Introduction
Many Patients are high risk of falling in hospital. The devastating outcome of falls has made fall prevention one of the important parts in hospital safety management. Patient falls is also one of the nursing performance indicators. The data from the quarterly review show that there was a drastic increase of fall rate in department as 0.82 in the first quarter of 2013 when compare with the average 0.57 in 2012. Thus, a fall reduction and prevention program using Six Sigma methodology was implemented in May 2013

Objectives
investigate the root causes of the increasing fall rate and provide improvement action after the relative analysis.

Methodology
DMAIC approach of the Six Sigma methodology was used to define the problem of the existing fall prevention strategies as well as measure the service performance by using various statistical tools. Besides, a work group was established to discuss the factors of fall with the perspective of the frontline staffs. Improvement measures were then introduced under the suggestion of the work group members.

Result
According to the data analysis and the brainstorm suggestion of the work group members, several improvement actions were introduced. Improvement actions performed in the area of staff training, individualize patient education, enhancement of fall prevention devices and removal of environmental hazard. Eight sessions of staff training session were conducted to increase the staff compliance of the fall assessment. Rounding system and handover to supporting staff system were introduced to address patient needs in a more proactive way and spot out patients
with high risk of fall. New model of fall alarm and other means of physical restraint were introduced to increase the utilization rate. Besides, extra call bells were purchased for standby use and baskets were provided at bedside to increase accessibility for daily essential items. Moreover, warning sign was fixed on the drip stand to avoid patients trapped by the drip stand. Finally, individualized patient education was performed to increase patient engagement in their fall care plan. After the implementation of the fall reduction and prevention program, snapshot was taken after the first quarter of 2014 to test the effectiveness of the program. The accuracy rate of fall assessment increased from 87% to 91.8%. Timeliness of fall reassessment increased to 100%, the compliance of fall preventive intervention increased from 83.1% to 90.63% and the fall rate of the first three quarter of 2014 has decreased 36% when compare with that in 2013.