



# Bed to Trolley

## Smooth Lateral Patient Transfer Device

source and it is easier to maintain. It has



also improved the safety of the patient compared to the other systems.

### Background

Across the globe there is a rise in aging population which has led to a deficiency in healthcare workers. Transferring patients from bed to trolley is a task that requires multiple people and can cause severe pain in those who are suffering from neurological conditions. This study aims to develop a self-aligning movable mattress overlay that can be operated by a single person to facilitate smooth transfer of patients.

The existing devices that are currently in use are sheet transfer, slider board transfer, roller board transfer, air transfer device, electronic transfer device and an automatic trolley which are labor intensive, requires multiple healthcare workers and cause severe pain in the patients who suffer from neurological conditions. The newly invented device outperforms these existing methods since this device can reduce the number of healthcare workers necessary in transferring a patient. The device also causes no discomfort to the patient. This device can be used without any external power

### Technical Problem

There are numerous technical problems with existing patient transfer devices such as inconvenience to the operator (person handling the equipment), where the inability for a single operator to handle the equipment without posing a risk to the patient. Further the existing devices cause discomfort by disturbing the alignment of the patient and compromise the safety of the patient during the transfer of a patient from bed to trolley and vice versa. Difficulty in cleaning the patient due to the inability to tilt them on a flat surface is another drawback of existing devices. Some existing products are complex and requires the use of a power source.





## Technical Solution

This apparatus provides a convenient and safe transfer mechanism using a movable mattress and a roller system affixed to the apparatus. Operation is simple and the equipment can be operated manually by one person. After transferring a patient to the trolley the mattress has side-barriers that protect the patient.

A single unskilled person; by utilizing this equipment, can transfer a patient from a bed to a trolley and move him in a secured manner. While the transfer of the patient is being done, the trolley is between the operator and the bed, which is safe as the trolley will continue to stay in a fixed position until the transfer is complete. Using this equipment in transferring a patient from bed to trolley or from trolley to bed does not change the alignment of the patient as the contact surface of the patient and the movable mattress is not disturbed. Once the side barriers are tucked under the mattress, it is possible to tilt the patient without causing discomfort which facilitates cleansing.

## Advantageous Effects

1. Minimize the possibility of injuries to the patient during transfer.
2. The number of health care workers required for laterally transferring patients would be reduced, while convenient transfer of the patient is possible by a single health care worker.
3. A patient who has undergone an operation can also be easily

transferred using this product. Using this equipment it is possible to transfer the patient from the operation theatre to the ward bed without changing the position of the patient.

4. Facilitating easy cleansing of the patient by turning the side barriers.
5. Since the transferring process is contactless this could also be used when transferring patients with contagious diseases such as Covid-19

## Industrial Applicability

This movable mattress can be introduced into Sri Lankan state and private hospitals which is extremely beneficial to patients in Sri Lanka where a single healthcare worker can handle the equipment. Another potential target market is bedridden patients residing at home where caretakers can easily transfer the patient from bed to trolley or vice-versa.

**USJ has already filed the patent for this product.**

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