Collaborative Industry Partnerships to Help Drive Outcomes, Savings and Growth at your ASC

Josh Christensen VP, ASC Initiatives

Smith&nephew

Supporting healthcare professionals for over 150 years

June 5th, 2018



Presenters



Geoffrey S. Van Thiel, MD, MBA Orthopedic Surgery, Sports Medicine, OrthoIllinois Assistant Professor, Rush University Medical Center Team Physician, US National Soccer Teams Team Physician, Chicago Blackhawks Medical Network, Ice Hogs

Mark E. Gittins, DO, FAOAO OrthoNeuro Clinical Instructor and Staff Physician, Ohio University College of Osteopathic Medicine Orthopedic Residency Program



Michael Ast, MD Assistant Professor, Orthopaedic Surgery Adult Reconstruction and Joint Replacement Hospital for Special Surgery



ONE Smith & Nephew ASC Program

Si smith&nephew Healthcare Systems

One trusted source, many unique solutions for your Ambulatory Surgical Center

Dedicated ASC programs

- Outcomes and satisfaction
- Savings and efficiencies
- Growth and development

Joint Replacement

Robotics | Sports Medicine

ine | Trauma

Trauma and Extremities

ENT

Incision Management

Why's and How's



Geoffrey S. Van Thiel, MD/MBA Ortholllinois

Associate Professor– Rush University Medical Center Team Physician – US National Soccer Team Physician – Chicago Blackhawks Medical Network

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"Understand the why's & how's of consolidation across service lines to improve efficiencies, streamline operations and reduce cost."







- Perhaps the most important question in this process
 - Clarity of thought
 - Clarity in communication
 - Clarity in purpose
 - Everyone will have different ideas.....





Our Why



- The catalyst
 - Outpatient joint replacement
- You don't know what you don't know......
 - 3 different implant companies began to overwhelm our ability to process instruments
 - Surgery centers are different than hospitals
- Stimulated a discussion on consolidation
 - If arthroplasty surgeons needed to conform, everyone should too



How?

- Started an RFP
 - This was much more difficult to do than anticipated
- Went into the process believing that we would be able to compare based on individual cost of implants
 - I.e. we could pick the lowest priced company
- Quickly found out that it is difficult to compare apples to apples
 - Also realized that deal structure was important too.
 - Support, equipment, rebates, etc



How?



- Realization that our RFP was not specific
 - AND the companies had not done this before either
 - Every proposal was different
- Had to bring in unique smaller companies to serve needs not met by larger company
 - Large companies reached out to put their own comprehensive proposal together





How?



- One company had a much stronger proposal and an understanding of the goal
 - Instead of choosing 2, we chose 1.

rth



Take Aways



- Absolute price is not the most essential component in a deal
- Ability to reduce total cost is the most important
- Can be done at multiple levels in the operational flow or supply chain
- Cannot be done with a disjointed/varied supply chain and or equipment flow







1.Surgeons2.Opinions

- Surgeons 3 options
- 1. Peer Pressure
- 2. Incentivize
- 3. Punish
- Opinions
 - 1. Difficult to argue facts, but need them 1st discussion
 - 2. Model options



Result



- Ability to increase case volume as a result of streamlined sterilization/preparation
- Consistent rep that manages all service lines
- Aids in inventory management
 - Makes inventory management streamlined and more cost effective
- Has resulted in decreased overall cost.



Thank You



Geoffrey S. Van Thiel, MD/MBA VanThielMD@Ortholllinois.com www.VanThielMD.com





Robotics: Short Stay Arthroplasty Enabler? Do robotics make clinical and financial sense in the ASC?

Mark Gittins, DO, FAOAO New Albany Surgery Center New Albany, Ohio



Disclosures

Smith-Nephew consultant
Zimmer-Biomet royalties
Depuy/Synthes consultant
Next-Step royalties
New Albany Surgery Center
The Orthopedic Foundation



Current Cleared Indications

Current FDA Cleared Applications:

- Partial Knee Replacement (PKR)
- Total Knee Replacement Journey II CR and BCS

Medial Unicondylar knee replacement Lateral Unicondylar knee replacement

- C



Total Knee replacement



Patello-femoral joint replacement



NAVIO[™] Total Knee Replacement The Clinical value proposition with NAVIO

Total Knee replacement – The Clinical value proposition

- Almost 20% of TKA patients dissatisfied
- Patient satisfaction after TKA: who is satisfied and who is not? Bourne RB, et al. Clin Orthop 2010;468:57
- 94.5% of surgeons versus

Only 82% to 89% of primary TKA patients are satisfied

J Bone Joint Surg Br. 2010 Sep;92(9): Scott CE, Howie CR, MacDonald D, Biant LC Clin Orthop Relat Res. 2010 Jan;468(1):57-63: Bourne RB, Chesworth BM, Davis AM, Mahomed NN, Charron

Our 20% problem.....

- 19%-25% dissatisfaction
 - Recovery lengthy
 - Activity limitations
 - Expectations unmet
 - 6-17% residual anterior knee pain
 - Knees don't feel normal
 - Inability to squat

Noble et al, Clin Orthop 2006 Bourne et al, Clin Orthop 2010



TKA Performance to Pt. Expectations



2 Arms (TKA vs normal knee) 243 TKA patients vs 257 individuals Age and gender matched arms Performance to expectations was poor *Clin Orthop Relat Res. 2005 Feb;431:157-165: Noble PC, Gordon MJ ... Mathis KB*

> Ortho**Neuro** For every motion in life.

Many Patients Pass on Knee Surgery

Duke University Knee Study

- 12.7% of women
 - Last to get health care in family
 - More pain
- 8% of men

Assessing the Impact of Medical Technology Innovations on Human Capital January 31, 2006



Primary Total Knee Replacement

PROCEDURE CONSIDERATIONS

- Image Free
- Preserve procedure efficiencies (time requirements)
- Incorporate benefits of planning and navigation
- Leverage capability of Navio freehand robotic technology



Navio TKA | Bone Preparation



NAVIO[™] Surgical System

PRECISE

- Patient-specific surgical plans
- Precise implant placement
- Fine tune cuts with bur

FLEXIBLE

- Multiple implant options
- Dynamic planning before bone cuts [bony anatomy + soft tissue]
- Informed ligament releases after bone cuts
- Multiple cutting modalities [Bur | Saw | Combo]

CONFIDENCE

- Precise planning
- Intra-operative assessment
- Surgeon controlled handheld instrumentation
- Flexible ligament balancing





TKA Cadaveric Assessment Measures • Handhel Motor Assisted Active [Internal Study] demonstrates a high degree of accuracy*

- Translational errors of implant placement in Anteriorposterior and superior-inferior directions, with NAVIO Total knee application were within **1.3 mm root mean** square error.
- Rotational errors of implant placement, with respect to varus/valgus, femur internal/external rotation and tibia slope were within 2 degrees of root mean square error.



Root mean square of translation and rotation error of TKA implant component placement when compared to NAVIO plan (mm/degrees)

*Study did not asses whether accurate placement of implant with robotics translates into a clinical and functional benefit for the patient. The NAVIO system does not make any claims for accuracy based on saw preparation of the bone.

Factors of Successful TKA

- Component design
- Surgeon experience/volume
- Optimal pain protocol and rehab
- Accuracy of implantation
- Soft Tissue Balancing





Alignment: Robotic Techniques vs. Manual

2.6x less variability than manual techniques (p<0.05)

RMS Error	Robotic	Manual
Flex/Ext (°)	1.6	4.1
Varus/Valgus (°)	2.3	6.0
Int/Ext (°)	1.7	6.3
Prox/Dist (mm)	1.3	2.8
Ant/Post (mm)	1.3	2.4
Med/Lat (mm)	0.9	1.6

Lonner et al CORR 2010 Dunbar et al J Arthrop 2012 Lonner et al CORR 2014



NASC Accuracy

o UKA

8 mm poly 61.7%9 mm poly 30.3%

o 92%



Case time learning curve



New Albany Surgery Center Data

• 70 NAVIO UKA

• Average operative time 16.34 minutes (11-33min)

- 40 Navio TKA
- Average operative time 30.03 minutes (21-60min)



Partial Knee Replacement

- Accelerated recovery
- Less pain
- Less blood loss
- Less postop morbidity
- More conservative
- Lower costs
- Better Bundle option
- Feels more normal
- Greater satisfaction





Safety: Partial vs. Total Hospital vs. ASC





30 day complications UKA vs TKA Medicare database

2-3 times decreased risk



Lonner et al 2014



Ortho-Robotics Growth Predictions

April 11, 2016

Global: Medical Technology: Orthopaedic Devices

Goldman Sachs

Orthopaedic robotics opportunity underappreciated; Buy SYK, SN

Exhibit 6: We expect >125k ortho procedures will be done robotically by 2020, with >50% of growth driven by total knee replacements WW orthopaedic robotic procedures, by type



Exhibit 21: We expect c.1,600 ortho robotics systems WW by 2020, generating over US\$900 mn in cumulative new sales (2016-2020E)

Installed robotic systems, US vs. OUS ; new system revenues in \$ mn (RHS)

Equity Research



Ortho**Neuro** For every motion in life.
2nd Generation Robotic-Assisted Surgical System

- Cost-favorable
- Speed and exposure control
- Easily to transport
- "Support of various implant systems from a number of implant manufacturers.
 - Smith & Nephew (Blue Belt Technologies)
 - DePuy Synthes, DJO Surgical, StelKast

• 34% currently in ASC's



Navio Differentiation

+ CT-free navigation principles

- No preoperative imaging required; procedure flexibility
- Avoid unnecessary step, radiation, insurance denials
- Future arthroplasty applications will be CT-free

+ Handheld robotics

- Reliable and consistent robotic-assisted bone preparation
- Improved ease of use; no bulky arm, no sterile draping

+ Open Implant platform

Supports multiple knee systems for robotic-assisted PKR

+ Portability and ease of use

- Integrates into the OR with no complex calibration and minimal setup
- Quick room turnover and facility-to-facility portability
- + Surgeon controlled software
 - Removes case rep reliance to navigate software and drive case forward
 - Allows surgeon to control case progression
- + Economically sound
 - Approx. 50% reduction in capital cost and annual service cost
 - Cost differential of ~\$1MM over 5 year program



Applications & Pipeline

Current FDA-Cleared Applications:

Medial & Lateral UKA Unicondylar Knee Replacement



PFJ Patellofemoral Joint Replacement



TKA Total Knee Replacement



- + Development Pipeline:
 - Total Hip Replacement
 - Revision Total Knee
 - Hip Arthroscopy/FAI
 - Shoulder

Ortho **Neuro** For every motion in life.

ROI Pro Forma Analysis







For every motion in life.

The importance of Marketing an Outpatient Center





Program Goals

- 1. Promote New Albany Surgery Center
- 2. Promote Navio Robotic Surgical System
- 3. Increase clinical referral network and awareness







Handheld Robotics

• Precision freehand sculpting technology tracks the position of the hand piece and bur relative to the surgical plan and adjusts the bur to control cutting





On line approach

• Google

• Display and paid search ads to maximize visibility and streamline access on care online







Traditional Advertising

• Print advertising

• E blast campaigns to build brand awareness.



Knee pain: is robotic assistance right for you?

Ortho**Neuro** New Albany Surgery Center, offers partial and total knee surgery through robotic assistance using the **NAVIO**' Surgical System. **NAVIO**' is a **CT-free robotics-assisted platform. NAVIO**' is an advancement in the way orthopedic surgeons perform partial and total knee replacement. The system works in conjunction with the surgeon's skilled hands to achieve precise positioning of components during surgery. This level of accuracy can help improve the function, feel and potential longevity of the knee implant.

Dr. Mark Gittins will help you understand your options for addressing your knee pain and will discuss the latest technologies available and answer many of your questions on Wednesday July 26th, 2017 from 6:00p.m. – 7:30p.m.

ATTEND OUR FREE SEMINAR TO LEARN MORE ABOUT THIS OUTPATIENT PROCEDURE.

 Featuring Dr. Mark Gittins

 When
 : Wednesday, July 26, 2017

 Time
 : 6:00 to 7:30 pm

 Where
 : OrthoNeuro New Albany Office 5040 Forest Drive, Suite 300 New Albany, 0H 43054



Refreshments and appetizers will be served

Orthopedic Surgeon

Visit www.Dr-Mark-Gittins.com or call 614-289-6426 to register. (space is limited)

> OrthoNeuro For every motion in life.

5040 Forest Dr, Suite 300 • New Albany, OH 43054

1 Hall et al., "Unicompartmental Knee Arthroptasty (Alias Uni-Knee): An Overview With Nursing Implications," Orthopaetic Nursing, 2004; 23(3): 163-171. 2 Repicts, U., et al., "Minimally invasive surgical technique for unicondylar knee arthroptasty," J South Orthopaetic Association, 1999 Spring, 811; 20-7. Individual results may vary. There are reak associated with may surgical proceedure including NAVID-condeble Artal Knee, Repicement, NAVIO is not for everyone. Children, pregnant women, patients who have mential or neuromuscular disorders that do not allow control of the Knee (and unicidant) and motoday bases patients should not undergo an ANAIO procedure. Consolity our physician of deals to defermine II NAVIO is infor you.

Trademark of Smith & Nephew



Clinical referral network

• Existing and new physician referral acquisition via dedicated CME program.





Dr. Mark E. Gittins

Orthopedic Surgeon

Dr. Gittins is a board-certified Orthopedic Surgeon specializing in Sports Medicine and Arthritis with extensive experience in outpatient joint reconstruction including the direct anterior hip replacement. Dr. Mark Gittins is a leading authority on the use of roboticassisted technology and trains surgeons from around the world on his techniques for addressing knee pain and reconstruction Dr. Gittins received his bachelor's degree from Anderson University in Anderson, Indiana. He attended medical school at Kirksville College of Osteopathic Medicine in Kirksville, Missouri, Upon completion of his Internship and Orthopedic Residency at Doctors Hospital in Columbus, Ohio, Dr. Gittins served an AO/ASIF Trauma Fellowship in Switzerland.

Dr. Gittins currently functions as Clinical Instructor and Staff Physician for the Ohio University College of Osteopathic Medicine Orthopedic Residency Program. Sports Medicine occupies Dr. Gittins time as team physician for USA Track and Field Team, Capital University and Big Walnut High School. He also has served as event physician for Ohio High School State Championships in various sports. Charity endeavors include serving as an Orthopedic Consultant for Heart to Honduras Medical Mission Group.

Dr. Gittins holds privileges at New Albany Surgical Hospital and St. Ann's Hospital, and is currently on the board of AOAO. Dr. Gittins interests include arthritis surgery, total joint replacement, knee joint vibrations, ACL reconstruction, arthroscopy, sports medicine and orthopedic surgical outcomes.

Board Certification American Osteopathic Board of Orthopedic Surgery #1076. 09/94

Undergraduate Anderson University, Anderson, Indiana; B.A.

Kirksville College of Osteopathic Medicine, Kirksville, Missouri; D.O. Residency Doctors Hospital, Columbus, Ohio, Orthopedic Surgery

Fellowships AO/ASIF Trauma Fellowship in Switzerland.

Physician Assistants



Medical School

Saint Francis University, Loretto, PA; Physician Assistant Science Program, Bachelor of Science in Health Science Graduate

Loretto, PA; Master of Science

in Physician Assistant Studies

Antonia Artise, PA-C



Undergraduate Wright State University, Dayton, OH; Bachelor of Science in Biology

Graduate Marietta College, Marietta, OH: Master of Science in Physician Assistant Studies Wright State University: Dayton, OH; Master of Science in Anatomy





Patient Data and ROI

• Leverage patient data for predictive health data







Google ad patient persona













Navio Community Seminar





New Albany Volumes

• 510 ASC cases

• 159 Hospital cases

































Conclusion

- Partial knee replacement
 - Conservative alternative to total knees
 - Rapid recovery
 - Greater return to work and sport
 - Normal kinematics/feel
 - Less morbidity/risk
 - Improved satisfaction





Conclusion

- Robotically-assisted surgery
 - Improves precision of bone preparation
 - Optimizes ligament balance
 - Enhances position of components
 - Optimizes outcomes and durability







Conclusion

knees replacement and newer generation robotic systems:

- Cost favorable for ASC
- Support the value-paradigm









Ortho Neuro

For every motion in life.

Thank you



HOSPITAL FOR SPECIAL SURGERY

Facilitating ASC Total Joint Replacements: Using Technology and Strategic Partnerships

Michael P. Ast, MD

Assistant Professor, Orthopaedic Surgery Hospital for Special Surgery

Director, Outpatient Joint Replacement Mercer County Surgery Center

Disclosures

- Consulting
 - Smith and Nephew, OrthAlign Inc, Stryker, Conformis
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 - OrthAlign, Inc
- Speakers Bureau
 - Smith and Nephew, OrthAlign Inc
- Research Support
 - Stryker, Smith and Nephew
- Ownership Interest or Stock Options
 - Mercer County Surgery Center, OrthAlign Inc
- Board Memberships
 - Eastern Orthopaedic Association, AAHKS

Outline

- Understanding the Challenges
- Using technology to address challenges
- Facilitating Partnerships to address challenges



HOSPITAL FOR SPECIAL SURGERY

The Challenges


- 1. Infrastructure
- 2. Avoiding complications
- 3. Program cost
- 4. Getting the First Patient in the Room



Infrastructure- Getting Started

- ASCs often not prepared for TJR
 - Sterilizers
 - Power Tools
 - Beds for longer recovery periods
 - Helmets
 - Heavier mallets (and other basic tools)

Infrastructure

- Sterilization is earliest limiting factor
- Limiting trays and turnover are necessary to achieve success



www.swmedical.com



www.steris.com

Optimizing Outpatient TKR with Patient Match Technology (PMT)

- Setup and Sterilization
- Efficiency
- No IM Violation
- Cost Considerations



VISIONAIRE™

Setup and Sterilization

- Often major limiting factor for ASC TKR
- Fewer trays for sterilization and setup
 - Both of these add cost
 - OR time
 - Turnover time

Stress Central Processing as volume increases

Standard TKA



Or



PMT

Case Efficiency

 PMT reduces case duration and OR time by eliminating 20-22 steps from TKR

• J Arthroplasty 2012







Case Efficiency

- Eliminates 12 steps from Femoral Prep
 - One guide which is easily placed determines
 - Valgus Angle (Mechanical Axis)
 - NO IM Rod
 - Level of Resection
 - Rotation
 - Size & AP Position from MRI







Case Efficiency

- 3-4 Steps eliminated from Tibial Prep
 - Tibial Alignment
 - Depth of Resection
 - Slope





No Violation of IM Canal

Reduces Blood Loss (145-396 cc)

- Chauhan JBJS-Br 2004
- Kalairajah JBJS-Br 2005
- Kandel J Knee Surg 2006
- Dutton JBJS 2008
- Reduces Risk Fat Embolization
 - Kalairajah JBJS-Br 2006
 - Young-Hoo JBJS 2008
 - Young-Hoo J Arthroplasty 2001
- Theoretically reduces pain as well



Cost Considerations

- No upfront capital costs
 - As opposed to other navigation technology
- Per use cost generally offset by savings in OR time and sterilization



HOSPITAL FOR SPECIAL SURGERY

Avoiding Complications

Avoiding Complications

- Highly motivated, high activity patients
- Highest expectations
- However, highest concern for complications
- Need to have mechanisms to decrease complications
 - Infection, Return to ED, Re-admission, Transfusion



Avoiding Complications

- Strong, Structured Program
 - Empower all involved
- Patient Selection
- Strict Adherence to Protocols
 - Standardized Perioperative Medications
 - TXA, Steroids, NSAIDS
 - Avoid Narcotics
 - Focus on Hydration

Use of devices shown to decrease complications



ACTICOAT™



Take control

ACTICOAT°

Silver-Coated Antimicrobial Barrier Dressing



Fast acting Starts working within 30 minutes (*in vitro*).¹



Effective against a broad spectrum of pathogens including MRSA, VRE and fungi *in vitro* Broad spectrum antimicrobial activity offers

reliable protection.^{1,2,3}



Compatible with NPWT

ACTICOAT Flex 3 and Flex 7 can be used in combination with NPWT for up to 3 days.



PICOTM

Prevention through innovation

PICO°

Single Use Negative Pressure Wound Therapy System



Helps reduce complications and readmissions May help reduce complications and readmissions as part of a comprehensive clinical protocol.^{4,5}



May accelerate and simplify discharge process Off-the-shelf means no management of capital equipment and no tracking of therapy days.



Patient friendly

PICO allows patients to be comfortable, shower and perform everyday activities.





HOSPITAL FOR SPECIAL SURGERY

Program Costs

Disclaimer: I am not an accountant or a tax attorney, nor am l a professional financial advisor. These views are simply my experience from starting and running an outpatient joint replacement program at a privately owned ASC

Controlled Growth

- Increase volume slowly and thoughtfully
 - Can your infrastructure handle it
 - Do you have enough equipment
- Push outside beneficiaries to help
 - Companies can help provide additional power equipment or help with necessary surgical equipment (retractors, etc)

Advanced Payor Negotiation

- Once local payors see success, they will want to participate
 - Bundled Payments
 - Episode of Care Programs
 - Centers of Excellence
 - Referral Centers



Episode of Care Programs

- Most common private "bundle"
- Payor defines "standard" cost of episode of care
- Provider responsible for all costs within a set timeframe
 - Usually 30 days pre-op to 90 days post-op
- If cost is lower, provider can profit
- If cost is higher, provider may be at risk
 - Usually catastrophic complications are excluded

Strategic Partnerships

- Take advantage of education and financing options
- Smith & Nephew's ASC GO!
 - Combines implant, ACTICOAT, PICO
- Programs for financing and early purchasing without using line of credit
- Surgeon visits to learn new techniques, technologies at other ASCs
- Higher level visits including administrators and nursing staff (Not paid for by industry)



HOSPITAL FOR SPECIAL SURGERY

The First Patient

Took me 1 year!

The First Patient

- Must have everything lined up
- Can be very intimidating
- Consider ASC / OP TJA consultants
- Consider industry partner programs



Summary

- Understand the Challenges
- Always have a surgeon champion
- Take advantage of what is available
- Find and utilize strategic partnerships

Thank you!



Questions?



One trusted source, many unique solutions for your Ambulatory Surgical Center

Dedicated ASC programs

- Outcomes and satisfaction
- Savings and efficiencies
- Growth and development



Robotics | Si

Sports Medicine

Trauma and Extremities

Incision Management

ENT