

Innovative Workplace Design – Enhances Staff Efficiency and Improves Patient Care

Nottingham City Hospital chose the Dräger Movita® workplace solution aiming at providing all-round access to the patient, ergonomic positioning and handling of medical equipment, excellent cable management, and a free floor. The new integrated hoist and mobilization system resulted in improved clinical workflow, patient comfort and safety, and staff satisfaction.



The Nottingham University Hospitals NHS Trust (NUH), which comprises Queen’s Medical Center, City Hospital, and Ropewalk House, provides a safe and caring environment while delivering high-quality clinical care and emergency services for residents from Nottingham and the surrounding areas. The Trust has a strong reputation for specialist services, including stroke, renal, neurosciences, cancer, and trauma. City Hospital is the NUH Trust’s planned care site, which includes specialist cancer, heart centers and stroke services. The Hospital aims to continually improve the quality of patient care while maximizing technology and investing in long-term solutions for upgrading services and equipment. This commitment has been demonstrated by reductions in infection rates, patient falls, and waiting times. In furtherance of these goals, when refurbishing its Intensive Care Unit (ICU) at City Hospital, NUH wanted to invest in a new innovative workplace design that incorporated an integrated patient hoist system. This solution should optimize the clinical patient environment, which would allow for improved workplace efficiency, better organized equipment and enhanced safety, privacy and access to patients.

SETUP IMPACTS ACCESS AND CARE

Built in the traditional way, the City ICU had been equipped with wall channels for the supply of medical gas and electricity. These channels no longer supported modern therapy. Their functionality restricted access to the patient’s head, especially during emergencies, provided limited flexibility when moving or mobilizing patients, and limited

the ergonomic positioning of medical equipment. Ventilators were on trollies, and depending on positioning, often restricted direct access to other medical equipment. Patient monitors, which were channel mounted, were difficult to operate and see. To mobilize or move patients, mobile hoists were required, which if not in use, had to be collected from a storage room. Even though well maintained, these hoists needed to have batteries charged or changed, and they required cleaning and disinfecting between uses, which slowed the clinical process.

The hoists were manipulated around the bed space, and often intruded into adjoining bed spaces potentially compromising a neighboring patient’s privacy. The hoists’ size impeded the continuous observation of the patient monitor, and patient treatment was frequently interrupted as fluid lines and monitoring cables needed to be repositioned to ensure a safe patient transfer. In many cases the mobile hoists required a large team of multi-professional staff to safely move a patient. Staff had to ensure they did not sustain strains or injuries as a result of the manual handling processes.

At your side in





"Having equipment that was easier for staff to move was essential. Approximately 40% of overall sickness absence in the NHS is related to musculoskeletal disorders, with an associated cost to the taxpayer of circa £400 million per year*. For this reason, we need to spend to save."
Mallory Mercer, former ICU Matron at NUH Hospital

Moving equipment between beds and units also proved to be potentially hazardous with gas hoses and power cords on the floor becoming obstacles for staff, particularly when wheeling mobile equipment.

HOSPITAL'S REQUIREMENTS

The new workplace design needed to improve the quality of the clinical area increasing the size of the bed space in line with the recommendations laid down in the NHS Estates Hospital Building Note 57. It had to be a cost-effective solution that would also make the workplace more efficient. The requirements were to provide allround access to patients, be easily adaptable for patient needs, and allow for ergonomic positioning of medical equipment, such as ventilators and patient monitors. Cable and hose management should unclutter the workplace and floor, leading to improved safety and cleanliness.

Additionally, "future proofing" was an essential response to a growing elderly population with more complex health needs, including obesity. Increased options for patient rehabilitation, positioning, and mobilization were imperative. City ICU wanted to provide an integral bed patient hoist that was safe and easy to use for both patients and staff. The new patient hoist system would provide a comfortable and dignified patient movement process and include a patient weighing system. In the ICU, accurate patient weight is vital to ensure correct therapeutic treatment and drug therapies.

The nationwide trend of a shortage of qualified nursing staff required an innovative solution to improve the workplace environment, reduce the daily workload, support patient access and clinical workflow and ensure the City ICU was an attractive place to work.



"The Dräger solution has enabled us to transfer patients more safely and smoothly between the bed and the chair. It is far less stressful for both patients and staff."
Catherine McLoughlin, Physiotherapist

PILOT PROJECT

The refurbishment work on the City ICU would, if successful, provide a template for future improvements or expansion plans in the ICU on the QMC campus, which is the NUH Trust's emergency care site. The City ICU would set the standard for ICU workplaces across the NUH Trust hospital sites.

In the starting phase of the project, a team from City Hospital visited other ICUs throughout England to review possible options for workplace design solutions. After a visit of the Dräger booth at the Medica exhibition in 2010, the team also visited Dräger Headquarters in Lübeck, Germany, in 2011. They participated in a design workshop, which allowed them to have "hands-on" experience with their planned, future workplace. The team was particularly interested in the Dräger Movita system because it offered a combination of a ceiling pendant and integral patient hoist. This fulfilled all of their requirements. The standard 250 kg hoist was chosen for the majority of the patient beds, and to accommodate obese patients, two of the hoists were chosen to lift up to 350 kg. Hospital staff stated the Movita system was "The best fit for purpose".

IMPACT

Late in 2011, the Dräger Movita workplace solution with the integral patient hoist system was installed at 17 beds in the Nottingham's City Hospital's ICU. Workspaces immediately became more organized and less cluttered. Smooth surfaces, rounded design, and having everything off the floor made cleaning of the equipment and unit easier. The nurses were highly satisfied with the improved clinical workflow and carespace efficiency, which helped them complete their daily care of patients.



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"The environment has to work for the patients and staff, not the other way around."

Mallory Mercer, former ICU Matron at NUH City Hospital

"I have only heard positive comments from my colleagues. Having the integrated hoist system on a single pendant arm has greatly simplified the process of hoisting patients thus promoting earlier rehabilitation."

Catherine McLoughlin, Physiotherapist

The current Dräger ventilators, previously located on trollies, were now mounted on the Movita system's pendant shelves. This freed up floor space and provided direct access to the workstation increasing the ability to clean around the bed and improve infection prevention strategies. Specially designed mounting plates together with a manual forklift meant that the ventilators could still be easily moved with minimal physical effort.

The patient monitors, which are now mounted on movable arms, provide optimal viewing regardless of the situation.

The hoist system improved workflow efficiency, requiring less effort when attending to the patients' daily hygiene needs and repositioning. Also the mobilization and moving of the patient from the bed to a chair became far easier and less time consuming. If a patient collapses on the floor or falls from a chair, the integral fixed hoist means immediate help is possible, which improves patient safety. Nurses feel more confident moving patients, as the new solution feels safer to both staff and patients. Fewer staff are required to move patients,

which releases physiotherapist time from manual handling tasks and allows earlier rehabilitation with more patients. Staff commented that patients said they feel much safer as there is far less swinging than was previously experienced.

MOVING FORWARD

Today, the new ICU workplace design serves as a model for improved workflow efficiency and patient care. It has set a new standard at Nottingham University hospitals. In spring 2014, Queen's Medical Centre added four new beds using the same Dräger workplace solution as City Hospital ICU. The QMC, the NUH Trust's emergency care site, includes the Emergency Department, the East Midlands Major Trauma Centre, and Nottingham Children's Hospital.

Future developments would build on the current Dräger workplace solution and enhance patient, visitor, and staff experience while maximizing value and innovation.

Sources

* Nursing in practice; Back injuries among NHS staff 'cost £400m a year'.

<http://www.nursinginpractice.com/article/back-injuries-among-nhs-staff-cost-%C2%A3400m-year>

The Trust has three campuses:

- Queen's Medical Centre – general and trauma emergency site (where the Emergency Department is located). QMC also houses the Children's Hospital, the University of Nottingham Medical School and School of Nursing and Midwifery
- Nottingham City Hospital – specialist, planned care and long-term conditions site with Centres for Heart Care, Breast Disease, Stroke, Urology and Respiratory Medicine.
- Ropewalk House – provides a range of out-patient services, including hearing services

NUH Trust has a national and international reputation for specialist services such as stroke, renal, spinal, breast, neurosciences, cancer services and trauma. The Trust has an annual income of £850 million and approximately 1,700 beds (87 wards). As a teaching trust, it has a strong relationship with the University of Nottingham and other universities across the East Midlands, including Loughborough University, and is part of the Olympic Legacy project. NUH Trust plays an important role in educating and training doctors, nurses, and other healthcare professionals working together to be the best for patients, through teamwork, innovation, and continuous improvement.



Nottingham University Hospitals in a Glance

Nottingham University Hospitals NHS Trust is one of the biggest and busiest acute hospitals in England, employing 14,000 staff. It provides care to over 2.5 million residents of Nottingham and its surrounding communities and specialist services to a further 3 – 4 million people from neighbouring counties.

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