

COMPdata Monthly Monitor- Montana
August 2005
Hip and Knee Replacement

Introduction

New and emerging technologies, including drugs, devices, procedures, and tests, have changed patterns of care and the sites where care is provided. An examination of hospital data reveals that one major breakthrough, joint replacement surgery, has a low rate of surgical complications and improves function and quality of life for patients who have severe arthritis or have been injured in a fall^{1,2}. With the anticipated increase in the prevalence of osteoporosis³, the main risk factor that contributes to joint fracture, hospitals and other health care facilities will need to be prepared for a long term, upward trend in joint replacement surgery and post-surgery rehabilitation.

Hip and Knee Replacement Patients in Montana Hospitals

(Note: All of the following inpatient statistics exclude newborns and obstetric cases – Major Diagnostic Categories 14 and 15.)

Table 1 - Total Montana Inpatients
Excludes MDCs 14&15

	2001	2004	% Change 2001 to 2004
	Discharges	Discharges	
Total Montana Patients	81,510	81,839	0.4

Table 2 - All Hip and Knee Replacements- Montana 2004
Excludes MDCs 14&15

	2001	2004	% Change 2001 to 2004
All Hip Replacements	1,420	1,617	13.9
81.51 Total Hip Replacement	824	1,008	22.3
81.52 Partial Hip Replacement	401	430	7.2
81.53 Revision of Hip Replacement	195	179	-8.7
All Knee Replacements	1,404	2,007	42.9
81.54 Total Knee Replacement	1,293	1,842	42.3
81.55 Revision of Knee Replacement	111	165	48.6

- Reflecting national trends⁴, Table 2 data shows that the overall number of hip replacements increased in Montana from 2001 to 2004. This increase is largely driven by total hip replacements, which is typically performed as an elective surgery after other therapies and treatments for chronic arthritis have been unsuccessful. For partial hip replacements, which most often result from acute injury due to a fall, there has been a slower increase in the number of procedures performed.

- The increase in knee replacements from 2001 to 2004 has been much more dramatic, and this follows national trends as well. Nationally, in the 1990's, the number of knee replacement surgeries increased by more than 40%, and that upward trend is continuing unabated in the current decade.

Table 3 - Top Three Total Hip Replacement Diagnoses- Montana 2004

Excludes MDCs 14&15

Principal Diagnosis	81.51 Total Hip Replacement	% of Total Hip Replacements
715.35 Pelvic Osteoarthritis- localized primary or secondary	485	48.1
715.95 Pelvic Osteoarthritis- unspecified	345	34.2
715.15 Localized Primary OA- Pelvis	48	4.8
Other Diagnoses	130	13.0
Total	1,008	100.0

Table 4- Top Three Partial Hip Replacement Diagnoses- Montana 2004

Excludes MDCs 14&15

Principal Diagnosis	81.52 Partial Hip Replacement	% of Partial Hip Replacements
820.8 Fracture of unspecified part of neck of femur	147	34.2
820.09 Transcervical fracture, closed, other	143	33.3
820.00 Closed Fx, Fem Intracap NOS	33	7.7
Other	107	24.9
Total	430	100.0

- Tables 3 and 4 illustrate the top three ICD-9 diagnoses for total hip replacement and partial hip replacement. A review of the data shows that most (over 75%) of total hip replacement patients have a primary diagnosis of osteoarthritis (arthritis). For partial hip replacement patients, however, the surgery is often needed as the result of a hip fracture.

Table 5 - Top Three Total Knee Replacement Diagnoses - Montana 2004

Excludes MDCs 14&15

Principal Diagnosis	81.54 Total Knee Replacement	% of Total Knee Replacements
715.36 Localized Osteoarthritis NOS- Lower Leg	970	52.7
715.96 Osteoarthritis NOS- Lower Leg	692	37.6
715.16 Localized Primary Osteoarthritis- Lower Leg	95	5.2
Other Diagnoses	85	4.5
Total	1,842	100.0

- An examination of Table 5 shows that knee replacements are similar to total hip replacements, with over 95% having one of three osteoarthritis (arthritis) diagnoses.

Table 6 – Patients with Hip Replacement Surgery
2004 Inpatient Discharges – (Excludes MDCs 14&15)

Table 6 – Part I Admission and Discharge Patterns		Total Hip Replacement	Total Knee Replacement	Partial Hip Replacement
		Total N = 1008 (%)	Total N = (%)	Total N = (%)
Admission Source	Emergency Room	2.0	0.2	69.5
	Physician Referral	95.5	97.6	20.9
	Other	2.5	2.2	9.6
Admission Type	Emergency	2.0	0.3	49.8
	Urgent	10.2	9.5	35.8
	Elective	87.8	90.2	13.5
	Other	0.0	0.0	0.9
Discharge Status	Routine to Home	54.9	58.2	7.9
	To Skilled Nursing	20.1	19.6	61.4
	To Home Health	13.5	13.5	3.0
	Transfer to Swing Bed	6.0	3.9	10.5
	To Rehab Facility	4.4	3.6	11.6
	Other	1.1	1.2	5.6
Hospital Location	Urban	53.9	57.2	64.2
	Rural	46.1	42.8	35.8

Table 6 – Part II Patient Characteristics		Total Hip Replacement	Total Knee Replacement	Partial Hip Replacement
		Total N = (%)	Total N = (%)	Total N = (%)
Gender	Female	57.8	61.0	69.5
	Male	42.2	39.0	30.5
Primary Payer	Medicare	58.3	58.4	82.1
	Commercial Ins	22.4	23.8	8.4
	Medicaid	1.1	1.1	0.9
	Other	18.2	16.7	8.6
Age	Less Than 45	4.1	1.3	0.7
	45 to 64 Years	31.1	33.2	8.4
	65 to 84 Years	58.5	62.0	50.9
	85+ Years	6.3	3.5	40.0
	Average Age	68.0	68.7	80.8
Avg Length of Stay		3.8	3.6	6.1
Avg Total Charge		\$24,906	\$23,312	\$23,643

Table 6 provides COMPdata statistics that explore in more detail the characteristics of those patients who were discharged in 2004 after total or partial hip replacement surgery as the principal procedure. Some highlights found in Table 6 are:

- A review of the admission source data for Montana discharges shows that most partial hip replacement patients were admitted through the emergency room, which is not surprising since most partial hip replacements are performed to repair trauma. Total hip replacements are performed in response to a chronic arthritic condition and most are generated by a physician referral.
- Note that partial hip replacement patients are older (average age 80.8 years) and require more care after discharge. Over half require follow-up care at a skilled nursing facility (SNF), which represents more than three times the rate at which total hip or total knee replacement patients require a SNF.
- While females overall are getting hip replacement surgery at a higher rate than males, the difference is more pronounced with partial hip replacements

MONTANA STATISTICS FROM COMPdata

All of the Montana patient statistics were derived from MHA's COMPdata. We encourage you to use COMPdata to examine your hospital community area(s) regarding hip and knee replacement patients so that you might better understand the impact of these patients on your care and treatment of your patient population and the resources needed to diagnose, treat, and manage this patient population.

The COMPdata graphing feature can be utilized to examine in a pictorial fashion trends in your state and hospital community area(s) regarding hip and knee replacement. Click here to obtain a graph that illustrates the frequency distribution of hip and knee procedures from 2001-2004: <http://www.ihatoday.org/compdata/mthipkneegraph.pdf>.

ADDITIONAL INFORMATION

If you would like to develop the COMPdata reports that will provide similar statistics for your hospital or community, a training tool is available to guide you through the process. The training tool may be requested by e-mailing compdata@ihastaff.org. For additional assistance on using the COMPdata system, contact the COMPdata Hotline at compdata@ihastaff.org.

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APPENDIX

- Most partial hip replacements are the result of hip trauma and/or low bone density, or osteoporosis. It is estimated that more than 10 million Americans over age 50 have osteoporosis including approximately 7.8 million women and 2.3 million men.³
- Most joint replacements are the result of osteoarthritis, a degenerative joint disease, which affects over 20 million Americans.⁴
- The US spends \$23 billion per year in hospital care for hip and knee replacement patients (2002 data).⁴

- Hip fracture incidence increases four-fold in women from age 50 to age 65. ⁵
- The lifetime risk of hip fracture at age 50 is estimated at 13.9% for women and 4.6% for men. ⁶

RESOURCES FOR ADDITIONAL INFORMATION

For Hospitals

The American Academy of Orthopedic Surgeons (AAOS) provides extensive information for orthopedic professionals, including the AAOS Bulletin and the AAOS Report. Additionally, information on current health policy issues such as changes in 2005 Medicare reimbursement, are included. Their web site is at www.aaos.org.

The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) is a division of the National Institutes of Health that supports research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases. Their web site at <http://www.niams.nih.gov> includes information about funding opportunities, grant applications, and clinical research in bone and joint health.

Research opportunities and on-line registration for the Journal of Arthroplasty are among the resources for health professionals at the National Association of Hip and Knee Surgeons web site. The link is <http://www.aahks.org>.

For Patients and the Community

The American Academy of Orthopedic Surgeons provides a search tool for locating orthopedic surgeons as well as current research and media reports on joint disease and treatment options. Go to www.aaos.org for more information.

Established in 1991, The National Association of Hip and Knee Surgeons has a web site at <http://www.aahks.org> that includes a link to a free web broadcast of "Total Joint Replacement: A Patient's Perspective", a 53-minute documentary that follows the lives of four patients as they make the decision to have hip or knee replacement surgery.

The Arthritis Foundation web site is an excellent source of the latest information on this debilitating condition. Included on the site are questions to ask a doctor when one may be a candidate for joint replacement surgery, the types of artificial joints currently available, and a guide to post-surgery rehabilitation. The site can be found at www.arthritis.org. Click "Joint Surgery Center" on the left bar of the "Resources" page.

The National Osteoporosis Foundation has a web site at www.nof.org that provides the latest information to prevent bone density loss and promote bone health. Included on the site is a link to The 2004 Surgeon General's Report on Bone Health and Osteoporosis. You can go to the report directly at www.surgeongeneral.gov.

REFERENCES

- ¹ Kane RL, Saleh KJ, Wilt TJ, Bershady B, Cross WW III, MacDonald RM, Rutks I. Total Knee Replacement. Evidence Report/Technology Assessment No. 86 (Prepared by the Minnesota Evidence-based Practice Center, Minneapolis, MN). AHRQ Publication No. 04-E006-2. Rockville, MD: Agency for Healthcare Research and Quality. December 2003. <http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=hstat1a.chapter.16930> .
- ² Questions and Answers About Hip Replacement, National Institute of Arthritis and Musculoskeletal and Skin Diseases, NIH Publication No. 01-4907, January, 2001
- ³ America's Bone Health, National Osteoporosis Foundation, 2002. <http://www.nof.org/advocacy/prevalence/>
- ⁴ National Hospital Discharge Survey, U.S. Department of Health and Human Services; Centers for Disease Control and Prevention; National Center for Health Statistics 2002.
- ⁵ *Osteoporosis in Postmenopausal Women: Diagnosis and Monitoring*. Summary, Evidence Report/Technology Assessment: Number 28. AHRQ Publication Number 01-E031, February 2001. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/clinic/epcs/osteosum.htm>
- ⁶ Oden, A; Dawson, A; Dere, W; Johnell, O; Jonnson, B; Kanis, JA;. Lifetime risk of hip fractures is underestimated. *Osteoporosis Int* 1998; 8; 599-603, table 3.