

# Bundled Payments in Orthopedic Trauma: How to Succeed

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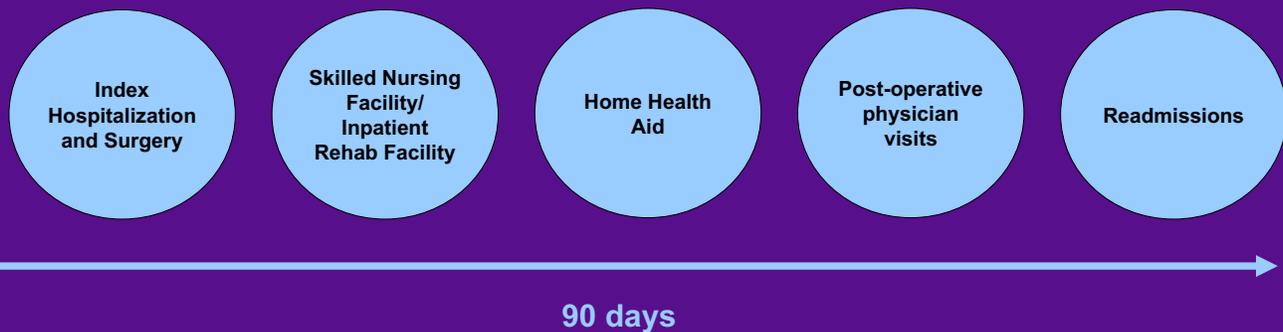
# BUNDLED PAYMENT MODEL OF CARE

## Background and Objective

- In response to the rise in healthcare spending and the unsustainable traditional fee for service model, the Centers for Medicare & Medicaid Services (CMS) have initiated several programs to transition from a **fee for service to a bundled payment base model**
- A significant proportion of orthopedic trauma patients may be incorporated into a bundled payment of care model in the future
  - Inclusion of hip fractures in the *Comprehensive Joint Replacement (CJR) bundle*
  - Possible introduction of the *Surgical Hip and Femur Fracture Treatment (SHFFT) bundle*
- Orthopedic surgeons, particularly trauma surgeons, must be prepared for the impending reimbursement-related changes regarding the care of these patients
- *The purpose of this exhibit is to understand the new CJR and SHFFT bundles and to provide strategies for adapting to the forthcoming changes to reimbursement for hip and femur fracture care*

## What is a Bundled Payment?

- Providers are given a set fee by Medicare for the entire episode of care for each patient
- Episode of care is defined by the index surgery and continues through 90 days



## What has worked in the elective joint population?

- Creation of Clinical Pathways to Standardize Care throughout the episode
  - Examples of successful initiatives include:
    - Maximizing regional anesthesia and peripheral blocks--> increases early mobilization and maximizes pain control --> decreased length of stay
      - Length of stay is the major determinant of index admission cost of care
    - Blood product management: transfusion decisions based more on symptoms rather than a specific threshold
    - TXA administration to reduce operative blood loss
- Reduction of Post-Acute Care Facility Use
  - Post-acute care consumes up to 45% of the bundled payment cost (*Iorio et al., 2017*)
- Introduction of care coordination to guide patients through the episode of care
  - Allows for more successful home discharges and decreased readmissions

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1. Iorio R, Clair AJ, Inneh IA, Slover JD, Bosco JA, Zuckerman JD. Early Results of Medicare's Bundled Payment Initiative for a 90-Day Total Joint Arthroplasty Episode of Care. *J Arthroplasty*. 2016 Feb;31(2):343-50.
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3. Iorio R, Bosco J, Slover J, Sayeed Y, Zuckerman JD. Single Institution Early Experience with the Bundled payments for Care Improvement Initiative. *J Bone Joint Surg Am*. 2017;99:e2(1-8).
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# HIP FRACTURE CARE IN THE CJR BUNDLE

## Introduction:

- The CJR Bundle was built out of the success of the BPCI Program for Joint Replacement
- Hip fracture patients treated with arthroplasty procedures are included in the current CJR bundle
- Elective Arthroplasty Patients are very different from Fracture Arthroplasty Patients
- *How can we incorporate the success that has been achieved in the elective arthroplasty population to the care of these patients?*

## One Institution's Experience of a Bundled Payment Initiative for Hip Fracture Arthroplasty Patients:

### Methods:

- 99 consecutive patients discharged with the DRG codes 469-470 performed for hip fractures from one academic medical center between January 2015 and December 2016
- BPCI initiative based upon an established program for total joint arthroplasty patients in the BPCI program was applied to all hip fracture arthroplasty patients beginning in January 2016
  - *Three main goals: 1) improved care coordination; 2) clinical pathway implementation and standardization of care; 3) encouragement of home discharge and minimization of post-acute facility usage*
- Patient outcomes prior to the introduction of the BPCI initiative were compared to those who participated in the initiative using independent t-tests and chi-square analyses using a p-value of <0.05 as significant

### Results:

- 99 hip fracture patients underwent arthroplasty procedures and were included in this study (44 patients received care prior to the initiative and 55 patients participated in the initiative)
- There was no decrease in mean length of stay between the two cohorts
- Percentage of patients discharged home nearly doubled with the introduction of the BPCI initiative (15.9% vs. 29.1%)
- There was a 15.5% reduction in total 90-day episode of care cost (\$52,600 vs. \$44,475) upon introduction of the initiative

Length of Stay, discharge disposition, and readmission rates for the pre-initiative and post-initiative cohorts

	Pre-Initiative (n=44)	Post-Initiative (n=55)	p-value
<b>Length of Stay (days) mean ± SD</b>	6.3 ± 3.2	5.8 ± 2.9	0.416
<b>Discharge Disposition n (%)</b>			
<b>Home</b>	7 (15.9%)	16 (29.1%)	0.281
<b>SNF</b>	28 (63.6%)	31 (56.4%)	
<b>Acute Rehab</b>	9 (20.5%)	8 (14.5%)	
<b>Readmission Rate n (%)</b>	9 (20.5%)	12 (21.8%)	0.869

90-day episode of care costs including post-discharge facility costs and readmission costs. <sup>a</sup> includes home health aid, skilled nursing facility, and acute rehab costs

	Pre-Initiative (n=44)	Post-Initiative (n=55)	p-value
<b>90-day bundle of care costs (mean ± SD)</b>	\$52,600 ± \$22,013	\$44,475 ± \$22,066	0.071
<b>Total post-discharge costs <sup>a</sup> (mean ± SD)</b>	\$25,453 ± \$14,929	\$20,591 ± \$16,281	0.129
<b>HHA</b>	\$6,018 ± \$1,138	\$4,657 ± \$1,575	0.069
<b>SNF</b>	\$26,394 ± \$11,885	\$26,858 ± \$16,693	0.903
<b>Acute Rehab</b>	\$38,308 ± \$12,929	\$28,170 ± \$5,041	0.053
<b>Readmission Costs (mean ± SD)</b>	\$10,943 ± \$8,964	\$12,680 ± \$9,986	0.685

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1. Kester BS, Williams J, Bosco JA, Slover JD, Iorio R, Schwarzkopf R. The Association Between Hospital Length of Stay and 90-Day Readmission Risk for Femoral Neck Patients: Within a Total Joint Arthroplasty Bundled Payment Initiative. *J Arthroplasty*. 2016 Dec; 31(12):2741-2745.
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# WHAT IS SHFFT AND HOW CAN HOSPITALS PREPARE?

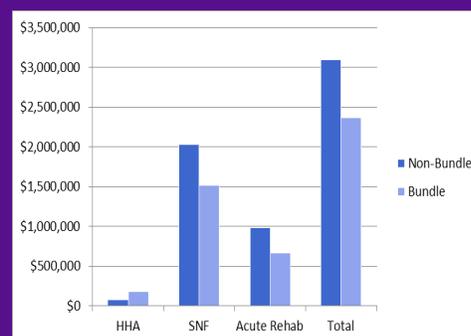
## Introduction:

- The SHFFT (Surgical Hip and Femur Fracture Treatment) Bundle would include all femoral neck, intertrochanteric, femur, and distal femur fractures that undergo non-arthroplasty operative fixation (DRGs 480, 481, 482)
- This program was planned to be initiated in January 2018 and instead was cancelled. The plan of the CMS Innovation Center is to redesign this program and initiate as an optional program.

## Effectiveness of a Model Bundle Payment Initiative in a Proposed SHFFT Bundle:

- BPCI initiative based upon an established program for total joint arthroplasty patients in the BPCI program was applied to all hip and femur fracture patients beginning in Jan 2016
  - Three main goals: 1) improved care coordination; 2) clinical pathway implementation and standardization of care; 3) encouragement of home discharge and minimization of post-acute facility usage
- 116 patients who participated in the “institutional bundle” (Jan 2016- Oct 2016) were compared to the 126 patients who received care prior to the initiative (Jan 2015- Dec 2015)
- Results:
  - Trend towards decreased mean length of stay, ( $7.3 \pm 6.3$  days vs.  $6.8 \pm 4.0$  days,  $p=0.457$ ) and decreased readmission within 90 days (22.2% vs. 18.1%,  $p=0.426$ )
  - Number of patients discharged home doubled (30.2% vs. 14.3%,  $p=0.008$ )
  - The readmission rate for all patients admitted to SNF was much higher than those discharged home and AR (44.9% vs. 17.0%,  $p=0.005$  and 44.9% vs. 15.0%,  $p=0.002$ , respectively)
  - Mean episode cost reduction was estimated to be \$6,450 using Medicare reimbursement data.

Analysis of post-acute care costs in bundle and non-bundle cohort.



## How to Improve Success by Using Risk-Stratification:

- 173 patients discharged with the DRG codes 480-482 from a level one trauma center between Oct 2014-Sep 2016 were evaluated and assigned a mortality risk tool (STTGMA score)
  - STTGMA score captures captures a patient’s injury, health, and functional status and provides a percent predicted inpatient mortality
- Patients were stratified into groups based on these scores to create a minimal, low, moderate, and high-risk cohort
- Patients in high risk cohorts had longer LOS, more complications, and more costly admissions
- High cost areas of care included room/board, procedure, and radiology

Hospital quality measures for minimal, low, moderate, and high-risk patients with hip and femur fracture patients.

	Minimal (n=85)	Low (n=53)	Moderate (n=26)	High (n=9)	Total cohort (n=173)	p-value
Mean Length of Stay (days)	7.5±4.2	8.0±3.7	8.2±5.0	11.7±4.0	8.0±4.2	0.045
Need for ICU/SDU level care	2.4%	9.4%	3.8%	33.3%	6.4%	0.002
Mean # of total complications	0.8 ± 0.7	1.0 ± 0.8	0.7 ± 0.9	1.6 ± 1.3	0.9 ± 0.8	0.029

- Conclusion: This analysis of a two-year cohort of patients who would qualify for a potential future SHFFT bundle demonstrates that the STTGMA trauma triage score can be used to identify high-risk patients that fall outside the bundle

# OVERALL LESSONS LEARNED AND FUTURE OF BUNDLED PAYMENTS

## Lessons Learned and Next Steps

<b>Lessons Learned?</b>	<ol style="list-style-type: none"><li>1. The largest opportunity to impact change is post-acute care costs<ul style="list-style-type: none"><li>• With the lack of available pre-optimization in fracture patients, length of stay is very difficult to significantly reduce</li><li>• Given the very high utilization of post-acute care facilities, small differences in discharge patterns can have a large financial impact</li><li>• Try to partner with SNFs/Acute Rehab Facilities that you trust and choose facilities that will partner with physicians so as to reduce hospital bounce back</li></ul></li><li>2. Clinical Care Coordinators are essential in bridging the gap between patients, post-acute facilities, and physicians to avoid unnecessary readmissions</li><li>3. Risk Stratification can be used to identify high-risk patients who may require additional resources</li></ol>
<b>Areas of Improvement/Next Steps?</b>	<ol style="list-style-type: none"><li>1. Understand post-discharge costs so as to reduce length of stay in post-acute care facilities</li><li>2. Continue work to decrease readmissions</li><li>3. Explore the possibility of increasing length of stay to decrease post-acute facility care costs</li></ol>

## Future of Bundled Payments in Orthopedics?

- Bundled Payment Models are here to stay
- Jan 2018: **BPCI-Advanced** was announced which builds off BPCI and carries forward Medicare's mission to *"align incentives among participating health care providers for reducing expenditures and improving quality of care for Medicare beneficiaries"*
  - Voluntary model with 29 Inpatient and 3 Outpatient Clinical Episodes including:
    - Double joint replacement of the lower extremity
    - Fractures of the femur and hip or pelvis
    - Hip and femur procedures except major joint
    - Lower extremity/humerus procedure except hip, foot, femur
    - Major joint replacement of the lower extremity
    - Major joint replacement of the upper extremity
    - Spinal fusion (non-cervical)
  - Model period will start on October 1, 2018 and run through December 31, 2023
  - Risk-adjustment will be incorporated into the target pricing
  - Payment will be tied to quality measures
  - Providers already participating in CJR will not be eligible for BPCI-Advanced for those procedures
- In addition to programs initiated by CMS, there have been recent moves in the private sector to create value based care programs with many private insurance companies having orthopedic bundled payment programs with specific providers

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2. Slotkin JR, Ross OA, Coleman R, Ryu J. Why GE, Boeing, Lowe's and Walmart Are Directly Buying Health Care for Employees. Harvard Business Review. June 8, 2017.