

# NURSE-LED CHEST DRAIN CLINIC: A CASE STUDY OF CHANGE FROM NATIONAL HEALTH SYSTEM IN UK

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## Introduction

The National Health System in the United Kingdom (UK) has witnessed dramatic changes in the role of nurses over the last 2 decades. The professional standard of nurses has very much improved. The public has realized this change and their trust in services provided by nurses has also increased. There are many clinics now in the UK run by specialized nurses such as Chest-Pain Clinic, Endoscopy Clinic, Bronchiectasis Clinic and others.[1,2] Thoracic surgery is no exception. Patients with chest drains placed for different indications like drainage of air and/or fluid in the pleural space are usually managed in hospital till the drainage stops and the chest tube is removed. This sometimes necessitates a long stay in hospital for persistent air and/or fluid drainage. This is undoubtedly associated with increased cost and burden on hospital resources. More time should be spent by physicians looking after such patients until they can be discharged home with no chest drain. Herein, we present the project of Nurse-led Chest Drain Clinic in Guy's and St Thomas's Hospital, London. The aim is to analyze the process of successful change achieved by nurses in this project.

## Materials and Methods

A project of change was designed to set up an outpatient clinic run by clinical nurse specialists for patients discharged home with an ambulatory chest drain system in situ. The project is observed and analyzed via interviews with the responsible nurses. Place: the clinic was located at Guy's Hospital in the Cardiothoracic Outpatient Department, 1st Floor, Thomas Guy's House.

**Clinic Times:** Monday afternoon 14.00 to 16.00, 4 slots of 30 minutes per patient.

## Abstract

### Background and Objective:

There are many nurse-led clinics now in the UK, such as Chest-Pain, Endoscopy and Bronchiectasis Clinics. Herein, we present the project of Nurse-led Chest Drain Clinic in Guy's and St Thomas, s Hospital, London. The aim is to analyze this change project.

**Methods:** A project of change was designed to set up an outpatient clinic run by specialist clinical nurses for patients discharged home with an ambulatory chest drain system in situ. The project is observed and analyzed via interviews with the responsible nurses.

**Results:** The clinic was established in 2005 and run by two Nurse Case Managers. 60 patients were seen in 2007 and the clinic remained well attended. Patients were happy to spend less time in hospital as they could stay safely with their families.

**Conclusions:** A safe at home management of long-term chest drains was provided by this nurse-led clinic.

**Key words:** chest drain, nurses, outpatient clinic

It was run by 2 Nurse Case Managers; both had specialized thoracic surgery skills and experience.

**Patient Population:** any patient with a chest drain in situ who can be managed at home by a District Nurse, or patients who had recently had a chest drain in hospital and required follow up.

On discharge home, the patient was given an information sheet and his/her District Nurse was informed by phone about the care of chest drain at home. The first appointment would be after 1 week. The nurse would assess level of fluid output and/or history of air leak. A chest X-ray would be ordered and reviewed by the clinic nurse specialist with the consultant thoracic surgeon or registrar. A clinical decision was to be made as to remove or keep the drain. Chest drain would be removed by the nurse when necessary. The consultant's message was clear: whenever in doubt, do not remove the chest drain.

A letter would be written to the GP, thoracic surgeon or the oncologist. A weekly follow up was necessary as long as the drain remained in situ.[3] Most patients with air leak could have their chest drain removed in 2 weeks. Examples of the devices used in patient's care are shown in Figures 1-3. The community nurses used to be afraid of caring for a patient with a chest drain. This fear was alleviated by annual workshops held in the department to educate them about chest drain care and other health topics.

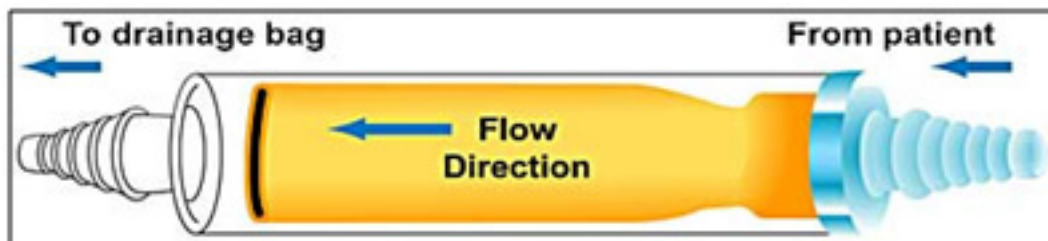


Figure 1: Heimlich chest drain valve

Source: [www.medicine-on-line.com](http://www.medicine-on-line.com) image 011



Figure 2: Heimlich valve attached to chest tube

Source: [www.vygonvet.co.uk](http://www.vygonvet.co.uk)



**Figure 3: a plastic bag attached to chest drain.**

Source: The Guy's and St Thomas, NHS Foundation Trust December-2007 Newsletter

## Results

The change took about 6 months. The clinic was established with co-operation of the consultant surgeons and other stakeholders. The actual work in the clinic began in 2005. An audit of all patients visiting the clinic was kept by the Nurse Case Manager on Excel. Numbers and outcomes were recorded. During the year 2007, 60 patients were seen i.e., 5 patients per week. "The Chest Drain Clinic remains well-attended, we see an increase in the number of patients managing their long-term drains at home and we are happy for patients to spend less time in hospital when they prefer to be at home closer to their families"[4] said the nurse case managers. Patients and their relatives felt happier, being earlier discharged and staying at home.

## Discussion

The Thoracic surgical department in Guy's Hospital at the time of the study had 4 consultant thoracic surgeons, 2 senior nurses and 28 beds.[3] The number of beds was considered relatively small in relation to the size of the served population (estimated to be around 15 million persons).[3,4] It is well known that patients with persistent air leak and/or fluid drainage may occupy beds for a long time thus putting a burden on hospital resources. The few surgeons in the department used to spend a considerable time in the follow up of such patients.

The idea of shifting the care of patients with chest drains after leaving the hospital, from doctors to nurses, was

thus born for many reasons. The Guy's and St Thomas, NHS Foundation Trust encouraged projects which aimed at a better use of beds, providing enough beds for cancer patients which comprised 75% of thoracic surgery work in Guy's Hospital [3] and shortens the waiting period before operations and thus meeting the national guidelines for cancer therapy.[3] Better use of beds and money saving is expected from such a project without affecting the patient's care. There were 2 senior nurses who specialized in thoracic surgery working in the department. They used to look after patients with chest drains while they were in the ward. They strongly believed that they could do the same service in an outpatient clinic. Although no Chest Drain Clinic was run before in UK, there were similar nurse-led projects in NHS like chest pain and endoscopy clinics which stimulated the Thoracic Surgery Specialist nurses to go ahead in their project. Literature review included a few similar models in other countries which formed a background for the project.[5] The literature also demonstrated that outpatient management of patients with spontaneous pneumothorax or even prolonged air leak appeared safe, efficient and economic.[6] The nurse specialists were further encouraged by the co-operation and support of the consultant surgeons. Patients always preferred to be at home as opposed to being in the hospital. The public in UK are increasingly aware about the current roles played by nurses in NHS. The communication system between the Senior Case Managers, patients and Community Nurses was good enough to support the new project beside the recent availability of compact, self-contained, clean and more user-friendly devices which can be strapped to the belt have been provided by manufacturing companies. [6] Therefore there was little to worry about.

On the other hand, the nurse case managers embarking on this change realized some potential threats to their success like slippage of the drain after patient's discharge, inability of the District Nurse to look after the chest drain, the clinic might not be considered a real clinic as that run by doctors and a minority of patients may prefer to be seen by the consultant rather than the nurse case manager.

The skilled nurse case managers shared a future vision with the doctors and agreed upon establishing the new clinic. They had put a plan forward that consists of identification and addressing the stakeholders as well as changing the systems of discharge, follow-up and referral of patients.

**The identified stakeholders were:** doctors (consultant surgeons and oncologists, GPs and juniors), patients, hospital manager, manufacturing companies and public. All were supportive; however, junior doctors did not make proper referrals initially.

In conclusion, out-patient care offered by nurse-led clinics to patients with chest drain for prolonged air leak provided many advantages over the in-patient care. The successful implementation of the change project highlights the techniques necessary to achieve similar changes.

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