

medstrom solo[®] +



General Hospital Bed with
Unrivalled Height Range

 midmed



Safety without compromise

No-one wants to compromise on patient or staff safety.

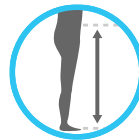
Unfortunately, that's the exact dilemma you'll face with many hospital beds. Beds that can't go low enough contribute to falls injuries, which impact early mobilisation and clinical outcomes. Whereas beds that don't go high enough increase moving and handling risks to an already stretched workforce.

Medstrom Solo[®] + is a unique bed with an ultra-low **and** ultra-high height. It incorporates all the advantages of the original Medstrom Solo bed whilst providing new, future-proofing benefits to meet the ever-increasing demands of modern healthcare.

Backed by a wealth of supporting evidence, Medstrom Solo + maximises safety for all, without compromise.



Ultra-high height (83cm)



Safe working height for caregivers to reduce manual handling risks.

Programmable custom egress height



Unrivalled height range allows all patients to mobilise from a height that's right for them, every time.

Ultra-low height (21cm)



Reduced risk of falls injuries, eliminating the need to procure a specialist bed frame for falls-risk patients.



Improved clinical outcomes

Challenges: Patient Falls, Early Mobilisation & Pressure Ulcers



Inpatient falls are the most commonly reported safety incident,¹ and 22% are from the bed space.²



Patients who fall multiple times in hospital are more likely to fall post-discharge. Within a month, 35% are readmitted and 5% die.⁶



A bed with a low height of 38cm does not provide a safe egress height for over 99% of UK adults.³



Frailty leads to an increased risk of falls, deconditioning, prolonged hospitalisation and death.⁷



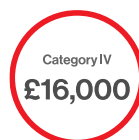
An 800 bed hospital has on average 330 falls per year from the bed space which result in harm, costing over £300,000.⁴



A fifth of patients >75 years old are frail. They account for nearly half of all hospitalisation days.⁸

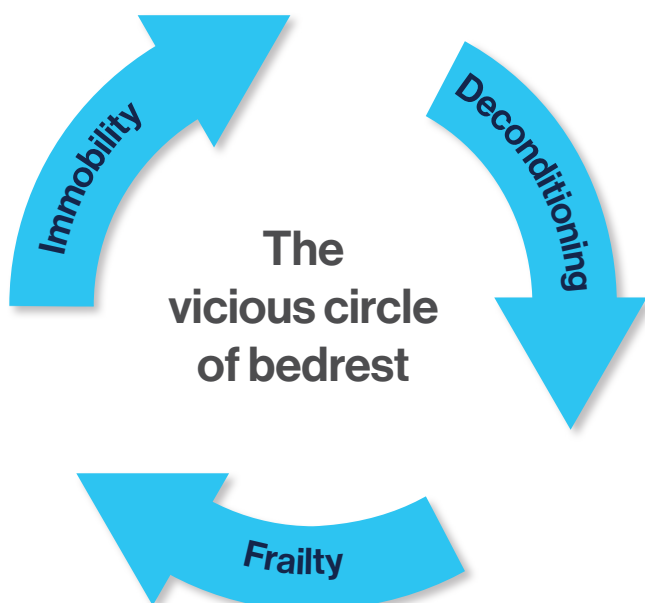


Falling from a bed with a low platform height of 38cm has 49% greater impact than a bed with a 21cm low height.⁵



Heel travel, resulting from ineffective bed articulation, can lead to pressure ulcers,⁹ costing up to £16,000 to heal.¹⁰

Complications of Immobility





Patient Falls: Reduced Risk of Injury & Safe Mobilisation Height



Medstrom Solo + has a low height of 21cm — the lowest bed platform of all general med surg beds, providing an unrivalled height range.

- Reduced risk of injury from a fall. The lower the height, the lesser the impact.
- A safe mobilisation height catering for the majority of the population, short and tall, allowing for early and safe mobilisation.



What percentage of ultra-low beds should you have in your fleet? 100% guarantees every patient who needs a low bed gets one.

In 2018 and 2019, 800 ultra-low hospital beds (100% of the fleet) were implemented into Blackpool Teaching Hospitals NHS Trust. In the 2019-2020 financial year, the Trust reported a 59.7% reduction in falls that resulted in harm,¹¹ equating to an annual saving of over £180,000 for falls from the bed space.⁴



The 'End PJ Paralysis' campaign ran for 70 days in the NHS. Its aim was to get patients up, dressed and moving, displaying impressive results:

- Reduced falls, pressure ulcers and length of stay.
- Improved patient experience.
- Saved over 710,000 NHS bed days.¹²

Medstrom Solo + allows earlier mobilisation of more patients, delivering these benefits.

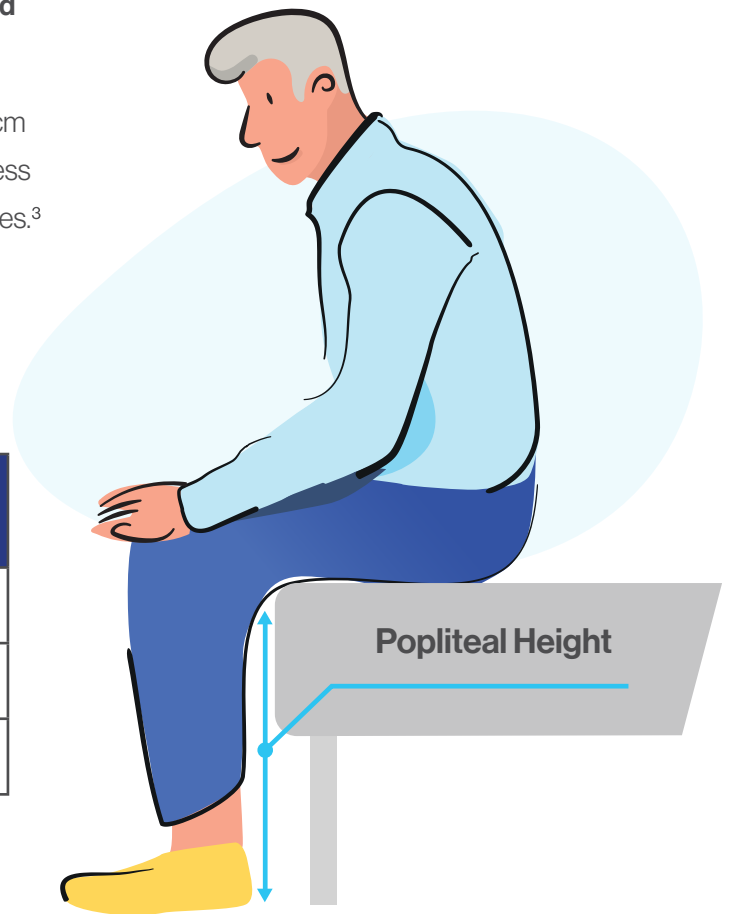
Early Mobilisation: Early & Safe Bed Egress

The safest height from which to mobilise is the popliteal height.³ This measurement is taken from the floor to the underside of the knee, with feet flat on the floor, and heels, knees and thighs all at a 90° angle.

Medstrom Solo + has an ultra-low height of 21cm. With a 14cm mattress it provides a height range that allows safe bed egress and mobilisation for 96% of adult females and > 99% of males.³

Safe, early mobilisation for more patients helps to improve clinical outcomes and reduce complications of immobility.

Bed's Lowest Height	Safe Egress (UK Males)	Safe Egress (UK Females)
21cm	>99%	96%
32cm	16%	< 1%
38cm	< 1%	< 1%





Programmable Custom Egress Height

Medstrom Solo + uniquely has a custom egress height setting, activated by a single button.

Setting the custom height ensures the patient always mobilises from their safest (popliteal) height. It removes guesswork and improves safety, reducing the risk of falls for patients and manual handling risks for caregivers.



In-Bed Mobilisation

Intuitive electric controls allow caregivers, and patients who are able, to effortlessly reposition the bed for physical benefits and comfort.

A one-button cardiac chair gives excellent upright positioning. This benefits body systems through gravity, facilitates eating and drinking and offers considerable psychological benefits for bed bound patients.



Night-Time Safety

A night light illuminates the area underneath the bed. This provides extra safety for self-mobilising patients when they get out of bed during the night.

It also provides light for caregivers making overnight checks. This reduces disturbance of patients, allowing them to sleep better and for longer periods.

Pressure Area Care: Elliptical Backrest Articulation



Nearly all profiling beds, due to their platform design, push patients down towards the foot end of the bed as the backrest is raised. This causes friction and shear on the sacrum and heels, increasing the risk of skin damage.

They can also cause abdominal crunching if auto-contour is used, and if the backrest alone is raised, will result in the need to move the patient back up the bed.

To eliminate these problems, the Medstrom Solo + backrest rises in an elliptical motion. It uniquely increases the platform length by 23cm, mimicking spine elongation which occurs when a person moves from supine to sitting. The overall result is zero sacral and heel travel⁹ and greatly reduced abdominal crunching. Benefits include reduced risk of pressure ulcer formation, increased comfort and improved lung expansion. The backrest stops at two positions (30° and 45°) when it rises, for safety and optimal respiratory management. Minimising guesswork by the caregiver to provide accurate patient repositioning.



Integral Bed Extension

The integral bed extension, easily operated by one person, lengthens the platform by 18cm. It allows taller patients to be accommodated safely and comfortably.

The movable foot section of the mattress platform supports the surface at the heel section. This means the whole surface can be moved down so the patient's heels remain fully supported.



Old problems, new solutions

Challenges: Safe Working Height, Bed Manoeuvrability & X-Ray



Each year, 80,000 nurses injure their backs at work and 3,600 are forced to retire early as a result.¹³



NHS staff who injure their backs in the course of their work cost taxpayers over £400 million per year.¹³



By 2030, the NHS could face a shortage of 108,000 full-time nurses.¹⁴



Friction and wheel design are among the push/pull factors that can contribute to musculoskeletal risk.¹⁶



Vibration is one of the physiological alterations that can affect a safe patient transfer the most.¹⁵



Beds with one steer castor 'crab' to one side when pushed, making the operator bend and twist to straighten them up.



Standard hospital beds can restrict hoist access due to brake cable housing, and cannot achieve an ultra-low height.



Most beds have a limited height range span of approximately 40cm, so are unable to achieve an ultra-low and ultra-high height.

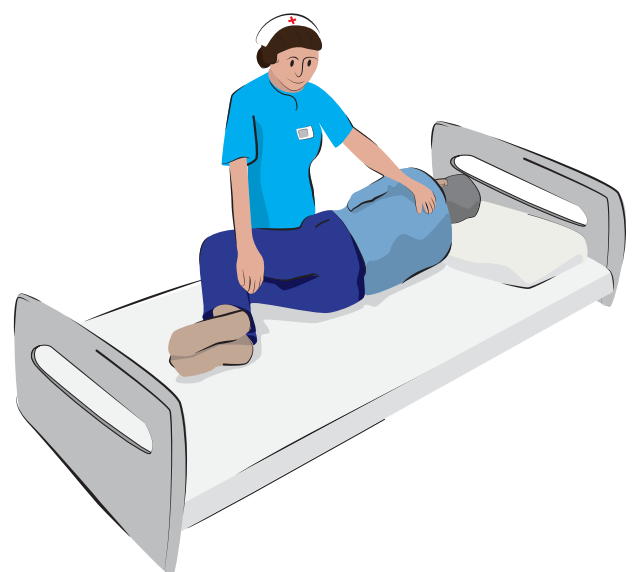
Safe Working Height

To maintain a straight back and safely perform moving and handling tasks, caregivers must be able to work at their umbilical height.

The Medstrom Solo + bed platform (83cm) with a 14cm mattress gives a top height of 97cm.

UK anthropometric data shows that this provides a **safe working height for 98% of all caregivers**, helping to reduce bending, twisting and associated injuries during patient care and transportation.^{3,17}

With its unrivalled height range span of 62cm, standardising on Solo + means you don't have to choose between patient or staff safety.



Bed Manoeuvrability

Medstrom Solo + has a unique double bogie castor configuration, with 16 touch points to the floor. There are two steer castors at the head end. Key advantages include:

- **Improved manoeuvrability** for enhanced user safety; the bed requires **40% less push/pull force** to move from static.¹⁸
- **Improved straight line steering** for enhanced user safety and comfort.
- **Increased comfort and support** for the patient as the double bogie system reduces vibration, giving a smoother ride.
- **Reduced risk of harm from falls** and **safer mobilisation** due to the ultra-low height.



X-Ray

Chest X-Ray on standard hospital beds can be problematic. This is especially true if the patient is unwell with limited movement, or if they can't tolerate an X-Ray cassette in close proximity to their back. It can also pose moving and handling risks to staff.

To address these problems, the Solo + backrest panel has been designed with a rectangular trough in the centre. This is large enough to simply slide a standard X-Ray cassette into and move it laterally to suit the patient's position.

As an option, securing clips can be fitted to the bed frame to adjust the height of the cassette and hold it in position.



Designed for life

Challenges: Clinical Choice, Infection Control & Life Cycle Costs



Split side rail options for hospital beds usually increase the lowest height to the detriment of safe mobilisation.



An insufficient side rail height does not protect patients and increases the risk of falling from the bed.²⁰



300,000 healthcare-associated infections in England per year costs the NHS in excess of £1 billion.¹⁹



Lack of equipment standardisation can increase the risk of human error.²¹



Lack of provision for safe equipment storage can lead to increased incidences of hospital acquired damage.



Short warranty periods can prove extremely costly after expiry over the rest of a bed's life.

Clinical Choice

At Medstrom, we believe that product choice should be clinically driven.

The Medstrom Solo + bed is available with either split or 3/4 length folding side rails. Other than that, everything else is the same, including:

- Price, quality and warranty
- Low and high height

The side rails of both beds fully conform to **IEC 60601-2-52** (the international standard for design safety for adult medical beds). Safety elements it covers for side rails include a sufficiently safe side rail height, minimising the risk of entrapment and ensuring lateral stability.

Your beds. Your patients. Your choice.



Infection Control

The open, 'A' frame structure of the bed makes it very practical to clean. There is no base plate and no metal tubes connecting the head and foot end castors, giving complete, unrestricted access to all parts. The mattress platform and head and foot boards are made of strong plastic which is smooth, lightweight and easy to clean. They are also removable, allowing cleaning of all parts on and around them.



Life Cycle Costs

Standardisation

Standardisation of equipment increases user familiarity, reducing the risk of human error.²² In practice, this means increased safety, reduced damage and less training requirements.

Hospital Acquired Damage (HAD)

Medstrom Solo + has been designed to withstand the tough hospital environment, with built-in features which help to minimise the risk of hospital acquired damage.



Handset holder



Strong, durable ABS plastic side rails, head and foot boards and mattress platform



Safe storage of multiple pieces of equipment



'A' frame gives clear visibility of potential hazards before lowering the bed

Built to last



Manufactured in the UK

The Medstrom Solo + bed is manufactured in the UK at Medstrom's factory in Castle Donington. This enables superior customer support with outstanding availability, access to spare parts and reduced lead times when you need it most.

Our UK base, sourcing of local components and electric vehicle fleet helps to reduce our carbon footprint, which we are constantly striving and innovating to improve. **Book a tour to come and see your beds being made!**

Technical Specification			
Minimum height:	21cm	Bed length extension:	18cm
Maximum height:	83cm	Back rest angle:	70°
Safe working load:	258kg (41st)	Knee angle:	30°
Max patient weight:	193kg (30st)	Calf angle:	20°
Bed weight: (straight ¾ side rails)	127kg	Trend/reverse Trend angle:	+ 14° / - 14°
(split side rails)	136kg		
Total length and width:	214cm x 99.8cm (236cm ext.)	Dimensions of sleep deck:	200cm x 90cm (218cm ext.)

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