

# Is day surgery safe in district general hospital? Audit of general surgical procedures in district general hospital

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## Abstract

**Background:** An Audit is a quality improvement process where we seek to improve standard of care of our patients and also improve the post-operative outcomes through systematic review of our work. Objective of this study was to find out the complications and readmission after a Day surgical procedures done by a single surgeon's services.

**Methods:** All the patients presented in the surgical Day unit at Trafford General Hospital from January 2016 to June 2016. Detail of all surgical patients admitted during the period was recorded from the theatre register. Demographic data, mode of admission, diagnosis and outcomes were recorded on a pro forma. The Operations included are Laparoscopic cholecystectomy, Hernia repair and anal canal surgery. We collected the data for readmission and any complications.

**Results:** The total number 145, (100 males and 45 females) Age between 25-86 years. Total number of patients had laparoscopic cholecystectomy were 42 (29 female and 13 male). Three (3) patient transferred to Manchester Royal Infirmary for pain out of 42. Total number of patients had hernias 82 (57 male & 25 female). Total number of patients had hernias 21 (14 male & 7 female). No complication found, 3 (0.2%) readmission and 1 (0.68%) death with 28 days due to cardiac cause in a 85 years old male. Overall mortality was estimated as 0.68%.

**Conclusions:** This surgical audit showed that day surgery is safe in a district hospital. Each Surgeon should do the self evaluation in a view to improve the quality of our health care system.

## Background

An Audit is a quality improvement process where we seek to improve standard of care of our patients and also improve the postoperative outcomes through systematic review of our work. The modern era of day surgery began in the years following World War II with the realisation that prolonged bed rest was associated with high rates of postoperative complications such as deep vein thrombosis [1]. The move towards early ambulation led to earlier discharge and, for the first time, the economic benefits of day surgery were noted [2].

The Royal College of Surgeons of England, in 1992, concluded that day surgery is better than inpatient care for many conditions and that it can be an effective way of reducing waiting times [3]. The increase in day surgery rates for appropriate procedures has the potential to improve the service for patients by achieving shorter waiting times, allowing patient choice and making best use of NHS.

Aim of this study was to find out the complications and readmission after a Day surgical procedures done by a single surgeon's services.

## Methods

All the patients presented in the surgical Day unit at Trafford General Hospital from January 2016 to June 2016 under a single surgeon's services. Detail of all the surgical patients admitted during the period was recorded from the theatre register. Demographic data, mode of admission, diagnosis and outcomes were recorded on a pro forma. The Operations included are Laparoscopic cholecystectomy, Hernia repair and Anal canal surgery. We collected the data for readmission and any post op complications.

## Result

The total number 145, (100 males and 45 females) Age between 25-86 years (Table 1). Total number of patients had laparoscopic cholecystectomy were 42 (29 female and 13 male, Age between 25-76 years). Three (3) patients who had laparoscopic cholecystectomy out of 42 (7%) transferred to Manchester Royal Infirmary for pain management.

Total number of patients had hernias (Inguinal, Femoral & Umbilical) 82 (57 male & 25 female, Age between 28-86 years)

Total number of patients had EUA+ Fistula +Fissure 21 (14 male & 7 female Age between 28-56 years)

No complication found, 3 (2.06) readmission and one (0.68) death with 28 days due to DVT/PE in a 84 years old male who was not mobile when discharged home. Overall mortality was estimated as 0.68%.

## Discussion

There has been revolution in Surgery over the past four decades, recent advances in surgical and anaesthetic techniques, as well as the publication of successful outcomes in patients with multiple comorbidities, deliberate policy and financial incentives for the

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**Table 1.** Audit January 2016 June 2016.

Procedure	Numbers	Readmission	Complications
Laparoscopic cholecystectomy	42 29 (female and 13 male). Age between 25-76 years	3 Readmission for pain control	No complication in 28 days post op period
All Kind of Hernias	82. (57 males and 25 females) Age between 28-86 years	0 Readmission	1 death 84 years due to DVT/PE problem at home within 28 days.
EUA+ Fistula +Fissure	21 (14 male & 7 female) Age between 28-56 years	0 Readmission	No complication in 28 days post op period

hospital have changed the emphasis in patient selection in day surgery. It is now accepted that the majority of patients are appropriate for day surgery unless there is a valid reason why an overnight stay would be to their benefit. If inpatient surgery is being considered it is important to question whether any strategies could be employed to enable the patient to be treated as a day case. Although the National Institute of Health and Clinical Excellence (NICE) guidance on pre-operative investigations [4] is widely used, one recent study showed no difference in the outcomes of day surgery patients even when all pre-operative investigations were omitted [5]. Fitness for a procedure should relate to the patient's health as determined at pre-operative assessment and not limited by arbitrary limits such as ASA status, age or BMI [6-8]. Patients presenting with acute conditions requiring urgent surgery can be efficiently treated as day cases via a semi-elective pathway [9]. Effective pre-operative assessment and preparation with protocol-driven, nurse-led discharge are fundamental to safe and effective day and short stay surgery. Several recent publications provide useful advice on the establishment and running of both services [10-13]. Day surgery rates for specific procedures still vary between individual surgeons, between hospitals and even between regions. In November 2011, there was still a 17% variation in day case rates for inguinal hernia repair and varicose vein surgery between the best and the worst performing Strategic Health Authorities (SHAs) in England, whilst the rates for day case laparoscopic cholecystectomy in all SHAs ranged from 23% to 56% [14]. The reasons for such variations are complex and remain largely unexplained, but often reflect an inability to organise healthcare effectively and follow guidelines [15-18]. The rate for day case laparoscopic cholecystectomy in the UK is just under 40% and still shows large variations between surgeons, trusts and regions [14]. The reasons for this relate to fears about reactionary haemorrhage, delayed haemorrhage and bile leak. The NHS Institute published a clinical pathway in 2007, which noted that 70% of laparoscopic cholecystectomies could be safely performed as day cases [19] and this target has been recommended to NHS commissioners as part of the 18-week programme [20]. As early as 1955, the advantages of inguinal hernia repair as day surgery were already described in the literature: quicker mobilisation, patient-friendly and lower costs [21]. From 1970s onwards, several retrospective series were published [22,23], as well as two small randomised studies in which day surgery was compared with inpatient treatment [24-26]. A randomised study compared how much patients valued different treatments [27]. These studies showed that day surgery is just as safe and effective, and, in addition, cheaper. In two of the three studies, patients were at least as content with day surgery [26,27]. In a large American cohort study, the costs of an inguinal hernia repair in a clinical setting were found to be 56% higher than those for day surgery [28]. Also in Germany, this procedure is generating less costs [29]. In 2011/12, 67.2% of inguinal hernia repairs were carried out as a day case, and rates varied from 32% to 100% across providers. Re-admission to hospital after day care surgery is often cited as an

important index of a standard of care but is rarely an accurate measure as patients may be admitted to other hospitals and thus 'lost' to audit. It is a quarter of a century since the Audit Commission published its first NHS value for money report. The commission's analysis suggested that if all health authorities in England and Wales, 'performed day surgery consistently at readily achievable levels for each of 20 common procedures, an additional 186,000 patients could be treated each year without increased expenditure.' More recent data from 1998 onwards suggests day cases as a proportion of elective activity have increased from 67 per cent to 78 per cent in 2013. As day case patients cost less to treat than patients who stay overnight as inpatients (in 2013-14, the average day case cost was £698 and the average elective inpatient case £3,375), the increasing proportion of day case activity has helped reduce overall costs [30]. The increase in day surgery rates for appropriate procedures has the potential to improve the service for patients by achieving shorter waiting times, allowing patient choice and making best use of NHS capacity. ISD estimate the cost of overnight accommodation to be £237 [31]. A reduction of 40,000 elective inpatients would result in efficiency savings of £9.5m per annum based on overnight accommodation savings alone. There was a major drive to promote day surgery around the turn of this century, but the political focus moved on before all of the lessons learned were fully implemented. Nevertheless, the recent drive to reduce length of stay and improve the quality of postoperative recovery has ensured that day surgery principles are fundamental to modern patient care. Abdominal pain is still the main cause of in-hospital morbidity and readmission; adequate pain relief is essential in day case surgery. Various methods, such as peritoneal instillation of local anesthetic agents [32,33] and wound infiltration with local anesthetic agents [34], have been attempted to decrease postoperative pain. While much of the postoperative pain in laparoscopic cholecystectomy is deep in nature, laparoscopy port sites should always be infiltrated with a long-acting local anaesthetic [35]. The morbidity of LC has been reported to be 4%-20% [36].

In our study 3 patients were readmitted for pain management. Our conversion rate was zero, compares well with literature [37,38] this may be due to small number of cases we operated during study period. There were no morbidity, one mortality within 28 days due to cardiac event at home after hernia repair, no morbidity and mortality in perianal surgery. Our morbidity rate was zero and mortality 0.68%, readmission/unplanned admission 2.06% compares favourably with those reported by other centers [39-42].

In this study, the most common reasons for unexpected or prolonged hospital stay were pain. Also our overall readmission rate of 0%, compares favourably with other national and international centers [43-48] and our readmission rate within 48 hrs was zero. Post op 3 patients (2%) has been assessed and transferred to MRI for pain control. Our overall day case rate was 100% for the period of this study

as we have a very effective pre-op assessment by the anaesthetists. Our overall day case discharge home rate was 98%.

Other studies have highlighted significant number of patients (12.5%) attending GP for antiemetic and analgesic prescriptions [49]. Readmission rates are lower, [43,44,50] where there is ongoing communications between Day unit and patients or between GP and patients.

This study shows that day case surgery is feasible and safe in a district general hospital though there is further room for improvement within our service

## Conclusion

This surgical audit showed that day surgery is safe in a district hospital. Each Surgeon should do the self-evaluation in a view to improve the quality of our health care system.

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