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Project title
A study on impact of Clinical Pathway implementation and setting up of Joint Replacement Centre on service quality in Kowloon Central Cluster

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Introduction
In response to a large service gap in 2009 in Kowloon Central Cluster (KCC), clinical pathways in Total Hip Replacement (THR) and Total Knee Replacement (TKR) surgery were implemented and the Buddhist Hospital Joint Replacement Centre (BHJRC) was established.

Objectives
To evaluate the effectiveness and safety of clinical pathways for primary THR and TKR in two different locations, Queen Elizabeth Hospital (QEH) and BHJRC by comparing the postoperative length of stay (LOS), 30-day mortality, 30-day surgical site infections (SSI) and 30-day readmission.

Methodology
Clinical pathways are multidisciplinary perioperative care plans outlining the optimal sequencing and timing of interventions based on best available evidence. In 2011, clinical pathways for primary and revision THR and TKR were fully implemented in KCC to facilitate and streamline patient management. In order to optimize resources utilization, revision and primary THR and TKR were carried out in QEH, an acute hospital with casemix of other orthopaedic operations like trauma and tumour surgery, and community hospital based BHJRC was dedicated for primary THR and TKR. The outcome measures for QEH THR and TKR in 2008-2009 under traditional standard of care formed the baseline. The data were compared against the same set of data for primary THR and TKR with clinical pathways at Group 1 (QEH in 2013-2014) and Group 2 (BHJRC in 2013-2014). Differences from the baseline in postoperative LOS, mortality, readmission rate and SSI rate after the implementation of the clinical pathways in the two hospitals with different settings were analyzed.

Result
Compared to baseline, there was a significant reduction in the LOS in Group 1 from a mean of 14.6 days to 10.7 days and 15.6 days to 9.0 days, with a reduction of 3.9 and 6.6 days respectively after clinical pathway implementation ($P<0.0005$). The mean LOS in Group 2 was significantly reduced by 6 days and 8.3 days respectively as compared to the baseline group ($P<0.0001$). There was no difference in mortality, readmission rate and SSI. As a result, the practice of clinical pathway for primary THR/TKR and the settings of JRC are two independent factors to improve the quality and efficiency of KCC joint replacement service.