Interdisciplinary Team Approach in the Rehabilitation of Hip and Knee Arthroplasties

Barbara Erickson, Max Perkins

Key Word: orthopedics

Use of an interdisciplinary case management team approach in the treatment of patients with hip or knee arthroplasty has resulted in a decrease in length of stay and achievement of functional outcomes at the authors' center. Case management was used to standardize patient care and to measure each patient's progress toward independence against established criteria of treatment outcomes. Outcomes established for physical therapy were ambulation distance, performance of a home exercise program, stair climbing, amount of active knee flexion (for knee arthroplasties), and incorporation of hip precautions. Outcomes for occupational therapy were ambulation distance, performance of a home exercise program, stool transfers, toilet transfers, and activities of daily living with emphasis on lower extremity dressing. The case management team consists of an occupational therapist, an occupational therapy assistant, a physical therapist, and two nurses. The specific role of the occupational therapy personnel in this team approach is to maximize, by discharge, a patient's functional level of independence in activities of daily living. Data from a 6-month period indicated that occupational therapy goals were achieved for 79% of the 33 knee arthroplasty patients and 73% of the 37 hip arthroplasty patients.
Assessment of Home Environment

To facilitate smooth discharge planning, all team members assess the patient’s home environment, including the patient’s support systems, such as availability of the family to assist with care. In addition, they assess what adaptive devices the patient may already have. The occupational therapist and physical therapist specifically address the physical environment of the patient’s home, including environmental obstacles and bathroom accessibility.

The occupational therapist specifically assesses the overall accessibility of the bathroom for use with a walker or cane and the need for durable medical equipment. In the course of treatment, the occupational therapist also assesses the need for upper extremity splinting as well as any preexisting physical limitations, including any joint deformities due to arthritis.

The physical therapist specifically assesses environmental barriers that the patient will face upon returning home, including stairs and the need for safety rails. The physical therapist also instructs both patients and their family members in a home exercise program.

Outcomes of Case Management

We implemented the case management approach in 1990 for all patients who have undergone hip or knee replacements. Treatment outcomes established at our facility for each discipline (occupational therapy, physical therapy, and nursing), are to be achieved by the sixth POD. For occupational therapy, outcomes are established on four functional activities: bed mobility, chair transfers, toilet transfers, and activities of daily living (ADLs) with emphasis on lower extremity dressing. For physical therapy, outcomes are established for ambulation distance, performance of a home exercise program, stair climbing, amount of active knee flexion (for knee arthroplasties), and incorporation of hip precautions. Occupational therapy and physical therapy staff members document case management data daily regarding the highest level of independence achieved by a patient for each identified outcome (see Appendix C).

The occupational therapist treatment goal is for the patient to reach a maximum level of independence in the four activities by the sixth POD. For patients with hip replacement, maximum level of independence is defined as completing the activities with minimal assistance. For patients with knee replacement, it is defined as completing the activities with standby assistance. If goals are achieved before the sixth POD, they are revised to achieving a level of complete independence in all areas.

By completing the case management form, therapists can easily determine patient progress and what treatment areas may need additional focus. Case management data are compiled quarterly. They reveal the average level of goal achievement, the number of treatment sessions needed to achieve goals, and disposition of patients at discharge.

From November 1992 to April 1993, 79% of the center’s 33 patients with knee arthroplasty and 73% of the 37 patients with hip arthroplasty achieved expected treatment outcomes by the sixth POD.
Effect of Case Management Approach

In 1990, the average LOS was 8.75 days for patients with total knee replacements and 10.29 days for patients with total hip replacements. At present, the average LOS for patients with total knee replacements is 4.8 days; for patients with total hip replacements it is 5.7 days. Thus, LOS for total knee and total hip replacement has decreased by 3.95 days and 4.59 days respectively. Discharge disposition was as follows: 27 (82%) of 33 patients with knee arthroplasty went home, and 6 (18%) were transferred to an inpatient rehabilitation unit that is part of the medical facility. Of the 37 patients with hip arthroplasty, 24 (65%) were discharged to home and 13 (35%) went to the rehabilitation unit.

During the data review process, the interdisciplinary team was able to raise the expected level of achievement for all components for both hip and knee arthroplasties because patients achieved the original outcomes sooner than the sixth postoperative day. With the implementation of case management, patients are being expected to achieve higher levels of functional independence in shorter periods of time.

Summary

Interdisciplinary case management of patients on our orthopedic service decreased their average length of stay 3.95 days for patients with knee arthroplasty and 4.59 days for patients with hip arthroplasty. As part of this interdisciplinary case management approach, the occupational therapist assesses and focuses treatment on the patient’s level of independence in four functional tasks: activities of daily living, bed mobility, transfers (bed, chair, toilet, tub-shower, car), and adaptive equipment. The occupational therapy treatment goal for patients with hip replacement is for the patient to achieve a level of minimal assistance in the four activities. Patients with knee replacement are expected to complete the activities with standby assistance.

References


Appendix A
Rehabilitation Services—Orthopedic—Occupational Therapy Initial Evaluation/Discharge Summary for Hypothetical Patient

DeKalb Medical Center

1. Diagnosis/Surgery: Osteoarthritis, Status Post Left Total Hip Replacement
   Surgical Date: ______

2. O.T. Order/Physician: ADL Assessment/Transfers Dr. Jones
   Date: 5-3-93

3. Past Medical History: Patient has had increasing pain in left hip over last year

4. Vocation/Leisure: Retired

5. Status Prior to Admission: Independent in all transfers and ADL's

6. Home Status: Patient lives with husband in a 1 story home with no steps. Patient has a tub bench and grab rails in shower. Bathroom is approximately 20 feet from bedroom.

7. Precautions: Partial weight bearing left lower extremity - Standard hip precautions

FUNCTIONAL ASSESSMENT

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Assistive Devices:

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Appendix A (cont’d.)

8. Cognitive Alert and oriented times 3


11. Initial Endurance: Good Fair Poor Discharge Endurance: Good Fair Poor

12. Patient’s Discharge Plans: Patient plans to return home.

13. Joint Protection/Energy Conservation education needed: Yes No Completed: Yes No Why Not?

14. Patient and/or Family Concur with Treatment Plan: Yes No

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<td>X Patient will demonstrate correct safety skills during all transfers and ADL Tasks.</td>
<td>Educate patient/family on precautions and safety techniques.</td>
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<tr>
<td>X Decreased bed mobility.</td>
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<td>Educate patient/family on proper bed mobility techniques.</td>
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Goals Met: Yes No Why Not:

DISCHARGE PLAN: Patient discharged to home.

INITIAL EVALUATION DATE/TIME: 5-3-93

DISCHARGE SUMMARY DATE/TIME: 5-7-93

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## Appendix B
Rehabilitation Services—Orthopedic—Occupational Therapy Progress Note for Hypothetical Patient

### Key:
- **I** = Independent
- **D** = Dependent
- **N/T** = Not Tested
- **N/A** = Not Applicable
- **MinA** = Minimal Assistance
- **MaxA** = Maximal Assistance
- **ModA** = Moderate Assistance
- **PWB** = Partial Weight Bearing
- **NWB** = Non Weight Bearing
- **SBA** = Stand By Assistance
- **V/C** = Verbal Cues
- **WBAT** = Weight Bearing as Tolerated
- **V/Cinq** = Verbal Cues

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May 1994, Volume 48, Number 5
### Appendix C
Rehabilitation Services Case Management for Hypothetical Patient

**DeKalb Medical Center**

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Patient Discharged To: Home.

**KEY:**
- I = Independent
- D = Dependent
- N/T = Not Tested
- N/A = Not Applicable
- SBA- = Stand By Assistance
- MinA = Minimal Assistance
- ModA = Moderate Assistance
- MaxA = Maximal Assistance
- CG = Contact Guard
- OR = Surgical Day
- PWB = Partial Weight Bearing
- WBAT = Weight Bearing As Tolerated
- NWB = Non Weight Bearing

#### POST OPERATIVE DAYS

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