

Purpose

The purpose of this interdisciplinary project was to examine fall rate trends among total knee arthroplasty (TKA) patients following a reduction in the use of Continuous Femoral Nerve Blocks (CFNB) for pain control.

Background

Use of CFNB inhibits femoral nerve motor function and therefore the quadriceps femoris functionality required for safe ambulation (Ilfeld, et al 2010).

Use of CFNB is associated with a 4.5 times greater risk of falling compared to no block (Wasserstein, et al,2013).

Use of CFNB has been shown to be an independent predictor of falls after TKA (Poruczik, 2013).

CFNB for TKA appears to be associated with a concerning number of falls and associated morbidity (Pelt, et al 2013).

CFNB may intensify existing quadriceps weakness and produce sensory and proprioceptive deficits that could contribute to falls (Finn, et al 2016).

Methods

Population: Chart review of TKA patients who fell post-operatively (n=15)

Setting: TCHHN Joint and Spine Center

Data Analysis:

- Retrospective chart review of TKA patients who fell (n=15) was conducted as part of a quality review and root cause analysis.
- Factors examined in this review included:
 - Age, sex, BMI, surgeon
 - POD of fall, shift, day of week
 - Co-morbidities/PMH, hx of OSA/CPAP/APAP
 - Hx of chronic pain, use of long acting or short acting narcotics, adjuvant medications
 - CFNB and if infusing at time of fall, use of single injection block
 - If was assisted fall, mobility pre-op, hx of falls pre-op, fall risk score at time of fall
 - Bed alarm on prior to fall
 - Level of assist with PT/OT, ambulation in feet by PT/OT
 - H&H, if hypotensive, if hypoxic, if on O2/removal date,
 - If foley or removal date, frequent voiding, bladder scanned
 - Description of situation of fall.

Methods Continued

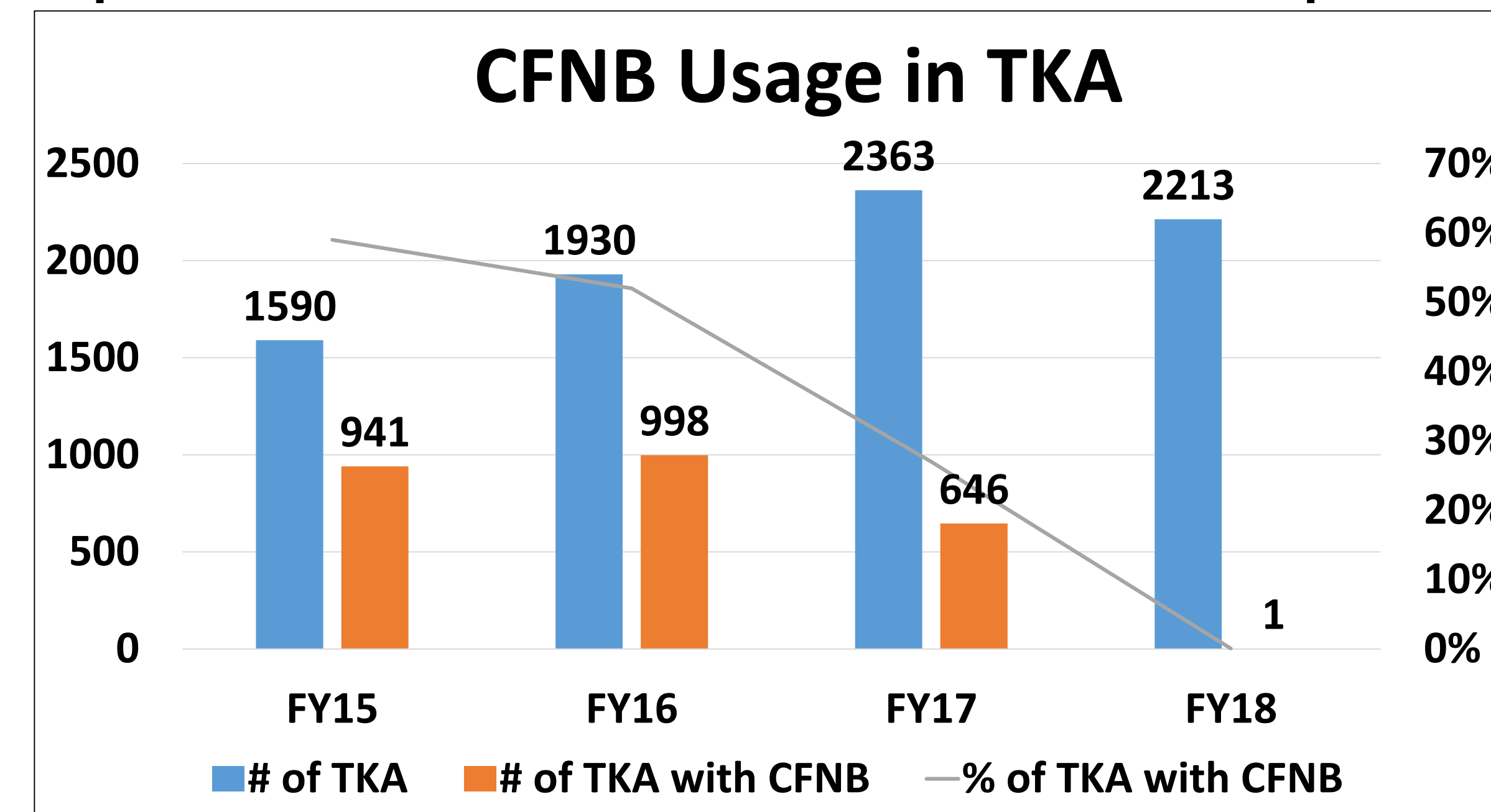
Intervention (continued):

- A literature review was conducted. Although other fall risk factors were identified in studies, multiple articles associated the use of CFNB with post op falls.
- TKA related falls were discussed in each Orthopedic Quality Assurance and Performance Improvement (QAPI) Committee
- A QAPI sub-committee reviewed current fall case and found that CFNB was used in 11 of 15 patients who had fallen.
- Physicians in the Ortho and Anesthesia Dept. elected to significantly reduce the use of CFNB in TKA patients by using alternative pain control methods, including adductor canal block, FI block, or intra-articular Experel.
- Plan to decrease the use of CFNB was implemented Mar-Apr 2016

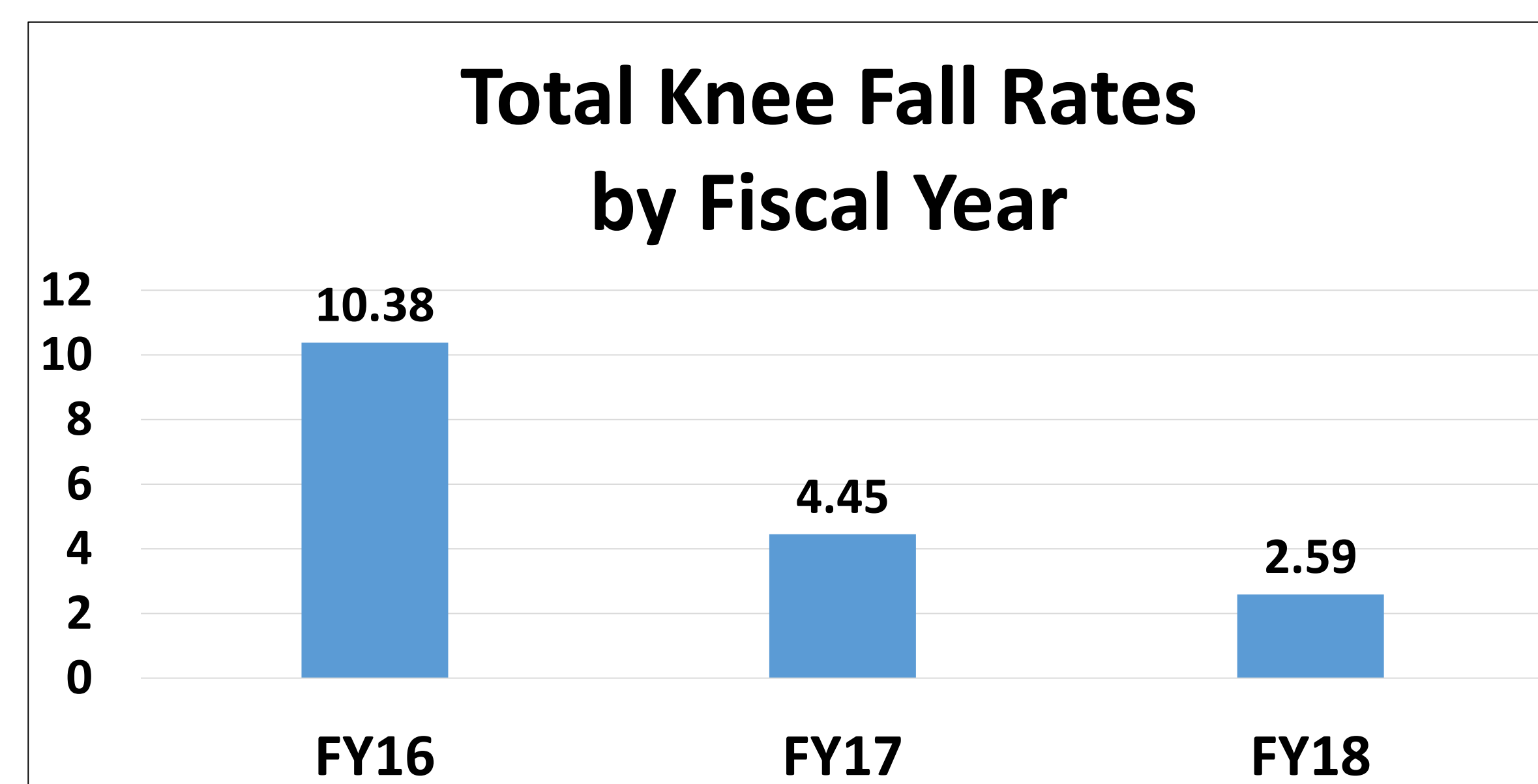
Findings

The use of CFNB decreased from 941 patients in FY15 to only 1 patient in FY18.

Implemented Plan to Decrease Use of CFNB Mar-Apr 2016



Fall rate among TKA patients decreased 75% (from 10.38 in FY 16 to 2.59 in FY18).



Conclusions

- Fall rates decreased by 75% following a reduction in the use of CFNB.
- The goal was to improve patient safety and reduce the fall rate among the inpatient post-operative total knee arthroplasty population was achieved (from a FY 16 rate of 10.38 to below 10 for FY 17).
- TKA fall rates for FY17 decreased to 4.45 and continued to decrease in FY18 (to 2.59).



Implications for Nursing

- Accidental falls are among the most commonly reported incident reported in hospitals and is implicated in the complication of 2% of hospital stays (Bouldin, et al, 2013).
- Fall rates in the total knee arthroplasty population were effectively reduced following reduction in use of continuous femoral nerve blocks.
- Nursing can be an influential in identifying risk factors and outcome trends in their patient populations as part of quality control initiatives and best practice.
- Interdisciplinary collaboration can be an important tool for identifying and addressing safety concerns in a manner which improves patient outcomes.
- A rigorous program of fall trend monitoring and analysis is recommended and is ongoing.

