

Special approaches for safe handling of disabled children in The Netherlands.

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While most direct caregivers will apply known principles of safe patient movement to situations where they are transferring adult patients, they are not as likely to apply the same principles to the act of transferring paediatric patients. The aim of this article is to illustrate the manner in which direct caregivers in The Netherlands are addressing safe patient handling of paediatric patients. Although it will focus on reducing back strain, it should be noted that good ergonomic working conditions always yield better quality of care; which is a universal concern for direct care providers.

Habitual manual handling

Safe handling of disabled children has a number of very specific challenges, making it different from lifting in other circumstances. We have to realise that because many paediatric patients weigh so little, direct care providers may be prone to get into the habit of performing manual transfers. Unfortunately, many paediatric patients exceed NIOSH's 23 kilogram manual load handling limit. As habitual manual handling will put the caregiver's back at risk when transferring these patients, an ergonomic solution is required; therefore, mechanical lifting devices should be used to perform the transfers. For care givers the necessity of using a lifter is not as obvious as it may be when performing a transfer of a patient weighing over 100 kg in for example a hospital.

Need for physical contact

Transferring paediatric patients with mechanical lifting devices can be seen as a contraindication to a child's need for physical contact. In The Netherlands, direct care providers are coached to physically comfort the patient over the course of a machine-assisted transfer to address this need. It should be considered that mechanical lifting devices can disrupt the healing environment of a paediatric ward. In The Netherlands, brightly coloured mechanical lifts are used. Depending on the specific ward, a toy may be attached to the device and sling, or the colours or logo of a popular local sports team may be printed on the sling. Ideally, a sling is dedicated to a specific child. Dedicated slings also address a patient's individual body proportions leading to an even distribution of the pressure on the sling, which can be relaxing for for example spastic children. Still we have to keep in mind that a big machine like a mobile lifter may interfere with the atmosphere we are trying to create on a ward for disabled children. Ceiling systems will allow easy transfer without being too dominant.

Haptonomic

Because some paediatric patients are not able to follow basic verbal instructions, a nonverbal form of working with patients called “Haptonomics” has been developed in The Netherlands. An example of a Haptonomic nonverbal instruction would be to indicate the direction of movement by placing a hand on the body part the caregiver wishes the patient to move. A gentle touch should be used (no pushing or pulling), as it takes very little force to activate the basic neuromuscular sensors and translate this into the desired movement. Too much force may lead to reactions such as resistance or spasms. Because individual patients differ very much in how and why they move, the Haptonomic approach is to be custom tailored by direct caregivers to an individual patient.

Working Environment Covenants

In the Netherlands, the ergonomic approach has been promoted by Working Environment Covenants. These covenants are signed agreements between national parties standardizing health care practices in almost all health care sectors (pediatrics, home care, nursing homes, behavioral health, medical transportation, etc).

Employers, health care workers (unions), and government agencies work together to intervene, set goals, and produce ergonomic guidelines. The groups monitor and fund initiatives to reduce direct care provider exposure to physical overload. These covenants were inspired by the European Committee Guidelines for promoting safe work practices, and are largely based on the USA NIOSH guidelines for lifting (translated to health care working conditions). Box one illustrates four examples of ergonomic health care standards for pediatric care set by the Dutch Working Environment Covenants.

Box 1: some examples of the Dutch national ergonomic guidelines.

- If the patient cannot sit independently on the side of the bed or is not weight bearing, a mechanical lifting device must be used for transfer.
- If the patient weighs more than 23 kilos, a mechanical lifting device must be used.
- If the patient is showered in a sitting position, a height adjustable shower chair must be used.
- If the patient needs assistance in re-positioning in bed, a height adjustable bed and friction reducing sheets must be used.



Static Loads

Recent studies have indicated static (or postural) loads are a significant cause of back pain and injury (Janssen et al, 2004). Because of this, static loads play a central role in guidelines set



by the Dutch Working Environment Convenants. While static overload frequently occurs during the act of washing, bathing, or showering patients (Knibbe, 1996), the Dutch guidelines also require height adjustable surfaces for feeding, communicating, brushing a patient's teeth, or any activity that may put the caregiver in an ergonomically compromising position.

Seamless slings

To comply with standardized ergonomic guidelines, a great number of pediatric patients in The Netherlands are to be transferred with mechanical lifting devices. Physical deformities of the children coupled with custom molded seating or bed surfaces can make sling application strenuous or impossible without some degree of manual lifting. Leaving normal lifting slings under the child at all times would increase the risk of pressure ulcers. For this reason seamless lifting slings are developed in the Netherlands. These seamless slings can also be used for patients at risk of skin breakdown.



Standing up naturally

Manufacturers continue to incorporate the concept of the natural, not-disabled, way of standing up in the design of their sit-to-stand or "pivot machines". This works for example in the rehabilitation process of patients who used to stand up in a natural way. Still, a large group of disabled children never stood up in a natural way (and may be never will), due to for example spasms and body deformations. Consequently the vast majority of passive disabled children are transferred with a passive hoist, while sometimes a sit to stand transfer still is possible, for example by deliberately provoking the extension spasms. This can be done with or without the support of a (tailored) sit-to-stand lifter.

Ergocoaches

"Ergocoaches" are an important element in the implementation process of the above mentioned Dutch national ergonomic guidelines. One or two RNs on every ward are

appointed and trained to become that ward's Ergocoach (also called "key figures", "lifting coordinators", "lifting specialists", or "mobility coaches"). These "ergonomic ambassadors" are available to fellow direct care providers for training, questions, problem solving, difficult or unusual patient handling situations, and to introduce new equipment and techniques. Ergocoaches are easily accessible as they work side by side with other direct caregivers on the ward. The theoretical advantage is that they are an integral part of the group and have a comprehensive grasp of the particular experiences and problematic safe patient handling situations encountered by the team while introducing ergonomically correct solutions. Most importantly, the Ergocoach must interact frequently with their colleagues, effectively demonstrating and communicating a standardized ergonomic approach.

While there is no research available to directly support or quantify the effectiveness of the Ergocoach program, there have been some intriguing results that may guide further research. One example is that facilities that have implemented both Ergocoaches and the national guidelines have shown a lower caregiver sick leave than facilities that have not yet fully implemented the national guidelines. This may be an indication that ErgoCoaches are not necessarily effective as stand-alone interventions but can positively influence the implementation process of guidelines and standardized ergonomic practices. Existing, quantifiable results make more in-depth research necessary and relevant. Research of this type may also shed more light on the implementation of ergonomic interventions in complex facilities that treat paediatric patients. This research is currently being undertaken by The Erasmus University Rotterdam (NL), in close cooperation with LOCOmotion.

Conclusion

Within the framework of the implementation of standardized ergonomic practices for safe patient handling of paediatric patients, tailored solutions are required at both the ward and individual patient level. Elements like physical contact versus machinery, healing environment, and nonverbal (or Haptonomic) communication should all be taken into account for a program to be successful. Experience from The Netherlands has shown that consideration of these factors, national guidelines, and the presence of Ergocoaches can all help to ensure the success of ergonomic interventions; thereby reducing the possibility of direct caregiver injuries

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