational barriers that may be resulting in the under use of palliative care amongst surgical services, The Journal of Palliative Medicine offered 10 tips that experts believe the palliative care clinician should know about trauma and emergency surgery patients [24]. This can be of particular importance in the geriatric patient population where surgical risk is often higher due to pre-existing comorbid conditions. Oftentimes, trauma patients have not had discussions with family regarding their end-of-life preferences prior to the inciting events. Therefore, code status and other life sustaining treatments should routinely be discussed with patients or caregivers within the context of their sustained injuries and presumed goals of care. Ensuring that trauma patients and their families understand the possibility of losing decision-making capacity during their trauma related care is of utmost importance [4, 20, 24]. Although timeline to death is the outcome most likely to be discussed after traumatic injuries occur, an emphasis should rather be placed on long-term changes to quality of life.

To provide high-quality palliative care to geriatric trauma patients and families, the unique needs of this population must be understood by not only the palliative care clinicians but also the surgeons involved. Educational partnerships and collaborations can continue to improve outcomes using this team-based care. For example, University of Texas Houston created a specific ward for trauma patients aged 55 years or older called “The Silver Unit” and this cohorting and education has led to increased awareness in residents and nursing staff concerning frailty and management of geriatric trauma patients [2]. The AAST also provides education for utilizing palliative care with easily applicable concepts such as “The Surprise Question: Would you be surprised if this patient were dead in 12 months?” If the answer is “no” or “maybe,” then it supports obtaining a PCC [20].

Primary palliative care is administered by the primary or multidisciplinary team, whereas specialist palliative care is administered by board-certified specialists. The AAST Primary palliative care guideline and Journal of Palliative Medicine Top 10 tips are tools utilized to increase the utilization and efficacy of primary palliative care, please see Table 2. Although both guidelines recommend a true palliative care consultation if available, they provide education to assist clinicians with prognostication of patients, preparing patients and their families for possible complications, determining code status and goals of care, and frameworks for delivering bad news [19, 20, 24, 44]. A prospective observational study of trauma patients admitted to the ICU found nurses desired palliative care consultation 50% more often for patients than resident or attending physicians, reflecting the wide variability in provider preferences for PCC [45]. Implementing palliative care principles into surgical resident education increased advanced care planning documentation and improved outcomes [46], and hospital wide education is recommended in a review by Newsome et al. [44].

Table 2 This data is mandatory. Please provide

Top Ten Tips Palliative Care Clinicians Should Know About Trauma and Emergency Surgery [24]

Tip 1: Surgeons May Not Know the Full Breadth of Palliative Care Practice and What Palliative Care Can Offer to Patients

Tip 2: Surgical Patients and Families, Even Under Emergency Circumstances, Often Have an Expectation of Surgical Cure and May Not Be Prepared for Surgical Failure or Postoperative Complications

Tip 3: Overcoming the Societal Normal to “Do Everything” Can Complicate Efforts to Provide Goal-Concordant Care in This Population

Tip 4: Patients Who Have Surgery Are at Risk for Losing Decision-Making Capacity for Prolonged Periods and Therefore It Is Important to Clarify Before Surgery the Desired Outcome, Goals of care, and Unacceptable States from the Patient’s Perspective

Tip 5: Older (55+) and Frail Trauma Patients Would Benefit from an Early Palliative Care Needs Assessment

Tip 6: Trauma Patients with Serious Preexisting Chronic Disease Would Benefit from an Early Palliative Care Needs Assessment

Tip 7: Code Status and Other Life-Sustaining Treatments Should Be Discussed Iteratively Within the Context of Goals of Care for Seriously Injured Patients

Tip 8: Surgeons Often Unconsciously Feel Patient Complications and Poor Outcomes Personally Due to the Feeling of Personal Responsibility That Performing Surgery Confers

Tip 9: The Timeline to Death Is the Outcome Most Likely to Be Discussed After Injury or Emergency Surgery; However, Long-Term Changes to Quality of Life Must Also Be Addressed During Goals of Care Discussions

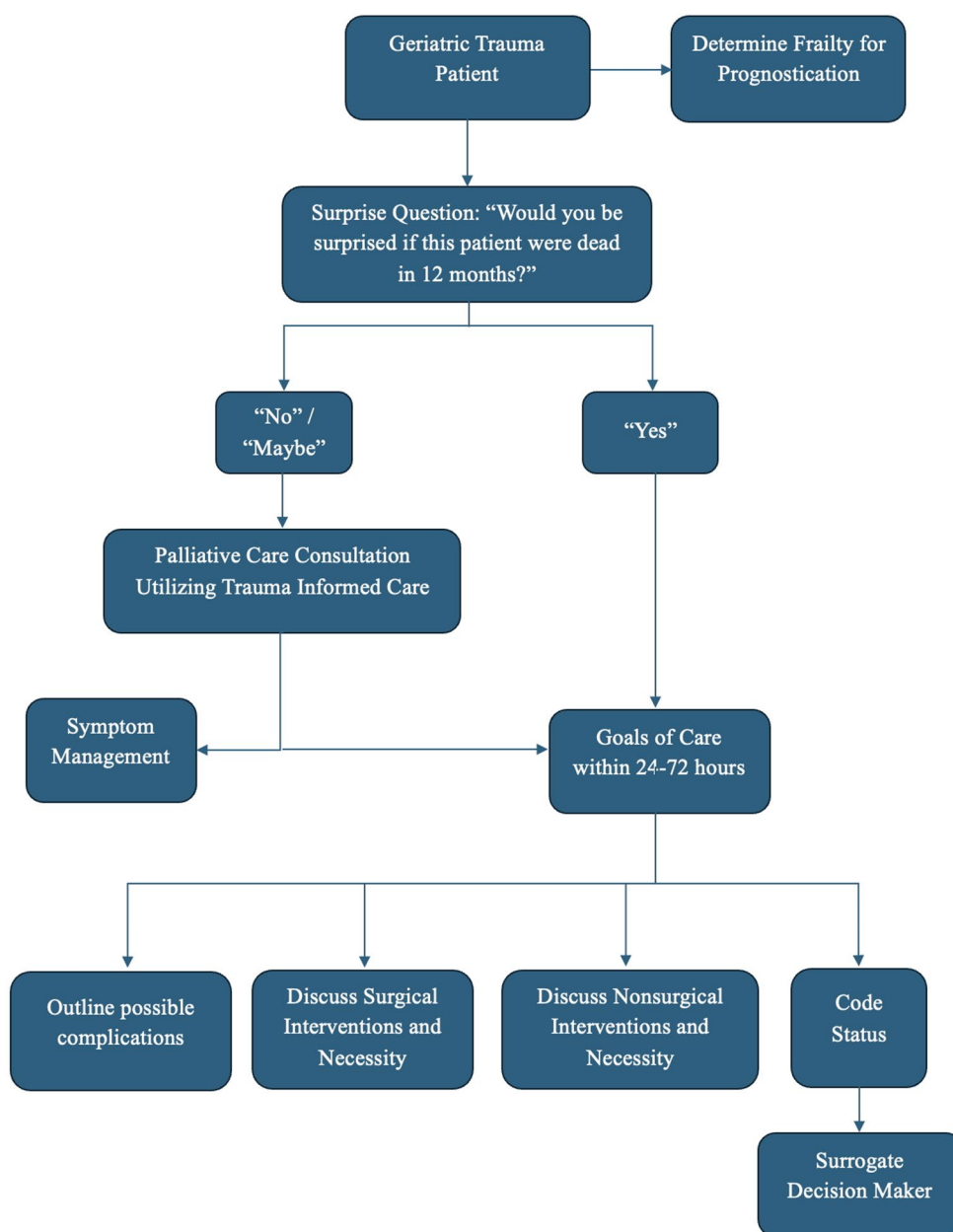
Tip 10: Trauma and Emergency Surgery Patients of All Ages Rarely Have Had Conversations with Their Families About Their End-of-Life Preferences Before Their Illness

Conclusion

Given that the geriatric trauma population is continuing to increase, determining when and for whom PCC should be considered is essential. The authors recommend determining frailty utilizing PPS, TSFI, or GTOS for prognostication purposes and to help guide the conversations with geriatric trauma patients and their families, chosen or biological. Applying “The Surprise Question” can help screen for those in which EPC would be beneficial, but the authors still recommend discussing goals of care and code status with patients who screen negative. Many geriatric

trauma patients require surgical or invasive procedures, and their increased risk of complications emphasizes the importance of these discussions initially to align medical treatments with patients’ value of quality of life. These discussions should include both surgical and nonsurgical interventions, outline possible complications, and help appoint a surrogate decision maker. Please see Fig. 1 for a flowchart demonstrating these discussion points and decisions. By evaluating geriatric patients for palliative care discussions, we can align our medical care with patient goals, values and priorities while preserving their autonomy and relieving pain and untoward symptoms.

Fig. 1 This data is mandatory.
Please provide



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Declarations

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