



Waitemata

District Health Board

Best Care for Everyone



Waitemata District Health Board - Falls with Major Harm

Analysis of Falls Occurring in 2012-2013

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Falls with Major Harm – Analysis and Commentary

The following report sets out an analysis of falls with major harm occurring in Waitemata DHB's hospitals (North Shore Hospital and Waitakere Hospital) in the financial year (FY) 2012-2013. The data has been taken from the incident reporting system (RiskPro), serious and sentinel event investigations and from the electronic patient information system (Concerto).

Falls with major harm include falls that result in a fracture, a cut requiring stitches, a head injury and falls resulting in death.¹

Background

Prevention of falls is an important patient safety challenge for hospitals internationally. Studies from around the world have reported rates of in-hospital falls typically ranging from three to five per 1,000 bed days.² Studies have also reported the serious consequences that can result from falls occurring in hospitals: 30-51% of falls in hospital result in some injury, with fractures occurring in 1-3%; patients who suffer a fracture as a result of a fall have poor outcomes and, if they survive, they have greatly extended lengths of stay.³ Mortality following a fractured neck of femur (hip fracture) is reported to be 20-35% within one year in patients aged 75-89yrs.⁴

A study in Australia, comparing the consequences for patients who sustain a proximal femoral or 'hip' fractures (most commonly neck of femur fractures) in hospital with patients sustaining hip fractures in the community, found that (of a total of 86 patients aged 75yrs and older): the mean age of the patients was 84yrs; 12 versus four died in hospital; 14 versus five were discharged to long-term nursing care facilities; six versus 18 returned to preadmission ambulation; four versus 24 returned to preadmission activity of daily living status; and the median post-fracture length of stay was 46 days for patients with hospital acquired fractures versus 32 days for those sustaining hip fractures in the community. A review of the 43 in-hospital fractures included in the study showed that 26 occurred in subacute wards; 25 occurred in bedrooms; 25 occurred at night; and 38 occurred while unsupervised.⁵

An analysis of Waitemata DHB in-hospital falls data for the financial year 2013-2014 was undertaken to provide a better understanding of the nature of falls occurring the DHB's hospitals and inform the DHB's falls prevention programme. The analysis focused on falls with major harm as these falls have the most serious consequences for our patients.

¹ The definition of falls with major harm has been taken from the Northern Region DHB's *First Do No Harm* patient safety programme. The four Northern Region DHBs have agreed to a falls classification system using the national incident reporting severity assessment code (SAC) code system. A SAC 1 incident is a fall resulting in death; a SAC 2 incident is a fall resulting in a fracture, dislocation, head injury, a cut requiring suturing, and chipping of teeth or dentures. *First Do No Harm* defines falls with major harm as any SAC 1 or SAC 2 fall incident.

² Healey F, Haines TP. A pragmatic study of the predictive values of the Morse falls score. *Age and Ageing* 2013;42:462-68.

³ Ibid.

⁴ Goldacre MJ, Roberts SE, Yeates D. Mortality after admission to hospital with fractured neck of femur: database study. *BMJ* 2002; 325:868-9

⁵ Murray GR, Cameron ID, Cumming RG. The consequences of falls in acute and subacute hospitals in Australia that cause proximal femoral fractures. *J Am Geriatr Soc* 2007; 55: 577-82.

Summary of findings

A total of 1301 falls occurred in NSH and WTH in FY2012-2013, with 37 of these falls resulting in major harm. The rate of in hospital falls for FY2012-2013 per 1,000 bed days was 3.96 (consistent with international reported rates of in-hospital falls typically ranging from three to five per 1,000 bed days); and the rate of in hospital falls with major harm per 1,000 bed days was 0.86.

Our analysis confirms that age is the most significant risk factor for patients falling and falling suffering major harm in our hospitals. The average age of patients falling is 77.63yrs, 83.51yrs for patients falling and suffering major harm, and 88.24yrs for patients whose falls result in fractured neck of femur (hip).

Patients over the age of 75yrs (55yrs for Māori and Pacific Islanders) represent less than a third of all patients in hospital but make up almost two-thirds of patients who fall, and almost 90 percent of patients whose falls result in major harm. All patients who suffered major harm met the Health Quality and Safety Commission's Quality and Safety Marker criteria for a falls risk assessment.

While 92% of our patients lived at home prior to admission to hospital, only one-third (32%) returned home following their admission. For those patients who did not return home, almost half move to a residential care facility, and 11% (4) died while in hospital. A further 8 patients have died following discharge (to October 2013), giving a mortality rate of 32.4% up to three months following an in-hospital fall. (It is important to note that in most cases the fall may contribute to a patient's death but is not the direct cause of death).

Analysis

DHB demographics

Waitemata DHB has a diverse population⁶ (Figure One). The population suffering falls and particularly falls with major harm is not representative of the DHB's population, with European over represented, and no Pacific Islanders suffering major harm from falls. Of the 37 patients who fell and suffered major harm, only one patient was Asian and one Māori.

⁶ Health Information for Action Team. Waitemata Health Needs Assessment 2009. Retrieved from: <http://www.waitematadhb.govt.nz/LinkClick.aspx?fileticket=S4pxtsIEfkc%3D&tabid=86&mid=409>

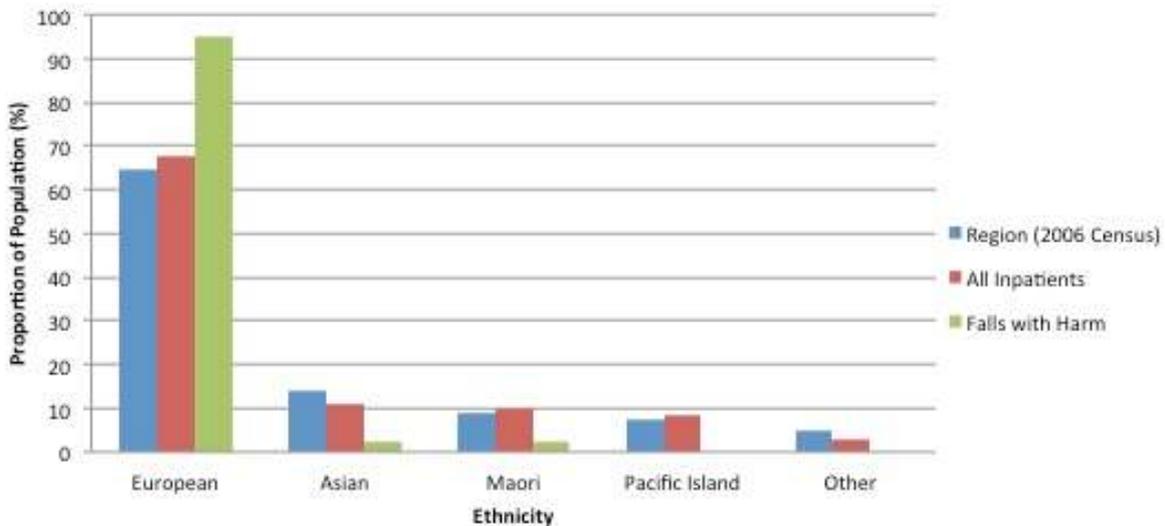


Figure One: Distribution of Waitemata DHB Population by Ethnicity

A disproportionate number of patients suffering major harm following an in-hospital fall are elderly (Figure Two). While patients over the age of 75yrs (55yrs for Māori and Pacific Islanders) represent 23 percent of patients in who spent time in hospital, the same group represent almost two-thirds (64%) of patients who fell, and almost 90 percent (89%) of patients whose falls result in major harm. All patients who suffered major harm met the Health Quality and Safety Commission’s Quality and Safety Marker criteria for a falls risk assessment (all patients over 75, or over 55 for Maori and Pacific Island ethnicity to receive a falls assessment).

Patients who fell were on average 77.63 years old, while patients who suffered major harm were 83.51 years old. Patients whose falls resulted in fracture hips (neck of femurs) were on average 88.24 years old.

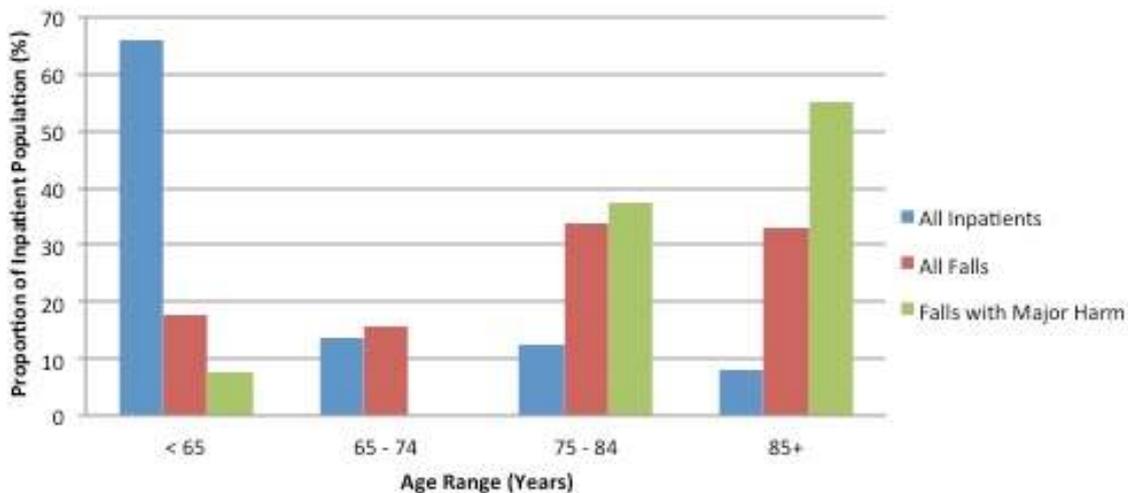


Figure Two: Distribution of Waitemata DHB Population by Age

With respect to gender, patients who fell were 49.8% female, while those whose falls resulted in major harm are 65% female. This may reflect the greater longevity of women.



Discharge Destination and Consequences

Prior to admission to hospital, 92% of patients lived at home (either alone or with family); however, only 32% of them returned home. Of the just over two-thirds of patients who did not return home: 11% (4) died (although in most cases not as a direct result of the fall); almost half (49%) moved into residential care; and 2% required an increased level of care (Figure Three).

While a patient’s presenting condition, such as a stroke, will influence the change of discharge destination, many patients did not present with significant illness.

It is also worth noting that in addition to the four patients who died while in hospital, a further eight patients have died following discharge (up until 1st October 2013). This equates to a mortality rate of 32.4%. The number may increase when each case is reviewed a full year following a patient’s fractured neck of femur.

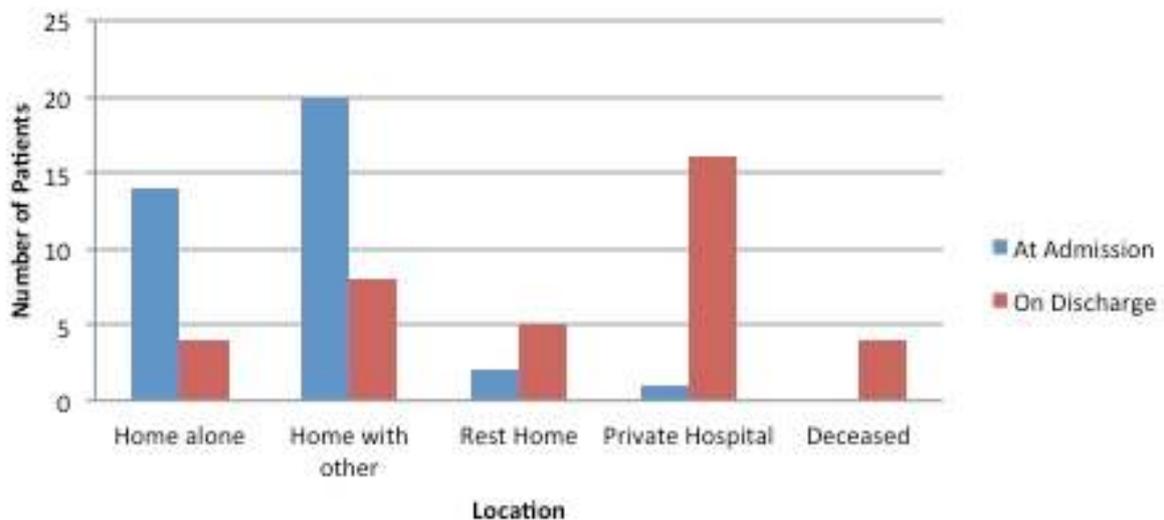


Figure Three: Living Arrangements at Admission versus Discharge for Falls with Major Harm

When Falls Occur

Figures Four and Five show when patients fall and suffer major harm relative to their admission. Figure Four shows the timing of the patient’s fall from the patient’s admission, and Figure Five shows when a fall occurs relative to admission to a ward. When considered as a continuous stay, 40% of falls with major harm occur within the first three days of admission and almost half (48%) within the first five days. The ‘spike’ in falls occurring at six – ten days appears to occur as a result of the patient being transferred from a ward to the Assessment, Treatment and Rehabilitation (AT&R) unit.

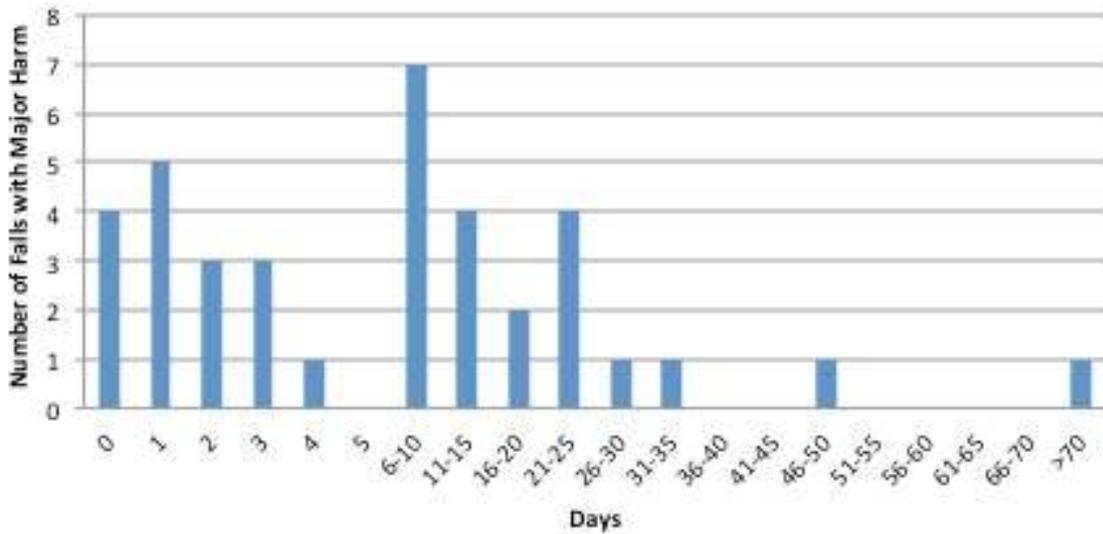


Figure Four: Days from Admission to Fall with Major Harm

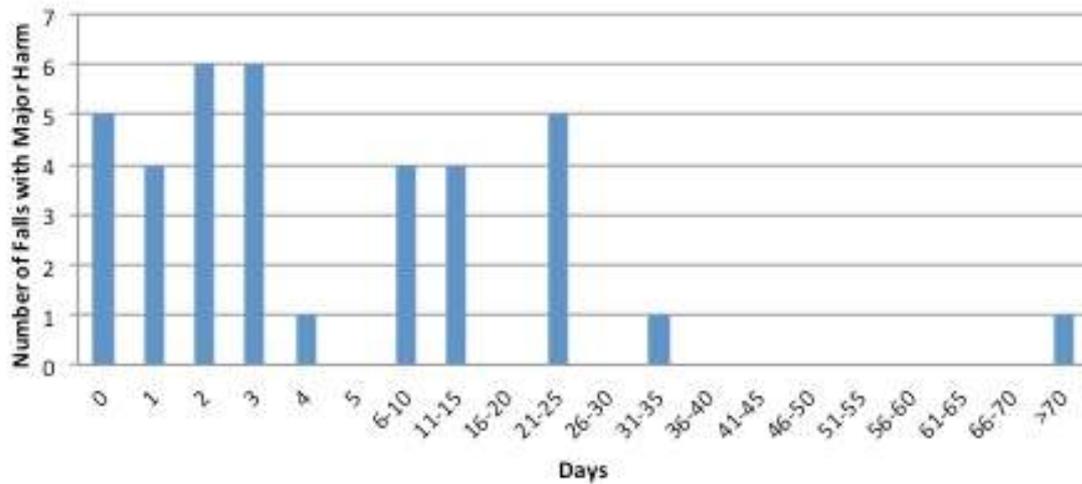


Figure Five: Days from arrival in ward to Fall with Major Harm (AT&R is excluded – it is considered separate admission)

When looking across the week, there is no significance to the day of the week when falls occur, with a consistent number each day (approximately 3 falls per day). When reviewing falls with major harm in the same way (Figure Six), a different pattern emerges. There may be value in investigating this further.

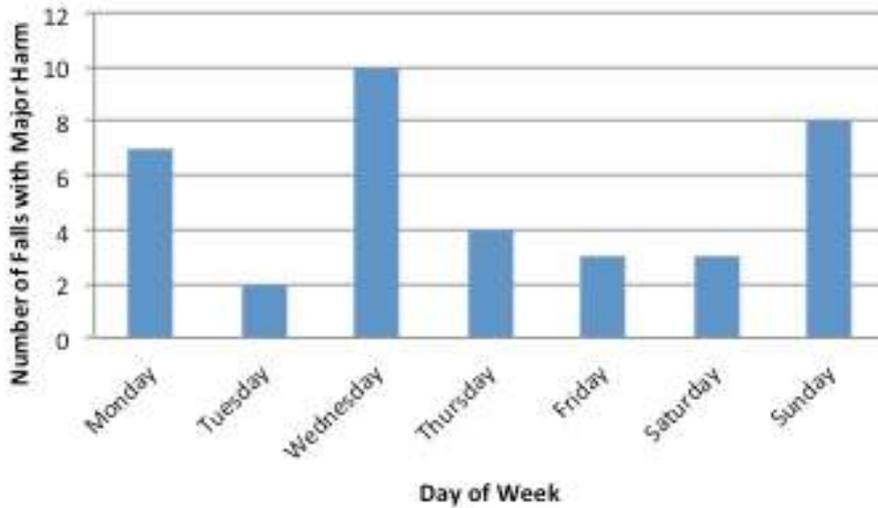


Figure Six: Days that Falls with Major Harm Occur

A similar pattern exists with regard to the time of day that falls occur. Figure Eight shows that falls occurred consistently throughout the day with apparent (but not significant) spikes around lunch time, around 7-8pm and at 1am. Falls with major harm, however, shows a different picture (Figure Nine). The greatest number of falls with major harm occur between 5am and 6am. Two other 'spikes' occur during the day (at 11am – 1pm; and 5pm – 6pm). These may reflect the time nurses are particularly busy preparing for handover (5-6am), or go on break. Also of note, falls with harm occurred more often between 7pm and 7am (i.e. overnight) with 25 of the 37 falls with major harm occurring at this time compared to 12 occurring between 7am and 7pm.

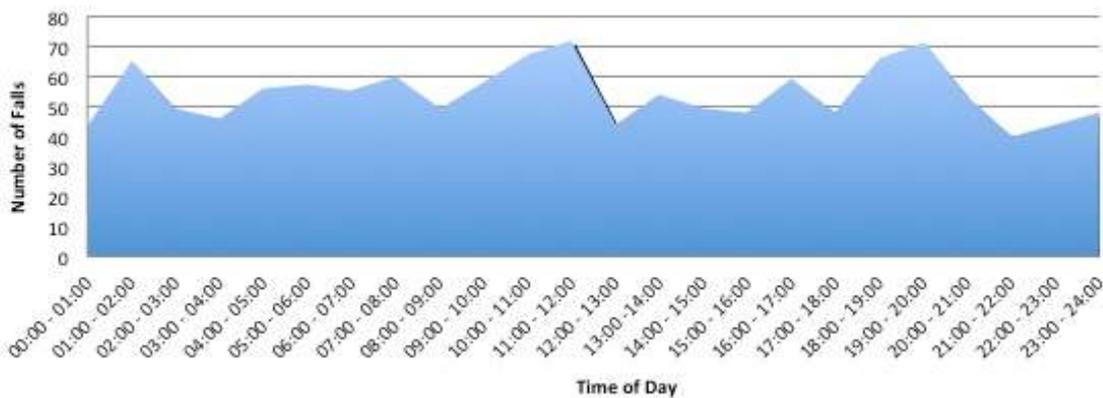


Figure Eight: Time of Day of All Falls

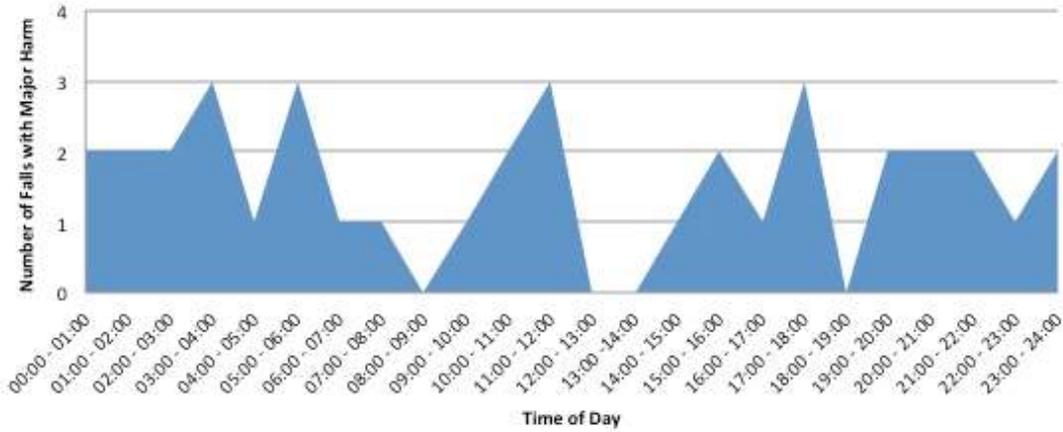


Figure Nine: Time of Day That Falls with Major Harm Occur



Injuries as a Result of Falls

Figure Ten shows that fractured neck of femurs are the most common major injury (13 or 35%) resulting from a fall, with fractures to the pelvis and spine the next most common.

To put this in national perspective, there were 15 neck of femur fractures in 2012 (January – December), and, therefore, Waitemata DHB contributed 15.6% of the 95 neck of femur fractures that occurred in this period as a result of patients falling in hospitals across the country⁷. As noted above, there is a significant mortality within one year for patients who suffer a fractured neck of femurs.

Two patients who fell and suffered major harm presented to hospital with previous fractures.

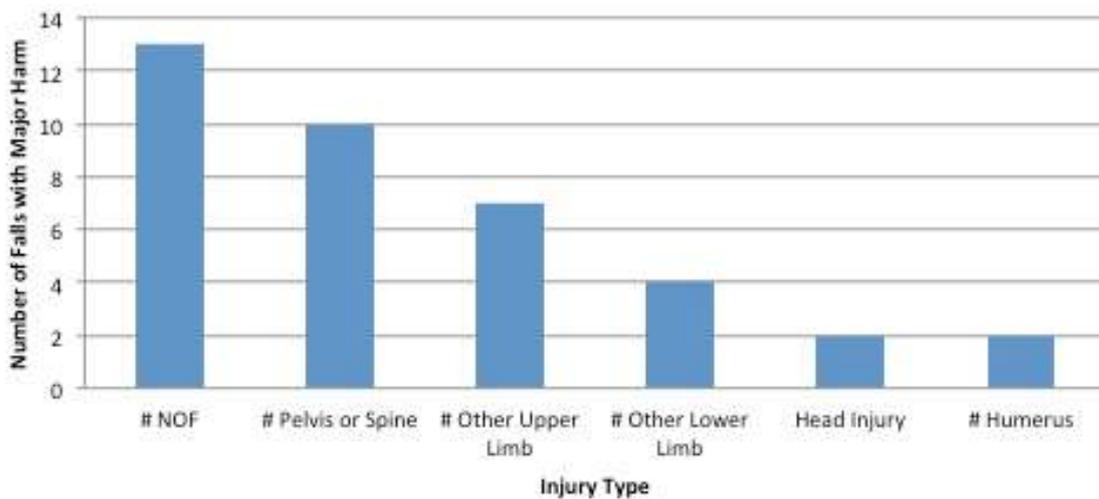


Figure Ten: Injuries Resulting From Falls with Major Harm

Where Falls Occur

Figures Eleven and Thirteen highlight where falls (Figure Eleven), falls with major harm and fractured neck of femurs occurred (Figure Thirteen). Medical and older adult wards having high numbers of falls and falls with major harm. It is worth noting that 43% of falls with major harm occurred on older adult wards (Muriwai, KMU, Ward 14 and Ward 15) with these wards also recording 62% of the falls resulting in a fractured neck of femur. This is consistent with international studies, reflecting the nature of patients admitted to the AT&R unit. General surgical and orthopaedic wards had a significantly lower number of falls (three falls with major harm, and one fractured neck of femur).

⁷ Falls quality and safety marker baselines (2013). Retrieved from: <http://www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/quality-and-safety-markers/falls/>



Figure Twelve shows the rate of falls per bed for each clinical area. The chart groups clinical areas (ED and ADUs, medical wards, cardiology units, older adult wards, and surgical wards) and clearly shows that all older adult wards and two medical wards have a significantly higher rate of falls per bed than the organisational average. In addition, it demonstrates that while falls occur in the EDs and ADUs and on cardiology and surgical wards, they occur less frequently in these areas.

Figure Fourteen shows that there is no relationship between number of falls with harm and fractured neck of femurs.

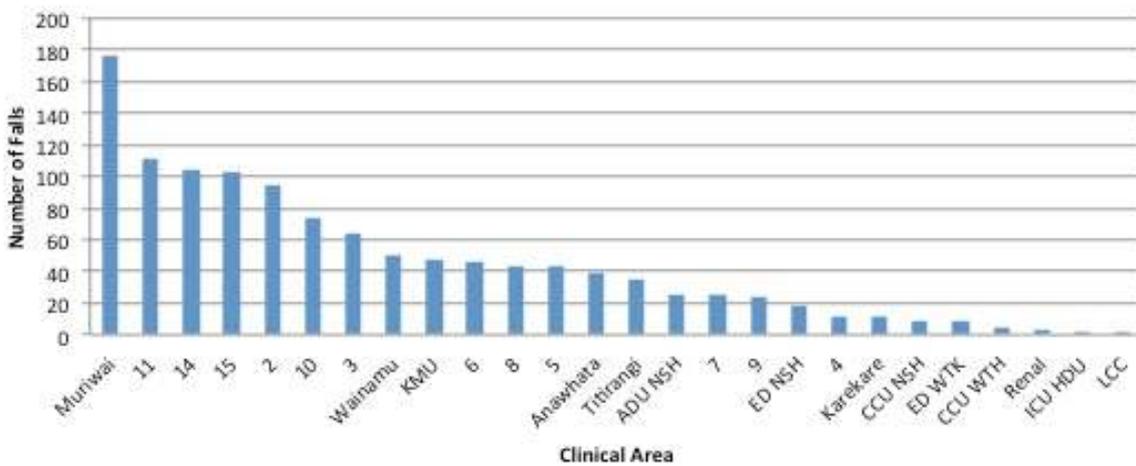


Figure Eleven: Location of all Falls

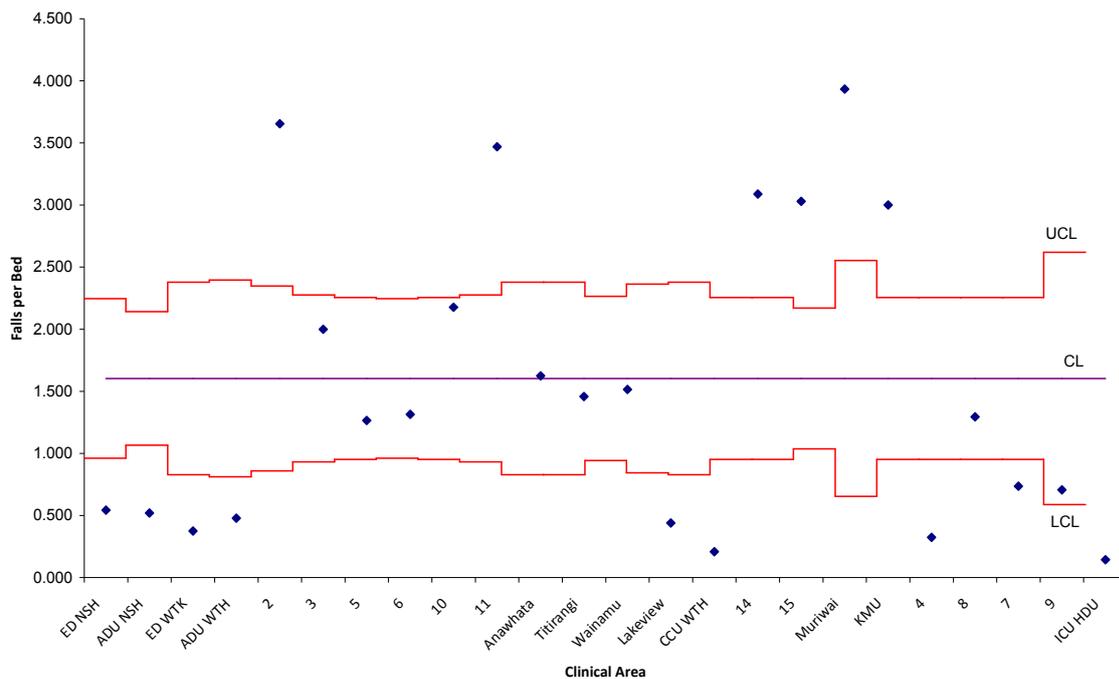


Figure Twelve: Falls per Bed for Each Clinical Area (U Chart)

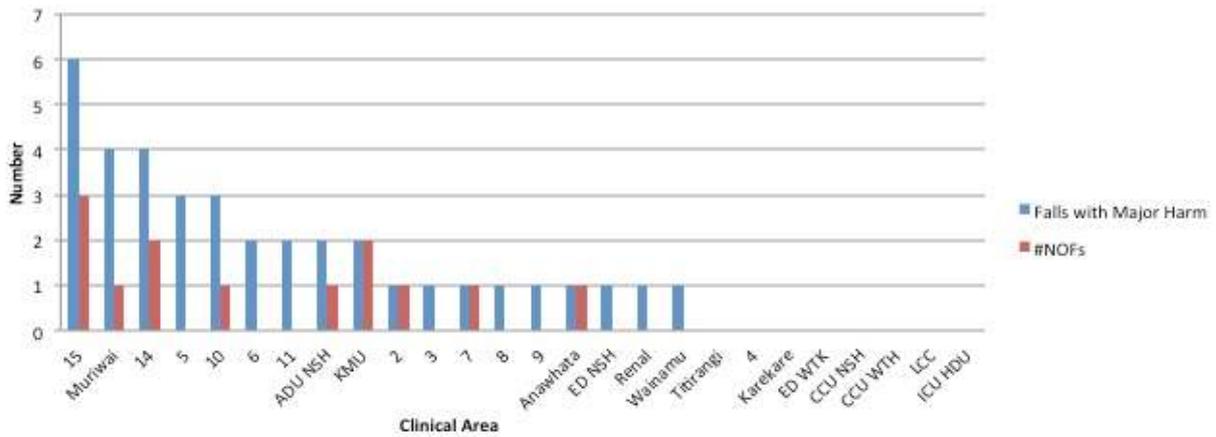


Figure Thirteen: Where Falls with Major Harm and Fractured Neck of Femurs Occurred

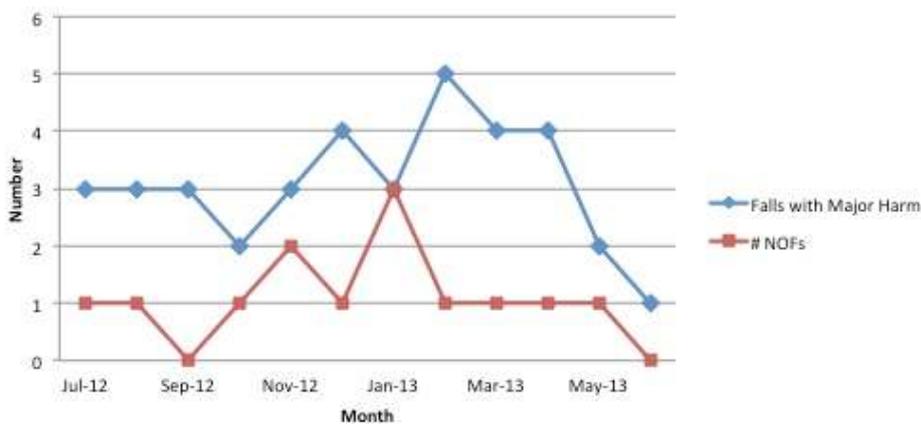


Figure Fourteen: Falls with Harm and Fractured Neck of Femurs (#NOFs) per month

Individual case reviews of patients falling and suffering harm reveal some clear themes. With respect to where falls occur on the wards, Figures Fifteen to Seventeen show most falls with major harm occur by the patient’s bedside (22) with many not being witnessed (16 or 43%) and the level observation not being recorded (78%). Of those whose activity at the time was known, 12 (32%) were attempting to move to either go to, or leave the toilet.

Three patients were reported to have acted impulsively and mobilised independently (i.e. without assistance) while a staff member was with them.

In two instances where a watch was recommended, the watch was not present at the time of the fall. The first was due to the staff member leaving for handover, while the second was reportedly assisting another patient in the room at the time of the fall.

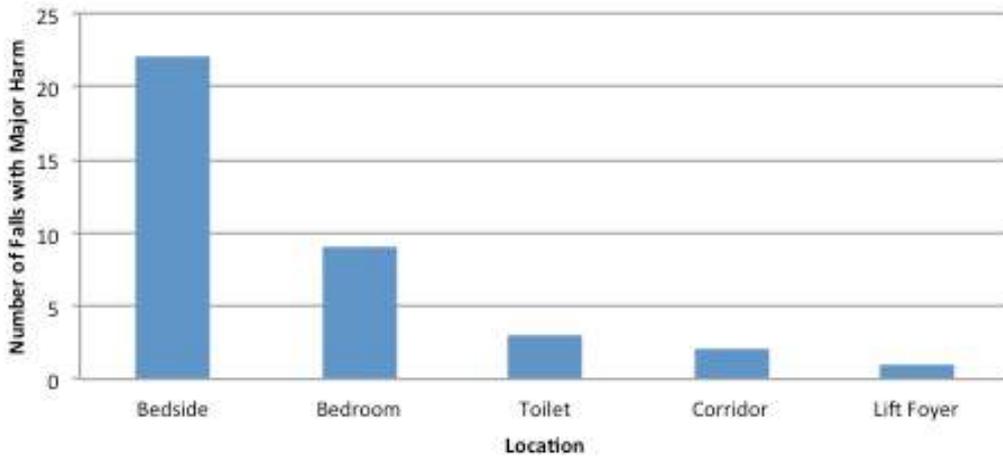


Figure Fifteen: Where Falls with Major Harm Occur

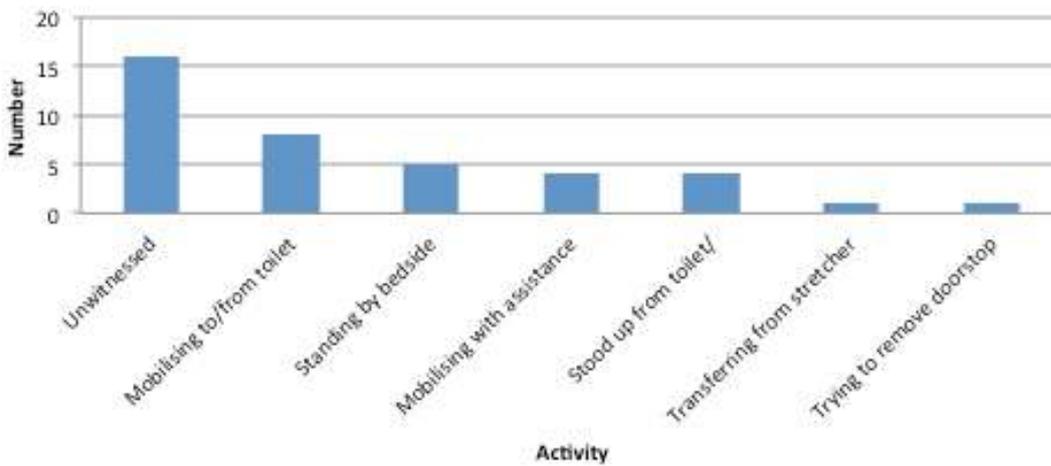


Figure Sixteen: Activity at Time When Falls with Major Harm Occur

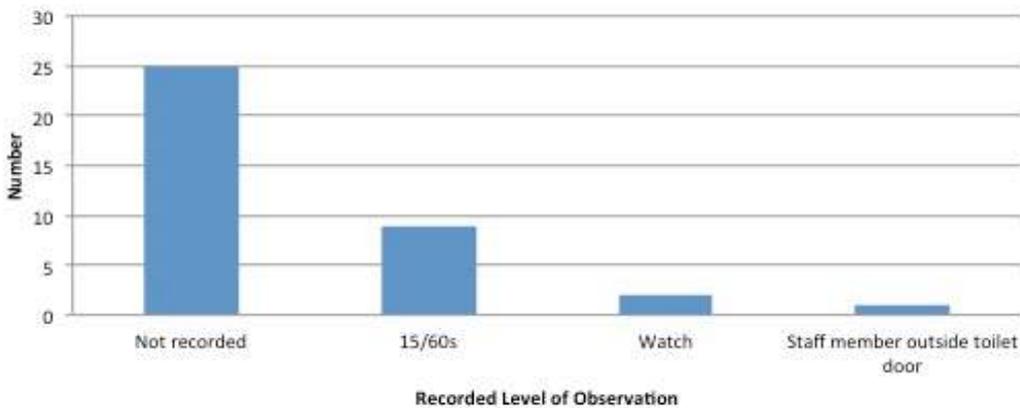


Figure Seventeen: Level of Observation at Time of Fall with Major Harm



While a number of patients had falls assessments completed, a significant number did not have them completed within the expected time (eight hours)⁸. Even when an assessment was completed, many patients did not have interventions put in place as a result of the findings (Figure Eighteen). Three patients were noted to have no assessment completed at any time during their stay. On two occasions assessments were not completed as it was not practice in that clinical area (ED and outpatients).

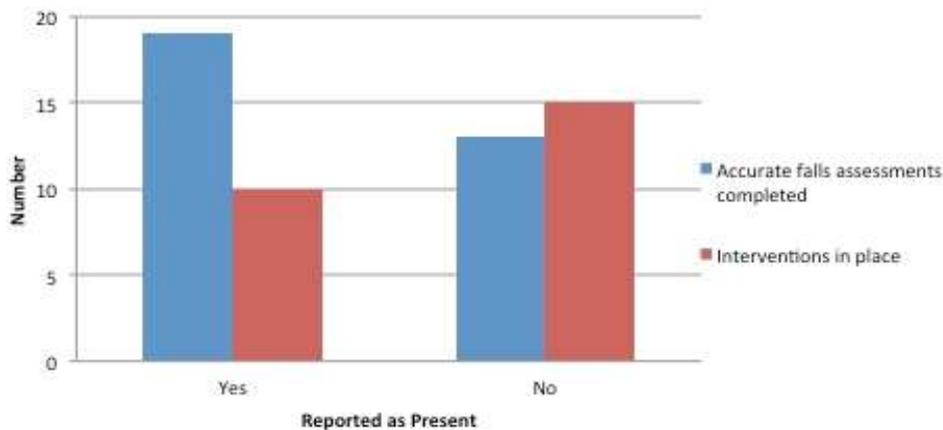


Figure Eighteen: Falls Assessments Completed & Interventions in Place for Falls with Major Harm

The majority of patients were assessed prior to their fall as being at high risk of falling (Figure Eighteen). It is worth noting that two patients were incorrectly assessed as moderate risk and as a result potential high risk interventions were not put in place.

Following one incident it was noted that the patient’s high falls risk was not detected before the fall, but a correct assessment occurred following the fall. Case reviews completed show that nearly half (49%) had fallen previously.

In five instances, patients falls risk was not reviewed following moving from one ward to another.

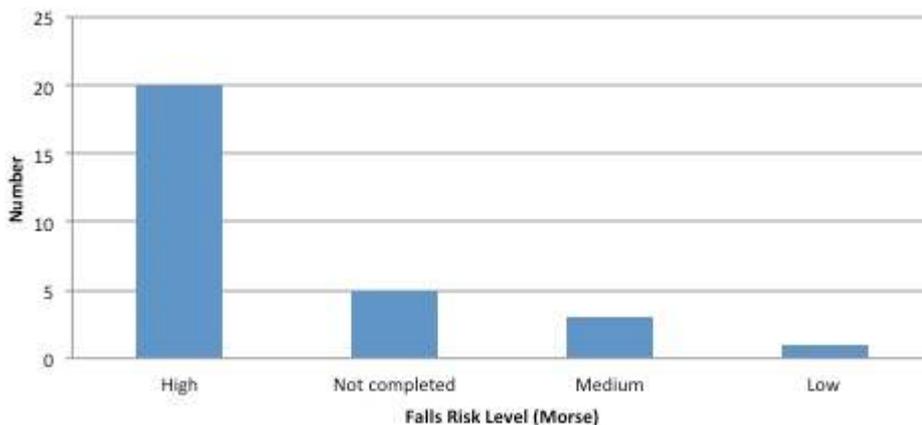


Figure Eighteen: Level of Falls Risk As Identified by Morse Falls Assessment for Falls with Major Harm

⁸ Falls Prevention – Reducing Harm Policy (2013). Retrieved from: <http://staffnet/QualityDocs/Quality%20Documentation/O1%20Clinical%20Practices/%5bP%5d%20Falls%20Prevention%20-%20Reducing%20Harm%20Nov12.pdf>