



# Ergonomics Good Practice Case Study

## Health Sector

National Ambulance Service

**Organisation:**

National Ambulance Service (Region South)

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This case study demonstrates how the National Ambulance Service managed ergonomic risks through the introduction of a range of engineering and organisational improvements in the way work was carried out to avoid or reduce the risk of musculoskeletal injury.

## Project Team

There were a number of key staff involved in this project including an Ergonomist, Operational Staff, Quality Safety & Risk Manager, Education & Competency Assurance Manager, Fleet Manager, Clinical Director and the National Quality & Patient Safety Manager.

## The Organisation

The National Ambulance Service responds to over 300,000 ambulance calls each year, employs over 1,600 staff across 100 locations and has a fleet of approximately 500 vehicles. In conjunction with its partners, every year the National Ambulance Service transports approximately 40,000 patients via an Intermediate Care Service, co-ordinates and dispatches more than 800 aero medical/air ambulance calls, completes 600 paediatric and neonatal transfers and supports Community First Responder Schemes across the country.

This care begins as soon as the emergency call is received and continues through to the safe treatment, transportation and handover of the patient to the clinical team at the receiving hospital or emergency department.

# 01 | Stage 1: Problem Identification

## Description of Task

The National Ambulance Service has a fleet of 500 ambulances throughout the country. Each ambulance has a defibrillator fitted within the ambulance which is used as part of patient clinical care. Due to the position of the defibrillator, staff either had to kneel on the patient stretcher in order to remove the defibrillator from the bracket on the side (trauma) wall of the ambulance, or stretch over the stretcher to remove the equipment. The equipment had to be secured with the use of a bracket when not in use and during transportation.

The defibrillator weighs 15kg. There were a number of reported injuries as a result of this practice.

## Evidence of Risk Factors

- Awkward posture as the upper arms are angled away from the body and the trunk is bent forward
- Twisting and stooping postures
- Unstable posture when reaching to remove the defibrillator from the wall bracket



# 02

## Stage 2: Problem Solving Process

A project group was established within the National Ambulance Service. The project group comprised staff representatives, Fleet Officer, Quality Safety and Risk Manager (QSRM), and an Education Competency Assurance Officer (ECAO), with input and advice from the Medical Director and National Quality & Patient Safety Manager. The project group set about completing a risk assessment of the current task set up, to quantify the ergonomic risk factors and to work towards developing a solution that would result in the elimination of risk while also allowing the task to be performed effectively. An independent ergonomist reviewed the current processes and assisted in conducting a risk assessment of the task.

### Problem Solving Activities

The main activities to be undertaken included:

- reviewing Accident & Incident Data from the National Incident Management System;
- reviewing Training Records;
- reviewing call data (cardiac calls);
- reviewing the present agreed “safe system of work” and exploring better options in terms of the relocation of the defibrillator taking into account any operational and clinical risk concerns;
- consulting with clinical and operational staff; and
- consulting with the people who designed and fitted out the ambulances and carry out a review of the vehicle design and the placement of the defibrillator.

# 03

## Stage 3: Outcome

### Main Interventions

The defibrillator is now relocated and fixed to the trauma wall at the head of the stretcher. This position allows it to be clearly visible and the paramedic can walk over to the trauma wall at the head of the stretcher and remove it. This took a number of visits to the fitters to ensure that the relocation was carried out on the current fleet of ambulances and to ensure future proofing for new vehicles coming on-stream.



# 04

## Stage 4: Results

No further injuries have been reported to date.

All stakeholders agree that it is important to discuss the practical positioning of new products/ equipment that are introduced in the future.

The importance of follow through with “safe system of work” notification and training in the new procedure for all staff has been copper fastened.

All parties recognise the value of closer co-operation and consultation between the clinical and occupational departments when introducing a new procedure.

### **Health benefits (including risk factors like force, repetition, posture eliminated or reduced)**

The need to stretch, pull and lift the defibrillator while using an unstable base was eliminated. Staff can now remove and replace the defibrillator while maintaining a neutral standing posture with no awkward bending or twisting postures.

### **Evidence of innovation or creative thinking**

When it came to refitting the defibrillator, the suction machine had to be relocated. The suction machine is a critical piece of equipment and needed to be as near as possible to the head of stretcher. It took a great deal of brainstorming and innovation to come up with a safe and practical solution.

### **Evidence of team work**

Staff, Clinical Director, National Patient Quality & Safety Manager, QSRM, Managers and an ergonomist were all involved in the process and decision making.

### **Evidence of consultation and communication with those that work on this production process**

The vehicle suppliers participated in a number of the meetings. The main reason for this inclusion was to see if the options agreed for relocation were actual areas where the bracket and defibrillator could be supported when anchored on the trauma wall.

### **Evidence of reduced lost days due to accidents or ill health**

No injuries reported since the relocation of equipment.

### **Evidence of management commitment and investment**

Management involved in the process (see team above).

### **Return on investment**

No loss of working time due to injury or associated costs.

### **Evidence of increased knowledge and awareness of ergonomics**

Operational staff involved in the Risk Assessment process for new equipment. Their input is valued as they operate the equipment on a day-to-day basis.

## Client Testimonial

*“With the introduction of a new defibrillator (LifePac 15) which was bigger and bulkier than the previous model, there were a number of reported injuries. The injuries occurred as a result of the posture needed when removing or replacing the defibrillator onto the bracket on the trauma wall. The escalation of injuries was caused by the fact that the older model of defibrillator was anchored on an area of the side wall of the ambulance which meant that the paramedic had to lean across the stretcher to access. To do so, staff were adopting an awkward posture and stretching excessively with arms extended and raised when removing the defibrillator from the wall bracket. A National Ambulance Service project group was established. Using the advice and input of an ergonomist with the Health and Safety Authority, we quantified the ergonomic risk factors, using the MAC & ART tool. Together we developed a solution to relocate the defibrillator on the trauma wall in a safe position which managed ergonomic risk. As a result, staff can now remove and replace the defibrillator in the bracket while maintaining a neutral standing posture, with no awkward bending or twisting postures. No further injuries have been reported since the repositioning.”*

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