

CONCEPTS

## IMPROVING THE INTERFACILITY TRANSPORT EXPERIENCE: DEVELOPMENT OF A MOBILE DELIRIUM / HOSPICE BOX

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*Recommended Citation:* Tillett, Z., Troncoso, R., Garfinkel, E., Levy, M., Crispo, M., & Margolis, A. (2025). Improving the interfacility transport experience: Development of a mobile delirium/hospice box. *International Journal of Paramedicine*. (11), 72-77. <https://doi.org/10.56068/XMNT1470>. Retrieved from <https://internationaljournalofparamedicine.com/index.php/ijop/article/view/3290>.

*Keywords:* interfacility transport; hospice; delirium; end of life care; equipment; emergency medical services, EMS, paramedicine

*Disclosures:* None.

*Funding:* External funding was not used to support this work.

*Received:* December 24, 2024

*Revised:* February 23, 2025

*Accepted:* April 7, 2025

*Pre-Issue Release:* June 11, 2025

*Published:* Pending

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### ABSTRACT

As the U.S. populace ages, interfacility transport teams face unique challenges in addressing the needs of two rapidly growing patient populations. Both elderly individuals at risk for delirium and those transitioning to comfort-based care, such as hospice are increasingly utilizing interfacility transport resources as the interact with the medical system. Current care modalities for patients are primarily centered on medical stability during transport and do not adequately address aspects such as patient comfort or alignment with goals when a patient is on hospice or at risk for delirium.

To address these challenges, a delirium/hospice care box was designed and implemented as part of a high-volume critical care transport program. This box was created to enhance the patient experience by targeting cognitive engagement, comfort, and sensory support. Items included in the box for cognitive engagement consisted of a Bluetooth speaker intended to play music of the patient's choice, fidget toys, sound amplifiers for those who are hard of hearing, and realistic baby dolls for patients with advanced dementia. Comfort and sensory support items included a medical-grade, wipeable weighted blanket, sunglasses, oral care products, essential oils, a clip-on fan, and other items. These were selected based on prior research demonstrating their benefits for this population.

The box was funded by a hospital grant and implemented within a busy interfacility transport team at a quaternary care academic center. The goals of the box included enhancing the transport experience, potentially reducing delirium, and aligning the care provided during interfacility transports with the goals of a unique but growing patient population.

### INTRODUCTION

Every day in the United States, approximately 10,000 Americans transition into the age 65 and older group, and by 2030, all living baby boomers will have reached this milestone (United States Census Bureau, 2019). In the face of an aging American populace, interfacility transport teams need to be forward-thinking about how to approach this rapidly growing patient population to enhance the quality of care provided. As the population ages, there will inevitably be an increase in both patients at risk for developing delirium and those actively experiencing it. Patients

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<https://youtu.be/5E7SFbjKd1Q>



most at risk of developing delirium—i.e., the elderly, chronically ill, and medically frail—comprise a significant portion of those who may require interfacility transport (Institute of Medicine [IOM] Committee on Approaching Death, 2015).

Further data suggests that non-pharmacologic interventions geared towards increasing comfort may help prevent patients from developing delirium (Patel et al., 2014). Additionally, non-pharmacologic, comfort-focused interventions can help reduce overall cognitive decline among hospitalized geriatric patients (Lachs et al., 1998). Delirium is both a resource-intensive and costly burden for the current healthcare system, with estimates as high as \$150 billion spent annually to manage this condition (Leslie et al., 2008). Thus, transport teams should attempt to mitigate delirium during transport to enhance patient experience and comfort, and minimize the risk of delirium development. While little evidence exists on whether interfacility transport directly contributes to delirium, interfacility transport includes many risk factors for precipitating delirium, such as an unfamiliar environment, disruption of routine medications, lack of toileting, restraints (seatbelts), potential disruption of the sleep-wake cycle, and uncomfortable stretchers. Failing to address these potential deliriogenic risks of interfacility transport could contribute to the strain the healthcare system is currently facing, and will continue to face, with an aging population.

Another growing patient population that transport crews may increasingly encounter includes those entering end-of-life care. In congruence with the nation's aging, there has been an increase in hospice enrollment, with 1.72 million eligible Medicare beneficiaries enrolling in hospice care in 2020, marking a 6.8% increase from the previous year (National Hospice and Palliative Care Organization, 2018). As more patients transition to hospice, transport crews will be asked with increasing frequency to transport these patients to facilities or home.

There is potentially significant physiologic crossover between those at risk for delirium and those entering hospice care models. These patients are often medically frail with limited reserves, making them at high risk for delirium, similar to the geriatric patient population. Furthermore, the overall goals of care among hospice patients are different, focusing primarily on maximizing comfort rather than pursuing curative treatments. Aligning the care delivered with individual patient goals is paramount for transport teams and should be a focal point in delivering the highest quality of care.

The development of a delirium/hospice box aims to optimize transport for these two populations, considering their known risk profile for delirium and the need for comfort-focused care. The box contents were carefully selected to provide transport clinicians with non-pharmacologic tools to support optimal care and comfort.

## IMPLEMENTATION

This patient care box was implemented within an interfacility critical care transport program at a quaternary care academic center responsible for approximately 22,000 patient transports annually. Clinicians were notified via email prior to deployment, and contents and usage instructions were provided in the email and in the box itself. Stored in the supervisor's office, the box was accessible for any transport as determined by dispatch information. No formal protocol was created for mandating implementation of the box and currently it is up to crews to deploy the box as they see fit. When employed, the box

is secured on an open seat accessible by clinicians during transport as per standard protocol for securing bags during transport.

The equipment was funded by a hospital grant award, with a total cost of \$600. Options exist to reduce the cost by selecting alternative items, such as substituting a less expensive weighted blanket, which constituted about one-third of the cost. Large items were designed to be wipeable and reusable, while smaller, inexpensive items were disposable. Items selected fell into two domains: cognitive engagement and comfort/sensory support (Table 1).

Comfort/Sensory Focused Items
Small stroller fan, plug in/battery powered, articulating tripod mount with 4 speed
Essential oil – 8 pack (including lavender)
Ultrasonic portable aromatherapy diffuser
Sommerfly Relaxer™ wipe clean travel sized weighted blanket, medium, 12 LB
Flameless candle set 3x, battery powered with remote
Biotene oral mouth rinse, dry mouth, fresh mint
Xylimelts dry mouth, stick on melts, 40 count
Medicine cups – 100 count paper, disposable
Blue mouth sponge 50 count, disposable
Aviator style sunglasses with case
Cognitive Engagement
Personal sound amplifier (Pocket Talker)
Blue tooth portable speaker system
Fidget decahedron, large fidget toy
Adult/Autism fidget toy set – 5 piece
Realistic sleeping infant doll 2x, one light skin tone, one dark skin tone

Table 1. Hospice box contents.



Figure 1. Box contents.



Figure 2. Box.

#### COGNITIVE ENGAGEMENT

The first domain, cognitive engagement, includes a Bluetooth speaker for music, which has been shown to prevent delirium and reduce anxiety, physiological stress, and sedation needs in mechanically ventilated patients (Johnson et al., 2018; Yang et al., 2010; Chou et al., 2016). Several fidget toys are included for anxious patients or those with hyperactive delirium. Two realistic-style baby dolls were also selected based on evidence suggesting they improve emotional states, reduce disruptive behaviors, and may help prevent delirium (Smith et al., 2013; Rosland et al., 2008). Lastly, a personal sound amplifier device (pocket talker) with headphones was included to facilitate communication with patients who have hearing difficulties.

#### COMFORT AND SENSORY SUPPORT

The second domain focuses on comfort and sensory support. A medical-grade, wipeable 12-pound weighted blanket was selected based on evidence that it reduces anxiety and benefits patients with behavioral issues or advanced dementia resistant to medications (Haring et al., 2011; Siedlecki et al., 2020; Thompson et al., 2010). Additional items include flameless candles for ambiance, sunglasses to reduce light exposure, and oral care items for hospice patients, as dry mouth and thirst are common among this population (Kunzmann et al., 2000). To manage air hunger and dyspnea, a small clampable fan was included, which can help non-hypoxic patients feel less short of breath (Hajat & Stein, 2018; Smith et al., 2009). Essential oils with a diffuser were also included, as lavender aromatherapy can help reduce pain and anxiety, and enhance sleep (Hartley & Perencevich, 2020; Buchman et al., 2002).

#### LIMITATIONS

There are notable limitations around the development of this box. While the box is based off of best practice guidelines and included input from experts in emergency medicine, interfacility medicine and palliative care there is limited supporting literature around creation of a project such as this. Given the lack of associated literature many of the studies for which the objects in the box are based are of low quality, and may not be generalizable to a broader population or may not apply in the interfacility space. Furthermore, several of the studies cited are not based in the US which may limit the applicability to a US based population. The box contents may need to be readdressed and amended based on clinician experience and as more literature around this topic is produced.

#### CONCLUSION

The delirium and hospice box was designed to improve the patient experience during transport and align care with patients' overall goals. While data on whether these items reduce delirium or improve transport experience is limited, many of these tools are used in healthcare settings for their established benefits. Reusable equipment and comfort-focused tools can potentially help manage anxiety, pain, and delirium in two rapidly growing patient populations.

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