TOTAL KNEE REPLACEMENT BASKET OF CARE SUBCOMMITTEE

Report to:

Minnesota Department of Health

June 22, 2009

BASKET TOPIC DETERMINED BY BASKET OF CARE STEERING COMMITTEE:

Total Knee Replacement (TKR)

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Total Knee Replacement (TKR)

SCOPE STATEMENT: [1]

The total knee arthroplasty basket of care is for adults between the ages of 18 and 64, body mass index of less than 35, and determined to have mild or no systemic disease, who are electing unilateral primary (first time) total knee arthroplasty as recommended by orthopedic consultation. The basket ends 90 days after the procedure.

Rationale for Scope Selection:

The subcommittee acknowledged that there is variation in selection criteria applied to prospective TKR candidates. There is no strong evidence-based appropriateness criteria or a universal functional tool available for use with total knee replacement patient selection. To avoid unnecessary complexities in the Basket of Care development and acknowledging the absence of evidence-based appropriateness criteria, the subcommittee elected to have the starting point for the basket begin after the process of shared decision-making has been completed between the provider and the patient, and the patient is electing to proceed with the TKR procedure.

The subcommittee, as part of this explorative step in creating a TKR basket, elected to maintain a narrow scope opting to put together a package of services, without significant implementation barriers, that has the potential for market place adoption. While the scope of this basket does not include the more complex or higher risk patient, the objective is that this basket incents providers to cooperate and develop innovative ways to deliver this care while improving health care quality and reducing costs. With the proposed scope, the subcommittee attempted to capture the average patient and therefore average associated costs. The subcommittee engaged in extensive discussion, including literature review regarding the use of a clasification that would be useful for providers and

understandable by patients in determining eligibility for this basket. Originally, the subcommittee considered the use of an ASA score of 3 or below; however, acknowledging some limitations for use with the ASA classification for this purpose, the subcommittee elected to use language in the scope that is consistent with an ASA score of 2 and below, described as follows: "…and determined to have mild or no systemic disease…" Additionally, the subcommittee discussed that ideally a mechanism would exist to support a provider/patient discussion to jointly determine whether the Basket of Care is appropriate to meet an individual's needs. The subcommittee acknowledges that the criteria of BMI less than 35 is not evidence-based, but rather represents subcommittee consensus and addresses those patients most likely to benefit from this Basket of Care. Furthermore in considering the scope, the subcommittee elected to limit the upper age to 64 recognizing that the 2008 health care reform law does not apply to services paid for by Medicare, state public health care programs through fee-for-service or prepaid arrangements, workers' compensation, or no-fault automobile insurance. A preoperative history and physical is required prior to the surgical procedure, and encouraged to be performed at the patient's health care home for purposes of continuity, but is not included in the basket in order to avoid anticipated administrative challenges the subcommittee considered. With regard to the scope end point (90 days after the procedure), the subcommittee added clarifying language to indicate that hospital readmissions within that timeframe applicable to this basket, would be limited to those resulting from complications involving the surgical site assuming care delivered by the same provider. Additionally, the original draft of the scope included a reference to "Never Events". The subcommittee further discussed the inclusion of "Never Events" in the scope and elected to remove this reference to avoid any potential inconsistencies or confusion with our current structures in place in Minnesota for reimbursement associated with "Adverse Events" Lastly, the subcommittee acknowledged that while some individuals will not be eligible to receive care within the basket, the care components within the basket and subsequent improvements in the quality of care may extend to all patients undergoing total knee replacement.

BASKET OF CARE COMPONENTS:

Basket components were identified based on current literature, existing guidelines, current standards of practice and in some cases evidence informed consensus.

Description	Timeframe / Frequency
Preoperative Phase [2]	

• Pre-surgery education including:
  ◦ Procedure education
  ◦ Physical therapy education & exercises
  ◦ Deep vein thrombosis prophylaxis (mechanical & chemical)
  ◦ Nutrition discussion (referral if indicated)
  ◦ Smoking identification (referral if indicated)
	Prior to procedure

• Case management for planning post hospital discharge [3]	Prior to procedure
Operative / Acute Care Phase:	
• Anesthesia services / Operating room services	As required for surgical procedure
• Professional fees [4]	As required for care within the basket
• Knee prosthesis [5]	Per clinical indications
• Imaging	Minimum of 1 set postoperative films and other imaging as clinically indicated
• Laboratory ◦ Postoperative hemoglobin and other laboratory studies as indicated	Per clinical indications

• Deep vein thrombosis prophylaxis [6]
  ◦ Mechanical compression devices
  ◦ Chemical (anticoagulation medications)
  ◦ Laboratory tests as indicated; International normalized ratio if on Coumadin
	Per clinical indications

• Post procedure facility services (hospital days, transitional care unit), home health, alternative sites [7]	Per patient requirements

• Medications [8]
  ◦ Prophylactic antibiotics
  ◦ Continuation of home medications during the inpatient stay
	Per clinical indications

Description	Timeframe / Frequency
• Pain Management [9] • Physical therapy • Durable medical equipment	Per patient requirement Per patient requirements Per patient requirements
• Occupational Therapy (if indicated for discharge to home) • Medicine Consultation [10] • Follow-up visits as needed • Case Management (inpatient) [11]	Per patient requirements Per clinical indications Per patient requirements
Post Hospital – 90 days after procedure: • Postoperative follow-up surgical visits [12] • Physical therapy [13]	 Per clinical indications Per patient requirements
• Durable medical equipment	Per patient requirements
• Occupational therapy (if indicated for discharge)	Per patients requirements

• Deep vein prophylaxis
  • Mechanical compression devices
  • Chemical (anticoagulation medications)
  • Laboratory tests as indicated; international normalized ratio (INR) if on Coumadin
• Pain management
• Imaging [14]
• Home Health
• Transitional Care Unit [15]
• Inpatient care for readmission within 90 days after procedure resulting from complications related to the surgical site, assuming care delivered by the same provider group.
	Per clinical indications
	
	Per patient requirements
	1 plain film of knee post-operatively
	Per patient requirements
	Per patient requirements
	Per clinical indications

Notes:

1. **Scope**

   The subcommittee, as part of this explorative step in creating a TKR basket, elected to maintain a narrow scope opting to put together a package of services, without significant implementation barriers, that has the potential for market place adoption. While the scope of this basket does not include the more complex or higher risk patient, the objective is that this basket incents providers to cooperate and develop innovative ways to deliver this care while improving health care quality and reducing

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2. **Pre-Operative Phase**

   A rationale for including pre-surgery education in the basket is the association between decreased length of stay and patients understanding expectations prior to admission.

3. **Case Management**

   A rationale for including case management in the basket is the ability for preplanning to reduce unnecessary hospital days.

4. **Professional Fees**

   As the basket price is intended to cover a collection of health care services ordinarily combined by a provider in delivering a full diagnostic or treatment procedure, it is anticipated that surgeon fees would be included in the basket. The basket component includes all of professional fees.

5. **Knee Prosthesis**

The subcommittee discussed implant cost variation at length. The subcommittee supported the prosthesis cost being in the basket believing most patients would expect this to be included in the basket price; however, the subcommittee acknowledged that further strategies, such as specific tiering, related to such pricing were beyond the scope of the subcommittee. Additionally, the subcommittee acknowledged that the discussion about which prosthesis to use usually occurs as part of the orthopedic consultation prior to the start of this basket.

6. **Deep Vein Thrombosis Prophylaxis**

   Deep vein thrombosis prophylaxis significantly reduces the risk of postoperative thromboembolism; options include mechanical and/or chemical. Additionally, compression devices can control pain and reduce edema.

7. **Facilities**

   The subcommittee acknowledges the challenge of balancing component specificity against allowing for innovation. The subcommittee elected to list components by general categories versus being more prescriptive, allowing for innovation. The subcommittee believes strongly that many opportunities exist for innovation in this particular area.

8. **Medications**

   Prophylactic antibiotics should be limited to 24 hours post procedure.

9. **Pain Management**

   The subcommittee acknowledged the opportunities for innovation as it relates to management of patient immediately post-operatively.

10. **Medication Consultation**

    This is intended to describe medical management for medications/conditions not related to the surgery.

11. **Case Management**

    This is included for the purpose of mobilizing the preoperative plan for dispositon or responding to any necessary changes.

12. **Post-Operative Follow-up Surgical Visits**

    No specific frequency of visits or modality is defined, allowing for provider determination.

13. **Physical Therapy**

    No specific frequency or length of physical therapy is defined, allowing for provider determination.

14. **Imaging**

    One outpatient knee film is included as the immediate postoperative film at the hospital may not be of required quality.

15. Transitional Care Unit

No specific length of stay or care at a transitional care unit is defined allowing for provider determination. The subcommittee believes strongly that many opportunities exist for innovation in this area.

Components considered but not included:

- Preoperative testing- acknowledged that following the preoperative evaluation there maybe additional patient-specific medical investigation required prior to proceeding with the procedure, such as laboratory tests, imaging, etc. These requirements could be widely variable, and not necessarily evidence-based, and therefore were not included.

Components in initial basket that were deleted or modified for final draft:

- Preoperative evaluation – after extensive discussion it was decided that the preoperative evaluation (history and physical) would not be included as part of the basket due to the complicated administration of this component and the desire to preserve the patient's relationship with their primary care physician in promotion of health care home. The subcommittee members considered such things as an overall belief that an opportunity exists for innovation and increased coordination of care if included in the basket; there exists the potential for an increase in fragmentation of care if preoperative evaluations were to be separated from a patient's established primary care physician; an acknowledgement that the preoperative evaluation can correlate directly with the surgical outcome; an acknowledgment that including the preoperative evaluation in the basket of care may pose unique challenges for non-integrated health care systems; the anticipated administrative challenges, including such things as the number of providers that may need to be contracted with in order to include all of the possible providers involved in this service, which may pose significant obstacles to developing a basket for some providers. The subcommittee elected to remove the preoperative evaluation from the basket and modified the scope statement to reflect this.

- Component frequency – most references to components specifying frequency of services were deleted. This included such things as typical number of hospital overnights, typical frequency of physical therapy sessions, typical number of postoperative surgeon follow-up visits, etc. The subcommittee recognized the potential limitation of designating frequencies, such as requiring unnecessary services and/or limiting innovation, and therefore, the subcommittee elected to list components by categories versus being more prescriptive.

- Professional fees – these were not addressed as part of the original draft. In further discussing this, the subcommittee agreed that as the basket price is intended to cover a collection of health care services ordinarily combined by a provider in delivering a

full diagnostic or treatment procedure, it would be most appropriate to include surgeon fees, as well as all other professional fees, in the basket.

- Prosthesis cost – The reference to an estimated dollar amount for the prosthesis has been removed from the document to avoid confusion. The subcommittee elected to include the cost of the prosthesis in the basket, acknowledging unique patient requirements and associated cost variation. The subcommittee recognized the need for pricing strategies associated with the prosthesis, but these strategies were acknowledged to be beyond the scope of the subcommittee.

- Mechanical compression devices – Specific company product names were removed and instead listed generically as mechanical compression devices to avoid identifying any one specific company product.

- Medications – Medications during the Operative/Acute care Phase were clarified to include "continuation of home medications during the inpatient stay."

- Pain management – The subcommittee agreed that the goal should be to provide excellent pain management regardless of the chosen modality/ specific medication regime. Previous references associated with the pain management component were intended as examples versus specifying a particular modality i.e. intravenous and oral medications, patient controlled analgesia, femoral nerve block etc. These examples have been removed from the pain management component to avoid being overly prescriptive.

- Inpatient care for readmission within 90 days after procedure resulting from complications related to the surgical site; assuming care delivered by the same provider – This was previously addressed in the scope and is now included as a specific component.

OPPORTUNITIES FOR INNOVATION INCLUDE:

- Determining how health care home may complement this basket of care; coordinating services between primary and specialty care.

- Preoperative education – preoperative education increases the patient's understanding of expectations in terms of short and long-term recovery. There is the potential for a decreased hospital length of stay when patients understand expectations prior to the procedure. There may be innovative ways to package and deliver this service that would provide greater benefit to patients and providers.

- Pre-procedure case management planning for post hospital discharge – pre-planning may reduce unnecessary hospital days and increase patient satisfaction. There may be innovative ways to coordinate this with the operative/acute care phase.

- Post procedure facility services – opportunity to look for combination of alternatives that best meet the needs of the patient i.e. could involve very different combinations of care than the current routine of 3 hospital overnights, TCU, etc.
- Pain management – there may be more innovative modalities of pain management that may significantly impact postoperative function and rehabilitation leading to decreased length of stay, etc.
- Prosthesis and patient preference – prosthesis pricing strategies allowing for a shared decision-making between providers and patient.

ADDITIONAL CONSIDERATIONS:

- The subcommittee identified examples of situations that could involve care beyond the scope of this basket i.e. postoperative complications including such things as myocardial infarction, etc., which would require a mechanism to address.

JUNE 4, 2009 STEERING COMMITTEE REVIEW AND COMMENT:

- Subcommittee discussed issues around appropriateness criteria for this surgery; this has greater implications for Minnesota health care economics beyond Baskets of Care.
- Opportunity to use shared decision-making between patient and provider
- Very supportive of patient safety as infection/negative events such as re-hospitalizations are covered in basket within 90 days if related to surgical site. May be an opportunity to use a registry for tracking this.
- The possibility of a multi-year warranty for return to a specific level of function was suggested.
- Discussed challenge of pricing for prosthesis because of surgeon preference and given contracting variation with vendors.
- Steering Committee recommended language change to include provider "group" versus just provider for component related to re-hospitalization.

SUPPORTING REFERENCES

ICSI Preoperative Evaluation Guideline – 2008

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Note: These references were submitted by subcommittee members through the course of their efforts in defining the Total Knee Replacement Basket of Care. These references provide recommendation, support and discussion, as well as evidence in some cases, for the particular care components included in the Total Knee Replacement Basket of Care.