

PREVENTION OF MUSCULOSKELETAL DISORDERS AMONG NURSING AND CARE STAFF

Organisation

Ida-Tallinna Keskhaigla (East Tallinn Central Hospital)

Introduction

There are more than 800 nurses and 350 carers among the 2000 employees in the East Tallinn Central Hospital (ETCH). One of the main tasks of nurses and carers in the hospital is to help patients in everyday activities: readjusting patients' position, supporting or keeping them in the required position. The patients' various ailments restrict the way they can be held or supported when being helped. Helping, moving a patient from a bed to a wheelchair, from a wheelchair into a bed, from a bed to a stretcher, from a stretcher to a bed or from the floor into bed requires remarkable physical effort. Unconscious or paralysed patients have no strength to change position by themselves, and all necessary activities must be carried out by the personnel. Muscular power is also required to transfer patients in wheelchairs or on stretchers from one level to another, either on ramps or over doorsteps.

The shortage of and high turnover of health care workers in Estonia increases the workload of personnel. This heavy workload is among the reasons why nurses and carers leave this profession thus further exacerbating the situation.

Table 1 The turnover of nurses and carers in the East Tallinn Central Hospital

Year	Nurses	Carers
2005	11.9%	20.5%
2006	13.4%	26.9%
2007	12.0%	28.8%

The continuous flow of personnel requires exceptional flexibility, consistency and sustainability from the training staff.

Aims

The management of the hospital agreed with the Work Environment Service, the Occupational Health Department and the Training Centre to collaborate in order to enhance the working conditions of nursing and caring staff.

The improvement of the work environment was aimed at removing risks identified during the risk assessment that originated from the buildings. Up-to-

date patient handling devices were purchased. Development of a training system was set out to meet every level of workers in patient handling positions. Training was provided for every new entrant, while specialised, targeted training was developed for workers on specific wards.

What was done, and how

Initial steps

Risk assessment output

Departmental risk analyses have revealed dangerous work situations, which are also risk factors of musculoskeletal disorders (MSDs):

- unstable or incorrect postures;
- continuous physical effort when handling patients;
- too much and frequent muscle power used;
- unplanned, unexpected postures;
- unsuitable work wear, footwear;
- employees with no prior ergonomics training.

All the above hospital risk factors affect the health of nurses and carers, causing lower back pains and health disorders in the areas of the neck, upper extremities and the back. These can result in long-term work incapacity. When a worker has to go on sick leave, other employees have to work more intensively to cover the duties of the ill colleague, which in turn puts the health of nurses and carers at an even higher risk. This is hazardous to patients and increases load and stress at work.

Table 2 Survey of personnel that manually handle loads (2007, n=156).

	Disorder in Neck Area	Disorder in Upper Back	Disorder in Lower Back
Workers' assessment	44 (28%)	34 (21.8%)	79 (50.6%)

The hospital management has applied an integrated approach in the prevention of MSDs. The main emphasis is on:

- efficient exchange of information between departments and services;
- increasing workers' awareness of health and safety matters.

In cooperation with structural units, the Work Environment Service, the Occupational Health Department and the Training Centre have joined forces to achieve this goal.

Improvement of the working environment

Large areas of the ETCH have been renovated in recent years to meet the latest occupational health and safety requirements: 8100 m² in 2005, 5800 m² in 2006 and 2100 m² in 2007. The renovation was planned and completed in accordance with the results of the risk analyses.

Occupational health and safety action

Health and safety guidance training has been passed by 100% of hospital staff.

Health checks for new employees are monitored by the Work Environment Service and periodical health checks by heads of structural units in cooperation with the Occupational Health department.

Table 3 Physician's recommendations from health checks for workers who manually handle loads

	2005	2006	2007
Workers who have passed health checks	835	842	959
Physician's recommendations:			
1 Use correct handling techniques	209	60	110
2 Handling of loads is not recommended	21	4	5

Using correct handling techniques means that the health aspects of worker need individual tailoring. After the Work Environment Service has described the risk level of an aid and of manual handling of patients, the occupational physician will draw each worker's attention to the right measures in accordance to his or her medical condition and age. This is also the basis for evaluating the needs for training and the training itself.

Setting up the system

Acquiring basic information

The Work Environment Service carries out risk assessments, which include identifying the main hazards and problems for workers who manually handle loads in the context of handling patients. The outcomes of assessments are presented to department managers, working environment representatives, the Occupational Health Department and the hospital management. An occupational health physician gives workers recommendations for safe working and prevention of disorders in handling patients, and schedules the frequency of health checks. Workers can use the hospital's medical rehabilitation services at discounted prices.

Planning of training

The heads of structural units assess all workers' training needs in the light of risk assessment outcomes, occupational health physician's recommendations, existing working conditions and equipment, and the application of knowledge acquired from previous training. The training requirements are forwarded to the Training Centre proposing training workshops. The heads of structural units make suggestions to management regarding the purchase of necessary equipment or improvements to working conditions.

Introduction of the training system

The Training Centre develops training programmes on manual handling of loads based on the information received and keeps records of attendees. Training is delivered by trained physiotherapists.

- New starter training takes place once a month in cooperation with the hospital management, the human resources department, working environment service and the managers of a relevant structural unit. The objective of the training is to increase workers' awareness of their rights to a safe working environment and of their responsibility to protect themselves and promote the safety of colleagues.
- Departmental training depends on workers' individual training needs, the specifics of a particular department, the equipment used and the need to aid or handle patients. Training concentrates on one technique at a time and it is practised until the skill is acquired. Training depends on the specific needs of patients treated in a given ward. Thus, a post limb prosthesis patient requires different help from a patient suffering from paresis. Lifting patients with different diagnoses – from one chair to another, from a bed to a chair, etc. – require entirely different approaches.
- Occupational health and safety issues also form part of vocational training – neurology, intensive care, caring and nursing procedures, geriatrics.



Figure 1 Training in correct patient transfer techniques.

Photo by Regina Palatu and Anne Sirge.

Running the system

The assessment of training requirements has made it possible to develop training programmes in accordance with the specific needs of a particular department or group of workers. The initiative for organising workshops has shifted from the training centre to the departments. Feedback on training programmes and training outcomes allows workshops to be set up and forms the basis for a consistent assessment of training requirements.

Number of attendees in new starter workshops:

- 149 employees in 2005;
- 204 employees in 2006;
- 198 employees in 2007.

There is training for new carers twice a year, which includes the theory of handling loads and practical training.

What was achieved

Working environment

In renovated departments, beds can be accessed from three sides. The floor surfaces are smooth, there are no doorsteps or slats. There is free access for wheelchairs, beds, stretchers and other equipment. Moving heavy objects in the way is no longer necessary. Corridors have been furnished with handrails. These enable patients to move around without external help. Bathrooms have been replaced with shower rooms. Patients are washed on shower stretchers or special chairs. It is thus possible to transport and handle patients ergonomically, to avoid bending forward during washing or to handle loads at a level that is too low. Departments have been supplied with and keep on acquiring modern equipment.



Figure 2 Patient lifter and shower stretcher. Photo by Regina Palatu and Anne Sirge.

Occupational health and safety

The prevention work has been effective. In 2005 the physician recommended the use of correct handling techniques for 209 workers and cautioned 21 workers about handling heavy loads, whereas in 2006–2007 the respective figures were much lower.

Fewer occupational accidents and personal injuries, fewer MSDs related to handling patients, fewer cases of work incapacity. There were 11 occupational accidents in 2005, seven occurred in 2006, and three in the first half of 2007.

Most workers with the assessment result “Handling of loads is not recommended” could keep on work in the same position with modified tasks, according to the occupational physician recommendations. Others were offered to transfer to positions where no manual handling is required (e.g., outpatient ward) thus no worker had to give up their hospital career.

Training

Workers know their rights, responsibilities and opportunities for self-development. They know who to turn to with problems and participate actively in providing solutions. All this helps create an environment where good working conditions and the awareness of workers reduces the occurrence of occupational accidents and MSDs.

Efficient cooperation between different units ensures that:

- workers feel secure from the first day at work;
- relevant training is provided for acquiring the latest ergonomic positions for handling loads;
- management is kept informed of working environment risks;
- all structure units receive feedback, which helps effectively to improve and optimise activities.

Costs and benefits

While the cost can be easily calculated, most of the benefits are indirect, thus it is not possible to express them in monetary terms.

Costs

- Training costs (trainer's salary, visual aids, videos) are EEK 100,000 (approx. EUR 9,390).
- Purchasing equipment was approximately EEK 15 million (approx. EUR 960,000).
- Costs of the general improvement of working conditions (including ergonomic work posts) were EEK 2 million (approx. EUR 127,820).

Benefits

- Workers applying correct working techniques do not fall ill, savings on work incapacity benefit and replacement costs.
- Correct working techniques save time, workers can plan their time.

- Correct working techniques reduce risks of harm to patients, and improved patient satisfaction also reduces stress at work among staff.

Success factors

- Integrated approach to occupational health and safety.
- Good communication among the Working Environment Service, the Occupational Health Department, the Training Centre and management of the hospital.
- Solution based on risk assessment results.
- Sustainable, system approach programme.

Further information

Estonian Association of Occupational Health Physicians

Hiiu 39, 11619 Tallinn, Estonia

Tel: (372) 617 29 47

Contact person: Ms. Ahe Vilkis

Email: ahe.vilkis@itk.ee

Transferability

The system can be easily transferred to other hospitals.