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"Best of the AAHKS 2016 Fall Meeting"

John C Clohisy, MD
Daniel C. and Betty B. Viehmann Distinguished Professor of Orthopaedic Surgery
Chief Adult Reconstruction and Hip Preservation

2016 AAHKS Annual Meeting Program Chair

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“Best of the AAHKS 2016 Fall Meeting”

William P. Barret, MD

Stephen T. Duncan, MD

Joseph T. Moskal, MD

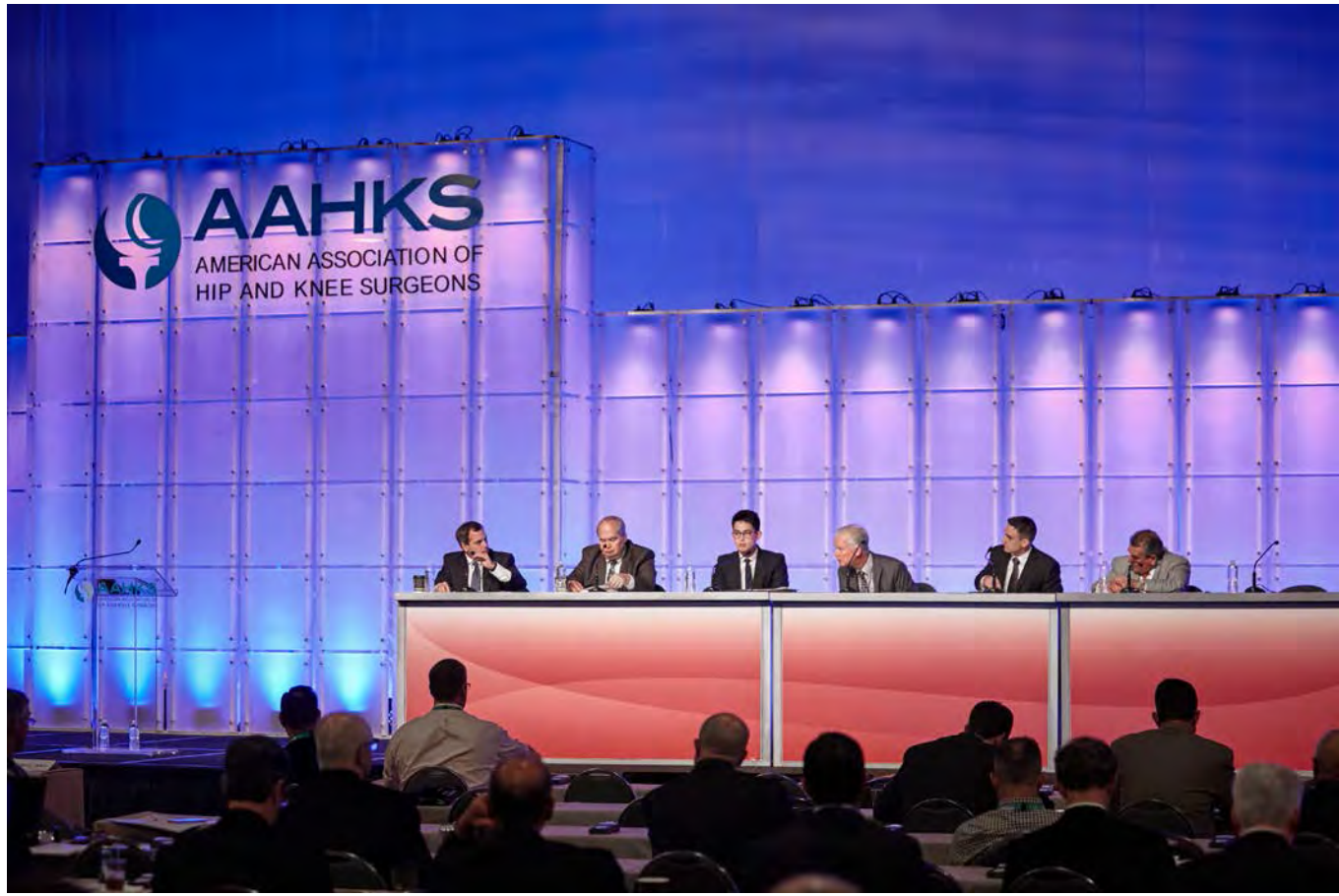
Brian S. Parsley, MD

Greg G. Polkowski, MD

2016 AAHKS Annual Meeting

A Year of Accomplishment

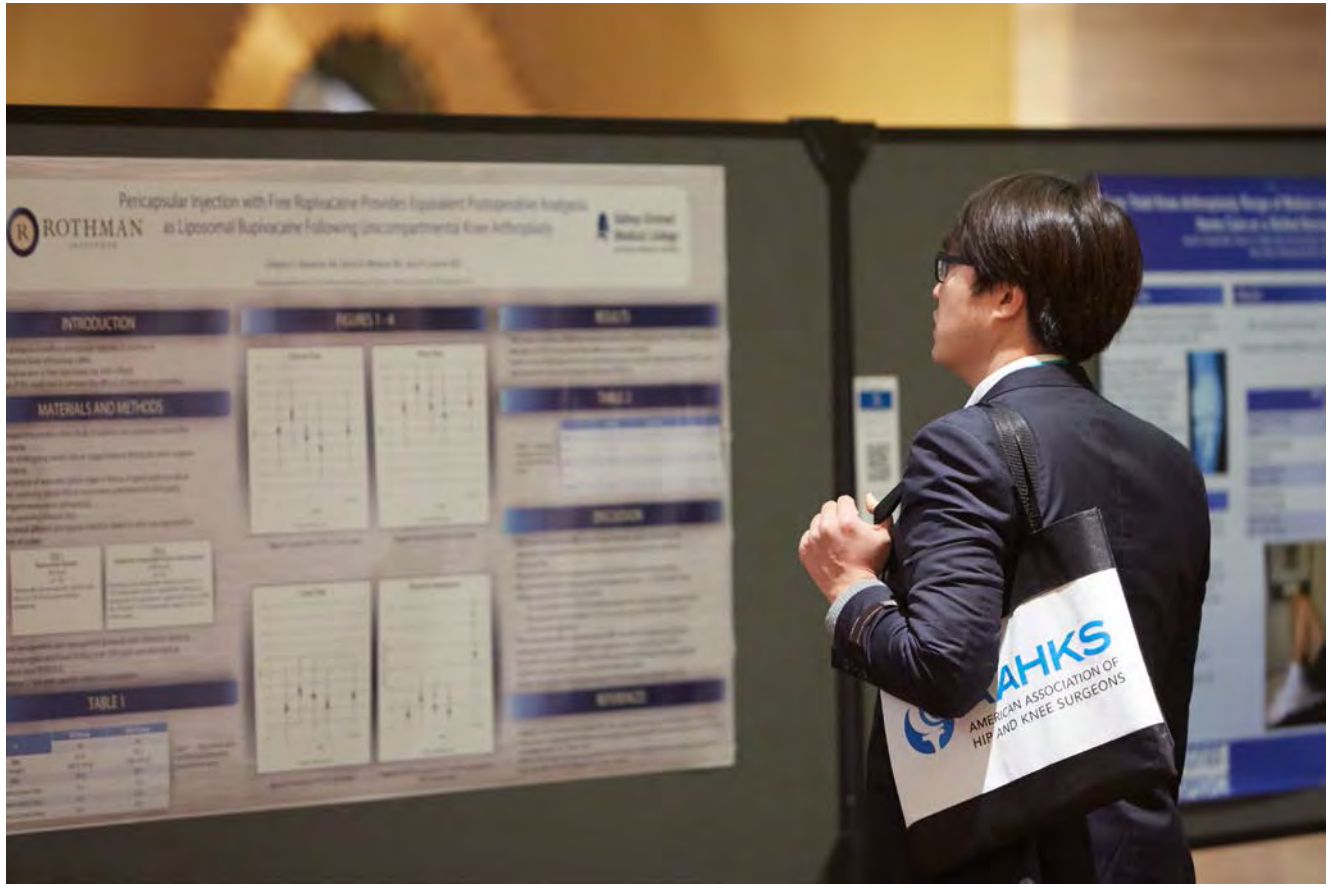
- 26th Anniversary
- CME accreditation
- 15%+ growth in membership
- *Arthroplasty Today* accepted for indexing in PubMed
- AAHKS donated 1.5 million to Arthroplasty Education and Research



2016 AAHKS Annual Meeting

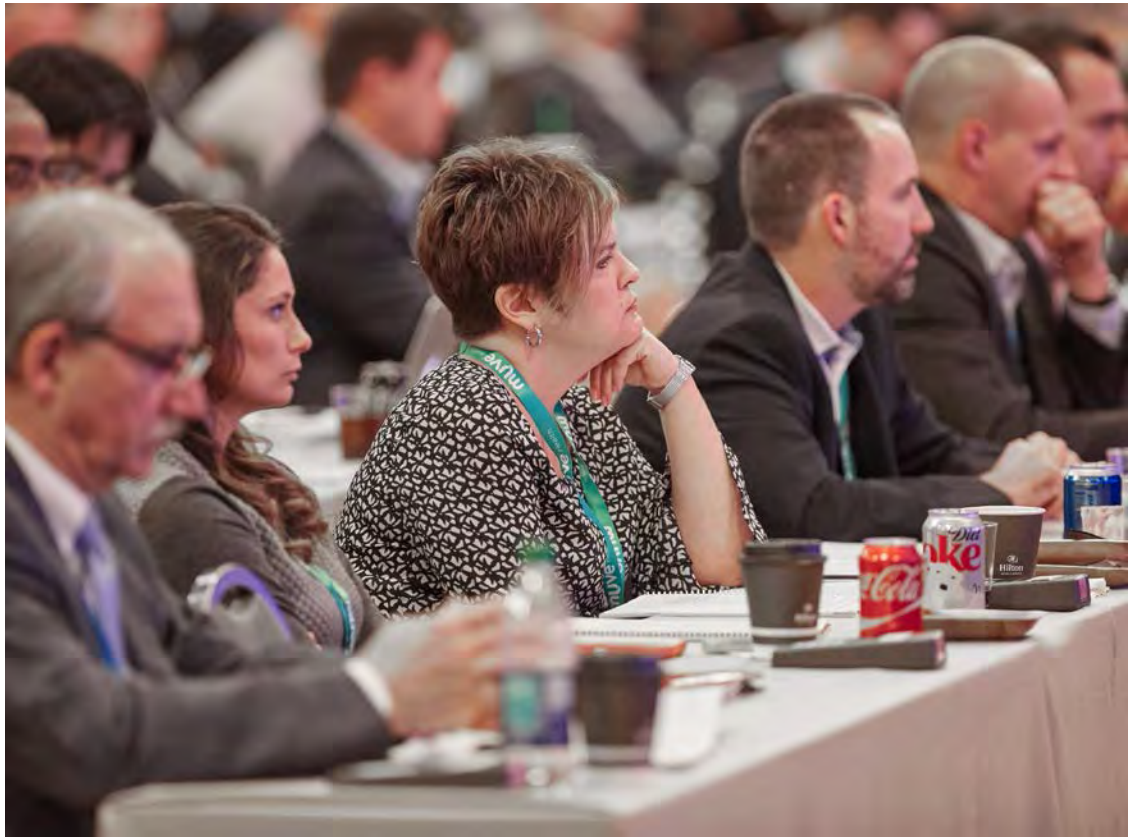
A Year of Accomplishment

- 1380 abstract submissions (record high)
- 59 papers (4%), 200 posters + 10 international
- 40 symposium submissions (8 selected)
- record attendance (2802 total)
- 400 more than 2015



Pre-Meeting Courses

- 8th Annual Residents Course
  - Matt Austin and Greg Polkowski
- 6th Annual Team Member Course
  - David Dalury and Jason Hurst
- 2nd Annual "The Business of Total Joint Replacement, Surviving and Thriving"
  - Mark Froimson and Jay Lieberman
- Industry Symposia
  - 11 total



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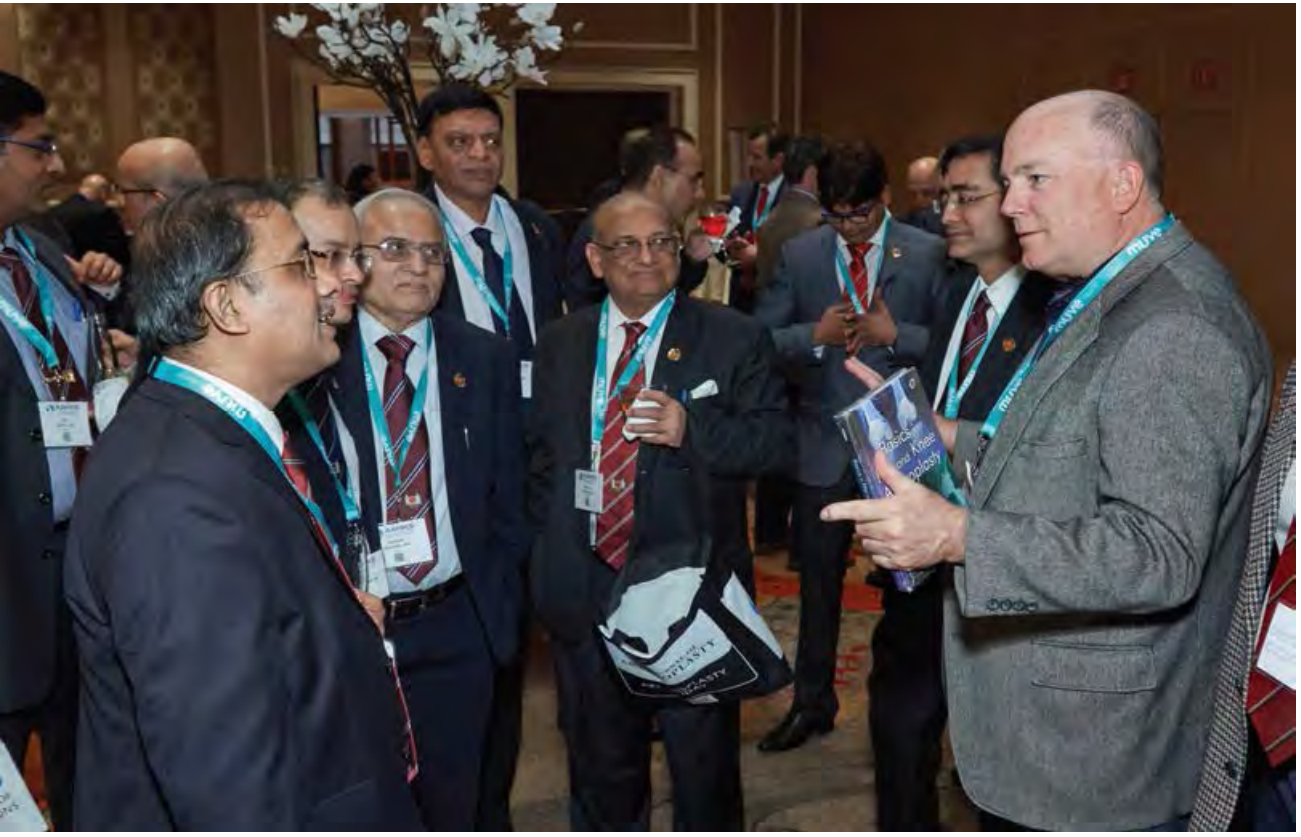
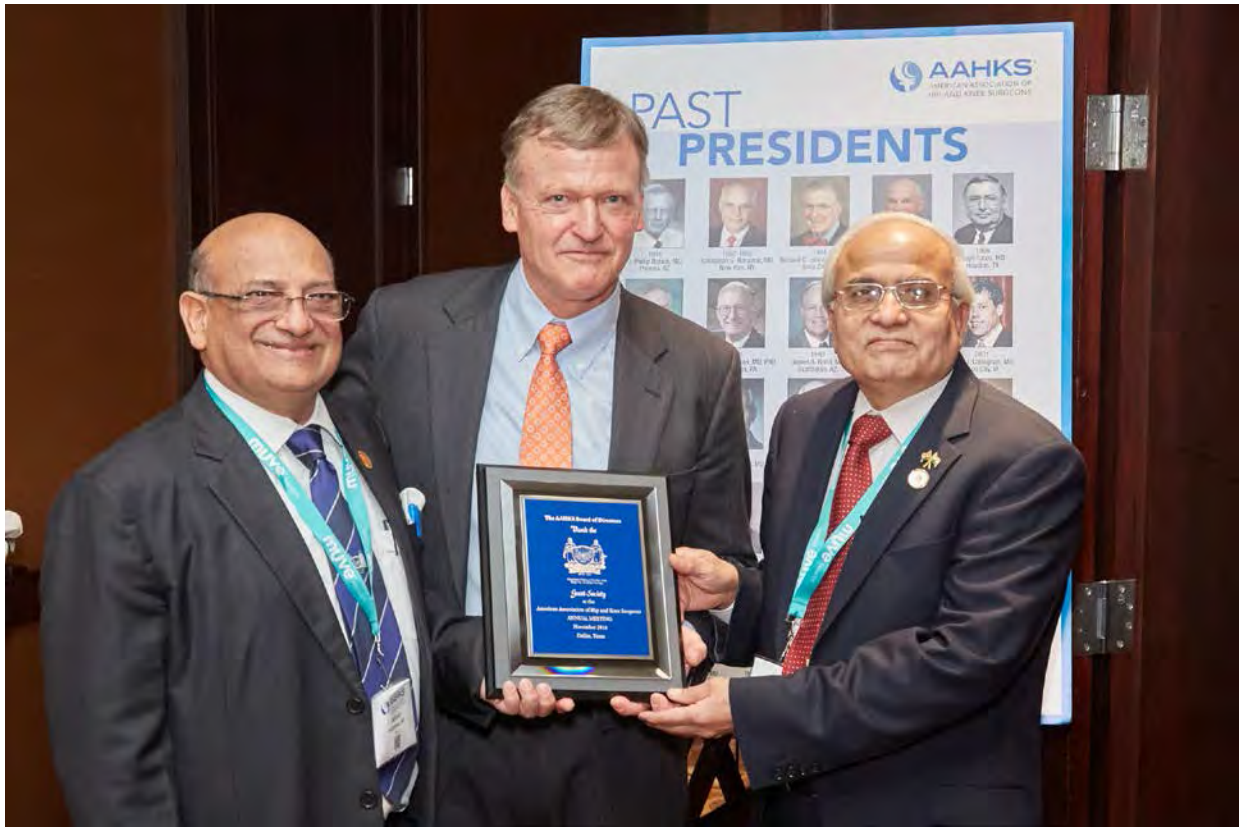
Guest Societies

– Indian Society of Hip & Knee Surgeons

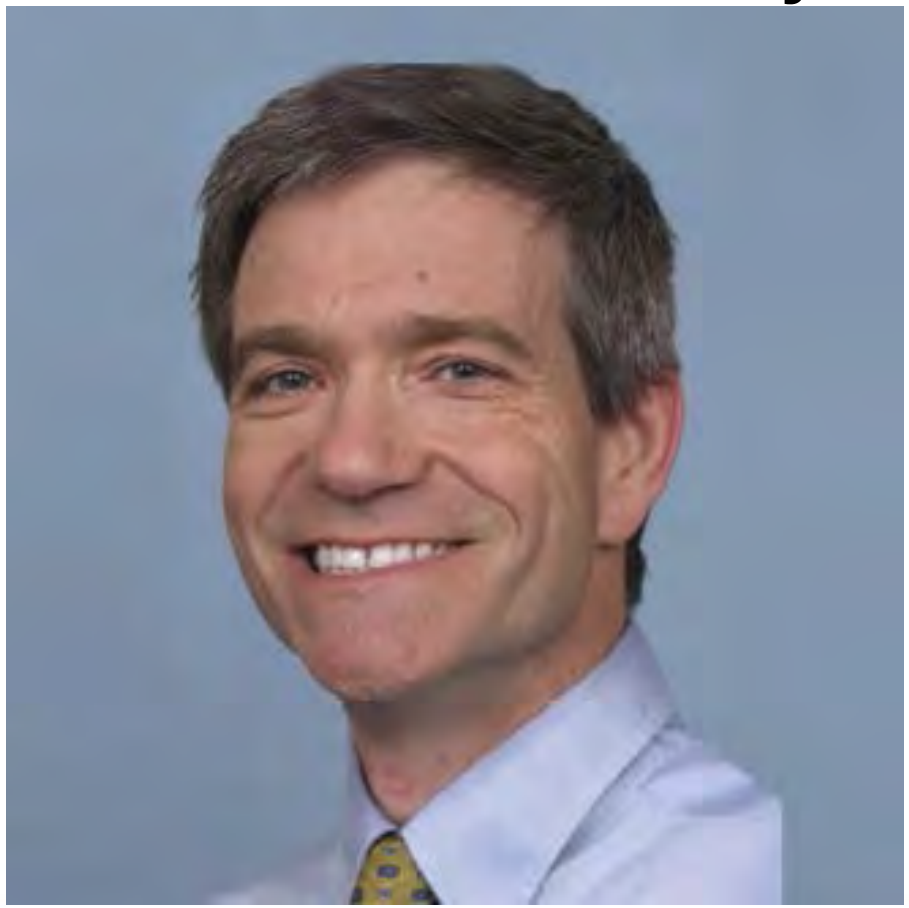
– European Knee Society





Recognition

AAHKS Presidential Award
Dr. Brian J McGrory



AAHKS Humanitarian Award Recipient
Dr. Brian Parsley

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2016 Fall Meeting Symposia

- Hip Arthroplasty-”Solutions from across the pond”
- DDH Concepts and Treatment Innovations
- Alternative Payment and Value Creation
- Multimodal Pain Management
- Practice Norms
- Periprosthetic Joint Infection
- Challenges in Knee Revision
- TKA and Soft Tissues

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James A. Rand Award Paper

Administrative Claims vs. Surgical Registry: Data Source and Outcome Disparities in Total Joint Arthroplasty

Joseph T. Patterson, MD

San Francisco, CA

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Administrative Claims vs. Surgical Registry: Data Source and Outcome Disparities in Total Joint Arthroplasty

Joseph T Patterson, MD, David Sing, BS, Erik Hansen, MD, Bobby Tay, MD, Alan Zhang, MD

Retrospective THA and TKA cohort 2007-2001:administrative claims from Medicare and UHC (88,309 THAs and 169,283 TKAs) compared to age matched cohort from (ACS-NSQIP) prospective registry

Significant difference in preoperative cardiopulmonary and diabetic comorbidities ($p<0.001$)

Smoking, alcohol, BMI underreported in administrative claims ($p<0.001$)

Rates of infection and complications (wound, TED, neurologic) significantly greater in administrative claims cohorts ($p<0.001$)

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Administrative Claims vs. Surgical Registry: Data Source and Outcome Disparities in Total Joint Arthroplasty

Joseph T Patterson MD, David Sing BS, Erik Hansen MD, Bobby Tay MD, Alan Zhang MD

Conclusion

Significant differences in prevalence of comorbidities and incidence of complications in the Medicare/UHC administrative claims data and ACS-NSQIP

Impact

These disparities have implications in the design and interpretation of investigations of TJA outcomes that rely on insurance claims data. (20% of paper presentations at 2016 meeting)

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Lawrence D Dorr Award

Differences in Post-Operative Outcomes between Total Hip Arthroplasty for Fracture vs Osteoarthritis

David W Fits, MD

Chicago, IL

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Differences in Post-Operative Outcomes between Total Hip Arthroplasty for Fracture vs Osteoarthritis

Charles Du Qin, BS, Mia Helfrich, BS, David Fitz, MD, Kevin Hardt, MD, Matthew Beal, MD

National Surgical Quality Improvement Program (NSQIP) data from 2011-2014 identified patients undergoing THA (CPT) code 27130

Propensity score matched 1:5 for THA for OA vs THA for fracture

	THA for OA	THA for Fracture	OR, Range	P Value
CMS reported complications	4.0%	10.7%	2.67 (2.17-3.28)	<0.001
Non-home bound discharge	39.8%	64.7%	1.73 (1.39-2.15)	<0.001
Readmission	4.7%	8.0%	2.78 (2.46-3.12)	<0.001
Post-surgical length of stay	3.2	4.4		<0.001

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Differences in Post-Operative Outcomes between Total Hip Arthroplasty for Fracture vs Osteoarthritis

Charles Du Qin, BS, Mia Helfrich, BS, David Fitz, MD, Kevin Hardt, MD, Matthew Beal, MD

Conclusion

Compared to elective THA for osteoarthritis, THA for hip fracture is associated with greater rates of post-operative morbidity.

Impact

Findings support recent advocacy for the exclusion of THA for fracture from THA bundled pricing and public reporting of outcomes.

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AAHKS Clinical Award

What are the Costs of Knee Osteoarthritis in the Year Prior to Total Knee Arthroplasty?

Nicholas Bedard, MD

Iowa City, IA

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What are the Costs of Knee Osteoarthritis in the Year Prior to Total Knee Arthroplasty?

Nicholas Bedard, MD, Blake Dowdle, MD, Christopher Anthony, MD, David DeMik, PharmD, Michael HcHugh BS, Kevin Bozic, MD, MBA, John Callaghan, MD

Determine costs of non-arthroplasty treatments for knee OA one year prior to primary TKA

Stratify costs using CPG recommended status

Humana Inc. administrative data set for 2007-2015 (86,073 TKAs)

hyaluronic acid, corticosteroid injection, physical therapy braces and orthotics, opioids and NSAIs, tramadol

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What are the Costs of Knee Osteoarthritis in the Year Prior to Total Knee Arthroplasty?

Nicholas Bedard, MD, Blake Dowdle, MD, Christopher Anthony, MD, David DeMik, PharmD, Michael HcHugh BS, Kevin Bozic, MD, MBA, John Callaghan, MD

Results

$78,392,953- total cost knee OA year prior to TKA

$43,582,648- cost of non-inpatient treatments

Treatments studied (8) made up 57.6% of non-inpatient costs

Only 3 of the 8 are recommended by AAOS (11.1% of cost)

46.5% of cost for treatments not recommended by AAOS

30% of these costs HA injections (CPG “strongly against”)

What are the Costs of Knee Osteoarthritis in the Year Prior to Total Knee Arthroplasty?

Nicholas Bedard, MD, Blake Dowdle, MD, Christopher Anthony, MD, David DeMik, PharmD, Michael HcHugh BS, Kevin Bozic, MD, MBA, John Callaghan, MD

Impact

If only interventions recommend by the CPG are utilized, the cost associated with outpatient management of knee OA could be decreased by 90%.

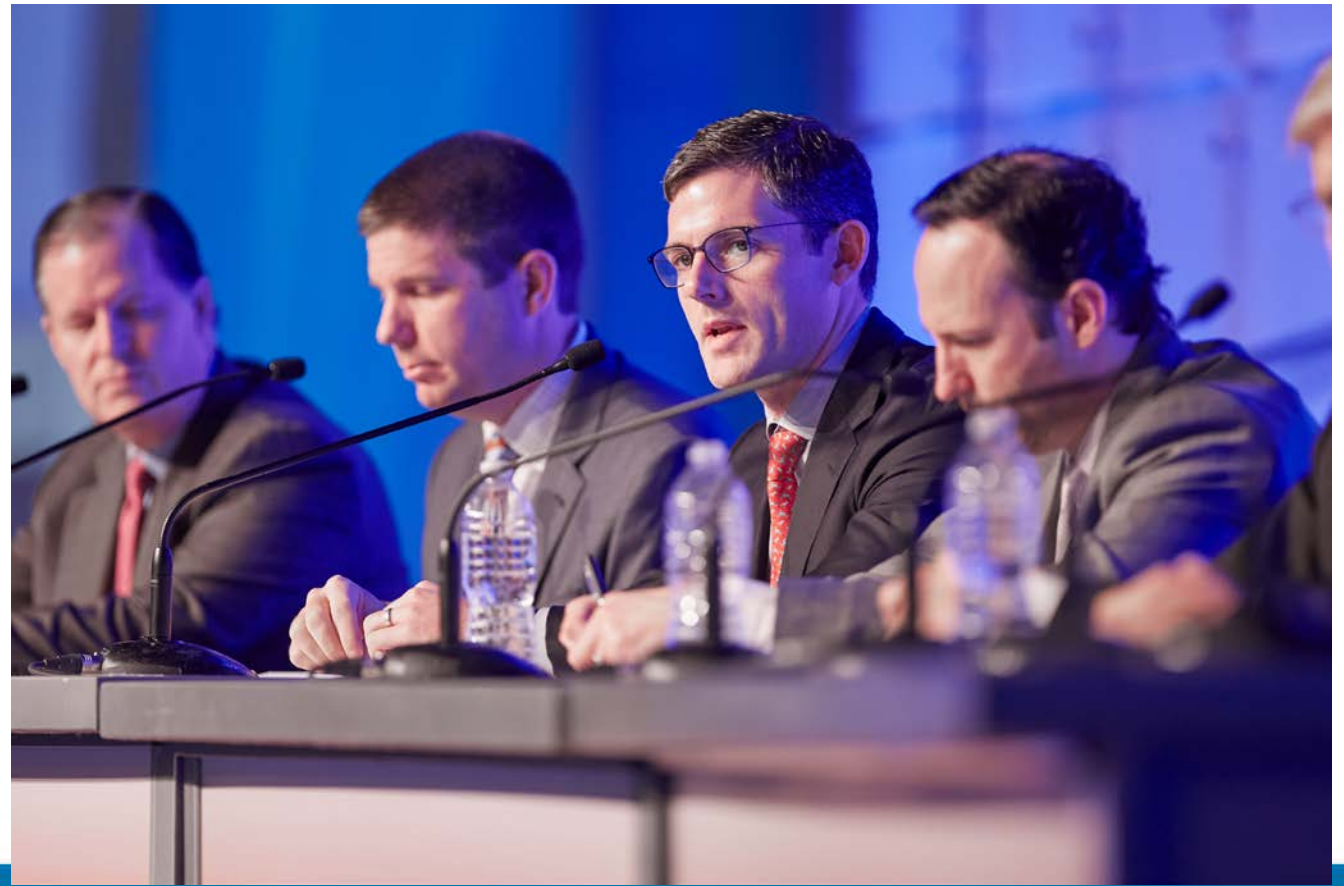
Scientific Sessions (9)

7 RCTs (11%)

13 administrative/national database studies

Predicting patient outcomes

Optimizing modifiable risk factors



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Scientific Session Highlights – Knee

A Large 3 Arm RCT of Peripheral Nerve Blocks, Periarticular Ropivacaine or Liposomal Bupivacaine in Total Knee Arthroplasty

Mathew Abdel, MD, Adam Amundson, MD, Rebecca Johnson, MD, Michael Kralovec, MD, Michael Taunton, MD, James Hebl, MD, Jason Panchamia, DO, Carlos Mantilla, MD, PhD, Sandra Kopp, MD, Mark Pagnano MD

165 consecutive adults randomized to one of 3 study arms

1) **Peripheral nerve block (PNB)**
2) **Periarticular injection (PAI) with ropivacaine (PAI-Ropi)**
3) **PAI with liposomal bupivacaine (PAI-Lipo)**

All 3 modalities provided good pain relief

PNB group consistently had less pain and opioid use

At no time interval did the PAI-Lipo group have less pain or opioid use than the PAI-Ropi group

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Primary TKA

Total Knee Arthroplasty in the 21st Century: Why Do They Fail? A Fifteen-Year Analysis of 11,135 Knees

Simon Young, FRACS, Chuan Kong Koh, MBChB, Saiprasad Ravi, MBChB, Mark Zhu, MBChB, Irene Zeng, PhD, Kelly Vince, MD

11,134 primary TKAs over 15 years at 3 tertiary hospitals

- **357 failures were identified**
- **Cumulative probability of failure at 15 years 6.1%**

Most common cause of failure by 10 years was periprosthetic joint infection (2.5x more than aseptic loosening)

Aseptic loosening highest annual incidence of failure after 10 years (0.3%)

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Primary THA

Tranexamic Acid was Safe in THA & TKA Patients with a History of VTE: A Matched Outcome Trial

Orlando Sabbag, MD, Matthew Abdel, MD, Adam Amundson, MD, Dirk Larson, MS, Mark Pagnano, MD

Matched retrospective study of 1262 patients with history of VTE undergoing THA or TKA

Intravenous TXA given to 258 (16%), not given in 1362 (84%)

VTE rates evaluated at 90 days

2:1 match of patients with recurrent VTE to patients without

Matched outcome analysis showed IV TXA did not increase risk of recurrent VTE in patients with previous history (OR 0.9; p=0.9)

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Infection

Cost Effectiveness of Staphylococcus Aureus Decolonization Strategies in High-Risk Arthroplasty Patients

Andy Miller, MD, Devin Williams, MPH, Michael Henry, MD, Geoffrey Westrich, MD, Hassan Ghomrawi, PhD, MPH

Decision analytical model for PJI risk

- 1, 2 or 4 swab screen vs no screen/no tx or universal decol

Universal decol resulted in the largest decrease in PJIs, followed by 4 swab, 2 swab and 1 swab strategies

Universal decol and nasal swab only were more cost effective

Nasal swab only most cost effective from patient/societal perspective

Universal decolonization was the dominant treatment from the hospital perspective

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Revision TKA

Porous-Coated Metaphyseal Sleeves for Severe Femoral and Tibial Bone Loss in Revision Total Knee Arthroplasty

Tyler Watters, MD, J Ryan Martin, MD, Daniel Levy, BS, Charlie Yang, MD,
Raymond Kim, MD, Douglas Dennis, MD

116 revision TKAs with 152 sleeves (111 tibial, 41 femoral)

- **mean follow-up 5.3 years (minimum 2 years)**
- **3 intraoperative fractures (1.9%), 19 knees (16.4%) required reop**
- **1 sleeve showed failed integration with subsidence (not revised)**
- **2 sleeves (1.3%) removed for recurrent infection**

Cohort demonstrates utility of porous metaphyseal sleeves with low rate of intraoperative complications and excellent mid-term fixation

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Complications

Fewer Complications Following Revision Hip and Knee Arthroplasty in Patients with Normal Vitamin D Levels

Alexander Chiaramonti, MD, William Barfield, PhD, Patricia Kirkland, BS, Harry Demos, MD, Jacob Drew, MD

- **Retrospective review of 126 revision TJAs (2010-2014)**
  - **Independent variables age, gender, BMI, smoking status, Charlson comorbidity index (CCI), vitamin D level**
- **Lower vitamin D levels found in patient revised for infection vs aseptic indications (p=0.016)**
- **Controlling for PJI, patients with low vitamin D were more likely to have complication (p<0.01), reoperation (p<0.01), multiple complications (p<0.01), infectious complications (p<0.01)**

Non-arthroplasty

Preoperative Symptoms in FAI are More Related to Mental Health Scores than the Condition of the Local Tissue

Cale Jacobs, PhD, Jeremy Burnham, MD, Kate Jochimsen, MS, Emily Hunt, MS, Chaitu Malempai, MD, Domingo Molina, IV, MD, David Hamiltin, MD, John Abt, ATC, PhD, Christian Lattermann, MD, Stephen Duncan, MD

Assessed correlation between demographics, intraop findings, mental health factors (VR-12 MCS) with HOOS sub-scales

Pathology or demographics did not correlate with HOOS

MCS correlated with HOOS Symptom (r=0.37), Pain (r=0.49), ADL (r=0.53), Sport (r=0.40) and QOL (r=0.35)

Severity of preoperative FAI symptoms was more related to mental health status than condition of tissues found at surgery

Primary THA

A Large Randomized Clinical Trial of Direct Anterior and Mini-Posterior THA: Which Provides Faster Functional Recovery?

Michael Taunton MD, R Trousdale MD, R Sierra MD, K Kaufman MD, M Pagnano MD

100 patients randomized to DAA or mini posterior THA

Early milestones and activity monitoring

	DAA (time days)	MPA (time days)	P Vale
Discontinue walker	10	14.5	0.01
Discontinue gait aids	18	23	0.04
Discontinue opioids	9	14	0.05
Ascend stairs	5	10	<0.01
Walk 6 blocks	20.5	26	0.05

DAA patients also more steps (p=0.01) and active a greater portion of the day (p=0.01)

Both techniques with excellent outcomes, DAA associated with faster early milestones

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Health Policy

Prolonged Conservative Management in Total Joint Arthroplasty:Harming the Patient?

Carlos Lavernia, MD, Anneliese Heiner, PhD, Michael Cronin, DO, Mark Rossi, PhD

98 patients undergoing primary THA or TKA
stratified with preoperative WOMAC function score ≥ 51 and <51
average 11 year follow-up (range, 5-21) WOMAC, SF36, QWB7
SF-36 physical function 43.5 vs 54.6, p=0.048
bodily pain 56.9 vs 72.4, p=0.006
social functioning 64.4 vs 80.0, p=0.006

Patients with lower preoperative function scores continued to have greater functional impairment when compared to patients with higher preoperative function

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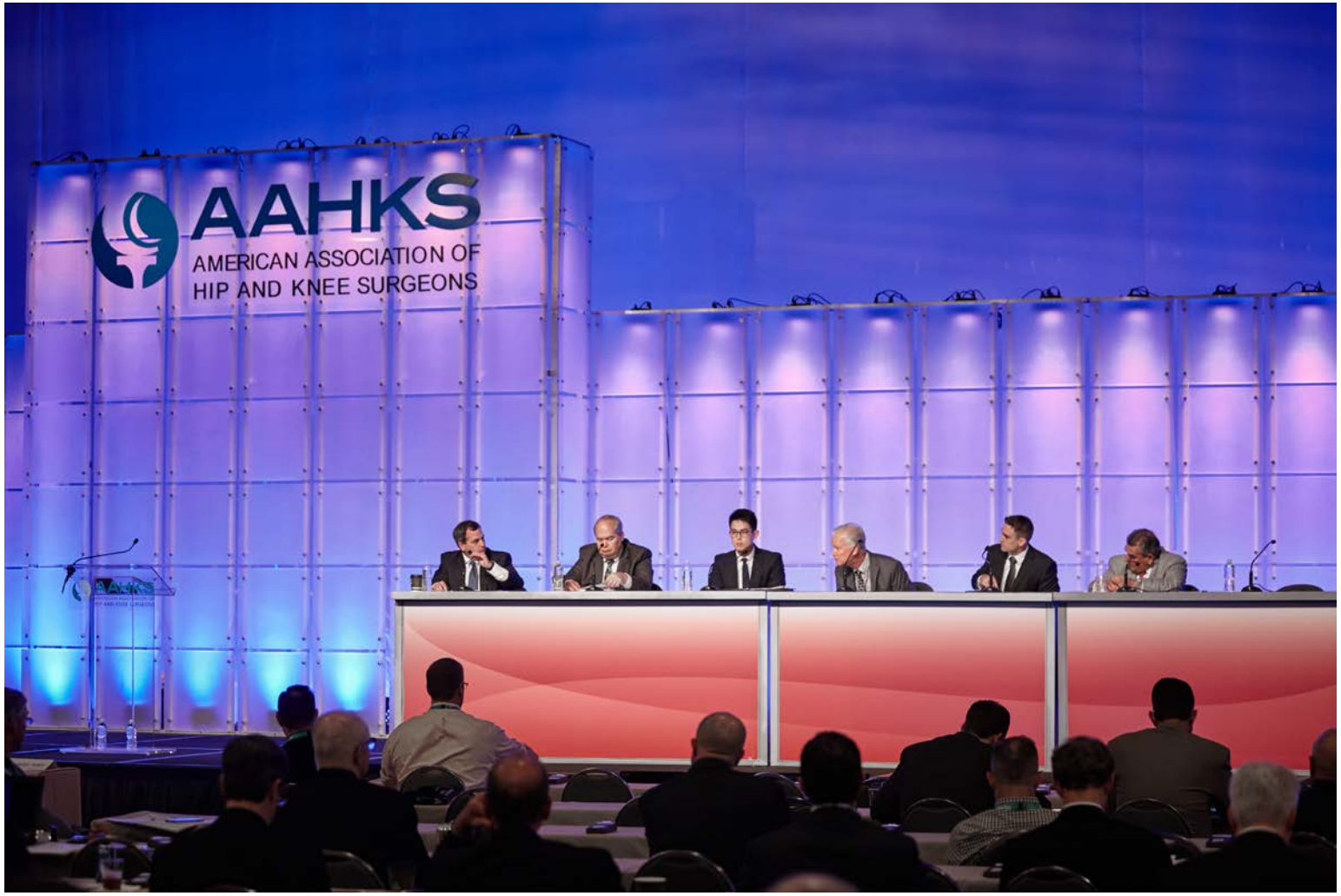

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Thank you