Introduction
Tonsillectomy is one of the oldest and most commonly performed surgical procedures. Approximately 3,500 tonsillectomies were carried out in Ireland in 2011. Of those, 73% were carried out on children younger than 16 years of age. Recurrent acute tonsillitis and upper airway obstruction account for the vast majority of cases. Modern tonsillectomy is safe; however, there is a unique set of morbidities associated with post-operative recovery. Although, the majority of these are minor, postsurgical haemorrhage is one of the most significant and potentially life-threatening complications, with an incidence range between three and twenty percent. Upper aero-digestive tract haemorrhage can be very difficult to control, and can rapidly lead to hypovolemic shock and airway compromise. Children in particular, are at risk. Safe management requires an experienced surgical and anaesthetic team. Length of in-patient stay for tonsillectomy varies worldwide from a few hours to several days. In Germany, in-patient stay ranges between five and seven days. In Ireland the average length of stay is 1.42 days (range 1-3 days). The delay in discharge may keep the patient overnight, in order to monitor for primary haemorrhage and provide adequate analgesia and recovery time. In many parts of the United Kingdom and the USA, tonsillectomy is performed as a day case procedure, and this refers to the same day discharge of the patients from the hospital following a planned surgical procedure. Strict guidelines to assess a patient’s suitability based on medical and social criteria have been published in these countries. In 2011, only two percent of tonsillectomies were carried out as day case, and in order to diagnose the reasons for delay, we conducted a retrospective study of all adult and paediatric patients, who underwent tonsillectomy in University College Hospital Galway (UCHG) between July 2011 and August 2012. Following an extensive review and comparison of international guidelines (which vary from country to country) medical and social exclusion criteria for day case tonsillectomy were defined. A standard proforma was developed, and information was collected in a systematic manner. PASW Version 18 (SPSS) was used for descriptive statistical analysis of the data.

Results
In total, 161 patients who underwent tonsillectomy in UCHG between July Ist 2011 and August 12th 2012, were included in the study. There were 78 adults and 83 paediatric patients (<16 years old). The age range was three to 65 years (median age: ten years). To determine patients suitability for day-case surgery, we applied medical and social criteria which included patients under three years of age, or weight less than 15kg, patients with bleeding disorders, or complex medical conditions to include individuals with congenital syndromes, craniofacial syndromes, cardiovascular disease, acute infection or abscess requiring hot tonsillectomy. According to these criteria (Table 1), 43 (27%) patients were suitable for DCT (24% of these patients were adults and 44% were children); 118 (73%) patients were unsuitable for DCT.

The distance/travel time criterion of 40km/30mins from the hospital site of surgery was the main criterion for exclusion; only 58 (36%) of all patients lived within the radius of 30 minute drive or 40km distance; 103 (64%) patients lived further than 40km or 30 minute drive from UCHG; of those, 25 (15%) patients were also unsuitable for medical reasons. The median distance in the hospital was 40 km (range: 1-199 km). Presence of medical exclusion criteria accounted for 14% (9%) of all patients unsuitable for DCT. The diagnosis of obstructive sleep apnoea (OSA) was the single most common medical criterion for exclusion; other medical criteria included the presence of conditions, such as epilepsy, autism, and Henoch-Schonlein purpura. Based on the American Society of Anesthesiologists (ASA) criteria, majority of patients were ASA Grade 1 or 2. Two patients had a formal diagnosis of hypertension; one patient had a family history of a bleeding disorder. One patient was unsuitable for DCT based on two or more medical criteria.

Of all patients, 126 (78%) patients had no significant post-operative issues, and were suitable for discharge home the following morning, while 35 (22%) patients had post-operative issues that required them to be hospitalised for longer (Table 2). Of those, 25 (15%) were adults and 10 were children. The primary reason for the extended hospital stay following tonsillectomy included pain control (16 adults and seven paediatric patients), other post-operative complications included fever, primary haemorrhage, and vomiting. Two patients developed anaesthesia-related complications.

Discussion
In light of current economic trends within the Irish health services, provision of day-case surgery has become more and more appealing. Many hospitals around the world have adopted policies regarding DCT. An increasing number of surgical procedures are being performed as day cases in Ireland. These include hernia repair, varicose vein surgery, breast lumpectomy and tympanoplasty. Because tonsillectomy is associated with potential airway compromise and the risk of haemorrhage, guidelines exist to assess the suitability of candidates for day case tonsillectomy. From the results of our study, only 27% of patients fitted the criteria for DCT, which is relatively low when compared with the
Given the wide geographical distribution of the catchment population of UCHG, one of the important social criteria is how far the patient lives and the time it takes them to reach hospital. In general, the time/travel distance criterion of 30 minutes has been widely accepted in the UK and other countries as a guideline, while some centres may allow up to one-hour drive from the hospital. The UK guidelines primarily come from major centres in large urban areas where the road/travel infrastructure is generally good. The time-frame of thirty minutes has been derived mainly for safety reasons, particularly in view of paediatric patients, as post-tonsillectomy bleeding can be heavy, and can cause airway compromise. In this setting, time is a critical issue. Therefore, knowledge of local infrastructure is important in assessing patients suitability based on this criterion, to allow timely and easy access to hospital for the prompt management of post-tonsillectomy bleeding. Patients who live further than the 30-minute travelling distance would be considered unsuitable for day case tonsillectomy. Determining a patient’s suitability based on the actual distance from the hospital rather than the travelling time, is not acceptable given the poor road quality in some rural areas, despite geographical proximity. In other areas, access to motorway can dramatically reduce the travelling time, even if the patient potentially may live outside the area of the acceptable radius. A degree of local geographical knowledge and common sense is therefore essential in determining a patient’s suitability for day-case surgery, while considering hospital infrastructure, geographical location and specific characteristics of the catchment population, we developed a list of recommendations for a patient-focused safe DCT in the Irish healthcare setting (Table 3).

We conclude that the decision to proceed to DCT should be based primarily on patient safety and the availability of internationally agreed surgical resources. Many of the reports on DCT come from highly populated urban areas in the UK and USA. Galway and the west of Ireland, when compared, would have appeared to have a higher density of rural located patients. Based on international selection criteria for DCT, only 27% of our patients (31% of all adult and 23% of all paediatric patients) were potentially suitable; with 49% being excluded for social reasons, 15% on both medical and social, and 9% excluded based on a single medical criterion. DCT should only be considered where adequate investment has been made in local infrastructure. Support and strict guidelines need to be developed and discussed on a national basis. Local geographical variations appear to be a major contributing factor. Currently, much of the infrastructure and support required for a patient-focused, safe and efficient DCT is deficient, and requires investment and development. This includes establishing dedicated ENT day surgery units with extended opening hours, in order to accommodate patients being admitted early in the day, and provision of sufficient time for post-operative recovery before the closing time.

References

Day-Case Tonsillectomy: Practical Solution or Practical Impossibility