

# Identification of Seniors at Risk Score to Determine Geriatric Evaluations on Trauma Patients With Hip Fractures

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- BACKGROUND:** Trauma centers are confronted with rising numbers of geriatric trauma patients at high risk for adverse outcomes. Geriatric screening is advocated but not standardized within trauma centers.
- OBJECTIVE:** This study aims to describe the impact of Identification of Seniors at Risk (ISAR) screening on patient outcomes and geriatric evaluations.
- METHODS:** This study used a pre-/postdesign to assess the impact of ISAR screening on patient outcomes and geriatric evaluations in trauma patients 60 years and older, comparing the periods before (2014–2016) and after (2017–2019) screening implementation.
- RESULTS:** Charts for 1,142 patients were reviewed. Comparing pre- to post-ISAR groups, the post-ISAR group with geriatric evaluations were older ( $M = 82.06$ ,  $SD = 9.51$  vs.  $M = 83.64$ ,  $SD = 8.69$ ;  $p = .026$ ) with higher Injury Severity Scores ( $M = 9.22$ ,  $SD = 0.69$  vs.  $M = 9.38$ ,  $SD = 0.92$ ;  $p = .001$ ). There was no significant difference in length of stay, intensive care unit length of stay, readmission rate, hospice consults, or in-hospital mortality. In-hospital mortality ( $n = 8/380$ , 2.11% vs.  $n = 4/434$ , 0.92%) and length of stay in hours ( $M = 136.49$ ,  $SD = 67.09$  vs.  $M = 132.53$ ,  $SD = 69.06$ ) down-trended in the postgroup with geriatric evaluation.
- CONCLUSION:** Resources and care coordination efforts can be directed toward specific geriatric screening scores to achieve optimal outcomes. Varying results were found related to outcomes of geriatric evaluations prompting future research.
- KEY WORDS:** Falls, Geriatric evaluation, Geriatric screening, Geriatric trauma, Hip fracture, Identification of Seniors at Risk (ISAR), Trauma

Cite as: Long, T. K., Booza, S. D., Turner, L. N. (2023). Identification of seniors at risk score to determine geriatric evaluations on trauma patients with hip fractures. *Journal of Trauma Nursing*, 30(3), 142-149. <https://doi.org/10.1097/JTN.0000000000000719>

## BACKGROUND

In 2019, older adults, defined as 60 years and older, made up about 16% of the U.S. population and are expected to increase to 25% by 2060 (Centers for

Dates: Submitted September 21, 2022; Revised February 16, 2023; Accepted February 22, 2023

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This material was presented as an oral and poster presentation at the Society of Trauma Nurses TraumaCon April 1, 2022, and American Geriatric Society Annual Scientific Meeting May 12, 2022, respectively.

The authors declare no conflicts of interest.

Supplemental digital content is available for this article. Direct URL citation appears in the printed text and is provided in the HTML and PDF versions of this article on the journal's Web site ([WWW.JOURNALOFTRAUMANURSING.COM](http://WWW.JOURNALOFTRAUMANURSING.COM)).

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Disease Control and Prevention [CDC], 2022). With the growing number of older adults, the prevalence of geriatric syndromes, including falls, is rising. In the United States, falls are the leading cause of injury (fatal and nonfatal) among adults older than 65 years (Moreland et al., 2020). Falls are the most common contributing factor to hip fractures in older adults, and may require increased assistance afterward (CDC, 2016).

In 2013, the American College of Surgeons (ACS) Trauma Quality Improvement Program (TQIP) announced a call for action regarding the need for specialized geriatric care and acknowledged the use of the Identification of Seniors at Risk (ISAR) screening tool, which identifies patients who may benefit from a geriatric evaluation (ACS, 2013). Using geriatricians in the care of trauma patients can promote positive outcomes that include cost-saving measures within the health care system, collaborating with hospice resources, and provision of resources at end of life (Olufajo et al., 2016). The ISAR score can help determine which older adult trauma patients may benefit from a geriatric evaluation.

## KEY POINTS

- The Identification of Seniors at Risk score can determine the need for geriatric evaluations on trauma patients.
- Geriatric evaluations positively impact mortality and LOS in older hip fracture patients with a higher ISS.
- More research is needed to correlate specific geriatric recommendations on trauma patient outcomes.

## OBJECTIVE

This study aims to describe the impact of the ISAR score screening on trauma patient outcomes and geriatric evaluations.

## METHODS

### Design

This study used a pre-/postdesign to assess the impact of ISAR score screening on patient outcomes and geriatric evaluations in trauma patients 60 years and older, comparing the periods before (2014–2016) and after (2017–2019) the screening implementation. Data were collected from the electronic medical record and the trauma registry.

### Setting and Sample

The study setting was a Midwestern, suburban, community teaching hospital verified as an ACS Level II adult trauma center. The average age of patients admitted to the trauma service was 68.5 years, and hip fractures associated with falling increased from 15% of all trauma admissions from 2014–2016 to 21% in 2017–2019. Inclusion criteria included patients 60 years and older, admitted during the above stated timeframes to the trauma service for a hip fracture after a fall (see Supplemental Digital Content 1, available at: <http://links.lww.com/JTN/A90>). Hip fracture was defined as femoral head, femoral neck, intertrochanteric, subtrochanteric, femoral shaft, and periprosthetic fractures. Exclusion criteria included patients admitted during the 6-month adoption period (July to December 2016), patients with incomplete scores, and multiple or nontrauma admissions.

### Screening Procedure

The trauma resident completed the ISAR screening tool during the emergency department evaluation. A geriatric evaluation was ordered in the electronic medical record if the patient answered “yes” to two or more questions on the screening tool. If a patient was discharged prior to being seen for the evaluation, follow-up information was provided at the geriatric outpatient clinic.

## Study Instrument

### Identification of Seniors At Risk

Developed in 1999 in Canada, the ISAR screening tool is a 6-item questionnaire aimed at providing a simple way to identify older adult patients in the emergency department at risk for subsequent death, transfer to a nursing home, long-term hospitalization, or a decline in functional status and who may benefit from a geriatric evaluation (Cortez, 2018; McCusker et al., 1999). The ISAR screening tool has been extensively validated and determined to demonstrate good test-retest reliability and modest predictive accuracy (Galvin et al., 2017). Tool questions include: Before you were injured, did you need someone to help you on a regular basis? Since the injury, have you needed more help than usual to take care of yourself? Have you been hospitalized for one or more nights during the past 6 months? In general, do you have problems seeing well? In general, do you have serious problems with your memory? Do you take more than three medications every day? (Galvin et al., 2017; McCusker et al., 1998). Some studies recommend that the ISAR screening tool be used as an adjunct, combined with clinical judgment, and not as an independent tool for clinical decision-making (Asomaning & Loftus, 2014; Edmans et al., 2013).

### Variables

Study variables include the ISAR score (0–6 or if incomplete or not completed), type of hip fracture, and demographics, including gender, race, age, ethnicity, and preferred language. Additional variables collected were Injury Severity Score (ISS), length of stay (LOS), intensive care unit (ICU) LOS, 30-day hospital readmission, in-hospital mortality, hospice consult, and discharge disposition.

### Data Analysis

Effect sizes were calculated based on the sample size and determined adequate. Variables were described using means and standard deviation for continuous variables and counts and percentages for nominal data. The Kruskal–Wallis test was used to evaluate the primary outcome of how the variables relate to each ISAR score. There were seven levels of ISAR, and thus 21 pairwise tests that were possible. All levels and pairwise tests were examined, and adjustments to the *p* value used Hochberg’s adjustment as required. The secondary outcomes compared the pre-ISAR implementation and post-ISAR implementation groups. Continuous variables were examined utilizing Student’s *t* tests, and nominal variables were examined using  $\chi^2$  tests. This study was approved by the Henry Ford Health Institutional Review Board, approval number 14455.

**Table 1.** Patient Characteristics and Injury Type

Demographics	Pre				Post				p
	M	SD	n	%	M	SD	n	%	
Age (years)	82.06	9.51			82.00	9.13			.775
Gender (female)			275/380	72.4			470/680	69.1	.267
Race (Caucasian)			370/380	97.4			660/680	97.1	.771
Ethnicity (Hispanic/Latino)			0/380	0			2/680	0.3	.540
Language (English)			363/380	95.5			648/680	95.3	.863
Hip fracture type									.001 <sup>a</sup>
Femoral shaft			26/380	5.5			22/680	3.2	
Intertrochanteric			184/380	48.4			331/680	48.7	
Proximal femur			166/380	43.7			327/680	48.1	

<sup>a</sup>The *p* value for the location of hip fracture is included for all fractures; the small sample sizes discounted the ability to do comparative statistics between injuries.

## RESULTS

A total of 1,142 charts were reviewed. Thirty-six were excluded for admission to nontrauma service, and 46 charts were excluded for patients with multiple admissions. Of the qualifying patients, 380 were included in the pre-ISAR implementation group and 680 in the post-ISAR implementation group. In the postperiod, 7% ( $n = 48/680$ ) of patients did not have an ISAR completed and thus were excluded from the results. Of the completed scores ( $n = 632$ ), 24 (3.8%) patients scored zero, 90 (14.2%) scored 1, 133 (21%) scored 2, 142 (22.5%) scored 3, 111 (17.6%) scored 4, 78 (12.3%) scored 5, and 54 (8.5%) scored 6. The majority of the patients admitted to the trauma service with hip fractures sustained an intertrochanteric fracture, followed by proximal femur fracture and femoral shaft fracture (Table 1).

### Primary Outcomes

Overall, the mean age increased with higher ISAR scores. Age was statistically different between ISAR scores. There was no significant difference between ISS and individual ISAR scores. LOS differed between individual ISAR scores, with the shortest LOS occurring in those with a score of zero ( $M = 98$  hr) and the longest LOS ( $M = 142$  hr) occurring in individuals with ISAR scores of 6. ICU LOS did not differ between ISAR scores, with the longest ICU stays ( $M = 7.18$  days) occurring in patients with an ISAR score of 3. There was no difference between in-hospital mortality and individual ISAR scores. However, in-hospital mortality was highest ( $n = 2/78$ , 2.56%) in ISAR scores of 5. Readmissions were also highest in those with an ISAR score of 5 ( $n = 14/78$ , 17.95%), followed by a score of 4 ( $n = 16/111$ , 14.41%). A score of zero had the lowest rate of readmissions ( $n = 0/24$ , 0%). Overall, the number of 30-day readmissions was not different between ISAR scores. Hospice consults differed between individual ISAR

scores, with most consults ( $n = 4/54$ , 7.41%) occurring in patients with a score of 6. Most patients were discharged to a skilled nursing facility (SNF) and did not differ between ISAR scores (Table 2). Sample sizes were not large enough to produce statistical significance between all discharge locations, so descriptive statistics were obtained for this variable (Table 3).

### Secondary Outcomes

Outcomes were compared between the time prior to the availability of the geriatric consult service to perform the geriatric evaluation (pre-ISAR implementation group) and the patients in the period after establishment of the consult service who received a geriatric evaluation (post-ISAR implementation group). Of the 680 patients in the post-ISAR implementation group, 434 (63.82%) had a geriatric evaluation. When comparing both groups, the majority of patients were female ( $n = 275/380$ , 72.4% vs.  $n = 470/680$ , 69.1%;  $p = .267$ ), Caucasian ( $n = 370/380$ , 97.4% vs.  $n = 660/680$ , 97.1%;  $p = .771$ ), primary language was English ( $n = 363/380$ , 95.5% vs.  $n = 648/680$ , 95.3%;  $p = .863$ ), and non-Hispanic or Latino ethnicity. Those of Hispanic or Latino ethnicity represented  $n = 0/380$  (0%) and  $n = 2/680$  (0.3%), respectively ( $p = .540$ ) (Table 1). Of significance, the patients in the postgroup who received a geriatric evaluation were older ( $M = 82.06$ ,  $SD = 9.51$  vs.  $M = 83.64$ ,  $SD = 8.69$ ;  $p = .026$ ), and the ISS was significantly higher ( $M = 9.22$ ,  $SD = 0.69$  vs.  $M = 9.38$ ,  $SD = 0.92$ ;  $p = .001$ ) when compared with the pregroup (Table 4).

There was no difference between groups for total LOS in hours ( $M = 136.49$ ,  $SD = 67.09$  vs.  $M = 132.53$ ,  $SD = 69.06$ ;  $p = .075$ ). In the pre-group ( $n = 22/380$ ), 5.78% of patients had a mean ICU LOS of 5.73 days ( $SD = 5.37$ ). In the postgroup ( $n = 18/434$ ), 4.14% of patients with a geriatric evaluation had an ICU LOS averaging 5.89 days ( $SD = 5.03$ ). Thirty-day

**Table 2. Primary Outcomes**

ISAR Scores	Variables													
	Participants		Age (Years)	ISS	LOS (Hours)	ICU LOS (Days)	30-Day Readmissions		Inhospital Mortality		Hospice Consults		Discharge to Skilled Nursing Facility	
	n	%	M	M	M	M	n	%	n	%	n	%	n	%
0	24/632	3.8	76.5	9.21	98	3.00	0/24	0	0/24	0	0/24	0	16/24	66.7
1	90/632	14.2	78.0	9.20	104	2.00	6/90	6.67	1/90	1.11	0/90	0	71/90	78.9
2	133/632	21	81.2	9.33	124	3.00	17/133	12.78	1/133	0.75	1/133	0.75	119/133	89.5
3	142/632	22.5	81.8	9.42	132	7.18	17/142	11.97	1/142	0.7	3/142	2.11	113/142	79.6
4	111/632	17.6	83.1	9.41	117	3.75	16/111	14.41	0/111	0	5/111	4.50	86/111	77.5
5	78/632	12.3	86.0	9.35	122	2.50	14/78	17.95	2/78	2.56	1/78	1.28	64/78	82.1
6	54/632	8.5	84.7	9.72	142	4.00	7/54	12.96	1/54	1.85	4/54	7.41	44/54	81.5
<i>p</i>			.001	.102	.012	.642		.413		.664		.034		.092

Note. ICU LOS = intensive care unit length of stay; ISAR = Identification of Seniors at Risk; ISS = Injury Severity Score; LOS = length of stay.

readmissions were higher in the post-ISAR implementation group with a geriatric evaluation compared with the pre-ISAR implementation group ( $n = 40/380$ , 10.53% vs.  $n = 62/434$ , 14.29%;  $p = .106$ ). Inhospital mortality was lower in the post-ISAR implementation group with a geriatric evaluation compared with the pregroup ( $n = 8/380$ , 2.11% vs.  $n = 4/434$ , 0.92%;  $p = .243$ ), and hospice was consulted more frequently ( $n = 4/380$ , 1.05% vs.  $n = 13/434$ , 3.00%;  $p = .083$ ) (Table 4).

As previously stated, due to the small sample size, statistical significance was unable to be computed for each discharge location; however, frequencies were obtained (Table 5). Overall, the majority were discharged to an SNF for both the pre-and post-ISAR implementation groups ( $n = 287/380$ , 75.53% vs.  $n = 313/434$ , 83.64%) followed by home with services ( $n = 25/380$ , 6.58% vs.  $n = 20/434$ , 4.61%) or home with self-care ( $n = 23/380$ , 6.05% vs.  $n = 18/434$ , 4.15%). Discharge to inpatient rehabilitation services was higher in the pre-ISAR implementation group ( $n = 26/380$ , 6.84%)

compared with patients in the post-ISAR implementation group with a geriatric evaluation ( $n = 10/434$ , 2.30%). Conversely, discharges to hospice were higher in the post-ISAR implementation group ( $n = 17/434$ , 3.92%) than in the pre-ISAR implementation group ( $n = 7/380$ , 1.84%).

### DISCUSSION

The use of the ISAR screening tool to guide geriatric evaluations in the literature varies. This variability includes screening performed by differing providers (nursing staff, residents, and advanced practice providers) and the frequency in which patients were assessed using the screening tool (within 24–72 hr of admission, twice a week, and daily). Inzitari et al. (2015) utilized a cutoff score of 3 as a positive ISAR score, whereas others considered 2 as warranting a geriatric evaluation (Asomaning & Loftus, 2014; Dingley et al., 2022; Edmans et al., 2013; Gronewold et al., 2017; Knauf et al., 2022). To the existing body of literature, this study adds outcomes stratified by

**Table 3. Primary Outcomes: Discharge Disposition by ISAR Score**

Discharge Disposition	ISAR Scores													
	0		1		2		3		4		5		6	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Acute care facility	0/24	0	0/90	0	1/133	0.8	0/142	0	2/111	1.8	0/78	0	0/54	0
Home with self-care	3/24	12.5	5/90	5.6	3/133	2.3	7/142	4.9	6/111	5.4	6/78	7.7	2/54	3.7
Home with services	4/24	16.7	13/90	14.4	5/133	3.8	9/142	6.3	7/111	6.3	3/78	3.9	1/54	1.9
Inpatient rehab	1/24	4.2	0/90	0	3/133	2.3	5/142	3.5	3/111	2.7	0/78	0	1/54	1.9
Left against medical advice	0/24	0	0/90	0	0/133	0	0/142	0	0/111	0	0/78	0	0/54	0
Long-term care	0/24	0	0/90	0	1/133	0	1/142	0.7	0/111	0	0/78	0	0/54	0
Skilled nurse facility	16/24	66.7	71/90	78.9	119/133	89.5	113/142	79.6	86/111	77.5	64/78	82.1	44/54	81.5

Note. ISAR = Identification of Seniors at Risk.

**Table 4.** Secondary Outcomes

Variable	Pre			Post With Geriatric Evaluation			p
	n	M	SD	n	M	SD	
Age	380	82.06	9.51	434	83.64	8.69	.026
ISS	380	9.22	0.69	434	9.38	0.92	.001
LOS (hr)	380	136.49	67.09	434	132.53	69.06	.075
ICU LOS (days)	22	5.73	5.37	18	5.89	5.03	.847
		n	%		n	%	
30-day readmissions		40/380	10.53		62/434	14.29	.106
Inhospital mortality		8/380	2.11		4/434	0.92	.243
Hospice consults		4/380	1.05		13/434	3.00	.083

Note. ICU LOS = intensive care unit length of stay; ISS = Injury Severity Score; LOS = length of stay.

each ISAR score for patients with hip fractures and the outcomes associated with geriatric evaluations using the score with a cutoff of 2 as a trigger for the evaluation.

## Primary Outcomes

### Patient Characteristics

For patients older than 60 years sustaining a hip fracture, the most common ISAR score was 3 (22.5%), whereas Głuszevska et al. (2017) similarly reported an ISAR score of 3 as the most frequent score (33.3%) in adults older than 59 years with a history of falling. Knauf et al. (2022) reported a median ISAR of 3; however, they used the age of 70 years and older. Those with an ISAR score of 5 contributed the most advanced age, consistent with a German study (Weinrebe et al., 2019). The mean ISS of this study was 9.38, which can be compared with a study by Dingley et al. (2022), who found a median ISS of 9. In our study, the ISS did not correlate with increasing ISAR score. Study of individual ISAR

questions correlated with injury severity or mechanisms of injury may be a future area of study.

### Clinical Outcomes

LOS was statistically different between ISAR scores. Głuszevska et al. (2017) reported that in patients with a history of falling, LOS increased in patients with higher ISAR scores when comparing ISAR scores zero to 1 and greater than 1, though not statistically significant. They also noted a higher LOS ( $M = 8.9$ ,  $SD = 7.8$  vs.  $M = 11.8$ ,  $SD = 9.5$ ;  $p = .03$ ) in patients who scored above the average ISAR score of 3.6 compared with below the average score. This study revealed a mean LOS of 5.18 days for patients who scored a 3 and 4, comparable to the study by Dingley et al. (2022), with a median (interquartile range) LOS of 5.1 (0.21) days. Higher ISAR scores are associated with adverse outcomes and generally indicate higher acuity patients, thus justifying a longer LOS. The longest ICU LOS occurred in patients with an ISAR score of 3, and Dingley et al. (2022) reported the highest ICU LOS in scores of 3 and 4. The ISAR screening tool was not originally developed to predict ICU stays. Limited literature supports this finding, and more research could be done in this area. With 30-day readmissions being the highest in those with ISAR scores of 4 and 4, quality and care coordination efforts could be directed toward geriatric trauma patients with these scores.

Most of the patients in the study were discharged to an SNF for rehabilitation services (physical or occupational therapy). Dingley et al. (2022) reported that as the ISAR score increases, so does the need for discharge to an SNF. Similarly, Knauf et al. concluded that a positive ISAR score ( $\geq 2$ ) in hip fracture patients predicted an increased risk of being discharged to an SNF (Knauf et al., 2022). Discharging patients to an SNF or a subacute rehabilitation (SAR) facility is the typical plan of care for a patient admitted for a hip fracture at the study site, contrary to Gronewold et al. (2017), who reported

**Table 5.** Discharge Disposition Before and After Geriatric Evaluation

Discharge Disposition	Pre n = 380		Post With Geriatric Evaluation n = 434	
	n	%	n	%
Acute care facility	1	0.26	1	0.23
Home with self-care	23	6.05	18	4.15
Home with services	25	6.58	20	4.61
Hospice	7	1.84	17	3.92
Inpatient rehab	26	6.84	10	2.30
Left against medical advice	1	0.26	0	0
Long-term care	2	0.53	1	0.23
Morgue	8	2.11	4	0.92
Skilled nursing facility	287	75.52	313	83.64

rare discharges to SNF and/or SAR facilities in patients who were admitted to the orthopedics and trauma surgery. Fewer patients in this study were discharged home with or without home care services. This could be due to having more family or caregiver support at home and recommendations made by physical and occupational therapists before discharge.

The finding that in-hospital mortality was not statistically different between ISAR scores is consistent with the TQIP report. The study hospital has had a historically low in-hospital mortality rate among patients with hip fractures. Dingley et al. (2022) reported the highest rate of 30-day mortality occurred in scores of 3 and 4. As previously stated, higher ISAR scores can signify patients with higher acuity, which may explain why hospice was consulted more frequently as ISAR scores increased and in those with an ISAR score of 6.

### Secondary Outcomes

The impact of geriatric evaluations can be difficult for institutions to determine. Literature suggests that these evaluations can have a varied effect on several different patient outcomes. Patients in the post-ISAR implementation group that received a geriatric evaluation were noted to be older with higher ISS. It could be considered that older patients with more severe injuries would benefit from a geriatric evaluation, and trauma residents utilized clinical judgment for placing geriatric evaluations. Patients with a geriatric evaluation had a shorter LOS by approximately 4 hr; this is vital because it can be associated with decreased costs and increased patient satisfaction. These findings are consistent with others in the literature. The study conducted by Cortez (2018) also had shorter LOS despite higher ISS, and a systematic review and a meta-analysis conducted by Eagles et al. (2020) found a decrease in LOS in geriatric trauma patients who received a geriatric evaluation without utilizing the ISAR screening tool.

It was noted that fewer patients in the post-ISAR implementation group with a geriatric evaluation experienced a stay in the ICU, but those that did had a longer LOS. This study was not aimed to address this specifically, and therefore future research could be done to correlate ICU LOS and geriatric evaluations.

Discharging patients to home with or without home care services was higher in the pregroup without a geriatric evaluation versus the postgroup with an evaluation; additionally, discharges to a SNF were higher in the post-ISAR implementation group. Findings in existing literature differ on the impact of geriatric evaluations on discharge disposition in that Southerland et al. (2017) recognized that geriatric patients admitted to the trauma service were frequently discharged to a higher level of care. In contrast, Wong et al. (2017)

found that geriatric evaluations encouraged discharging patients home compared with long-term care facilities. Geriatric evaluations of patients who fall and sustain a hip fracture can address home safety, thus possibly leading to recommendations for discharge to an SNF or SAR more frequently. Finally, admissions to inpatient rehabilitation decreased in the postgroup, and further investigation could assist with determining causal factors. It is noted that inpatient rehabilitation admissions are typically low due to requiring a physical and medical need for admission. Geriatric evaluations can enhance communication between patients, families, and providers of various specialties, which can ultimately assist with the coordination of discharge planning for the patient (Devore et al., 2016; Min et al., 2015; Wong et al., 2017).

Thirty-day readmissions were higher in the post-ISAR implementation group with a geriatric evaluation. Southerland et al. (2017) noted no difference in 90-day readmission rates and that patients who received a geriatric evaluation were discharged home more often but were found to be four times as likely to be readmitted.

The training and expertise of the geriatric clinicians may explain the increase in hospice service consults in the post-ISAR implementation group with a geriatric evaluation. Other studies found that geriatric evaluations have contributed to increased documentation of patient code status and the number of do not attempt resuscitation orders (Olufajo et al., 2016; Southerland et al., 2017). In-hospital mortality decreased in the post-ISAR implementation group with a geriatric evaluation, even with increased age and ISS. Inconclusive findings have been noted in the literature regarding trauma patients who received geriatric evaluations and their impact on mortality (Dugan et al., 2017; Eagles et al., 2020; Olufajo et al., 2016). This supports the need for continued research on this topic.

### Limitations

The 6-month period during which the geriatric evaluation service was in the early stages of development and planning was omitted from the study. Additionally, in the postgroup period, 7% of patients did not have an ISAR completed upon initial patient evaluation by the resident; therefore, that data was not included in the study. One hundred percent completion is the goal; however, completion rates may have been even lower if the 6-month period had been included. As some patients may have had an altered mental status or lack of family or surrogate presence to obtain accurate information at the time of screening, the ISAR score can be challenging to obtain (Asomaning & Loftus, 2014). This study also did not verify the accuracy of the scores obtained by the trauma resident, which could impact

the outcomes associated with each ISAR score in addition to the outcomes related to patients who received geriatric evaluations.

After a geriatric evaluation is completed, the outcomes can be impacted by the compliance of the trauma service in following the recommendations and the patient's and family's adherence to the plan of care. More research could be done to evaluate compliance with the recommendations, as Wong et al. (2017) identified 88.2% compliance. This study did not address what is included in a geriatric evaluation, which may provide insight into patient outcomes. Additionally, it may have been helpful to know which ISAR questions are most often answered "yes" to validate whether the specific concerns were addressed during the evaluation. Finally, though inhospital mortality and LOS downtrended in the postgroup with geriatric evaluations, further research needs to be completed to control for confounding variables.

## CONCLUSION

The ISAR score can identify which trauma patients with hip fractures may benefit from a geriatric evaluation. Although with varying results, geriatric evaluations can provide specialized recommendations for the plan of care, including discharge disposition and hospice consults. Understanding the breakdown of outcomes related to individual ISAR scores can help plan and implement quality improvement projects for this population. For example, readmissions were high in patients who scored a 5, and LOS was highest in those with a score of 6. Therefore, efforts can be targeted toward these outcomes and scores. Further research could evaluate the use of the ISAR score on other injury types, examine the components of the geriatric evaluations on trauma patients, and track compliance with geriatric recommendations.

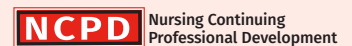
## Acknowledgment

We would like to thank Dr. Jonathan Beaulac, Director of Geriatric and Palliative Medicine, and Christine McEachin, MBA, BSN, RN, Trauma Program Manager, for their continued support of this project.

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