



Posey® Bed

Where Comfort Meets Safety

Case Study:

Use of the Posey Bed

in Acute Care



Rx ONLY

 **Posey®**

The Posey Bed Case Study Summary of Findings for Posey Bed Use with At-Risk Patients

Introduction

A six-month observational study, approved by the Institutional Review Board of Doctors Hospital, Columbus, Ohio, was coordinated and supervised by Cindy Wagner, RN, BC, MS, CNS.

Staff Survey Results:

1. 91% felt the Posey Bed was easy to work with
2. 84% felt that it decreased agitation
3. 100% felt that the patients slept better

Case Study Conclusions Summary:

1. **There were no patient falls** during the study period (six months) for patients treated with the Posey Bed.
2. Using the Posey Bed reduced total sitter hours by 40% during the study period, resulting in **major cost savings**.
3. The Posey Bed was positively accepted by patients, family and staff.

Protocol for Using the Posey Bed

The Posey Bed is a product used to protect the patient from falling and potentially injuring himself or herself. Drawing on nursing protocols from over 600 Posey Bed users, the Posey Company recommends the following process when using the Posey Bed.

- Document high-risk behaviors (example: confusion).
- Obtain a medical restraint order from the physician, which shall be renewed daily.
- Perform trial releases by unzipping both nets daily per order and document; monitor closely.
- Ensure trained medical staff continue to regularly supervise the patient.
- Continue documenting the patient's behavior and interventions.

Goals for Using the Posey Bed

- Provide an enclosed, protected, safe environment, which promotes freedom of movement
- Ensure continuation of medical treatment and rehabilitation of the patient/resident
- Maximize patient safety
- Reduce the use of physical restraints, allowing increased mobility, which will assist in preventing contractures
- Provide a safe environment with decreased stimulation, which will reduce agitation
- Reduce the need for medication
- Reduce the incidence of pressure sores by encouraging freedom of movement
- Reduce agitation that might be caused by using wrist or ankle restraints
- Reduce the risk of pneumonia caused by immobility

Summary: Use of the Posey Bed in Acute Care

Cindy Wagner, RN, BC, MS, CNS Columbus, OH April 2007

Health care workers are challenged with trying to keep patients experiencing delirium and dementia safe. These patients often attempt unassisted transfers out of their beds and are at risk for falls. The plan of care to prevent these types of falls may include audible alarms, physical body restraints and staff assigned to one at-risk patient only (“sitter”). There are limitations to these interventions: patients figure out “work-arounds” for the alarms; body restraints are very restrictive to the patient’s movements in bed and may increase distress and/or agitation; and sitters are not cost effective and may even increase agitation for the patient.

A unique intervention to assist with fall prevention is a bed canopy system – the Posey Bed. The Posey Bed is an enclosure that fits around a patient’s hospital bed and does not allow the patient to climb out of bed alone. The Posey Bed is considered a restraint, though less restrictive than tied restraints, and requires physician assessment and a written order. Bed enclosures have been used in hospitals, nursing homes and in home care settings for over 15 years and provide a safe, controlled environment for the patient without restricting extremity and body movements while in bed.

Purpose

This study was designed to:

- Evaluate acceptance of the Posey Bed by patient, family and staff
- Determine the impact of the Posey Bed on sitter use
- Record fall rates during the study period

Hypotheses

- Hypothesis 1: The majority of those surveyed will reply with positive comments about the Posey Bed.
- Hypothesis 2: Use of patient sitters will decrease during the post-intervention period.
- Hypothesis 3: Hospital fall rates will decrease during the post-intervention period.

Study Design

This was a prospective observational study approved by the Institutional Review Board of the hospital.

A 210-bed community teaching hospital in Ohio implemented the use of the Posey Bed as an intervention to reduce injury rates with falls. A physician order was obtained after assessment confirmed the patient was a candidate for the Posey Bed. Nursing staff was educated on the criteria and procedure for using the Posey Bed. A Posey Bed was kept at the hospital on rental consignment until needed.

As soon as one bed was placed, another consignment Posey Bed was delivered assuring a product was readily available for the staff. Staff members attempted to contact the patient’s family, if known, before placement in the Posey Bed and to either provide them with an informational booklet with a picture of the Posey Bed or explain the bed and justification for its use over the phone.

Since the Posey Bed was a new product to the study hospital, the principal investigator (PI) and/or manufacturer representatives educated the direct care staff on:

- The clinical conditions most suitable for treatment with the Posey Bed.
- How to place patients into the Posey Bed.
- Monitoring of patients during treatment.
- Completion of survey forms.

In addition, other employees such as transportation, and house-keeping, staff and therapists were notified and attended brief inservices.

Sitter utilization was recorded daily by the nursing supervisor. The reason sitters were utilized was not recorded. Typical clinical conditions to place sitters include suicide precaution, aggressive behaviors, and fall prevention.

Study Population

A convenience sample of hospitalized patients age 18 and older who met clinical criteria (Table 1) were placed in the Posey Bed after physician order from Jan 1 - June 30, 2006. Patients located in critical care units were excluded.

Table 1. Clinical Inclusions and Exclusions for Placement in the Posey Bed	
Inclusions	Exclusions
<ul style="list-style-type: none"> Restless/agitation Impulsive movements Lack of self or body part awareness Inability to follow safety requests Attempts to climb over bed rails Decreased comprehension 	<ul style="list-style-type: none"> Combative, violent, aggressive Suicide risk Multiple lines Claustrophobic

Instrument

Three surveys were developed, one each for staff, family, and the patient, if cognitively able to complete a survey. The responses from the patient were direct comments documented by nurses or patient care assistants caring for the patient.

Findings

Table 2. Demographics		
Age	Range 49 – 93	Mean 81
Sex	Male 50% (12/24)	Female 50% (12/24)
Diagnoses	Dementia n =11 (45.8%)	Secondary diagnoses: acute infections (4); fractures from falls prior to admission (2)
	Dementia n = 13 (54.2%)	Secondary Diagnoses: urinary tract infection (4); stroke (2); pneumonia (1); anemia (1); encephalopathy – toxic/metabolic (2) mrdd & syncope (1); end stage renal disease (2)

- The mean number of days in the Posey Bed was 3.5 (85 total bed days); range 1-14 days.
- Five patients had falls prior to admission.
- Three patients had restraints or sitter utilized before the Posey Bed placement.
- Four patients were removed from the Posey Bed during their stays: one at request of family who decided to stay with patient; one at patient's request, after assessment and alternative treatments were used; one because of medical need for central line and wrist restraints; one due to increased agitation and attempts to actively resist the enclosure.
- One patient was able to get out of the Posey Bed: it was reported that the zippers were not secured in the correct position; no fall or injury was suffered, and the staff was re-educated about proper zipper placement.
- Two patients were readmitted during the study period, and their family requested placement in the Posey Bed. Patients met placement criteria (one patient in the Posey Bed twice; the second in the bed three times).
- Discharge Status:
 - Extended care facility... 15... 62.3%
 - Expired 1 4.1%
 - Home 8.... 33.3%

Survey Results

Staff (Appendix A): During the educational preparation for implementing the study, professional and ancillary staff expressed concern that their patients would have increased agitation from placement and skepticism about the benefits. One male assistant believed he could tip the bed. He was invited to attempt this and, despite his efforts of rolling and thrashing, he was unable to move the bed. It should be noted that a patient performing these behaviors would have been removed from the Posey Bed and alternative interventions would have been utilized. Staff concern and attitudes changed during the study as evidenced by the survey responses. Surveys were completed by nurses and patient care assistants.

91% (21/23) felt the Posey Bed was easy to work with; 84% (16/19) felt that it decreased agitation; and 100% felt that the patients slept better (11/11) and that they required less sedation (4/4). In addition, staff were asked to write down comments made by the patients while they were cared for in the Posey Bed (Table 3).

Table 3. Staff and Patient Comments

Patient Comments:

“Green is my favorite color.”

“This is just like camping; all I need is a coffee pot.”

“Thank the girls for bringing me this beautiful bed. This color is beautiful. I like this bed.”

“This is a thermal bed and it keeps me warm.”

“I haven’t had any mosquito bites” because of the netting.

Staff Comments:

“Patient A was very restless and verbal (calling out) and met criteria for placement in the Posey Bed. This patient’s roommate, Patient B, also was confused but did not meet criteria for the Posey Bed. After Patient A was placed in the Posey Bed, he settled down, and his roommate complained that it wasn’t fair that the ‘other man who was yelling so much got a new bed!’”

Patient (Appendix B): Only four patients were cognitively able to be interviewed by the PI during or after being in the Posey Bed. One patient was able to state why he was in the bed – “to keep me from falling.” All patients agreed the bed kept them safe. One patient said the bed was “comfortable.”

Family (Appendix C): Fourteen family surveys were returned but not all of the questions were answered. The remainder of the patients treated in the Posey Bed had no family members available to complete the survey.

63% of respondents (7/11) had read the information book; 53.8% (7/13) had never seen a restraint; 92.9% (13/14) agreed that the bed kept the patient safe; 100% (12/12) agreed that they preferred the Posey Bed to restraints; 75% agreed the patient was “not upset” by being in the Posey Bed; 83.3% (10/12) answered favorably that the patient “slept better,” and 16.6% (2/12) answered neutrally to this question. One family had agreed to patient placement in the bed as explained by the direct care nurse and PI and shown a picture of the bed; however, when the bed was brought to the room, the family declined placement and chose to stay with the patient.

A serendipitous finding occurred during education for the staff. The Posey Bed was placed on patient care units for convenient, hands-on education. A number of visitors (not associated with patients placed in the Posey Bed) saw the Posey Bed and verbalized curiosity about the bed. The PI explained the purpose of the bed to them and all responses were positive – relating they understood the need and that the Posey Bed looked comfortable. Two separate visitors who were caregivers for a family member with Alzheimer disease related this type of bed would be very helpful to them in the home setting due to the constant concern for their family member’s safety.

Sitter Utilization

Sitter utilization was reduced 40% during the study period for two patient care units (Graphic 1). One additional unit reflected a decrease, but this was not statistically significant (Unit C). Descriptive statistics for the three patient care units and sitter utilization are displayed in table format.

For Unit A, a 41-bed medical unit, the independent sample t-test shows a p-value of 0.016, indicating statistical significance (the chosen value of significance is 0.05). This shows that there is a difference in means between the six months prior to the canopy beds and the six months after their introduction. The null hypothesis (of no change) is therefore rejected, and it is concluded that having the Posey Bed significantly reduces the number of sitter hours (Table 4).

Table 4. Unit A. Group Statistics									
	Pre versus Post	N	Mean	Std. Deviation	Std. Error Mean				
No. of Hours:	Pre	6	771.7500	395.94441	161.64363				
	Post	6	211.5000	151.70432	61.93303				
Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
No. of Hours: Equal variances assumed	12.637	.005	3.237	10	.009	560.25000	173.10217	174.55432	945.94568
No. of Hours: Equal variances not assumed			3.237	6.437	.016	560.25000	173.10217	143.55845	976.94155

For Unit B, a 26-bed cardiac step-down unit, the independent sample t-test shows a p-value of 0.021, indicating statistical significance (value is less than 0.05, the chosen level of significance here). The interpretation is that there is a difference in means between the six months prior to the canopy beds and the six months after their introduction for this unit, also, and it is concluded that having the canopy beds significantly reduces the number of sitter hours (Table 5).

Table 5. Unit B. Group Statistics									
	Pre versus Post	N	Mean	Std. Deviation	Std. Error Mean				
No. of Hours:	Pre	6	251.3333	164.39789	67.11516				
	Post	6	59.6667	49.69775	20.28902				
Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
No. of Hours: Equal variances assumed	3.924	.076	2.734	10	.021	191.66667	70.11483	35.44110	347.89224
No. of Hours: Equal variances not assumed			2.734	5.906	.035	191.66667	70.11483	19.43989	363.89344

Unit C is a 35-bed combined medical-surgical unit. The independent sample t-test shows a p-value of 0.746, indicating no statistical significance. The interpretation is that there is no difference in means between the six months prior to the canopy beds and the six months after the intervention. The null hypothesis (of no change) cannot be rejected, and it is concluded that having the canopy beds did not significantly reduce the number of sitter hours for this unit. Though not statistically significant, this unit placed 6 (25%) of the total study patients on the Posey Bed. Sitter use was reduced by 193 hours. Observations by the PI and comments from staff on this unit indicated the bed canopy did provide clinical significance for these patients (Table 6).

Table 6. Unit C. Group Statistics									
	Pre versus Post	N	Mean	Std. Deviation	Std. Error Mean				
No. of Hours:	Pre	6	248.4167	185.20594	75.61001				
	Post	6	216.2500	147.38987	60.17166				
Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
No. of Hours: Equal variances assumed	.569	.468	.333	10	.746	32.16667	96.63075	-183.140	247.47341
No. of Hours: Equal variances not assumed			.333	9.520	.746	32.16667	96.63075	-184.620	248.95338

Falls

Patient falls increased by 14 during the post-intervention period. There were a total of 53 falls during this period and 39 falls during the six months prior intervention.

The PI reviewed the staff documentation concerning the study period falls:

- 24% (n=13) of the falls were attributed to slips or trips in cognitively intact patients
- 6% (n=3) were equipment-related falls
- 19% (n=10) occurred during toileting
- 17% (n=9) were due to a loss of balance/syncope
- 34% (n=18) were associated with mental status changes

These data suggest that at least 30% of the falls were accidental and patients would not have been candidates for the Posey Bed intervention. It could not be determined if patients experiencing mental status changes had pre-existing confusion, related to dementia or delirium, or an acute onset episode. Patients with known confusion may or may not have met criteria for the Posey Bed based on their level of restlessness or agitation. No falls occurred in the patients treated with the Posey Bed.

Limitations

- Patients who did not meet criteria for placement in the Posey Bed were counted in the tally of falls contributing to the increase in number of falls.
- Nurse documentation of the patient's mental status did not include if the cognitive changes were chronic or acute. Acute changes would not have been considered in a fall risk assessment and interventions, such as the Posey Bed would not have been selected.
- Survey responses: Several patients had no family members to respond to the satisfaction survey. Patients were unable to verbalize their comments. The same staff cared for multiple patients treated with the Posey Bed. These staff did not complete individual surveys for all patients, because they felt they had contributed their input previously.
- The data collection form did not record if a sitter was considered or used before the Posey Bed intervention.
- The facility sitter log did not require the reason for the sitter order. Sitters may have been used for suicide prevention or combative patients, who are not candidates for the Posey Bed.

Discussion and Recommendations

The Posey Bed was successfully integrated in the study hospital as an additional safety precaution for patients meeting the inclusion criteria. Positive responses noting the benefits of the Posey Bed were received from staff and patients' families. The Posey Bed significantly reduced sitter utilization on two units and was more economical than utilizing a unit staff member as a bedside sitter (bed rental costs approximately \$40 per day; nursing assistant salary average of \$10 per hour = \$240 per day). The Posey Bed treatment was utilized more frequently at the onset of the post-intervention period. It is recommended to re-inservice and send reminders of the criteria for placement to unit nursing staff and nurse managers after the initial adjustment of the intervention tapers off.

References

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- Posey Company. (2005) Posey® Bed canopy: A bed enclosure safety system. User Manual and Assembly Instructions. Arcadia, CA. www.posey.com.
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Appendix A. Staff Survey Tool

The Posey Bed Study Form

Nursing is evaluating patients, family and YOUR response to the Posey Bed. Results of this study will be shared with the POSEY Company, published in Nursing Matters, and considered for submission to a nursing journal. This is an IRB approved clinical research study. Please complete this form. Your observations and comments are a very important contribution to nursing research – thanks for your input.

Medical Record # _____ Age _____

Reason for the Posey Bed – fall prevention due to risk factors of:

delirium (acute confusion) dementia head injury

other: _____

Called family to ask if they wanted to stay with patient ____

Explained Posey Bed option to family ____

Date the Posey Bed placed _____ Time _____

Date Removed _____ Time _____

Was patient in restraints at any time before being placed in the Posey Bed? No Yes
 limb chest

What was the patient's response to the Posey Bed ?

more calm OR increased agitation
 slept better OR did not sleep as well
 required less sedation OR required more sedation

Any other calming measures used? _____

Was the Posey Bed easy to work with? Yes No If no, why not? _____

I initially placed patient in the Posey Bed ____ OR

I cared for patient while they were in the Posey Bed ____

RN____ LPN____ PCT____ PCA____ Rehab____ Resp____

COMMENTS:

Include any patient comments/responses _____

Appendix B. Patient Survey Tool

You have been treated with the Posey Bed to keep you safe and help prevent falls. The Posey Bed is an approved way to do this. Doctors Hospital wants to know what you think about this bed system. If you would like to share your comments, fill in this short survey regarding how you feel about this safety system.

- 1. I read an info booklet about the Posey Bed. ___ Yes ___ No
- 2. I have never had a chest or wrist restraint placed on me before. ___ Yes ___ No
- 3. I have had a bedside sitter with me before. ___ Yes ___ No

Please read the statement below and rate your answer on the scale to the right	Strongly Agree	Disagree	Neutral	Agree	Strongly Agree
I feel the Posey Bed kept me safe.	<input type="checkbox"/>				
I prefer the Posey Bed over a tied chest restraint for safety.	<input type="checkbox"/>				
I did not get more upset while in the Posey Bed.	<input type="checkbox"/>				
I was able to sleep better while in the Posey Bed.	<input type="checkbox"/>				

Date _____

Medical Record # _____ (to be filled in by staff)

Return this paper to the nurse caring for you.

Thank you for helping!

Appendix C. Family Survey Tool

Your family member has been treated with the Posey Bed to keep them safe and help prevent falls. The Posey Bed is an approved way to do this. Doctors Hospital wants to know what you think about this bed system.

If you would like to share your comments, fill in this short survey regarding how you feel about this safety system.

1. I read an info booklet about the Posey Bed. ___ Yes ___ No
2. I have never seen a chest or wrist restraint used. ___ Yes ___ No

Please read the statement below and rate your answer on the scale to the right	Strongly Agree	Disagree	Neutral	Agree	Strongly Agree
I feel the Posey Bed keeps my family member safe.	<input type="checkbox"/>				
I prefer the Posey Bed over a tied chest restraint for safety.	<input type="checkbox"/>				
My family member does not seem upset about having the Posey Bed in place.	<input type="checkbox"/>				
My family member was able to sleep better while in the Posey Bed.	<input type="checkbox"/>				

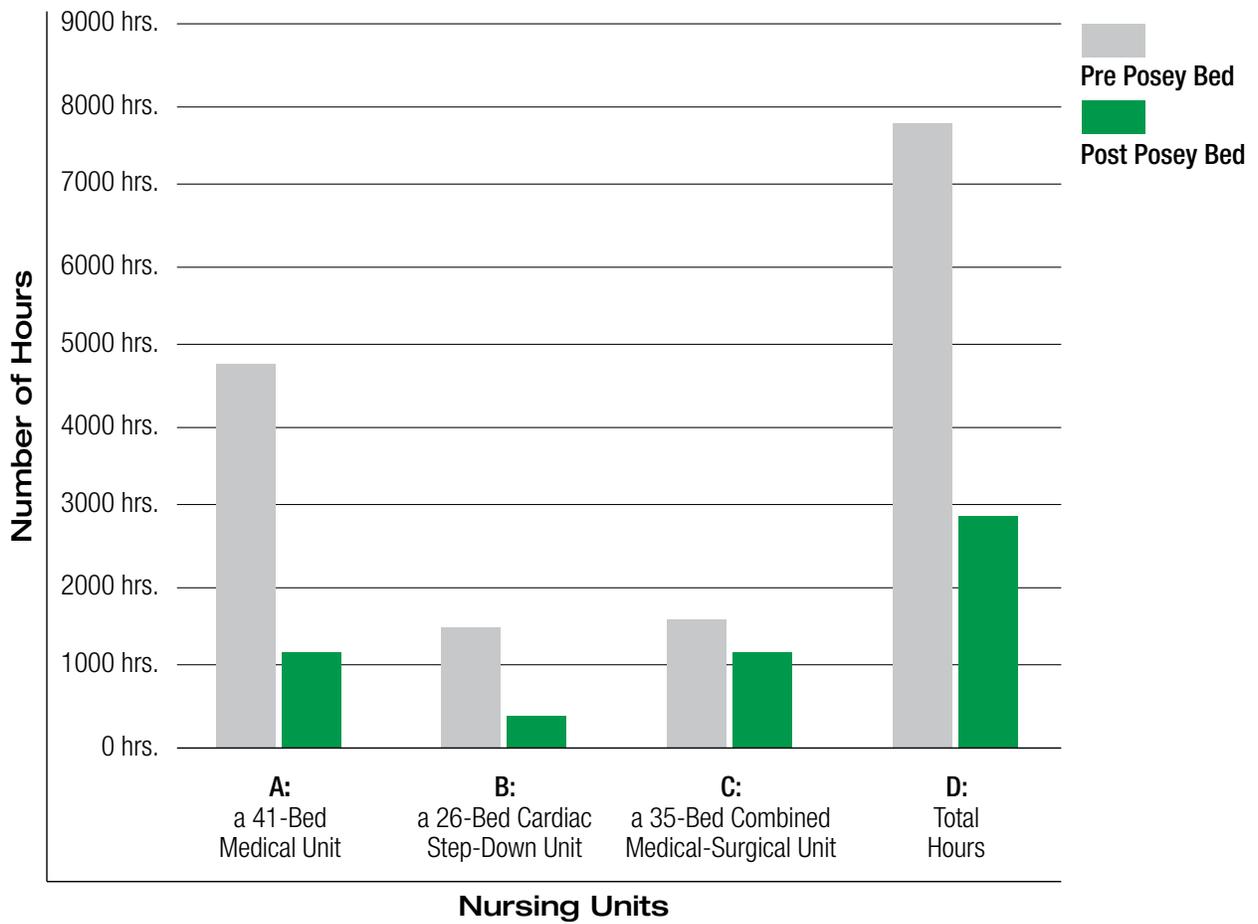
Date _____ Age of the Patient _____

Medical Record # _____ (to be filled in by staff)

Return this paper to the nurse caring for you.

Thank you for helping!

Graphic 1. Sitter Hours



Testimonials

"The patients have really taken well to the Posey Bed. They get a sense of security that they have never had before trying this product. The netting makes it easy for the nursing staff to check on and care for the patients. This is an excellent product and we have had wonderful results with it."

Joann Agapito
Occupational Therapy
Stockley Center, Georgetown, DE

"We used the Posey Bed for extremely restless gero-psych patients at high risk for falls... The patients calmed down very quickly because the Posey Bed made them feel safe in their 'retreat.'

Using the Posey Bed helped us avoid all other kinds of restraints, and we felt there was no risk of injury, even for highly agitated patients.

The relatives of our patients were skeptical at first, but soon accepted the Posey Bed as a pleasant and healing alternative to restraints. The Posey Bed resulted in much less stress for all patients, families and our nursing staff! The Posey Bed will continue to play an important role in our patient care."

Winfried Oberhausen, MD
Hunsrueck Hospital
Simmern, Germany

"We have used the Posey Bed as an adjunct to other safety products, when a patient's behavior would have otherwise required either sedation or added restraint. We have seen significant decreases in our patients' agitation and/or restlessness once placed in the enclosure, suggesting that they feel more secure. Family members who've been reluctant to go home when their loved one was agitated have also expressed relief, stating they now feel they could leave knowing that 'grandma' was safe."

Sally McKelvy, RN
Mount Carmel Hospital
Colville, WA

"They found a Posey 'safety enclosure' that fits onto my hospital bed (which I already had at home). Now, my husband has a priceless peace of mind that allows him to move about the house freely while I'm sleeping, doing all the other things caregivers must do. I don't know how many times I've heard him say, 'That Posey Bed has saved your life and made mine a hundred times easier.' Good people at Posey, THANK YOU!!!"

Joyce Landorf Heatherly
Home care patient and user of the Posey Bed

"The Posey Bed has been very useful in containing confused elderly patients. This restraint is also less restrictive and more comfortable for the patient. Patients are less confused using the Posey Bed than when restraints are applied directly to their body. We had expected more agitation using the Posey Bed, but this did not happen. The patient's seem to like the bed, (and) we have significantly reduced the use of 'sitters' at the bedside, when using it."

Linda Garner, RN
Sunnyside Hospital
Sunnyside, WA

Patient Indication – Unassisted Bed Exit

Patients at risk of a life-threatening fall

The Posey Bed is an FDA cleared bed enclosure system that has been safely used around the world since 2003. Posey, a worldwide leader in the manufacture of patient safety products since 1937, designed the Posey Bed as the perfect choice for high fall-risk patients who are cognitively impaired and continually leave their beds without nursing assistance. Models are designed for adult and pediatric use in home care, long-term care and acute care facilities.

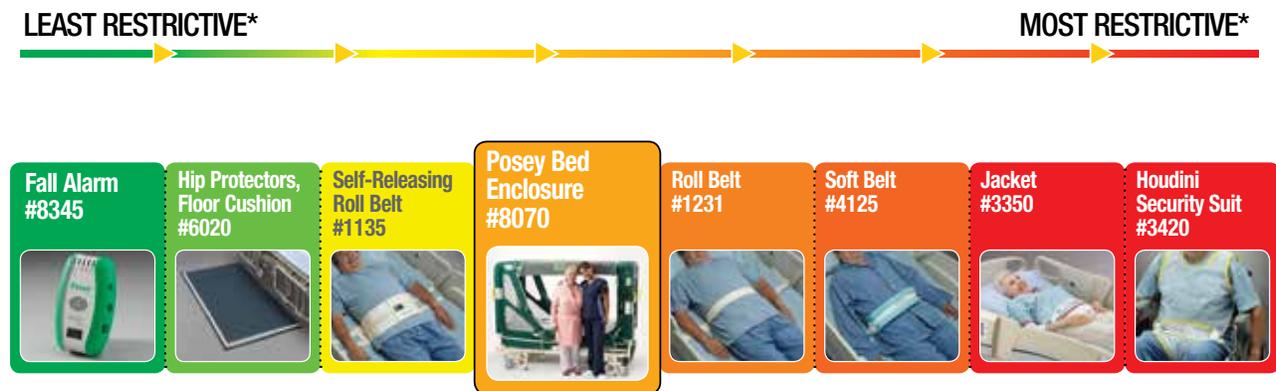
The Posey Bed is a hospital bed, canopy and mattress system designed to help provide a safe, controlled environment for patients at extreme risk of injury from a fall or unassisted bed exit.

The Posey Bed is a less restrictive alternative to more physical restraints such as belts, vests or jackets.

For patients:

- At least 46 inches tall
- Weighing between 46 and 300 lbs.

The Posey Bed is a restraint, and must be prescribed by a licensed physician (Rx ONLY).



* Least/Most Restrictive are general terms used, in conjunction with the color code, to indicate relative degrees of restriction when reading across and within the patient indications shown here. The color code intensity of a product in one indication does not imply that a product showing the same color code in another indication has the same restriction level. A physician's order is required and an assessment should be done to determine if the Posey Bed is an appropriate intervention for the patient.

CAUTION Photos are solely to depict products and are NOT a guide to safe use. See the instructions accompanying each product before use. The Posey Bed Helps Meet Joint Commission Requirements for Less Restrictive Devices by Reducing the Need for Physical Restraints.



All-In-One

Posey Bed | 8070

- Comes complete with a fully automatic low hospital bed
- Features patented 6" enclosed mattress compartment
- Is ideal for patients with compromised skin integrity
- Helps promote a restful sleep



All Care

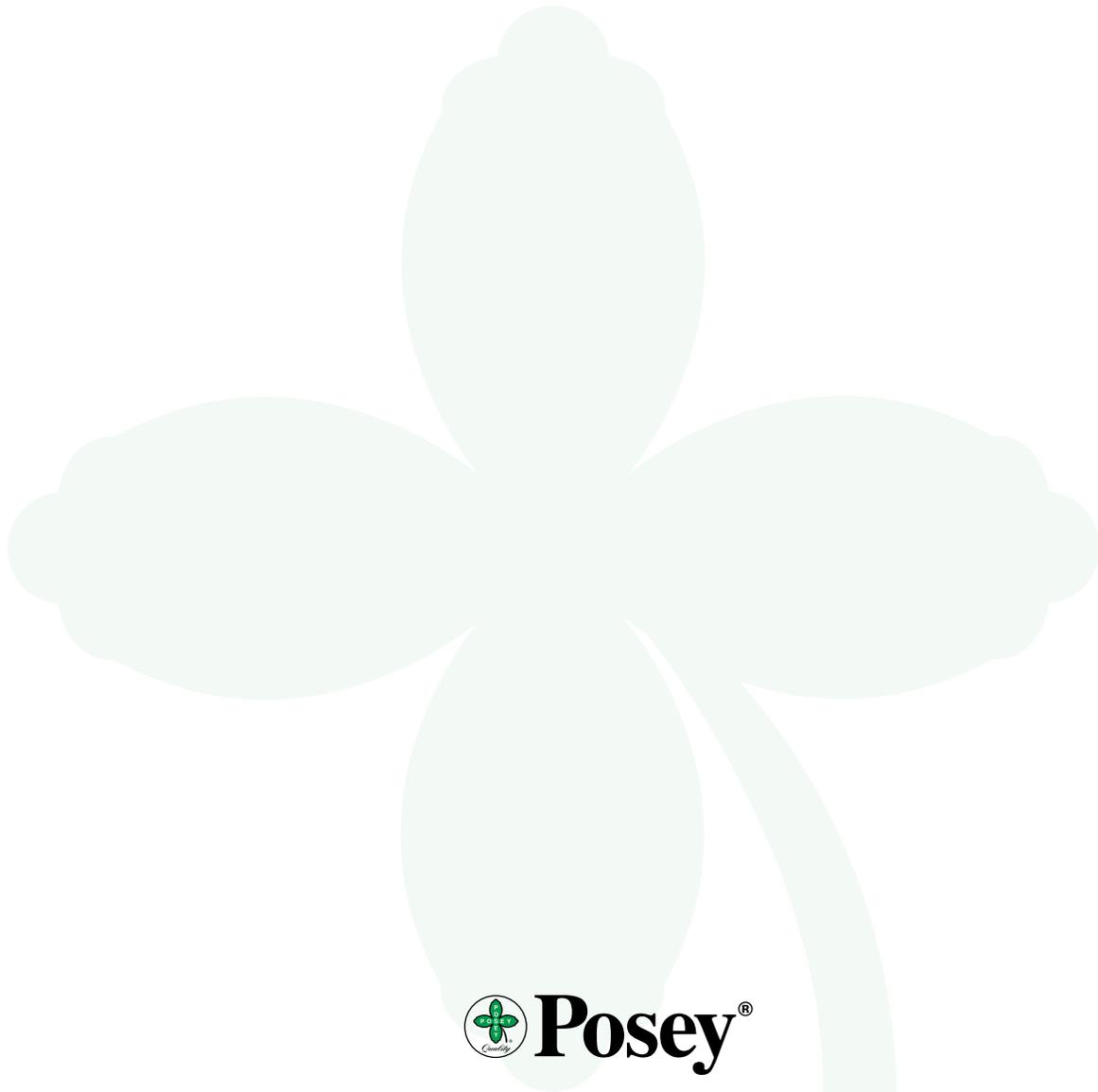
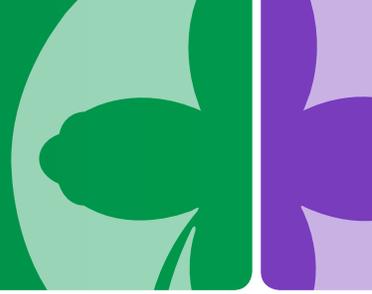
Posey Bed | 8060

- Expandable mattress compartment accommodates a 10" air loss mattress for patients needing additional therapy
- Is ideal for patients with compromised skin integrity
- Helps promote a restful sleep

All Posey Bed versions can be complemented with accessories (sold separately), designed to enhance patient comfort and to facilitate ease of use.

Posey® Bed 8070

Where Comfort Meets Safety



Posey®

Posey Company • 5635 Peck Road, Arcadia, CA 91006-0020 USA
Phone: 1.800.447.6739 • Fax: 1.800.767.3933 • www.posey.com