

Safe patient handling in Taiwan

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J. Chang. Safe patient handling in Taiwan. Gerontechnology 2015;13(4):428-430; doi:10.4017/gt.2015.13.4.011.00 Glorious Union MedTech Corporation designed and developed a number of products to improve lifting and transferring of non-mobile persons.

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Of the 23 million people in Taiwan, the aged part is approximately 11.2% and was estimated to reach 14% by 2018. Consequently, as the demographic structure changes, the patient-to-care provider ratio is increasing¹.

Over the past several decades, the caregivers in Taiwan were trained to adopt manual lifting. They were educated to understand anatomy, physiology and ergonomics². But still, such a care provider is prone to occupational injuries. In Taiwan, over 88% of care providers in hospitals and nursing homes are experiencing musculoskeletal disorders (MSDs), and lower back pain is of a higher prevalence in Taiwan than in other countries³.

'Safe patient handling and movement' was introduced to Taiwan in 2011 by the Chinese Safe Patient Handling and Movement Association. It is a set of rules with the following general principles: (i) manual lifting is to be eliminated or minimized, except for emergency situations, (ii) patients are encouraged to help in the transferring process, (iii) assistive devices must be used whenever possible⁴. As a result, the use and demand of assistive devices is increasing. The increasing number of elders in Taiwan, as well as the aging of the caregivers, form additional causes for the change. Care providers are searching for alternatives to make caring tasks less physical demanding and less labor-intensive.

IMPORTED DEVICES

Taiwan used to import all assistive devices from other countries. However, since life style, living standard, and environment in Taiwan differ from the countries where the assistive devices were designed, various problems appeared. (i) Too expensive to be affordable, (ii) Too large for Taiwan's general living environment, and (iii) Too large to handle since the body size of care providers and patients is smaller. The imported products are not well-adapted to Taiwan.

OUR ROLE IN TAIWAN

Glorious Union Medtech Corporation (GUMT) is one of the first companies that developed as-

sistive devices in Taiwan. Its major customers have always been the care providers, including nursing staff, patients' family members, and part-time paid care givers, etc. As the local market size is not large, very few companies are willing to invest in research and development of new devices. From care providers' perspective, the company put unprecedented resources into developing products, starting from the belief that assistive devices are meant to protect both the patient and the care provider, and need to meet the ultimate demand of the users.

Thinking of the users

In the 'designing for human' philosophy, several elements are taken into consideration: (i) Human factors, (ii) Inclusive design, (iii) User-friendliness, (iv) Functionality, (v) Working environment, and (vi) Market competitiveness. With the main goals of meeting the users' demand and eliminating inconvenience for the users, we especially emphasize the differentiation in function or feature and price. The resulting products appeared welcome and appreciated; the company is now exporting its assistive devices to over 30 countries around the world. Two examples of patented products follow.

6-Way patient transferring slide (Figure 1).

Turning, positioning, sitting up, and transferring of a patient can be labor-intensive, highly-risky and repetitive. It is one of the major causes of lower back pain among caregivers, as grabbing the bed sheet in transfer causes pain in wrist and shoulder³. In Taiwan usually non-electric assistive devices are used since they are more affordable and do not require much space. Transferring included a transferring sheet with handles, an assisting belt and a turning disc. However, constantly changing assistive devices is not efficient. So some care providers still prefer grabbing bed sheet to save the trouble of inserting and removing the assistive devices.

In an iterative process of prototype production, reviewing, testing, and revising, we incorporated various functions and launched the patented '6-

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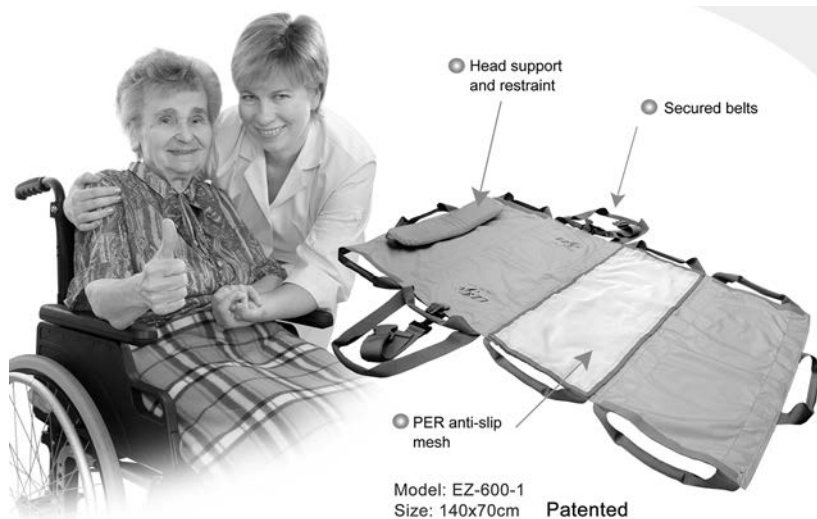


Figure 1. The 6-Way patient transferring slide

way Patient Transfer Slide'. The transfer slide is made of Gore-Tex, with its nature of being waterproof and breathable⁵, the patient may stay on it for extended periods of time, which reduces the inconvenience of inserting and removing the transferring sheet constantly. Furthermore, the transfer slide combines six functions in one device to help the most common caring tasks: transferring, turning, positioning, and sitting up. It can also serve as an assisting belt and soft stretcher. With its weight of only 620g, it is user-friendly for the care providers. The sales volume is about 10,000 pieces per year, customers use them daily, as often as 2-4 times a day. The satisfaction rate is 85%.

Emergency escape air slide (Figure 2).

As Taiwan is a highly-populated country, high-rise buildings are common. According to the Living Demand Report of People with Disabilities published by the Ministry of the Interior, in Taipei, the capital of Taiwan, 70.5% of the resident buildings are apartments (60.9% have four to five floors), and approximately 60% of them are not equipped with an elevator⁶. This is challenging for daily movement, more seriously, for escape during fire, earthquake, or other emergency situations. The case is the same in hospitals, the elevators are forbidden to use during those emergency circumstances. For people and patients who live on the 2nd floor and above, when encountering an emergency, the traditional approach of getting downstairs is to have the caregiver carry the patient on his or her back. For people with more financial resources, another solution is the EVAC+CHAIR⁷. However, neither way works for severely disabled patients. Generally, people with severe disabilities dwell in hospitals or nursing institutions, and the elevators cannot be used when an emergency occurs.

Moreover, due to their physical condition, these people cannot be transferred quickly and easily.

Inspired by sleeping bags, we designed the 'Emergency escape air slide'. When not in use, it can be folded and stored like a sleeping bag (228x105cm); during emergency, it can be inflated (190x100cm) within 1min with an auto inflation pump. For almost any type of patient, a caregiver or nurse only needs

to move the patient onto the slide, and s/he can drag the patient downstairs. With ergonomic three-section inflation design for head, hips and legs area, forehead restraints, two sets of belts, and specially designed air cells, the patient feels a sense of security and comfort while being transferred. The sale of the 'Emergency escape air slide' is about 4,000 pieces a year. Given the fact that it is not daily-use equipment, customers do not use it very often. Although it is mostly used in yearly or quarterly manoeuvres, the customers' satisfaction is as high as 80%.



Figure 2. The emergency escape air slide

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SATISFACTION IS THE GOAL

Product demand is changing. At first customers used to put emphasis on whether a product is nice (function, price, quality), then they turned to whether they like it or not (brand, design, and symbolic meaning). Research indicates that over-

all customer satisfaction is a fundamental indicator for a firm's performance⁹. For GUMT, it has always been its goal to provide ultimate satisfaction. With this philosophy in mind, new products will be continuously developed to improve the quality of care in Taiwan and the world.

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