Management of Older Adults with Agitation by Emergency Medical Services and the Emergency Department

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Conflicts of interest

Dr. Zahra Goodarzi MD MSc

Clinician Scientist & Geriatrician

Honoraria, other rewards: None
Speakers' Bureaux, advisory boards: None
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Patents, royalties: None
Investments in health organizations: None
Other influential affiliations: None

Objectives

1. Understand the gaps in the evidence for the management of agitation in the emergency setting;
2. Learn the barriers to the management of agitation in the emergency setting.

What do we know?

Older adults account for 43% of ED visits

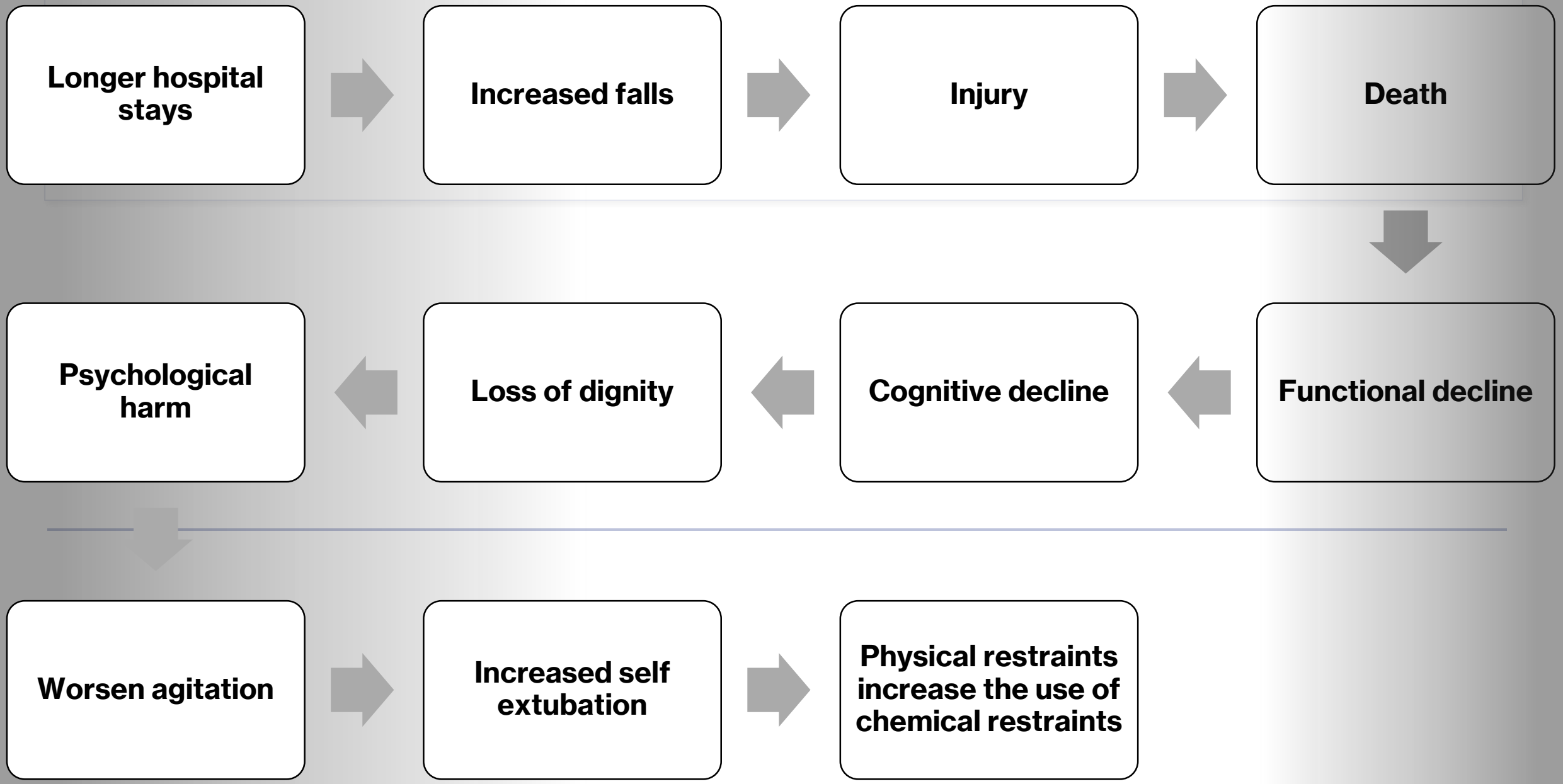
An 8-hour exposure to the ED leads to 1 in 8 semi-independent or independent older adults can develop agitation or delirium.

73-100% of older adults presenting with agitation are admitted with 32% going to ICU

84% of those in the ED receive physical restraints with 72% receive chemical restraints.

80% of older adults restrained in acute care have a medical illness.

Older adults 3x more likely to be restrained in hospital


Longer hospital stays
Increased falls
Injury
Death
Functional decline
Cognitive decline
Loss of dignity
Psychological harm
Worsen agitation
Increased self extubation
Physical restraints increase the use of chemical restraints

What are the barriers?

Barriers for EMS

Lack of training for agitation in specific populations	Protocols for sedation are not adapted to vulnerable older adults	Lack of access to prior records, poor handover or antecedent events	Lack of initial care planning for potential agitation etc for patients with known dementia	Lack of access to care partners
Challenges on scene	Not enough EMS	People wanting EMS to “just transfer” no questions asked	Challenges around goals of care	Language issues
En route challenges are profound.	Rural EMS and distances	Lack of time for unmet needs assessment	Ambulances not set up to manage this	Restraints used to reduce harm to self or others

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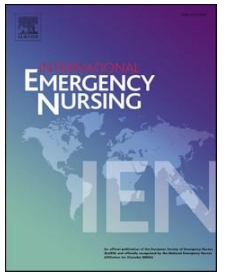
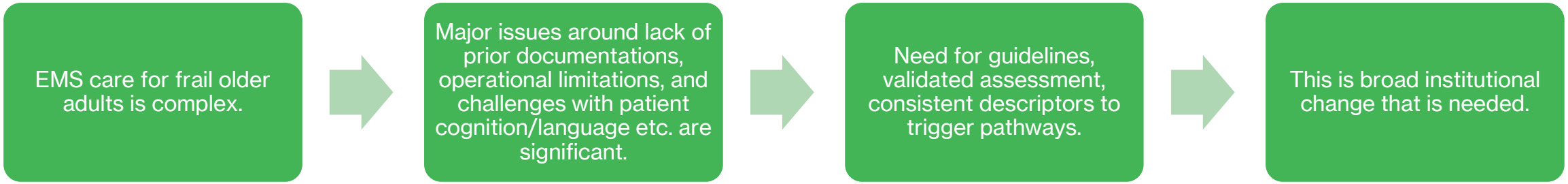


Care of frail and older adults: A content analysis of paramedic operational clinical practice guidelines

Wayne Harris [a,*], Christine Stirling [b], Anne-Marie Williams [c], Peter Lucas [d]



https://doi.org/10.1016/j.ienj.2021.101007

Barriers in ED

Receiving patients with lack of history	Acuity in confused agitated older adult hard to assess	Goals of care unclear	Care-partners not present
Lack of prior care planning	Lack of diagnosis of dementia or type	Lack space and resources to provide non-drug interventions	Confined area high volume, high acuity can't have wandering etc.
Balancing dose of chemical restraint and efficacy	Lack of formal geriatric training	Lack of frailty assessment	Lack of GEM

Workplace Safety

Violence

Burnout

Lack of Resources

Management of Agitation with EMS

british paramedic journal

Original research

COLLEGE OF paramedics™
leading the development of the paramedic profession

A retrospective cohort study of pre-hospital agitation management by advanced paramedic practitioners in critical care

https://doi.org/10.29045/14784726.2022.12.7.3.8

Table 4. Relationship between restraint and suspected acute behavioural disturbance cause.

Restraint	Alcohol/drugs	Mental health	Neurological	Infection	Unknown
YES	85 (58%)	42 (29%)	5 (3%)	13 (9%)	2 (1%)
NO	31 (34%)	27 (30%)	10 (11%)	15 (17%)	7 (8%)

Table 5. Relationship between sedation assessment tool score and pharmacological intervention.

DRUGS	No drugs	HAL only	MDZ only	HAL and MDZ	Totals	HAL (mean dose)	MDZ (mean dose)
SAT +3	2 (3%)	10 (18%)	9 (16%)	36 (63%)	57	6.75 mg SD = 2.55	6.13 mg SD = 2.74
SAT +2	7 (13%)	10 (18%)	15 (28%)	22 (41%)	54	6.67 mg SD = 2.55	5.45 mg SD = 1.54
SAT +1	26 (93%)	0	1 (3.5%)	1 (3.5%)	28	5 mg SD = 0	5 mg SD = 0

HAL: haloperidol; MDZ: midazolam; SAT: sedation assessment tool; SD: standard deviation.

https://doi.org/10.29045/14784726.2022.12.7.3.8

EMS Workplace Violence

https://doi.org/10.1016/j.injury.2018.05.007

Table 2
Haddon's Matrix illustrates the alignment of Themes.

	Human factors	Equipment factors	Operational environment	Social/Agency environment
Pre-event	Theme 1 Improved knowledge of special populations Training such as de-escalation, communication and self-defense	Theme 2 Ability to restrain or defend (using chemical and physical restraints; pepper spray)	Theme 3 Systems in place to provide advance warning of potentially violent patients and to accompany EMS to the scene	Theme 4 Improved public awareness Stronger laws against assaulting EMS personnel System for managing alcohol, drug and mental health cases. Better agency policies
During event	Theme 5 Better situational awareness		Theme 6 Law enforcement or security officers on the scene Other on-scene professionals	

Systematic Review of Safety

There is a lack of evidence about patient safety in EMS transport.

And no evidence discussed that pertains to older adults.

Table 1: Patient safety themes emerging from the literature

Theme	Number of Articles
Clinical Judgment	9[25-33]
Adverse Events - medication incidents, reporting	16[9, 13-15, 34-45]
Intubation	15[46-59]
Ground Vehicle Safety	7[12, 23, 24, 60-65]
Aircraft Safety	6[66-71]
Interfacility Transport	16[72-86]

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...EMS has shifted to the healthcare domain, however, true integration with that system is lacking.

"We now have inexperienced people with inexperienced people."

The most effective way to reduce medication incidents, identified by a large number of informants, is to move away from a 'culture of blame' and create a work environment that more effectively improves patient safety through risk mitigation and surveillance.

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THE CANADIAN PATIENT SAFETY INSTITUTE

EMS in Alberta

- 670,000 calls/year Alberta Wide, 5600 Paramedics, 780 Ambulances.
- Acute Paramedicine, Air Transport
- Conveyance to Urgent or Acute Care
- Community Health and Pre-Hospital Support Program (CHAPS)
  - ” The Community Health and Pre-Hospital Support Program (CHAPS) allows Paramedics to refer patients to Home Care and other community services that help these patients remain safe in their home and reduce their need for EMS transport to emergency departments.”
- On Line Medical Control System
  - 24/7 access to EMS physician available for paramedics to consult with, for evidence based support, province wide.

https://www.alberta.ca/ambulance-and-emergency-health-services

Current algorithms for Adult Disruptive Behaviour

- Consent and Capacity
- Consider and treat primary causes Use of Minimum Force
- Use of IM Midazolam 10mg q15min (up to 20mg) AND IM Haldol (5mg q15m to a maximum of 10mg) to achieve rapid sedation
- Administer half doses if > 65 yo → suggested dose Haldol 2.5mg IM no repeat
- If inadequate call OLMC

Management of Agitation in Emergency Department

SR of non-drug interventions for managing agitation in ED.

Agitation has significant impact “on wellbeing, retention, safety and performance of staff, as well as the impact on patient care and safety.”

"Eight studies met pre-set criteria for inclusion with several incorporating multiple intervention components involving changes to environment, policy and practice rather than assessment of single interventions."

“Alarmingly, despite searching a publication period spanning three decades, no study provided a level of evidence sufficient to warrant recommendation for any specific intervention.”

JAMA Internal Medicine | Original Investigation

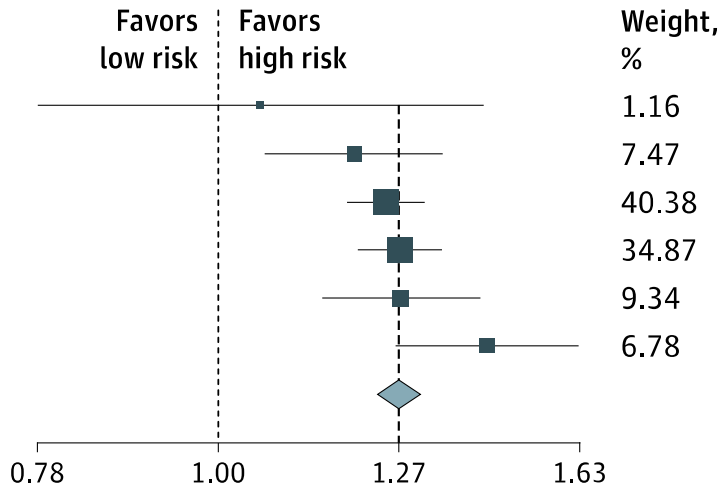
Racial Disparities in Emergency Department Physical Restraint Use
A Systematic Review and Meta-Analysis

Vidya Eswaran, MD, MAS; Melanie F. Molina, MD; Alison R. Hwong, MD, PhD; David G. Dillon, MD, PhD; Lizbeth Alvarez, MPH; Isabel E. Allen, PhD; Ralph C. Wang, MD, MAS

Figure 2. Meta-Analysis of Risk of Restraint Use by Racial Categories

Study	Black patients		Patients of other racial groups		RR (95% CI)	Weight, %
	Restrained	Not restrained	Restrained	Not restrained		
Wong et al, 2019[21]	20	9	43	23	1.06 (0.78-1.43)	1.16
Schnitzer et al, 2020[25]	306	19 200	2147	162 357	1.20 (1.07-1.35)	7.47
Wong et al, 2021[23]	2041	202 943	5091	636 709	1.26 (1.19-1.32)	40.38
Wong et al, 2022[22]	1886	176 415	3773	452 504	1.28 (1.21-1.35)	34.87
Carreras Tartak et al, 2021[24]	364	3500	2049	25 824	1.28 (1.15-1.43)	9.34
Smith et al, 2022[25]	548	5739	394	6111	1.44 (1.27-1.63)	6.78
Overall					1.27 (1.23-1.31)	

Heterogeneity: $\tau^2 = 0$; $I^2 = 0.01\%$
Test of $\Theta_i = \Theta_j$: $Q(5) = 6.38$; $P = .27$
Test of $\Theta = 0$: $z = 14.48$; $P = 0$
Egger test statistic: −0.24; $P = .81$
Random-effects REML model
sorted by _meta_es



Risk of restraint use in Black vs non-Black patients. Meta–analysis was performed on a subset of 6 of 10 studies based on availability of restraint data by patient race. REML indicates restricted maximum likelihood.

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Racial Disparities in Emergency Department Physical Restraint Use
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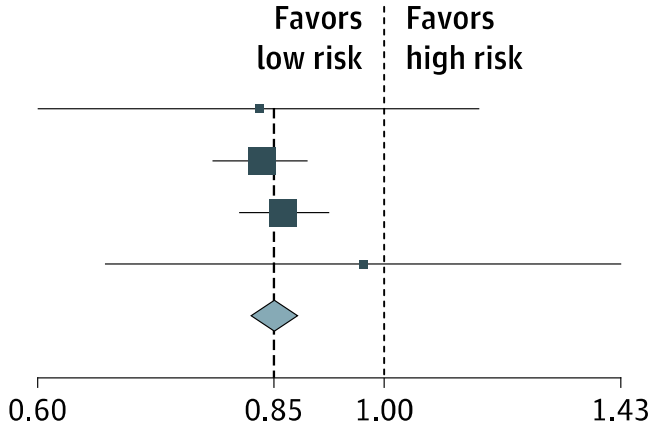
Vidya Eswaran, MD, MAS; Melanie F. Molina, MD; Alison R. Hwong, MD, PhD; David G. Dillon, MD, PhD; Lizbeth Alvarez, MPH; Isabel E. Allen, PhD; Ralph C. Wang, MD, MAS

Figure 3. Meta-Analysis of Risk of Restraint Use in Hispanic Ethnicity Patients vs Non-Hispanic Ethnicity Patients

	Hispanic patients		Non-Hispanic patients		
Study	Restrained	Not restrained	Restrained	Not restrained	RR (95% CI)
Smith et al, 2022[26]	35	531	903	11 234	0.83 (0.60-1.15)
Wong et al, 2022[22]	1007	130 258	4584	493 999	0.83 (0.78-0.89)
Wong et al, 2021[23]	1042	120 325	5981	593 822	0.86 (0.81-0.92)
Wong et al, 2019[21]	11	6	52	26	0.97 (0.66-1.43)
Overall					0.85 (0.81-0.89)

Heterogeneity: $\tau^2 = 0$; $I^2 = 0.01\%$
Test of $\Theta_i = \Theta_j$: $Q(3) = 0.91$; $P = .82$
Test of $\Theta = 0$: $z = -6.90$; $P = 0$
Egger test statistic: 0.39; $P = .70$
Random-effects REML model
sorted by _meta_es



Meta-analysis was performed on a subset of 6 of 10 studies based on availability of restraint data by patient ethnicity. REML indicates restricted maximum likelihood.

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What can we do differently?

CAEP GERIATRIC EMERGENCY GUIDELINES

DELIRIUM IDENTIFICATION

AGITATION MANAGEMENT

RESTRAINT POLICY

EDUCATION AND TRAINING

FALLS ASSESSMENT

MEDICATION MANAGEMENT

HIGH RISK MEDICATION

Table 9
Tolerate, anticipate, and don't agitate: T-A-DA concept[79]

Element	Explanation	Example
Tolerate	Tolerating some of the behaviors of delirium and allowing patients to respond to their environment while monitoring them closely to prevent harm	Allow patient to get out of the bed independently under close supervision; consider what this behavior may mean (eg, request for toileting).
Anticipate	Anticipating which actions will worsen delirium and consider alternatives	Anticipate that Foley catheter placement may worsen delirium and obtain a urine sample, placing a straight catheter and then discontinuing it immediately.
Don't Agitate	Avoiding agitating the patient which often is unintentional	Have all members of the care team see the patient at once to decrease the number of unfamiliar interactions and physical examinations.

ED See the Person workshop

2-hour interactive hands on workshop

Delivered by senior's health educators to all SHC ED staff; Feb-June 2021

Didactic component reviews underlying pathophysiology of dementia and delirium

practical examples of how to effectively provide care to and avoid triggering the older ED patient

covers how to perform de-escalation techniques to avoid the use of mechanical or chemical restraints.

The See the Person workshop Goals

To educate our ED staff how to communicate more effectively with our older ED patients who are living with dementia or who are experiencing a delirium

To avoid triggering, meet care needs, avoid agitation, and attempt de-escalation nonpharmacologic strategies to manage agitation

To improve RN confidence in managing these challenging patient scenarios therefor potentially improving RN job satisfaction

STP ED Survey Results

Knowledge of skills reviewed in workshop

- **Before 5.25/10**
- **After 8.44/10**

78% of attendees were interested in the 8 hour course after attending the 2 hour course

Evaluation comments

I will give patients more time to process information and respond

I will stay in patients field of view and be aware of their visual changes

I will give more time, and use simple shortened questions, calming techniques to achieve goal oriented tasks

When working with patients living with dementia I will remember to participate in their reality and transition to present time

I will work on redefining what “needs to be done” and advocate for my patient

Hand over Hand technique for redirection and care tasks

Not using the word “ remember”

SUPER volunteers: (**Sup**porting **S**eniors in the **ER**)

Adapted from the MAUVE and CARE programs from Mt. Sinai Toronto and NYC :

- Experienced, specialized volunteers who have received the 4-hr *See the Person* workshop training and offer bedside support for our isolated older ED patients
- SHC ED since April 2019
- RGH ED since Feb 2022, next steps>>PLC post connect launch
- Onboarding and training approx. Every 6 months
- Activities include; socializing, reorienting, calming, mobilization, offering nutrition, reading, fidget tools, comfort care

How can we help?

Specialists have a role to play

Clear Diagnoses

Education of Patients and Care-partners

Discuss and Document Prognosis

Advanced Care Planning

Pre-planning for potential ED or Hospitalization

Care Planning for behaviors

Care-Partner Support

Early Support Services e.g. Home Care

Early Involvement of Dementia Teams or Geriatricians or Geriatric Psychiatry

OAHR

Older Adult Hospital Readiness

Be Ready for an Emergency Department Visit

Name _____

Last updated:

_____

month day year

Give this sheet to the nurse.

About Me

I like to be called _____

This caregiver knows me best _____

My address is _____

I have a ready-to-go bag. ❑ **Yes** ❑ **No**

My bag has important information about me. It has items I need.

I am registered with the MedicAlert® Safely Home® program.

❑ **Yes** ❑ **No**

My ID number is _____.

My information can be accessed by calling

My doctor says that I have dementia or Alzheimer's disease.

I get confused easily, and I can't always remember things.

I might feel overwhelmed, worried, or upset. **What helps me?**

_____

I might feel restless, agitated, or panicky. **What helps me?**

Older Adult Alert!

These things may be hard for me:

- being in a noisy waiting room
- lying in bed for a long time
- using a call button
- being alone
- any medical devices placed on me

Older Adult Alert!

When I am sick, and there is a change in what I can do, consider:

- delirium
- untreated pain
- effects of medication
- a new medical problem
- an unrecognized infection

What can help me be my best?

Not being alone ▪ Being with the caregiver who knows me best ▪ Having a quiet place to wait ▪ Sitting in a comfortable chair ▪ Having a blanket ▪ Taking care of my basic needs ▪ Reassuring me ▪ Including me

https://alzheimer.ca/en/help-support/im-caring-person-living-dementia/ensuring-safety-security/emergency-room-visit-prep

High Volumes

Patient Safety

Lack of Resources

Lack of Communications

Lack of Training

Lack of Options to Manage

Lack or Access to Specialists

Lack of Documentation

Need for Case Finding

Need for Restraint Policy Updates

Environment Not Set Up

Slow Flow in System

Moral and Physical Injury

Educate and prepare patients, document diagnoses, advanced care planning, early community support. Prevention is key.

This work and ongoing work is all because of the team work of the Geriatric ED Task Force in Calgary.

MD Leads: Dr. McGillivray and Goodarzi
EMS: Ryan Lee BSc APS, Valerie Hopwood-Crawford APS(Mentor)
SHC: Heather Battle RN, Vanessa Culp RN, Paige Guinn NP, Nicole Bonin CNS Geriatrics, Darren Burback MD
PLC: Suzanne Wickware RN, Brock Love RN, Margriet Greidanus MD, Erika Dempsey MD, Marsha MacDonald NP, Tara Bruneski, Pharm.
RGH: Bretton Hari MD, Cory Banack CNS, Natasha Wright MD, Jennifer Smith RN Patient Care Manager, Jessie Trenholm OT, Michelle Persaud MD
FMC: Lester Mercuur MD, Suzanne Nicol CNS, Jacqueline McMillan MD
All: Jennifer Yeung and Theresa Guitterez