medstrom solo®

Safety Without Compromise

medstrom+

Improved Patient Outcomes

Healthcare Challenges

Currently, hospital bed selection requires significant compromise on either patient or caregiver safety.

Beds that cannot achieve a low enough height serve only to contribute towards the epidemic number of falls, negatively impacting mobilisation. Meanwhile, beds that cannot reach a safe working height put nursing staff at risk of injury, adding strain to an already stretched workforce.

The problem deepens when these healthcare challenges are considered:

By 2030, one in five people in the UK will be aged 65 or over.[1]

77% of all reported in-patient falls happen to patients aged 65+.[2]

In-patient falls costs the NHS approximately £2.3 billion each year.[2]

At least 25% of hospital beds are occupied by people with dementia.[3]

Bed frame construction can increase the risk of tissue damage in the heels.[4]

Each year, 80,000 nurses injure their backs at work.[5]

By 2030, the NHS could face a shortfall of 108,000 full-time nurses.[6]

Lack of equipment standardisation can increase the risk of human error.[7]

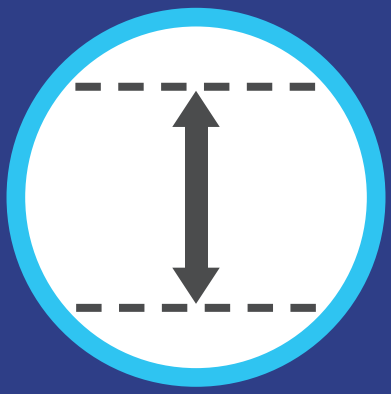
The Medstrom Solo

The Medstrom Solo is a unique bed frame that offers a long-term, preventative solution to these clinical challenges.

Providing the functionality of an ultra low bed and a general medical bed all in one, means patients and caregivers are safely supported.

This eliminates the "pick and mix" approach to bed selection, ensuring the **right patient** is on the **right bed** at the **right time**.

Safety Without Compromise



The lowest height and highest working height to maximise safety.

A wealth of evidence demonstrates true clinical benefits.

Standardisation that protects patient and caregivers for the long term.

Made in the UK

The Solo bed is manufactured at Medstrom's facility in Castle Donington, UK. This enables superior customer support with outstanding availability, access to spare parts and reduced lead times when you need it most.
All backed up by Medstrom's clinical and technical service, available 24/7/365.

Come and see your beds being made by booking a tour of the Medstrom factory!

Safe & Early Mobilisation

Falls from around the bedside can be a symptom of trying to mobilise from a bed that is too high and cannot go low enough. From an elderly patient's perspective, if both feet are not flat on the floor, this fosters uncertainty about safely mobilising, affecting their independence.

Did you know?

A true measurement of a bed's lowest height is measured from the top of the sleep deck to the floor. This is different to the mythical measurement some manufacturers provide, whereby the under-bed clearance is stated.

Under-bed clearance is relevant only to hoist access and is measured from the floor to the first interference point underneath the bed frame.

Using a patient's popliteal height is an industry-proven method for determining the safe sitting height from which to commence mobilisation. This measurement is taken from the floor to the underside of the knee.

When the appropriate popliteal height is achieved by the bed, the patient should demonstrate a 90º/90º/90º, safe and stable position prior to mobilisation.

Clinical Challenges

Inpatient falls are now the most commonly reported patient safety incident.[8]

22% of patients who fall in hospital do so from the bed, indicative of patients who cannot get their feet on the floor.[9]

If a bed cannot achieve a patient's popliteal height, they experience greater problems in standing up.[10]

Over 250,000 falls and 1,000 fractures are reported from hospitals in England and Wales each year, increasing length of stay, litigation risk and cost to life.[8]

Solo Solutions

An ultra-low height of 21cm allows patients to mobilise safely from the bed, with their feet firmly on the floor.

A custom height function provides bespoke patient care whilst delivering the ultimate protection.

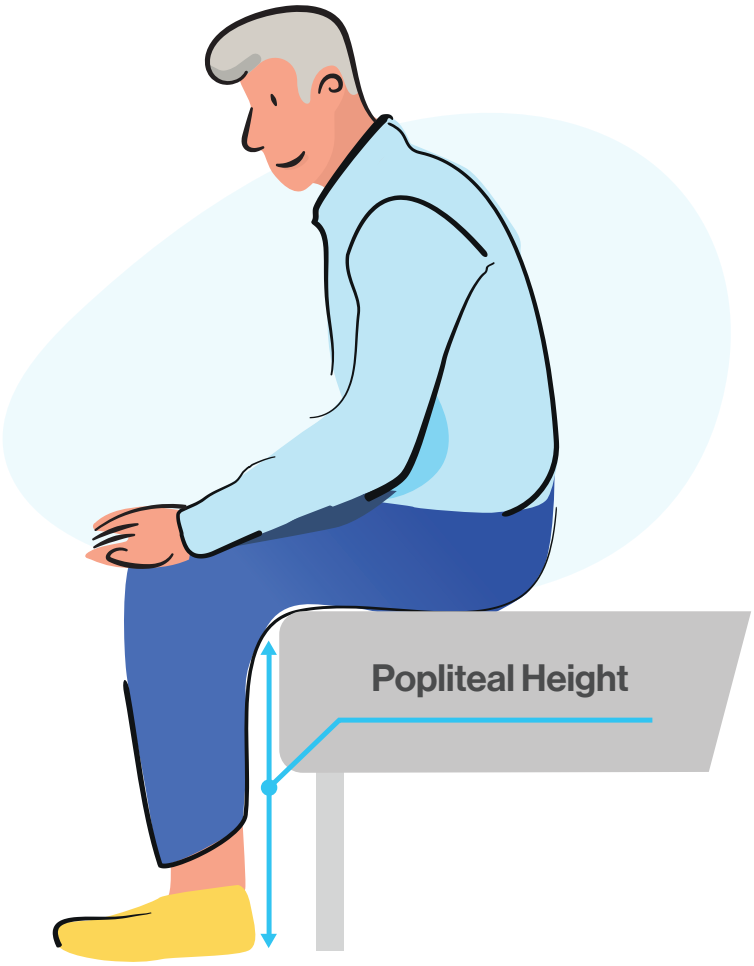
A bed height of 21cm creates 49% less impact force, versus a 38cm bed height, minimising the risk of injury from a fall.

Of course, the depth of the mattress must be taken into consideration as well, with a standard, static foam mattress measuring approximately 14cm.

Using average popliteal measurements for the most vulnerable falls demographic (over 65's), in conjunction with a bed's lowest height and a 14cm mattress, an optimum height for safe mobilisation can be determined.

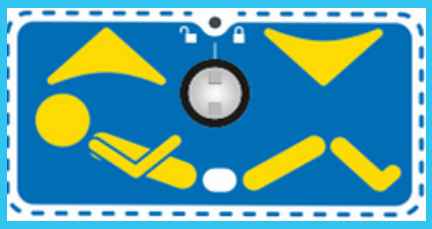
- **A height of 21cm meets the popliteal height for >99% of males and 96% of females.**
- **A height of 38cm meets the popliteal height for <1% of males and <1% of females.**

Therefore, a low bed height of 21cm will provide the greatest protection for the ageing population when trying to safely mobilise.[10] Significantly helping with falls prevention and minimising the risk of injury from a potential fall.



Did you know?

You can program the Medstrom Solo to stop at a custom height using the auto-contour buttons on the hand pendant (below). Once the patient has both feet flat on the floor, in accordance with their popliteal height, hold both arrow keys for 10 seconds until there is an audible beep.



The bed will now automatically stop at this custom height, removing the guesswork around optimising the safest mobilisation point. This saves caregivers time and improves patient independence.

Protecting Caregivers

A safe working height for nurses is widely regarded as umbilical height, so they can maintain a straight back and prevent bending. However, many manufacturers focus on low height only, compromising on high height and contributing to the back injury crisis.

Medstrom Solo protects caregivers by offering a platform that can achieve a safe working height of 97cm (83cm platform + 14cm mattress). This delivers a safe and strain-free environment to carry out in bed procedures, as well as an appropriate height for manoeuvering. [10]

Clinical Challenges

£400 million

NHS staff who injure their backs in the course of their work, cost taxpayers over £400m a year.[11]

3,600

3,600 healthcare workers are forced to retire early due to back and musculoskeletal conditions.[11]

Solo Solutions

A height of 97cm (83cm platform + 14cm mattress) provides a safe working height for 98% of nursing staff.[10]

The Solo helps to minimise back injury, sickness and stress for nursing staff with a standardised solution.[10]

Improved Manoeuvrability

Clinical Challenges

Friction and wheel design are among the push and pull factors that can contribute to musculoskeletal risk.[12]

Vibration is among the physiological alterations that can affect a safe patient transfer the most.[13]

Solo Solutions

16 Touch Points

Eight double castors provide a total of 16 touch points with the floor. This reduces the load per point.

40%

The Medstrom Solo reduces the push and pull forces required to manoeuver by up to 40% compared to other beds.

Easy to operate brake and steer system allows for improved manoeuvrability around hospital corridors and into bays.

Did you know?

A single porter can travel 10 -15 miles a day, bending and flexing as they push and pull things along, around and into challenging spaces.

Medstrom utlises a unique castor configuration that provides greater control and manoeuvrability during transit. Eight double castors increase the surface contact with the floor, distributing the load across 16 points.

This is shown to support hospital staff with pushing and pulling the bed, helping to minimise back injuries. When compared to other general medical beds, the Solo recorded a 40% reduction in the push and pull forces required. This was conducted on a vinyl flooring system, equivalent to a hospital setting.

The Medstrom Solo also employs the use of bogie castors, which absorb the impact of uneven hospital terrain, such as lift entrances and expansion joints. This delivers a smooth ride for patients during transit, benefiting their levels of comfort and support.

Did you know?

The Solo's bogie castor concept is widely used on train carriages. The purpose of the bogie is provide stability, improve ride quality by absorbing vibrations and reduce abrasion due to friction. These features are mimiced in the hospital environment.[14]

Ergonomic Patient Positioning

Did you know?

A patient's spine grows an average 12cm in length when put into an auto-contour or chair position.

The bed frame plays an instrumental role in delivering safer patient positioning. In fact, the articulating motion of a bed can increase the risk of tissue damage by pushing the patient down the bed, causing heel travel.[4]

The Medstrom Solo has been designed to articulate in sympathy with the patient's elliptical curve, providing 23cm of extension. When articulated into a cardiac chair position, the patient does not migrate down the bed - protecting the sacrum, heels and shoulders against tissue damage. This reduces the manual handling required to retain patient positioning, saving nurses staff significant time and effort.

"The auto-contour function creates zero migration, creating comfort, reducing torso compression and can be a cost-effective addition to pressure ulcer prevention for the institution, whilst potentially improving a patient's quality of life."

Anita Rush - Clinical Lead Nurse, Specialist Equipment [16]

Clinical Challenges

Heel travel, resulting from ineffective bed articulation, can lead to the development of pressure ulcers.[4]

Category IV
£16,000

The cost of a pressure ulcer ranges from £2,000 per category I to £16,000 for a category IV.[15]

Solo Solutions

23 cm

The backrest accommodates for the lengthening of the patient's spine with an eliptical motion when raised.

0 Heel Travel

The Medstrom Solo eliminates patient migration and the risk of tissue damage from shear and friction.[16]

Unique Split Side Rail Design

Clinical Challenges

An insufficient side rail height does not protect patients and increases the risk of falling from the bedside.[17]

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

Solo Solutions

Both Solo side rail options are compliant with BS EN ISO 60601-2-52, the medical standard for safe side rails.

The ergonomic split side rail provides an excellent stabilisation aid to support patients safely mobilising from the bed.

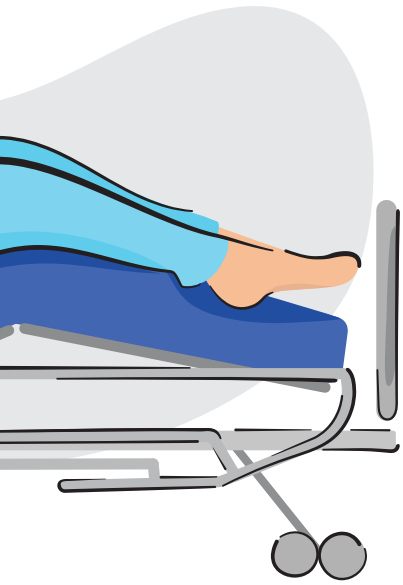
The Medstrom Solo makes side rail selection a completely clinical choice, with both the split and full length rails available at no extra cost. Both options are compliant with BS EN ISO 60601-2-52, even when combined with deeper cell dynamic mattresses of 25cm.

The ergonomic design of the split-side rail allows for enhanced and safer patient mobilisation. Rigorously tested in line with BS EN ISO 60601-2-52 regulations, they are great when used as a mobilisation and repositioning aid to encourage patient independence.

Did you know?

The Solo has visible angle indicators on the split side rail that removes the guesswork associated with achieving head of bed positions. This works alongside the automatic safe stops at 30º and 45º, helping caregivers to prevent respiratory complications in line with pneumonia care protocols.

Meanwhile, a gas-assisted release reduces the effort for healthcare staff, whilst dampening the downward movement. Notably, the split side rail design is compatible with achieving a low height of 21cm, unlike traditional split rail hospital beds. This ensures patient mobilisation is not compromised.



Side rail height is optimised for BS EN ISO 60601-2-52 compliance

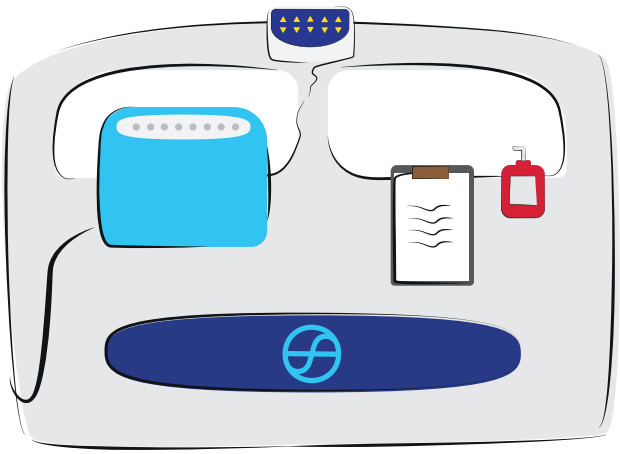
Superior Life Cycle Costs

Did you know?

Standardisation increases the likelihood of user familiarity and thereby reduces the risk of human error. This means optimised use of equipment, decreasing the number of issues whereby damage could occur.[7]

The Medstrom Solo utilises a number of innovative elements that provide a cost-effective solution across the lifespan of the bed:

- The unique footboard can accommodate a variety of equipment in two distinct sections. The flat, sturdy frame can easily hold an air supply unit for powered surfaces, as well as patient notes. The interchangeable head and foot boards also reduce the need for multiple spare parts.



Clinical Challenges

HAD

Lack of provision for safe equipment storage can lead to increased instances of hospital acquired damage (HAD).

Solo Solutions

Medstrom offers a 10 year warranty on the bed-frame and 5 year warranty on the electrical components.

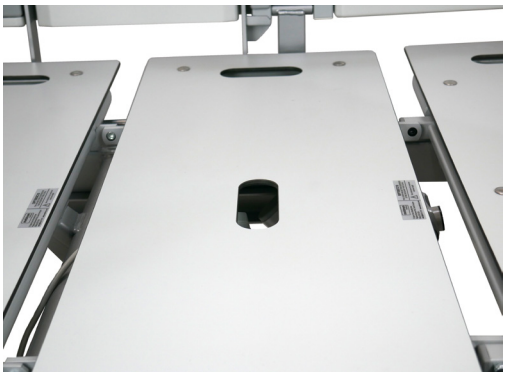
24/7/365 technical and clinical support is available to make operators feel secure in using the bed.

The Solo is durable and long-lasting and its intuitive design promotes ease of use for caregivers and patients alike.

- The patient handset can be securely stored in a designated side rail holster, to deliver semi-integrated controls. When the bed is articulated or in transit, the handset is stowed safely, avoiding common damage arising from impact.
- The Medstrom Solo's apex design is key to providing the platform with its unrivalled low to high height spectrum. At the bed's highest height, caregivers have unrestricted access underneath for hoist access or patient tables. What's more, it provides clear visibility of any potential hazards before lowering. Before reaching the lowest height, an audible alarm will sound to indicate the final descent.
- The Medstrom Solo is capable of being steam cleaned thanks to an IPX6 rating for its mechanical and electrical components, and an IPX4 rating for its handset.

Technical Specification & Service

Dimensions	
Dimensions of sleep deck:	90cm x 200cm (218cm extended)
Dimensions of bed frame:	99.9cm x 214cm (236cm extended)
Minimum height: **(from top of sleep deck)**	21cm
Maximum height: **(from top of sleep deck)**	83cm
Safe working load:	258kg (193kg patient, 65kg mattress + accessories)
Electric, shear-reducing back angle adjustment:	to 70º
Electric thigh section angle adjustment:	to 30º
Manual calf section angle adjustment:	-20º to 20º
Electric Trendelenburg/ reverse Trendelenburg angle:	14º
CPR:	Electric, bi-lateral manual with dampened action
Headboards & Footboards:	Plastic, removable, tool-free
Weight of bed • **4 bar folding siderail:** • **Split siderail:**	 127kg 136kg
Height of siderail from sleep deck: • **4 bar folding siderail:** • **Split siderail:**	 50cm 42cm



The powder coated frame gives superior access for cleaning and the sleep deck, are all easily removed for cleaning.

The manual bilateral handles are accessible

Headboard and footboard are easy to remove for access, without the need for tools.

"Selecting Medstrom was a unanimous decision. Not only do I have confidence in the equipment's ability to enhance patient care, but I believe that clinician efficiency will also greatly improve because of access to a better class of hospital bed that can tailor support to the individual needs of patients."

Senior Clinician - Medstrom Total Bed Management (TBM) Account

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Improved Patient Outcomes

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