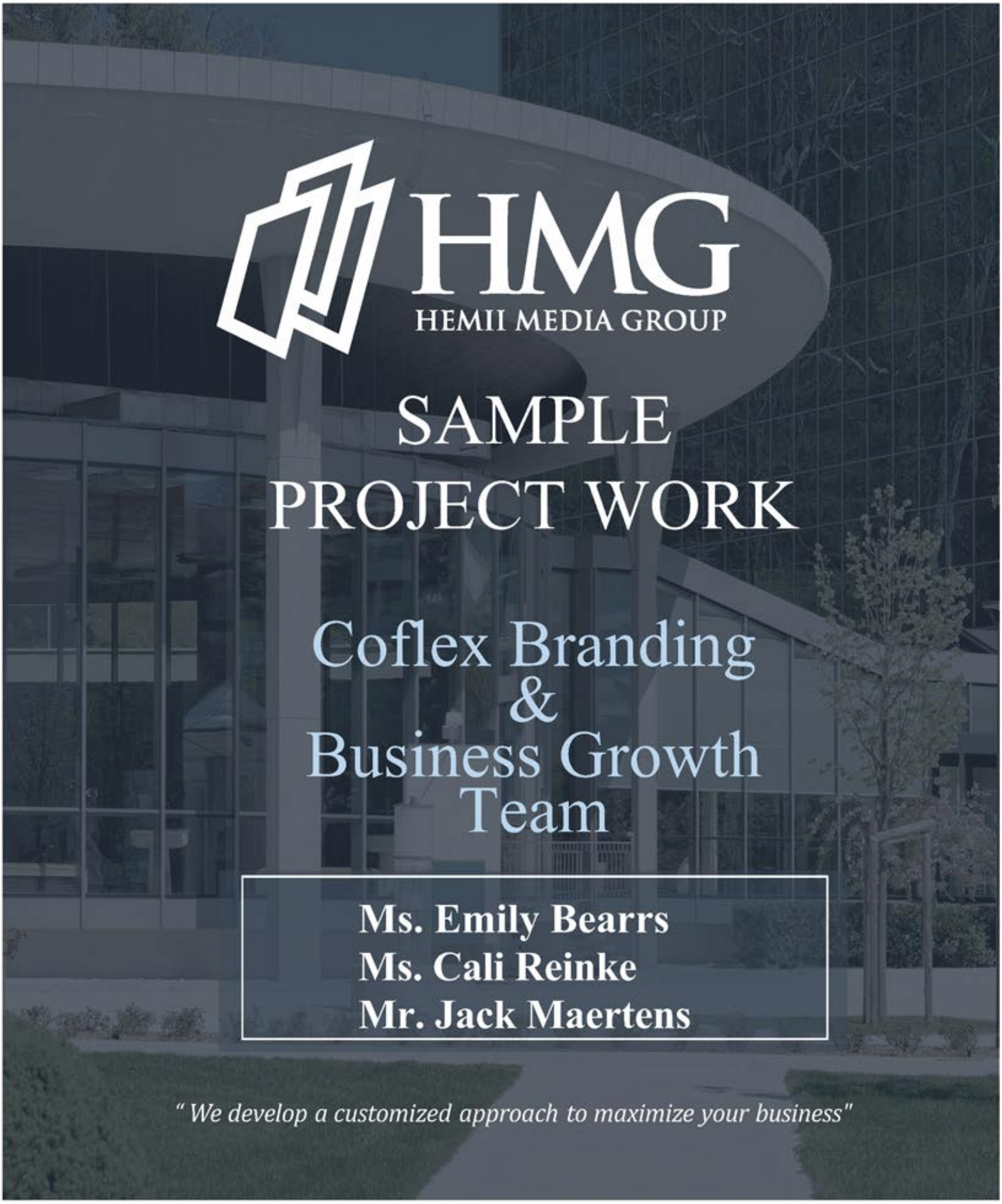

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Orthopaedic Consultants of Wyoming Valley

Bringing The Latest Knee Technology to Patients

Ask Dr. Charlton, Dr. Mattucci or Dr. Raklewicz about this new Innovative Partial & Total Knee Replacement Option offered at Orthopaedic Consultants of Wyoming Valley..

TOP EXCELLENCE ORTHOPEDICS

NAVIO® Surgical System

We are recognized for **excellence** in **orthopaedics.**

Our physicians are experts in orthopedic care and innovative treatment options serving the greater Wyoming Valley communities. When you are seen by one of our experts, you know that you are being treated by an experience doctor who is focused on, and dedicated to, delivering orthopedic excellence.

William PH Charlton, MD
Orthopedic Surgeon

Dr. Charlton earned his undergraduate degree from Penn State University, his Medical degree from Jefferson Medical College and completed his residency at the Rothman Institute. Dr. Charlton also completed a sports medicine fellowship at Kerlan-Jobe Orthopaedic Clinic in Los Angeles, California. Dr. Charlton is a board-certified surgeon with sub-speciality certification in Sports Medicine. He maintains membership in the American Academy of Orthopaedic Surgeons.

Dr. Charlton specializes in:

- NAVIO® Robotic Surgical System of the Knee
- Partial Knee Replacement
- Total Knee Replacement
- Total Hip Replacement
- Shoulder Replacement
- Shoulder Arthroscopy - Labral Repair
- Shoulder Arthroscopy - Rotator Cuff Repair
- Elbow Arthroscopy
- Knee Arthroscopy
- Knee Arthroscopy - ACL Repair

James M. Mattucci, MD
Orthopedic Surgeon

Dr. Mattucci received his undergraduate degree from Yale University and his Medical degree from Temple University School of Medicine. He completed an internship in general surgery at the Graduate Hospital and a residency in orthopaedic surgery from MCP Hahnemann University Hospital.

Dr. Mattucci completed fellowships in sports medicine at the University of Pennsylvania Hospital and MCP Hahnemann University Hospital. Dr. Mattucci is a board-certified orthopaedic surgeon. He maintains memberships in the American Academy of Orthopaedic Surgeons, the American Medical Association and the Philadelphia Orthopaedic Society.

Dr. Mattucci specializes in:

- NAVIO® Robotics Surgical System of the Knee
- Partial Knee Replacement
- Total Knee Replacement
- Total Hip Replacement
- Knee Arthroscopy
- Knee Arthroscopy - ACL Repair
- Shoulder Arthroscopy
- Shoulder Arthroscopy - Instability Surgery
- Shoulder Arthroscopy - Rotator Cuff Repair
- Shoulder Arthroscopy - Labral Repair
- Shoulder Replacement

Michael C. Raklewicz, MD
Orthopedic Surgeon

Dr. Raklewicz earned his Bachelor's degree and Medical degree from the University of Pittsburgh. He completed a medical internship at Presbyterian University Hospital in Pittsburgh. He completed orthopaedic research at Rancho Los Amigos Hospital in Downey California before completing an orthopaedic residency at the University of Pittsburgh Program and Affiliated Hospitals.

Dr. Raklewicz is a board-certified orthopaedic surgeon. He maintains memberships in the American Academy of Orthopaedic Surgeons, Pennsylvania Medical Society and the Luzerne County Medical Society.

Dr. Raklewicz specializes in:

- NAVIO® Robotic Surgical System of the Knee
- Partial Knee Replacement
- Total Knee Replacement
- Total Hip Replacement
- Ankle Arthroscopy
- Knee Arthroscopy

ORTHOPAEDIC CONSULTANTS
of Wyoming Valley

Bilingual Services Available

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Kingston, PA 18704
www.orthoconsultwv.com

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Don't suffer another day

Precision Total and Partial knee Replacement Through Robotics

Dr. Eric Green and **St. Cloud Surgical Center** offer Partial and Total Knee Replacement utilizing the **NAVIO® Surgical System - a CT-Free robotic-assisted platform**. **NAVIO®** is a tool designed to help your surgeon correctly size and position the knee implant. ***Attend this event to find out if you are a candidate.***

St. Cloud Surgical Center offers Partial & Total Knee Replacement in an Outpatient Setting.
Go Home The Same Day Of Your Procedure.

Attend our free seminar to learn more about these options.

call **507.200.2263**

or go online to register
visit: **www.stcsurgicalcenternavio.com**

Featuring

Eric Green, MD
Orthopaedic Surgeon

Certified orthopaedic surgeon with St. Cloud Surgical Center

St Cloud Surgical Center
SPECIALISTS IN OUTPATIENT SURGERY

ST CLOUD ORTHOPEDICS

1526 Northway Drive, St. Cloud, MN 56303

Monday, November 12, 2018
6:00 pm - 7:30 pm
(Food and drinks provided)

SPACE IS LIMITED!

Event Location:
Marshall Area YMCA
200 S A Street, Marshall MN 56258

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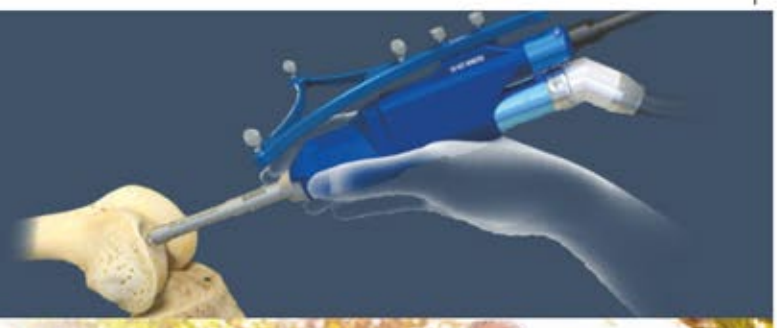

Precision total and partial knee replacement through robotics

Take back your life! Now there are advanced robotic assisted technology options for treating painful knee conditions – options that can **get you back in action** faster than ever before. This new innovative technique is offered by local NAVIO-trained orthopedic surgeon Dr. Michael Raklewicz at Orthopedic Consultants of Wyoming Valley.

Using this state of the art technology, the NAVIO® Surgical System works with the surgeon's skilled hands to achieve precise positioning of the implant for consistently accurate results.

Michael C. Raklewicz, MD
Orthopedic Surgeon

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of Wyoming Valley
Bilingual Services Available

390 Pierce Street
Kingston, PA 18704

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Saint Peter's University Hospital is now offering robotics-assisted partial and total knee replacement using the NAVIO✧ Surgical System, a CT-free platform that delivers consistent and accurate results. Because no two knees are alike, the system works in conjunction with our surgeon's skilled hands to customize each procedure and achieve precise positioning of components during surgery. This level of accuracy can help improve the function, feel and longevity of the knee implant.

For details, call 732-745-8600 or visit saintpetershcs.com/navio

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

Thursday, June 21, 2018 ▪ 6 p.m. ▪ Visit **saintpetersknee.com** or call **732.210.0699** to register

Address your knee pain.

Through **robotic assistance** in an **out-patient** setting and go home the same day!

Tuesday, April 18th
6:00pm to 7:30pm

MOVEMENTORTHOPEDICS
GET BACK TO IT.

Discover a Less Invasive Approach to Hip Replacement Surgery

Direct Anterior Hip Replacement Seminar

If your hip is keeping you from enjoying life to the fullest, consider direct anterior hip replacement surgery.

This less-invasive procedure is much easier on the patient because there is less tissue and muscle damage involved in the surgery. Dr. Jeffrey S. Dulik and Dr. Dean J. Marshall of Spectrum Orthopaedics has performed many of the Direct Anterior Approach hip replacement surgeries. They will explain the technique, outline the benefits and answer questions at a free, open-to-the-public seminar to be held at Ohio Specialty Surgical Suites.

ATTEND OUR SEMINAR TO LEARN MORE ABOUT THIS PROCEDURE.

FEATURING

Dr. Jeffrey S. Dulik
Orthopaedic Surgeon

Dr. Dean J. Marshall
Orthopaedic Surgeon

Thursday, Nov. 8, 2018
6:30 pm (Light refreshments will be served)

Event Location:
Ohio Specialty Surgical Suites
7442 Frank Ave NW
North Canton, OH 44720

Please register by
Wednesday, November 7, 2018

Call: **330.339.3060**

OHIO SPECIALTY SURGICAL SUITES LLC

Address your knee pain...

Through robotic assistance in an outpatient setting and go home the same day!

Spectrum Orthopaedics offers partial and total knee replacement utilizing the **NAVIO® Surgical System - a CT-Free robotic-assisted platform. The NAVIO® Surgical System** is a tool your surgeon uses to correctly size and position the total or partial knee implant with computer and robotic assistance.

Computer assistance is used to collect the unique shape and motion of your knee to virtually plan the procedure. Robotic assistance is used to accurately perform the procedure. The extra layer of planning and precision provided by the **NAVIO®** system aims to ensure the procedure is performed exactly as your surgeon intends. **The NAVIO®** system does not perform the procedure, rather it assists the surgeon by providing accuracy and precision crucial to the success of the surgery.

Os3 offers Partial & Total Knee Replacement In an Outpatient Setting...
Go Home The Same Day Of Your Procedure.

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

RSVP / Registration required. **Call (330) 271-6885** | Space is limited!
Or register online at: **spectrumorthokneepain.com/events**

Featuring:

Tim K. Conlan, MD
Orthopaedic Surgeon

Michael L. Lykins, DO
Orthopaedic Surgeon

Tuesday, November 6, 2018

6:00pm to 7:00pm (Appetizers will be served)

EVENT LOCATION:

Shisler Conference Center
1680 Madison Avenue, Wooster, OH. 44691

1 Hall et al., "Unicompartmental Knee Arthroplasty (Alias Uni-Knee): An Overview With Nursing Implications," Orthopaedic Nursing, 2004; 23(3): 163-171. 2 Repicci, JA, et al., "Minimally invasive surgical technique for unicondylar knee arthroplasty," J South Orthopedic Association, 1999 Spring; 8(1): 20-7. Individual results may vary. There are risks associated with any surgical procedure including NAVIO-enabled Partial Knee Replacement. NAVIO is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Consult your physician for details to determine if NAVIO is right for you.

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SPECTRUM ORTHOPAEDICS

Discover a Less Invasive Approach to Hip Replacement Surgery

DIRECT ANTERIOR HIP REPLACEMENT SEMINAR

If your hip is keeping you from enjoying life to the fullest, consider direct anterior hip replacement surgery.

This less-invasive procedure is much easier on the patient because there is less tissue and muscle damage involved in the surgery. Dr. Jeffrey S. Dulik and Dr. Dean J. Marshall of Spectrum Orthopaedics has performed many of the Direct Anterior Approach hip replacement surgeries. They will explain the technique, outline the benefits and answer questions at a free, open-to-the-public seminar to be held at Ohio Specialty Surgical Suites. **Light refreshments will be served.**

FEATURING

Dr. Jeffrey S. Dulik
Orthopaedic Surgeon

Dr. Dean J. Marshall
Orthopaedic Surgeon

WHEN
Thursday
November 8, 2018 - 6:30 pm

WHERE
Ohio Specialty Surgical Suites
7442 Frank Ave NW
North Canton, OH 44720

REGISTER
Please register by
Wednesday, November 7, 201
8 by phone: 330.339.3060

OHIO SPECIALTY SURGICAL SUITES LLC

Discover a Less Invasive Approach to Hip Replacement Surgery

Direct Anterior Hip Replacement Seminar

If your hip is keeping you from enjoying life to the fullest, consider direct anterior hip replacement surgery.

This less-invasive procedure is much easier on the patient because there is less tissue and muscle damage involved in the surgery. Dr. Jeffrey S. Dulik and Dr. Dean J. Marshall of Spectrum Orthopaedics has performed many of the Direct Anterior Approach hip replacement surgeries. They will explain the technique, outline the benefits and answer questions at a free, open-to-the-public seminar to be held at Ohio Specialty Surgical Suites.

ATTEND OUR SEMINAR TO LEARN MORE ABOUT THIS PROCEDURE.

Thursday, Nov. 8, 2018

6:30 pm (Light refreshments will be served)

Event Location:
Ohio Specialty Surgical Suites
7442 Frank Ave NW
North Canton, OH 44720

Please register by
Wednesday, November 7, 2018

Call: **330.339.306**

FEATURING

Dr. Jeffrey S. Dulik
Orthopaedic Surgeon

Dr. Dean J. Marshall
Orthopaedic Surgeon

OHIO SPECIALTY SURGICAL SUITES LLC
IN PARTNERSHIP WITH SPECTRUM ORTHOPAEDICS

Knee Pain:
Don't suffer another day.

SAMPLE

Precision total and partial knee replacement through robotics

Bassett Healthcare Network offers partial and total knee replacement utilizing the **NAVIO® Surgical System - a CT-Free robotic-assisted platform**. The Navio Surgical System is a tool designed to help your surgeon correctly size and position the total or partial knee implant with computer and robotic assistance. Attend this event to find out if you are a candidate for partial knee or total knee replacement. Using the Navio Surgical system, you may experience less pain[1], a more normal feeling knee[1] and quicker rehabilitation[1].

Doctors Wetzel, LaBudde, Scott and Diaz will help you understand your options for knee care. He will discuss the latest technologies available and answer many of your questions on **Wednesday, April 25, May 23, June 21, 2018 from 5:30 p.m. - 7:30 p.m.**

Attend our free seminar to learn more about these options.

Featuring:

F. Todd Wetzel, MD
Orthopaedic Surgeon

Jackson L. LaBudde, MD
Orthopaedic Surgeon

James Scott, MD
Orthopaedic Surgeon

Michael R. Diaz, MD
Orthopaedic Surgeon

CALL
(607) 215-4157
TO REGISTER

or visit:
www.feelbetterwithbassett.com

Event Locations

Wednesday, April 25
Oneonta
FoxCare Center – John Remillard Conference Center
1 FoxCare Drive off of Route 7
Oneonta, NY 13820

Wednesday, May 23
Herkimer
Herkimer Health Center
Primary Care Lobby
321 East Albany Street
Herkimer, NY 13350

Wednesday, June 21
Delhi
O'Connor Hospital
Board Conference Room
460 Andes Road
Delhi, NY 13753

Bassett Healthcare Network

1 Hall et al., "Unicompartmental Knee Arthroplasty (Alias Uni-Kneel: An Overview With Nursing Implications," Orthopaedic Nursing, 2004; 23(3): 163-171. 2 Repicci, JA, et al., "Minimally invasive surgical technique for unicondylar knee arthroplasty," J South Orthopedic Association, 1999 Spring; 8(1): 20-7. Individual results may vary. There are risks associated with any surgical procedure including NAVIO-enabled Partial Knee Replacement. NAVIO is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Consult your physician for details to determine if NAVIO is right for you.

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Knee Pain:
Don't suffer another day.

Precision total and partial knee replacement through robotics

Commonwealth Health Wilkes-Barre General Hospital offers partial and total knee replacement utilizing the **NAVIO® Surgical System - a CT-Free robotic-assisted platform**. The **NAVIO® Surgical System** is a tool designed to help your surgeon correctly size and position the total or partial knee implant with computer and robotic assistance. Attend this event to find out if you are a candidate for partial knee or total knee replacement. Using the Navio Surgical system, you may experience less pain[1], a more normal feeling knee[1] and quicker rehabilitation[1].

Doctor Raklewicz will help you understand your options for knee care. They will discuss the latest technologies available and answer many of your questions on **Thursday, September 27, 2018 from 6:00 p.m. - 7:30 p.m.**

Attend our free seminar to learn more about these options.

call **570.209.5728 or go online** to register **at:**
www.http://commonwealthhealth-kneepain.com

Featuring
Dr. Michael Raklewicz

Thursday, September 27, 2018
6:00 pm - 7:30 pm
(Refreshments and appetizers will be served)

Event Location:
Mohegan Sun Pocono Convention Center - **Anthracite Room**
1280 Highway 315, Wilkes-Barre, Pennsylvania 18702

Dr. Michael Raklewicz
Orthopedic Surgeon

Dr. Michael Raklewicz is an independent member of the Medical Sta ff of Wilkes-Barre General Hospital.

Commonwealth Health®
Wilkes-Barre General Hospital

575 North River Street, Wilkes-Barre, PA 18764
www.commonwealthhealth-navio.com

1 Hall et al., "Unicompartmental Knee Arthroplasty (Alias Uni-Knee): An Overview With Nursing Implications," Orthopaedic Nursing, 2004; 23(3): 163-171. 2 Repicci, JA, et al., "Minimally invasive surgical technique for unicondylar knee arthroplasty," J South Orthopedic Association, 1999 Spring; 8(1): 20-7. Individual results may vary. There are risks associated with any surgical procedure including NAVIO-enabled Partial Knee Replacement. NAVIO is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Consult your physician for details to determine if NAVIO is right for you.

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Knee Pain:

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Precision total and partial knee replacement through robotics

Memorial Medical Center offers partial and total knee replacement utilizing the **NAVIO® Surgical System - a CT-Free robotic-assisted platform**. The **NAVIO® Surgical System** is a tool designed to help your surgeon correctly size and position the total or partial knee implant with computer and robotic assistance. Attend this event to find out if you are a candidate for partial knee or total knee replacement. Using the **NAVIO® Surgical System**, you may experience less pain[1], a more normal feeling knee and quicker rehabilitation[1].

Doctors Signorelli and **Cummins** will help you understand your options for knee care. They will discuss the latest technologies available and answer many of your questions.

Attend our free seminar to learn more about these options.

call 715.257.0862

or go online to register at:
www.ashlandmmcnavio.com/event

Tuesday, Oct. 16, 2018

6:00 pm - 7:30 pm

Event Location:
Harbor View Event Center
(Formerly Steak Pit)
130 Harbor View Drive
Washburn, WI, 54891

Thursday, Oct. 25, 2018

6:00 pm - 7:30 pm

Event Location:
AmericInn
3009 Lake Shore Drive East
Ashland, WI 54806

(Refreshments will be served)

1 Hall et al., "Unicompartmental Knee Arthroplasty (Alias Uni-Knee): An Overview With Nursing Implications," Orthopaedic Nursing, 2004; 23(3): 163-171. 2 Repicci, JA, et al., "Minimally invasive surgical technique for unicondylar knee arthroplasty," J South Orthopedic Association, 1999 Spring; 8(1): 20-7. Individual results may vary. There are risks associated with any surgical procedure including NAVIO-enabled Partial Knee Replacement. NAVIO is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Consult your physician for details to determine if NAVIO® is right for you.

FEATURING:

Dr. Joseph Signorelli
Orthopedic Surgeon

Dr. Justin Cummins
Orthopedic Surgeon

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Is Knee Pain Holding You Back?

Attend our NAVIO® Robotic Knee Replacement Seminar

Memorial Medical Center offers partial and total knee replacement utilizing the **NAVIO® Surgical System - a CT-Free robotic-assisted platform**. The **NAVIO® Surgical System** is a tool designed to help your surgeon correctly size and position the total or partial knee implant with computer and robotic assistance. Attend this event to find out if you are a candidate for partial knee or total knee replacement. Using the **NAVIO® Surgical System**, you may experience less pain[1], a more normal feeling knee and quicker rehabilitation[1].

Dr. Signorelli and **Dr. Cummins** will help you understand your options for knee care. They will discuss the latest technologies available and answer many of your questions.

Attend our free seminar to learn more about these options.

call 715.257.0867 or go online to register at: www.ashlandmmcnavio.com/event

Featuring Dr. Joseph Signorelli
and Dr. Justin Cummins

Tuesday, September 18, 2018
6:00 pm - 7:30 pm

Event Location:
Barkers Island In
300 Marina Drive, Superior, WI 54880
(Refreshments will be served.)

Dr. Joseph Signorelli
Orthopedic Surgeon

Dr. Justin Cummins
Orthopedic Surgeon

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Knee Pain:
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Precision total and partial knee replacement through robotics

St. Peter's Hospital Joint Replacement Center offers partial and total knee replacement utilizing the **NAVIO® Surgical System - a CT-Free robotic-assisted platform**. The Navio Surgical System is a tool designed to help your surgeon correctly size and position the total or partial knee implant with computer and robotic assistance. Attend this event to find out if you are a candidate for partial knee or total knee replacement. Using the Navio Surgical system, you may experience less pain[1], a more normal feeling knee[1] and quicker rehabilitation[1].

J. David Abraham, MD will share information on your options for knee care. He will discuss the latest technologies available and answer many of your questions on **Wednesday, June 6, 2018 from 6 p.m. - 7:30 p.m.**

Attend our free seminar to learn more about these options.

CALL **518.290.1665** TO REGISTER or visit www.stpetersnaviorobot.com

Featuring:

J. David Abraham, MD

Wednesday, June 6, 2018
6 p.m. - 7:30 p.m.

Event Location:
MERCY AUDITORIUM
St. Peter's Hospital Campus
310 S. Manning Boulevard, Albany
(Across the street from the hospital)

St Peter's Hospital
Joint Replacement Center
ST PETER'S HEALTH PARTNERS

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1 Hall et al., "Unicompartmental Knee Arthroplasty (Alias Uni-Knee): An Overview With Nursing Implications," Orthopaedic Nursing, 2004; 23(3): 163-171. 2 Repicci, JA, et al., "Minimally invasive surgical technique for unicondylar knee arthroplasty," J South Orthopedic Association, 1999 Spring; 8(1): 20-7. Individual results may vary. There are risks associated with any surgical procedure including NAVIO-enabled Partial Knee Replacement. NAVIO is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Consult your physician for details to determine if NAVIO is right for you.

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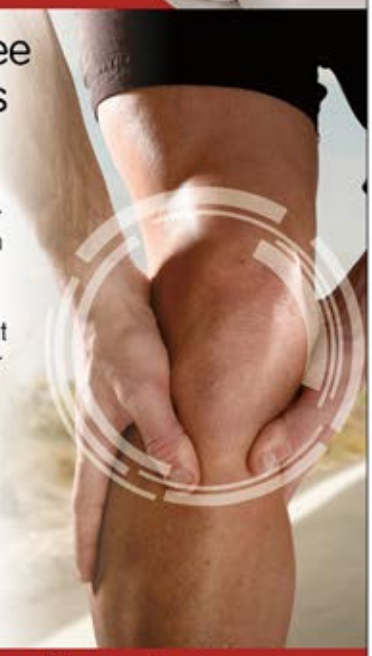
Precision total and partial knee replacement through robotics

St. Peter's Hospital Joint Replacement Center offers partial and total knee replacement utilizing the **NAVIO® Surgical System - a CT-Free robotic-assisted platform**. The Navio Surgical System is a tool designed to help your surgeon correctly size and position the total or partial knee implant with computer and robotic assistance. Attend this event to find out if you are a candidate for partial knee or total knee replacement. Using the Navio Surgical system, you may experience less pain[1], a more normal feeling knee[1] and quicker rehabilitation[1].

J. David Abraham, MD will share information on your options for knee care. He will discuss the latest technologies available and answer many of your questions on **Monday, October 22, 2018 from 6:00 p.m. - 7:30 p.m.**



Attend our free seminar to learn more about these options.

call 518.290.1378

to register or visit www.stpetersnaviorobot.com

Featuring:

J. David Abraham, MD

Wednesday, June 6, 2018
6:00 p.m. - 7:30 p.m.

Event Location:
MERCY AUDITORIUM
(Across the street from the hospital)
St. Peter's Hospital Campus
310 S. Manning Boulevard
Albany, NY 12208

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Joint Replacement Center
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1 Hall et al., "Unicompartmental Knee Arthroplasty (Alias Uni-Knee): An Overview With Nursing Implications," Orthopaedic Nursing, 2004; 23(3): 163-171. 2 Repicci, JA, et al., "Minimally invasive surgical technique for unicondylar knee arthroplasty," J South Orthopedic Association, 1999 Spring; 8(1): 20-7. Individual results may vary. There are risks associated with any surgical procedure including NAVIO-enabled Partial Knee Replacement. NAVIO is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Consult your physician for details to determine if NAVIO is right for you.

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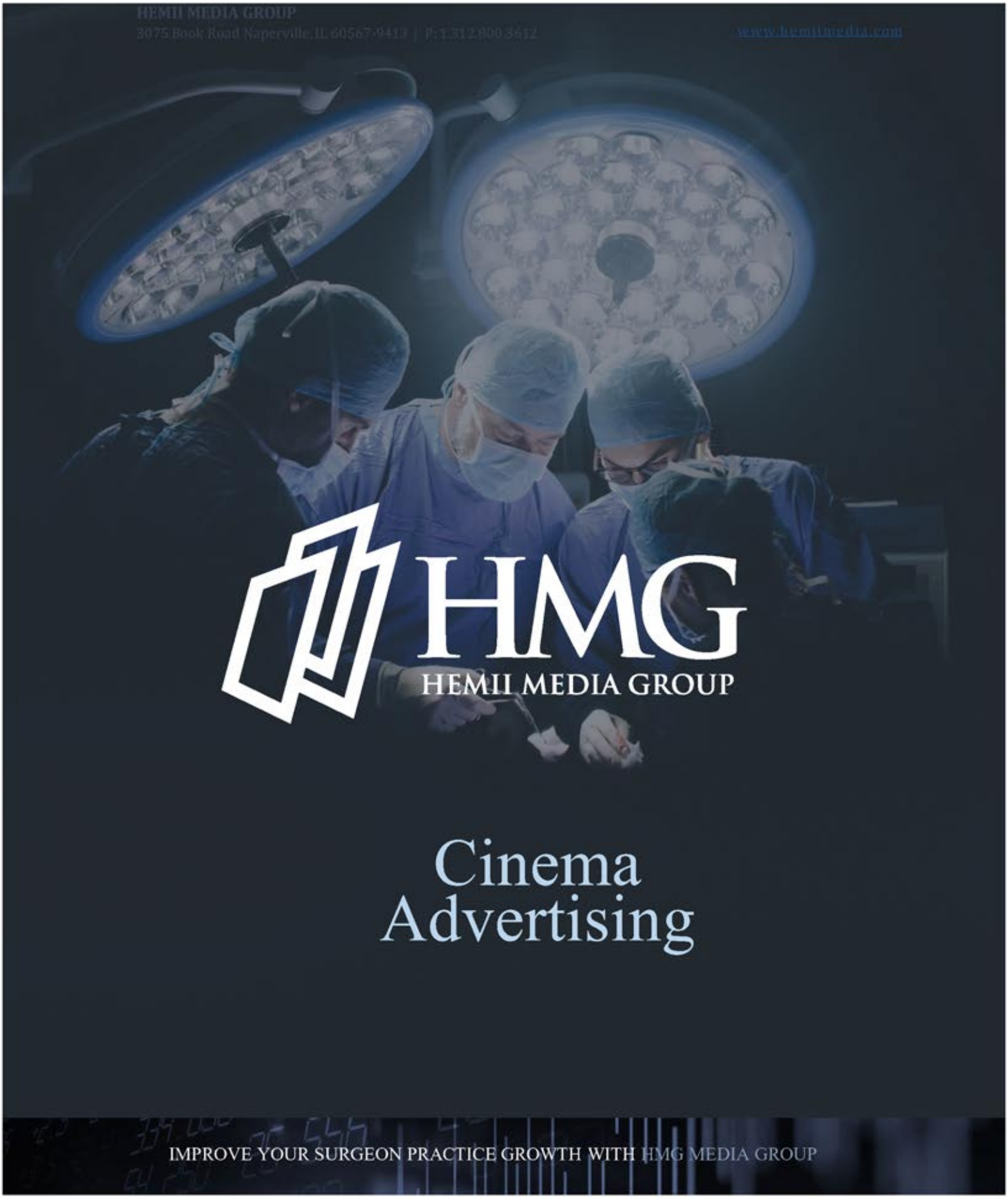

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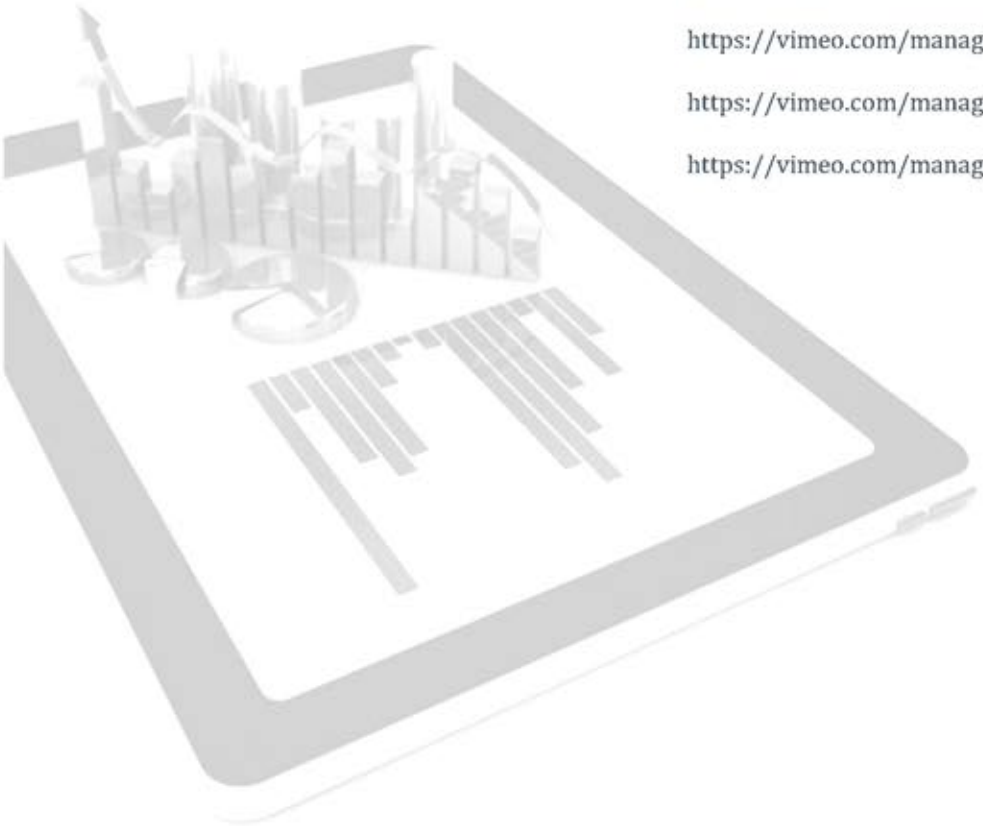

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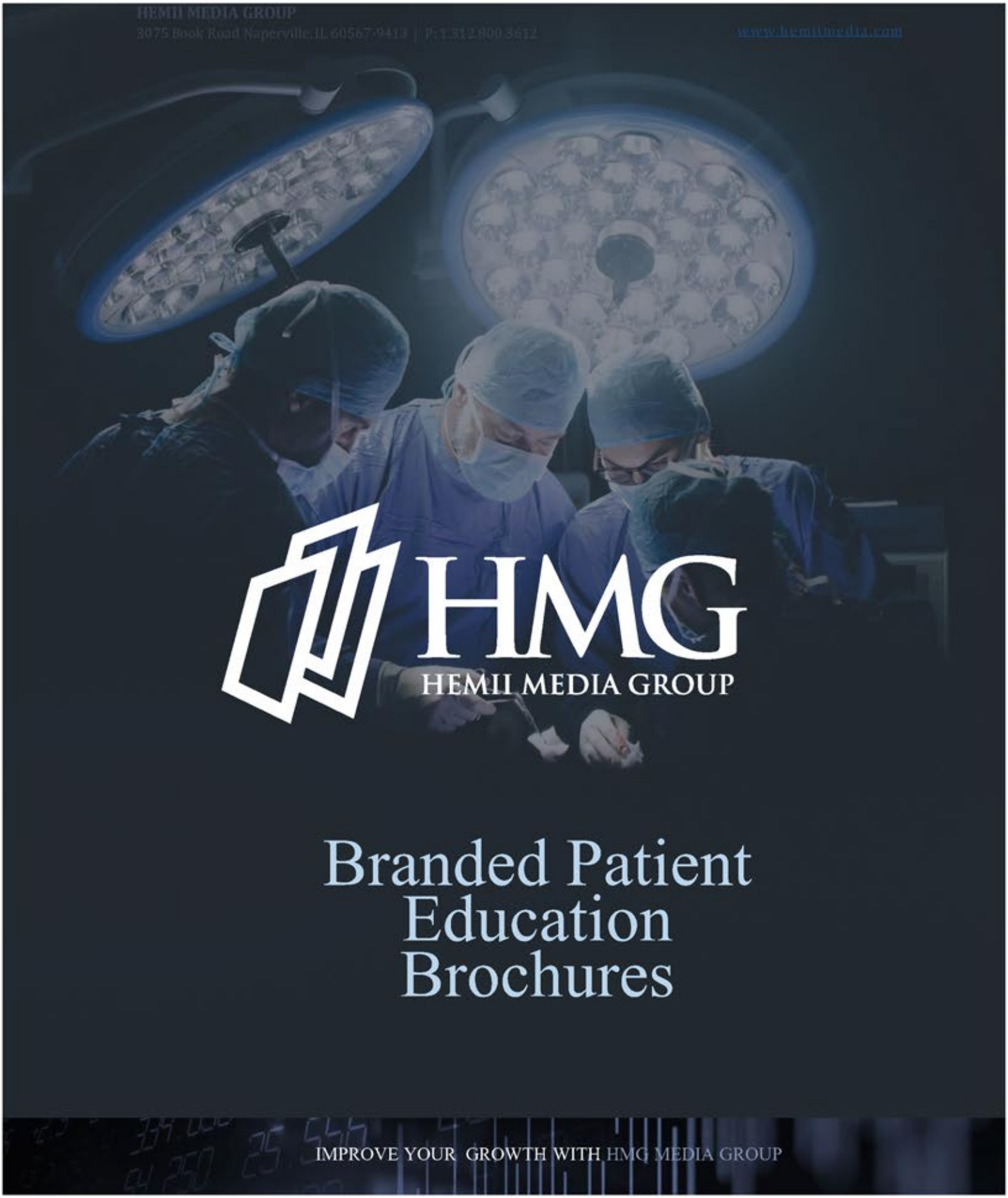

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"I feel like I can enjoy my life again. I just wish I hadn't waited so long."

- Maria Leticia Duarte

What can NAVIO® Robotics-assisted partial knee replacement mean for you?

Consistent results[1]
Accurately placed implants[1]
Customized planning
No CT-scan required

Partial knee replacement offers several benefits over total knee replacement:

Less pain[2]
A more normal feeling knee[2]
Smaller incisions[3]
Quicker rehabilitation[2]

What's my next step?

Ask your surgeon:

- Is my knee pain caused by osteoarthritis?
- Is NAVIO Robotics-assisted partial knee replacement right for me?
- How does my age, lifestyle and overall health affect my treatment options?
- What are the risks associated with surgery?

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The NAVIO™ system is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Knee replacement surgery is intended to relieve knee pain and improve knee functions. However, implants may not produce the same feel or function as your original knee. There are potential risks with knee replacement surgery such as loosening, fracture, dislocation, wear and infection that may result in the need for additional surgery.
Longevity of implants depends on many factors, such as types of activities and weight. This information is for educational purposes only and is not intended as medical advice. Consult your physician for details to determine if NAVIO robotics-assisted procedure is right for you.

The NAVIO system is intended to assist the surgeon in providing software-defined spatial boundaries for orientation and reference information to anatomical structures during orthopedic procedures. The NAVIO system is indicated for use in surgical knee procedures, in which the use of stereotactic surgery may be appropriate, and where reference to rigid anatomical bony structures can be determined. These procedures include unicondylar knee replacement (UKR), patellofemoral arthroplasty (PFA), and total knee arthroplasty (TKA). The NAVIO system is indicated for use with cemented implants only.

1 Lonner J., Smith J., et al., High Degree of Accuracy of a Novel Image-free Handheld Robot for Unicondylar Knee Arthroplasty in a Cadaveric Study. Clin Orthop Relat Res 2014 Jul 8. Epub 2014 Jul 8.
2 Hall et al., "Unicompartmental Knee Arthroplasty (Alias Uni-Knee): An Overview With Nursing Implications," Orthopaedic Nursing, 2004; 23(3): 163-171.
3 Repicci, JA, et al., "Minimally invasive surgical technique for unicondylar knee arthroplasty," J South Orthopedic Association, 1999 Spring; 8(1): 20-7.

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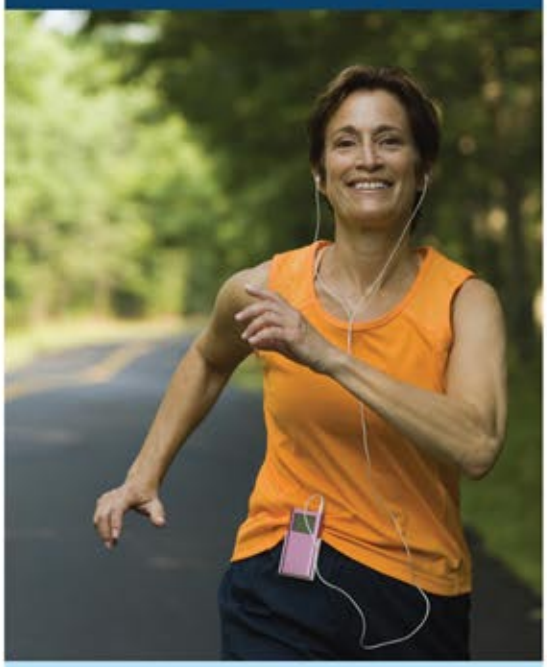
Does knee pain keep you from what you love?



The NAVIO® Surgical System can help your surgeon **get you back in action** with accurate and precise partial knee replacement.

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Knee pain makes a big difference in your life. So can **NAVIO® Robotics-assisted partial knee replacement.**

What causes knee pain?

Millions of people suffer from osteoarthritis, which occurs when there is a breakdown in the cushioning cartilage between joints, such as the knee. When this cartilage wears down, bones begin to rub against each other causing pain, swelling, stiffness and damage to other parts of the knee.

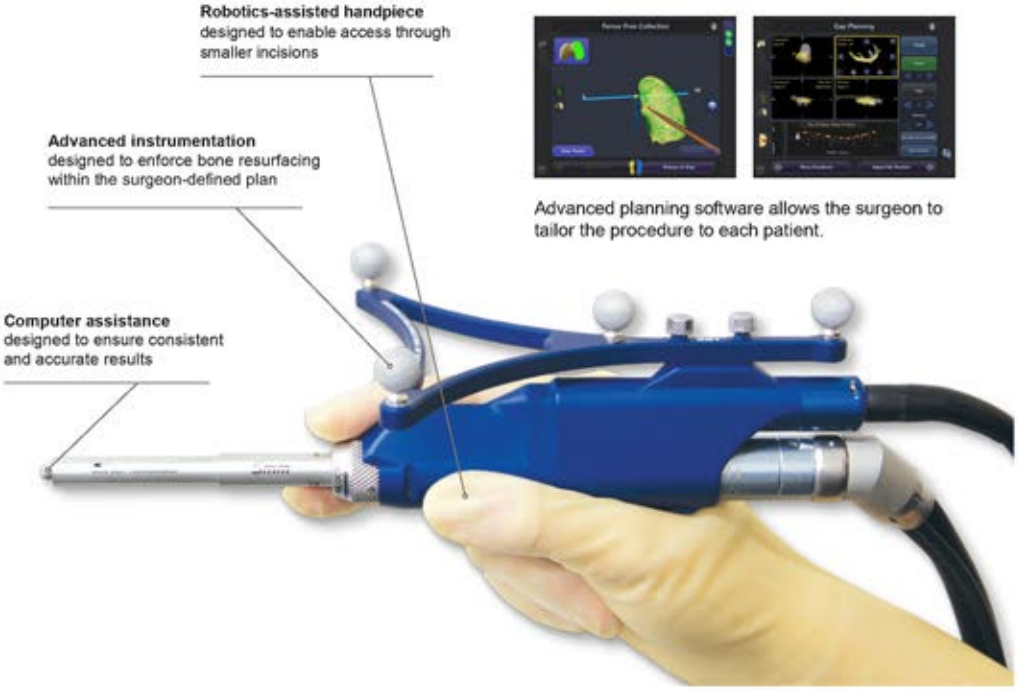
What can be done about it?

While there is no cure for osteoarthritis, there are multiple treatment options to manage pain and potentially delay the progression of the disease. Your doctor may prescribe exercises, weight loss or medication. If osteoarthritis progresses to an advanced stage and is causing severe pain, surgery may be the best option.

Instead of masking the pain or accommodating limited mobility, partial knee replacement – where the surgeon replaces only the diseased part of the knee – is a solution that can benefit sufferers of early to mid-stage osteoarthritis. While total knee replacement is the most common surgical treatment for osteoarthritis, ask your doctor if partial knee replacement is right for you. If so, there is advanced technology for partial knee replacement that can help your surgeon perform the procedure with a high level of accuracy and precision.[1]

What is NAVIO Robotics-assisted partial knee replacement?

The NAVIO system is an advancement in the way orthopedic surgeons perform partial knee replacement. The system works in conjunction with the surgeon's skilled hands to achieve the precise positioning of the knee implant based on each patient's unique anatomy. This added level of accuracy can help improve the function, feel and potential longevity of the partial knee implant.



How does the NAVIO system achieve these results?

The NAVIO system provides robotic assistance through an advanced computer program that relays precise information about your knee to a robotics-assisted handpiece used by the surgeon during the procedure. By collecting patient-specific information, boundaries are established for the robotics-assisted handpiece so the surgeon can remove the damaged surfaces of your knee, balance your joint, and position the implant with great precision.[1]

Advanced planning software allows the surgeon to tailor the procedure to each patient.

What can NAVIO® robotics-assisted technology mean for you?

Consistent results[1,2]
Accurately placed components[1,2]
Customized planning
No CT-scan required

- Other robotics-assisted surgical platforms require a costly CT-scan, which exposes patients to unnecessary radiation equivalent to 48 chest radiographs.[4]

Why partial knee replacement?

Partial knee replacement offers several benefits over total knee replacement, such as less pain[5], a more normal feeling knee[5], smaller incisions[6], and quicker rehabilitation.[5]

Why total knee replacement?

Total knee replacement is one of the most successful procedures in all of medicine according to the American Academy of Orthopaedic Surgeons.[3] Over 90% who undergo the procedure experience a dramatic reduction in knee pain and a significant improvement in their ability to perform common activities.[3]

What's my next step?

Ask your surgeon:

- Is my knee pain caused by osteoarthritis?
- Am I candidate for a partial or total knee replacement?
- Is NAVIO robotics-assisted technology right for me?
- How does my age, lifestyle and overall health affect my treatment options?
- What are the risks associated with surgery?

Find out more about knee pain and what you can do about it.

Talk to your surgeon today.

Visit www.RediscoverYourGo.com to learn more.

The NAVIO system is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Knee replacement surgery is intended to relieve knee pain and improve knee functions. However, implants may not produce the same feel or function as your original knee. There are potential risks with knee replacement surgery such as loosening, fracture, dislocation, wear and infection that may result in the need for additional surgery. Longevity of implants depends on many factors, such as types of activities and weight. This information is for educational purposes only and is not intended as medical advice. Individual results will vary. Consult your physician for details to determine if NAVIO robotics-assisted procedure is right for you.

The NAVIO system is intended to assist the surgeon in providing software-defined spatial boundaries for orientation and reference information to anatomical structures during orthopedic procedures. The NAVIO system is indicated for use in surgical knee procedures, in which the use of stereotactic surgery may be appropriate, and where reference to rigid anatomical bony structures can be determined. These procedures include unicondylar knee replacement (UKR), patellofemoral arthroplasty (PFA), and total knee arthroplasty (TKA). The NAVIO system is indicated for use with cemented implants only.

1. Lonner J., Smith J., et al., High Degree of Accuracy of a Novel Image-free Handheld Robot for Unicondylar Knee Arthroplasty in a Cadaveric Study. Clin Orthop Relat Res. 2014 Jul 8. Epub 2014 Jul 8.

2. Data on file - Internal document TR0923 Rev B.

Note: claims referenced in citations 1 and 2 are the result of in-vitro simulation testing have not been proven to predict clinical performance.

3. Arthritis of The Knee, American Academy of Orthopedic Surgeons, http://orthoinfo.aaos.org/topic.cfm?topic=A00389, Accessed 9.5.16

4. Lonner, Jess, Moretti, Vince, "The Evolution of Image-Free Robotic Assistance in Unicompartmental Knee Arthroplasty", The American Journal of Orthopedics, May/June 2016, 249-254. Accessed June 7, 2016

5. Hall et al., "Unicompartmental Knee Arthroplasty (Aka Uni-Knee): An Overview With Nursing Implications," Orthopaedic Nursing, 2004; 23(3): 163-171.

6. Repicci, JA, et al., "Minimally invasive surgical technique for unicondylar knee arthroplasty," J South Orthopedic Association, 1999 Spring; 8(1): 20-7.

Part Number 09008 V1 5/17

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Surgical System

Does knee pain keep you from what you love?

The NAVIO Surgical System can help your surgeon **get you back in action** with accurate and precise knee replacement technology.[1,2]

Knee pain makes a big difference in your life. So can knee replacement with NAVIO® robotic assistance.

What causes knee pain?

Millions of people suffer from osteoarthritis, which occurs when there is a breakdown in the cushioning cartilage between joints, such as the knee. When this cartilage wears down, bones begin to rub against each other causing pain, swelling, stiffness and damage to other parts of the knee.[3]

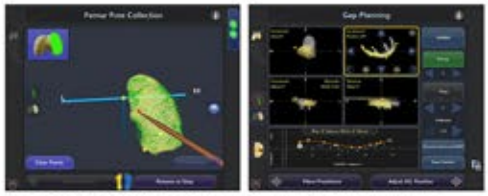
What can be done about it?

While there is no cure for osteoarthritis, there are multiple treatment options to manage pain and potentially delay the progression of the disease. Your doctor may prescribe exercises, weight loss or medication. If osteoarthritis progresses to an advanced stage and is causing severe pain, surgery may be the best option.[3]

A partial or total knee replacement are common surgical options you may discuss with your doctor. Partial knee replacement—where the surgeon replaces only the diseased part of the knee — is a solution that can benefit sufferers of early to mid-stage osteoarthritis. Total knee replacement – where the surgeon replaces the entire knee joint – is a more common procedure generally reserved for advanced osteoarthritis affecting multiple compartments of the knee. Ask your doctor if a partial or total knee replacement is right for you. With either option today, there is advanced technology that can help your surgeon perform the procedure with a high level of accuracy and precision.[1,2]

What is a NAVIO robotics-assisted knee replacement?

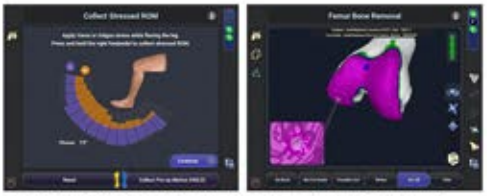
The NAVIO system is an advancement in the way orthopedic surgeons perform partial and total knee replacement. Every NAVIO procedure has an individualized plan based on each patient's unique anatomy. The system works in conjunction with the surgeon's skilled hands to achieve precise positioning of components during surgery. This level of accuracy can help improve the function, feel and potential longevity of the knee implant.[4]



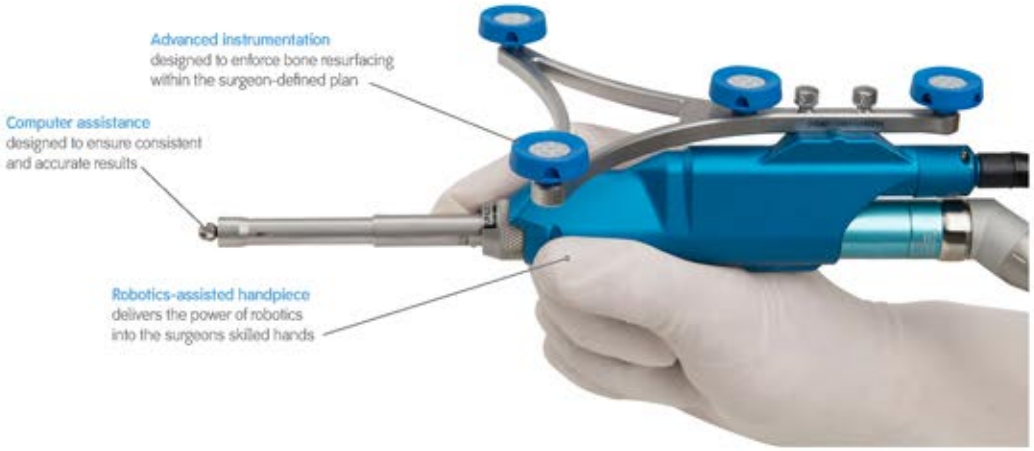
Advanced NAVIO technology helps the surgeon create a 3D map of your knee.

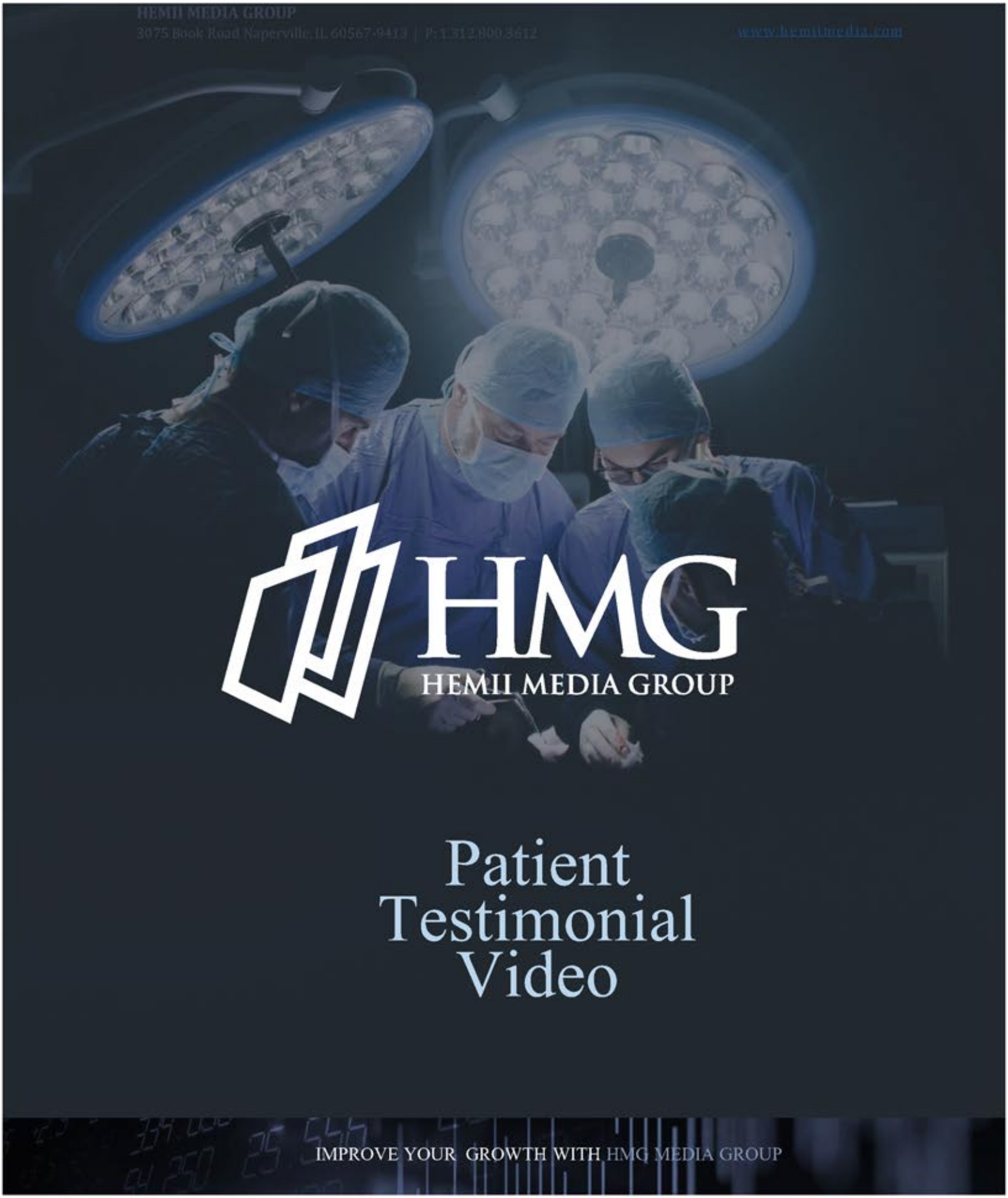
How does the NAVIO system achieve these results?

The NAVIO system provides robotic assistance through an advanced computer program that relays precise information about your knee to a robotics-assisted handpiece used by the surgeon during the procedure. By collecting patient-specific information, boundaries are established for the robotics-assisted handpiece so the surgeon can balance your joint and position components with accuracy and precision.[1,2]



Advanced NAVIO technology helps the surgeon accurately position the implant.





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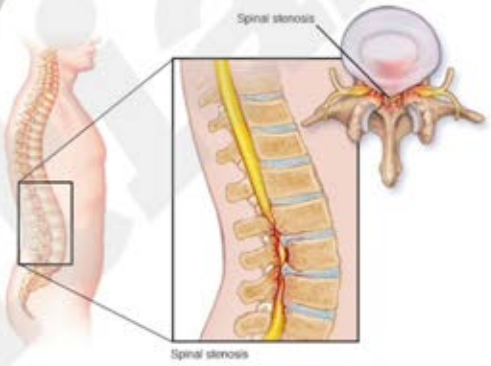

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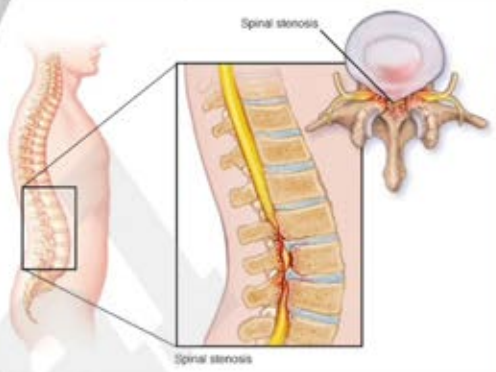

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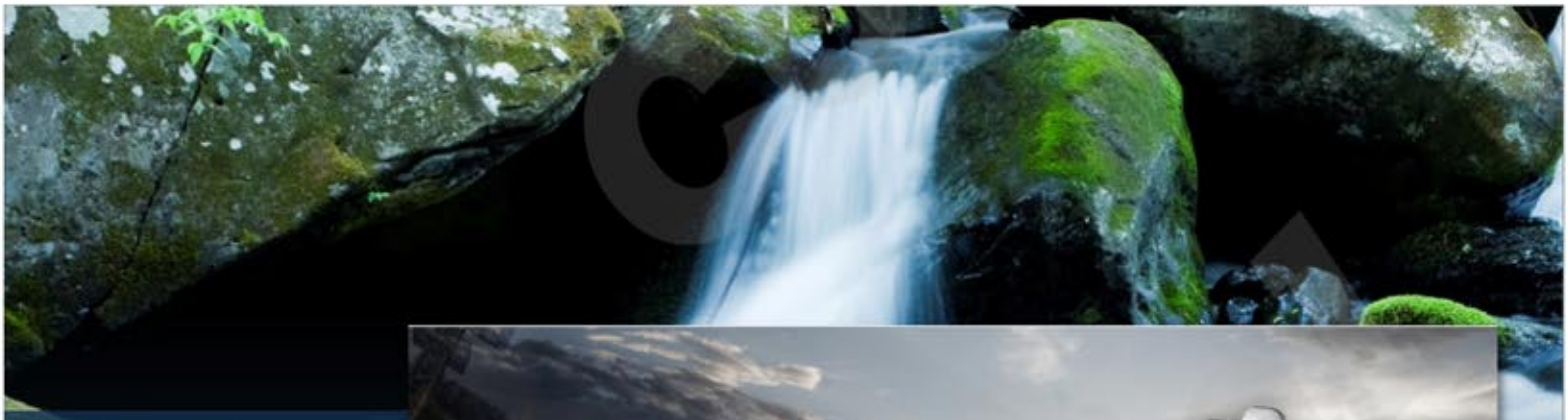

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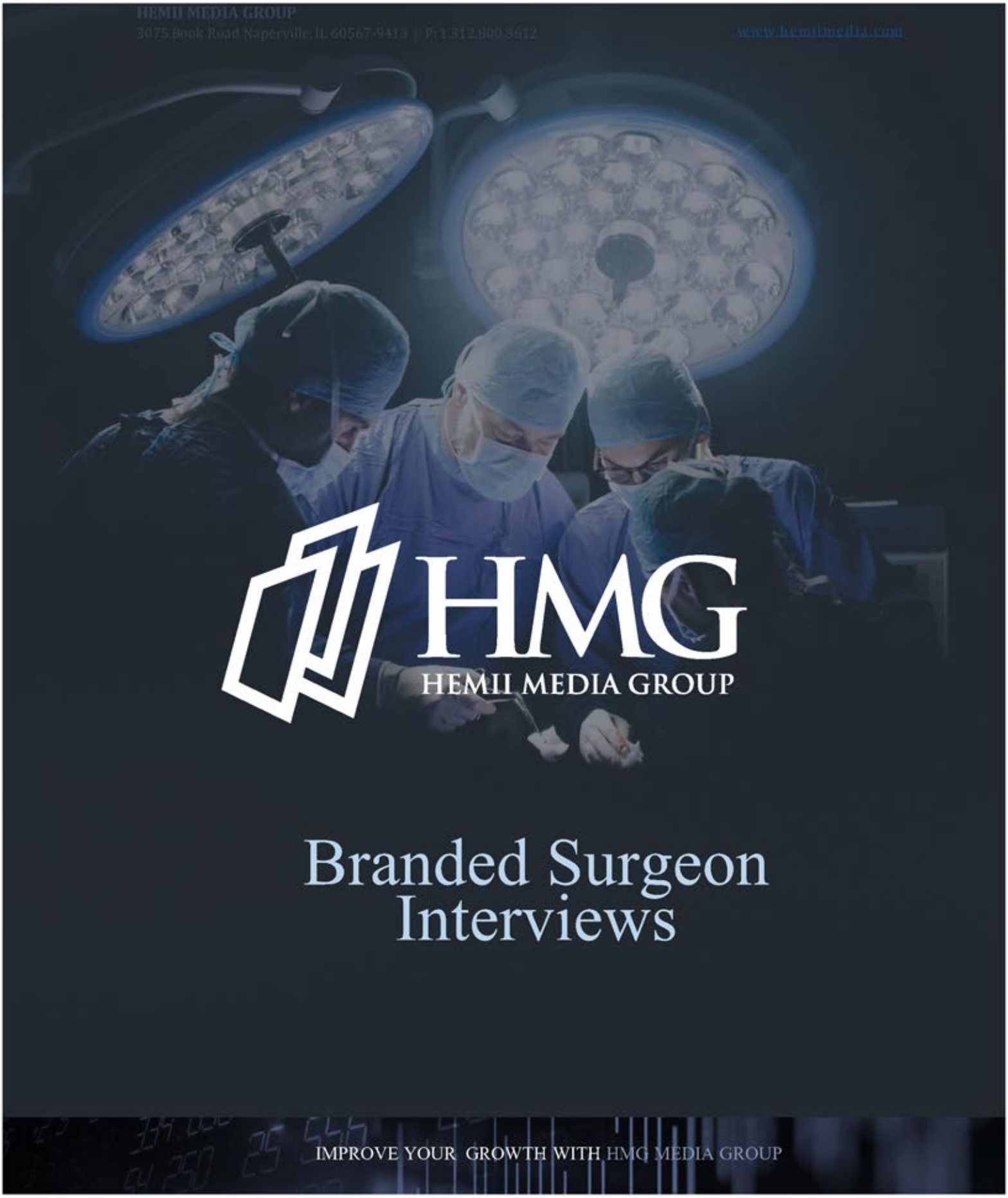

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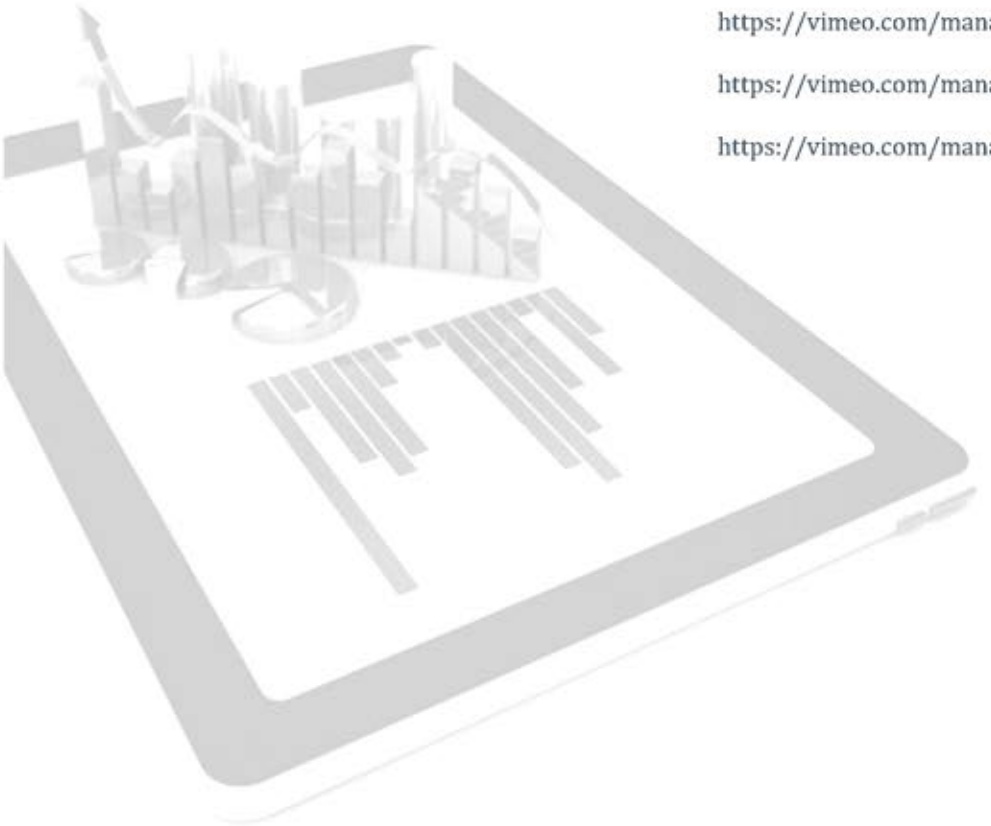

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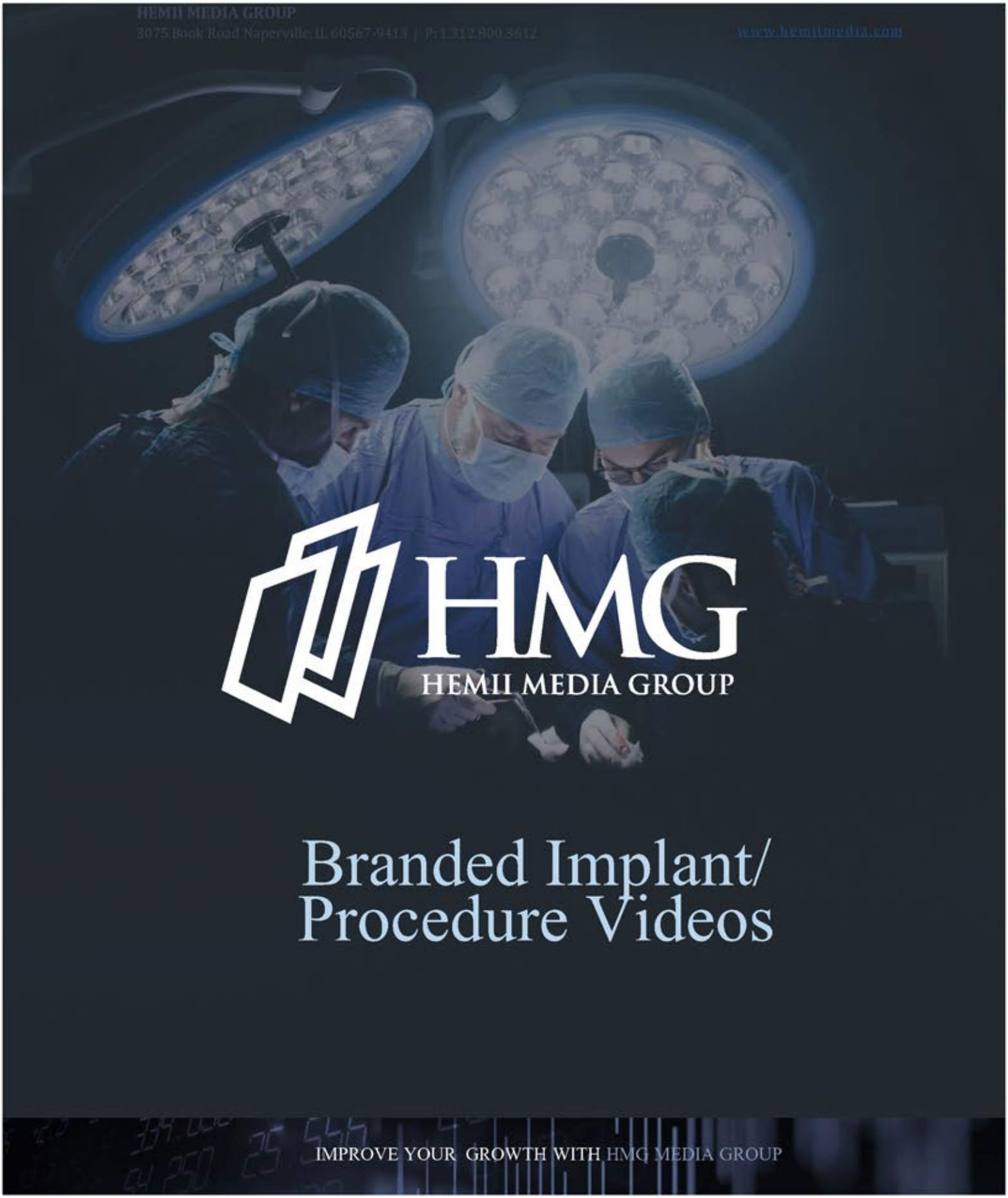

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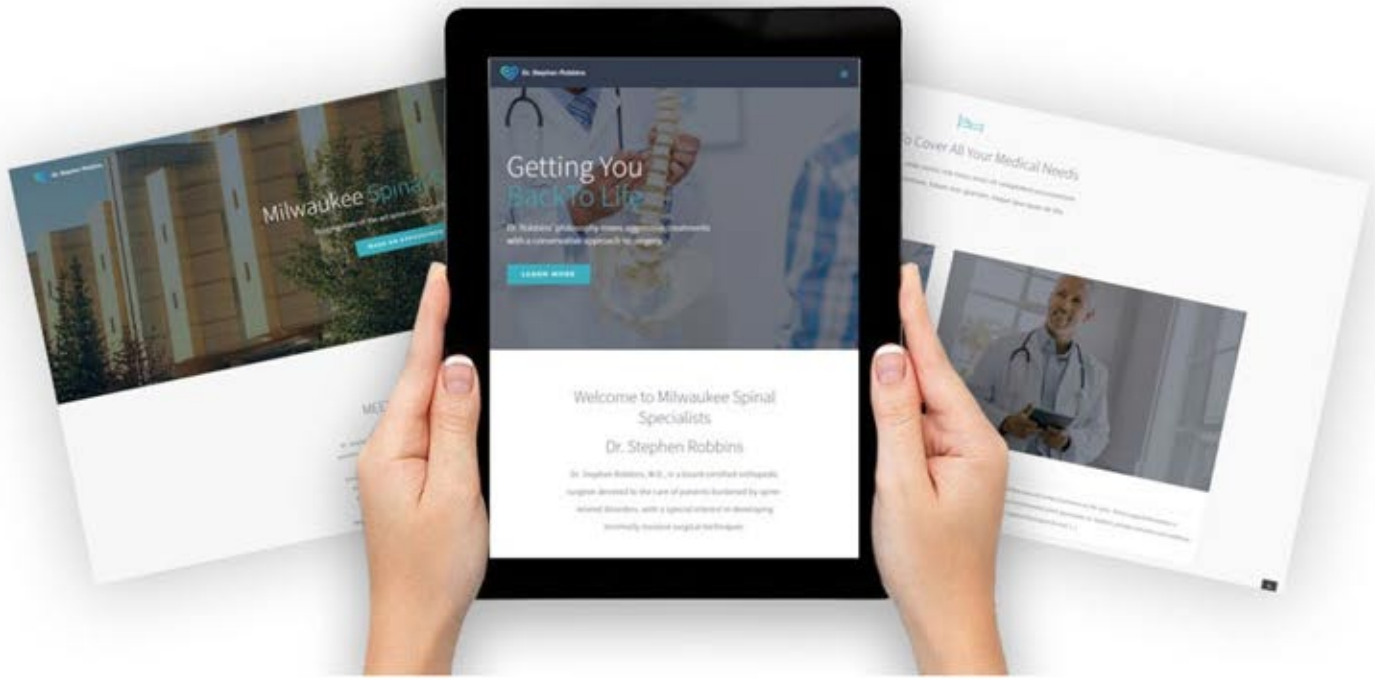

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NAVIO ROBOTICS ASSITANCE PROVIDES ACCURACY AND PRECISION

The NAVIO system is an advancement in the way our orthopedic surgeons perform partial knee replacement. The system works in conjunction with our surgeon's skilled hands to achieve the precise positioning of the knee implant based on each patient's unique anatomy. This added level of accuracy can help improve the function, feel and potential longevity of the partial knee implant.

Through an advanced computer program, the NAVIO system provides robotic assistance that relays precise information about your knee to a robotics-assisted handpiece used by our surgeons during the procedure. By collecting patient-specific data, boundaries are established for the handpiece so we can remove the damaged surfaces of your knee, balance your joint, and position the implant with greater precision.

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Patient Success Stories

About Dr. Parminder Kang

A native Las Vegan, Parminder S. Kang, M.D. is happy to be back in his hometown. He graduated from the Academy of Math Science and Applied Technology at Las Vegas' Clark High School. He then graduated with honors in Physics from the University of California at Berkeley in 2001. A knee injury in college led him to pursue a career in medicine. Dr. Kang received his medical degree from the State University of New York College of Medicine where he graduated at the top of his class (AOA) in 2005. He then completed his orthopaedic residency at the Baylor College of Medicine in the world-renowned Texas Medical Center in 2010. During his residency he received the Journal of Orthopaedic Trauma Best Teaching Resident award. After completing his general orthopaedic training, he obtained a prestigious fellowship for an additional year of training in Adult Reconstruction and Hip Preservation at Washington University in St. Louis, Missouri in 2011.

PARMINDER KANG, M.D.

Dr. Kang is a member of the American Academy of Orthopaedic Surgeons, the American Association of Hip and Knee Surgeons and the Arthroscopy Association of North America. His practice focuses on providing advanced conservative and surgical care to patients with hip and knee problems, particularly with injuries to the cartilage and/or labrum. He uses the newest techniques and cutting edge technologies to treat his patients.

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- Partial hip arthroplasty
- Hip resurfacing
- Hip arthroscopy
- Hip preservation procedures
- Knee arthroscopy
- Complex hip and knee revision surgery

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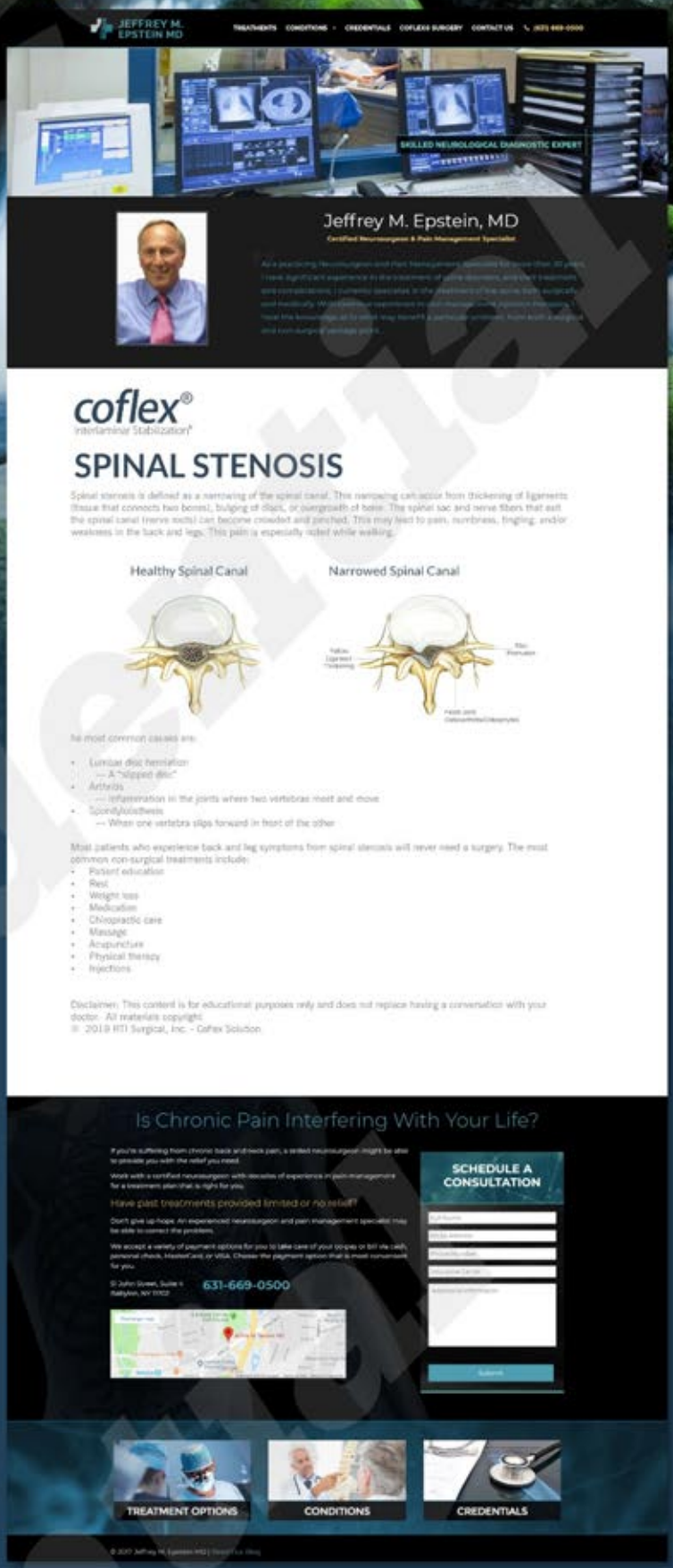

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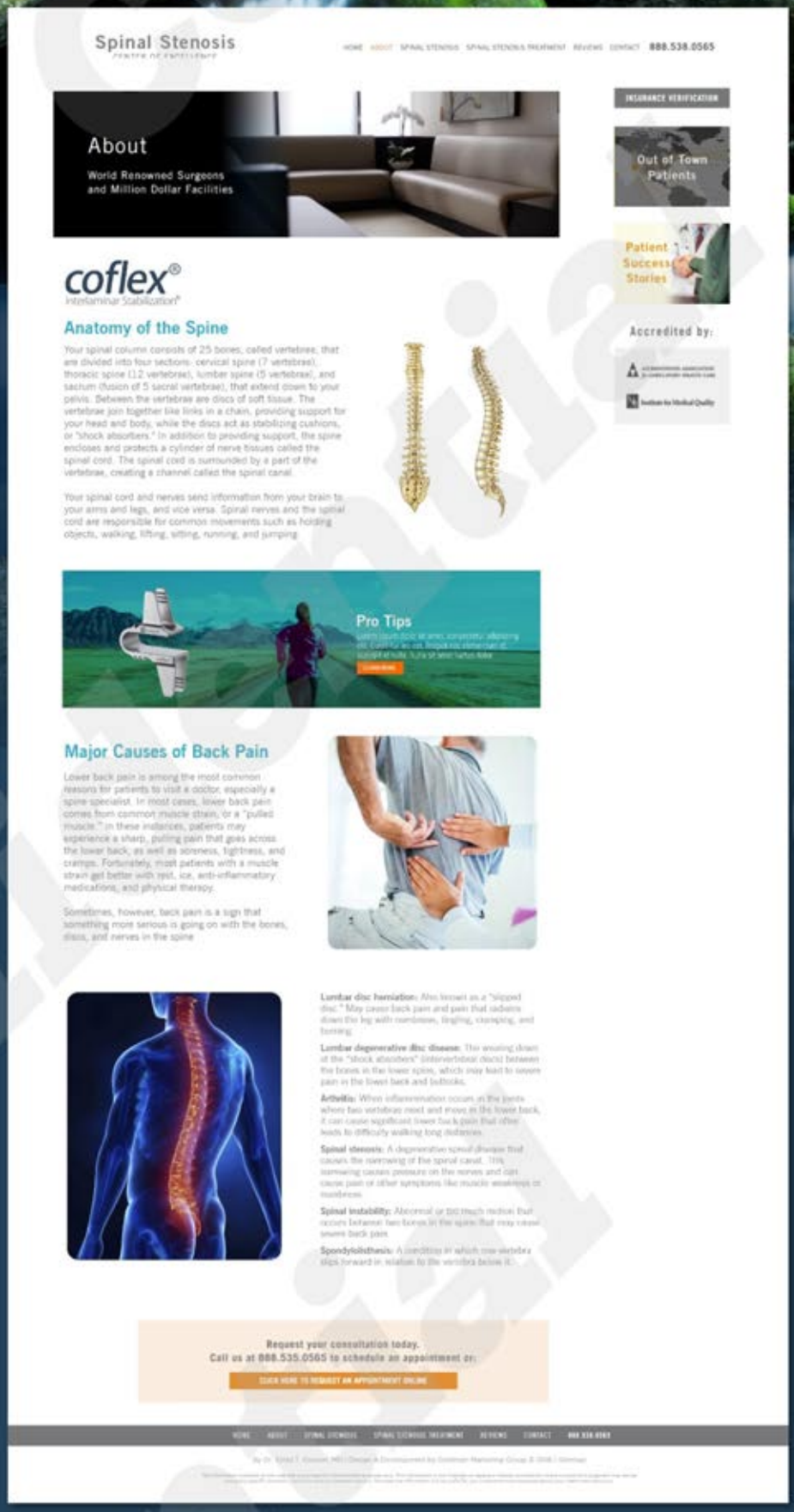

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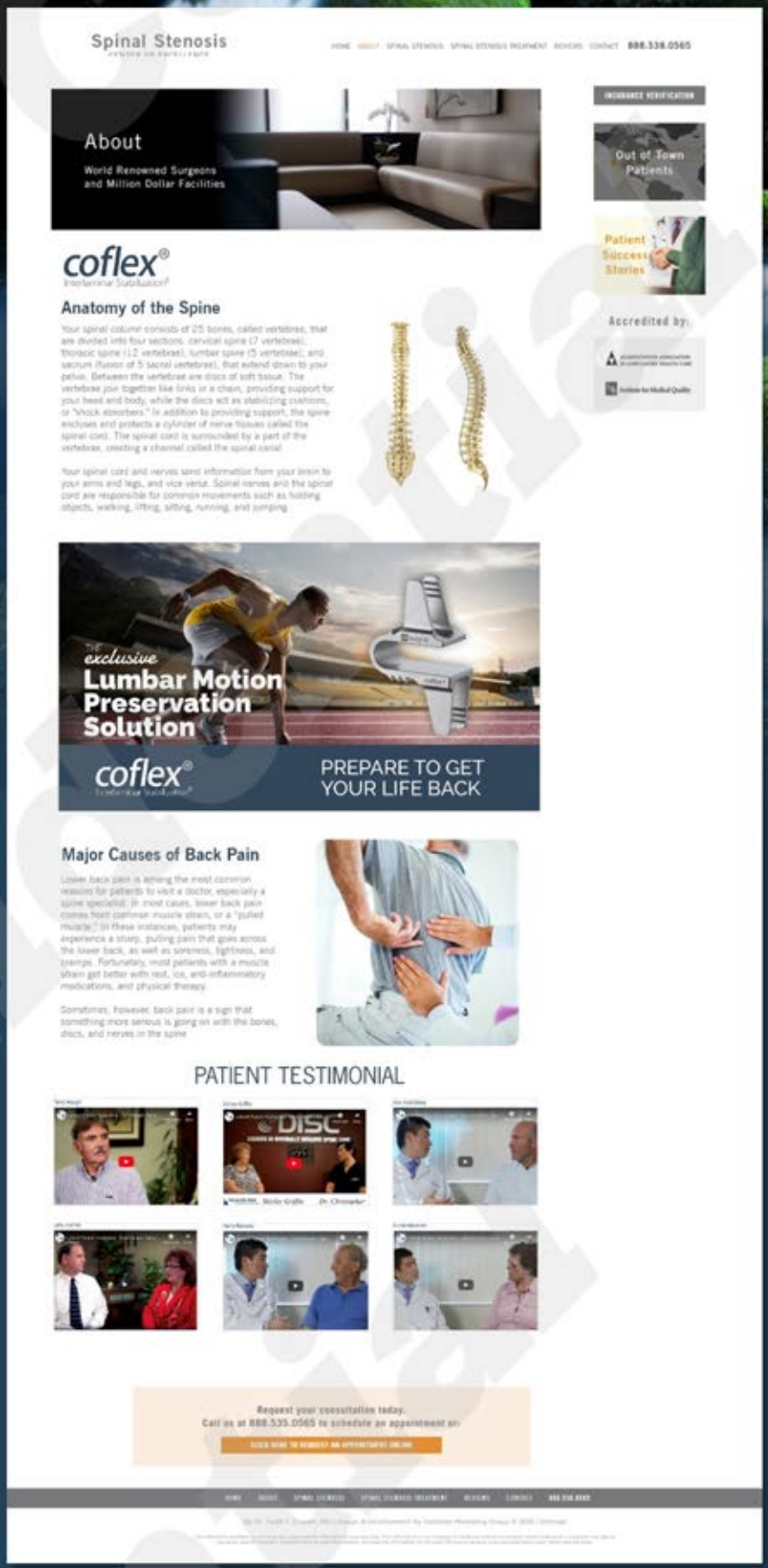

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Dr. Martin Anderson


Dr. Sanjai Shukla

1 Post, Zachary D., MD, Orozco, Fabio, MD, Diaz-Ledezma, Claudio, MD, Hozack, William J., MD, Ong, Alvin, MD 20140 Journal of the American Academy of Orthopaedic Surgeons.
Additional information available at www.RediscoverYourGo.com.

There are potential risks with hip and knee joint replacement surgery such as loosening, fracture, dislocation, wear and infection that may result in the need for additional surgery. Do not perform high impact activities such as running and jumping unless your surgeon tells you the bone has healed and these activities are acceptable. Early device failure, breakage or loosening may occur if you do not follow your surgeon's limitations on activity level. Early failure can happen if you do not guard your hip and knee joint from overloading due to activity level, failure to control body weight or accidents such as falls. Knee and hip replacement surgery is intended to relieve joint pain and improve joint functions. Talk to your doctor to determine what treatment may be best for you.
*Trademark of Smith & Nephew.

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NAVIO®
Surgical System

Ready to address your knee pain?

Precision partial knee replacement through robotic assistance

The NAVIO Surgical System is a CT-free robotics-assisted platform that delivers accurate and precise results[1]. Compared to total knee replacement, partial knee replacement has been shown to offer patients less pain[2], smaller incisions[3], quicker rehabilitation[2] and a more normal feeling knee[2].

Visit **www.cmis-robotic-assisted.com** to learn more.

CMIS

CENTER FOR MINIMALLY INVASIVE SURGERY

an affiliate of SCA

Individual results may vary. The NAVIO system is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Knee replacement surgery is intended to relieve knee pain and improve knee functions. However, implants may not produce the same feel or function as your original knee. There are potential risks with knee replacement surgery such as loosening, fracture, dislocation, wear and infection that may result in the need for additional surgery. Longevity of implants depends on many factors, such as types of activities and weight. This information is for educational purposes only, and is not intended as medical advice. Consult your physician for details to determine if Navio robotics-assisted procedure is right for you.

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Hinsdale Orthopaedics

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951 Essington Road
Joliet, IL 60435
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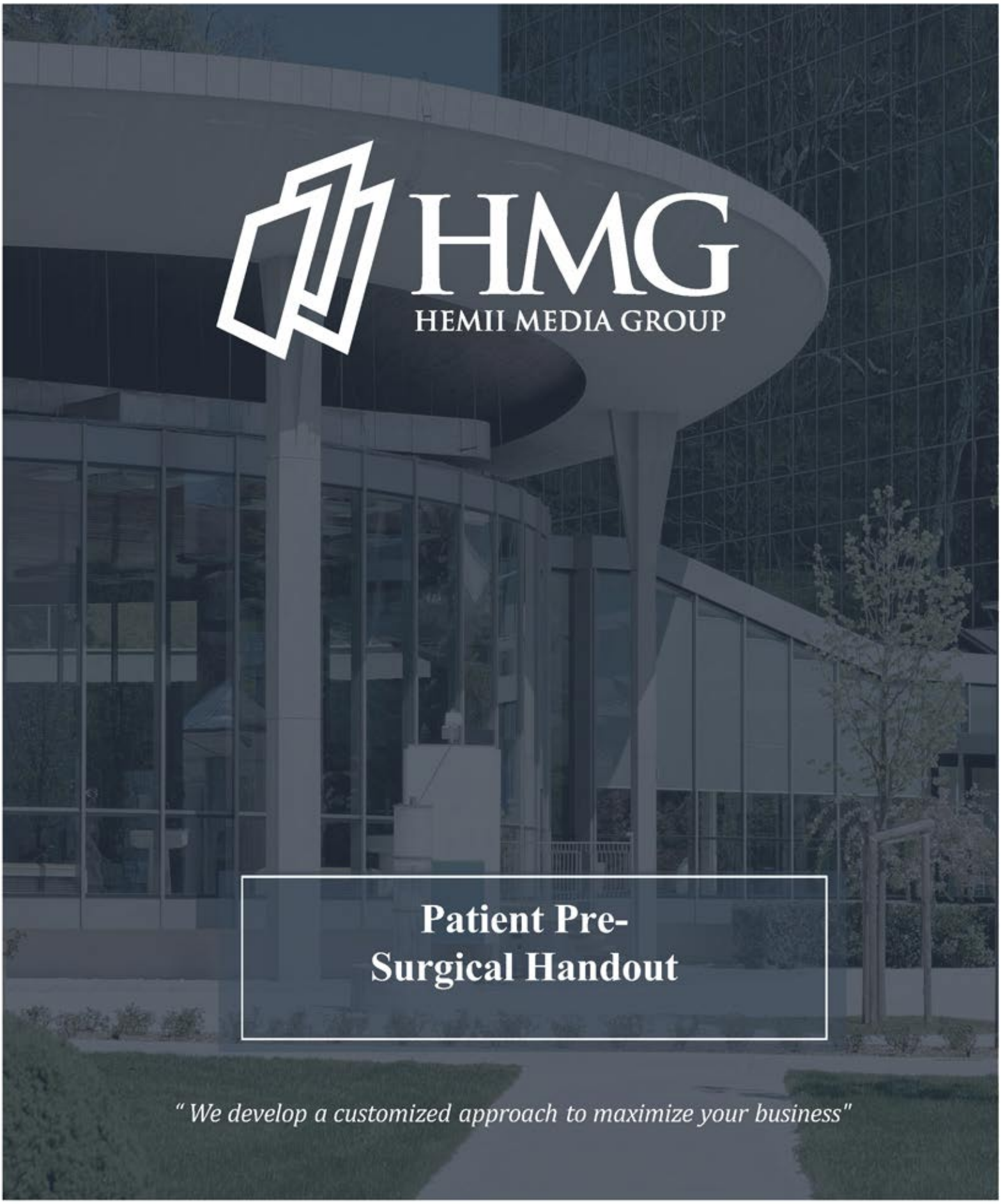

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WHAT TO EXPECT FROM YOUR **NAVIO® ROBOTICS-ASSISTED** PARTIAL KNEE REPLACEMENT

The NAVIO Surgical System can help your surgeon get **you back in action** with accurate and precise partial knee replacement.

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Patient Guide

Partial knee replacement

Partial knee replacement is a potential alternative to total knee replacement for patients with early to mid-stage osteoarthritis that is generally limited to one compartment of the knee. The procedure removes and replaces the damaged portion of the knee with an implant, sparing the cruciate ligaments that are vital to knee stability, and preserving healthy bone and cartilage. In contrast to total knee replacement, partial knee replacement offers patients:

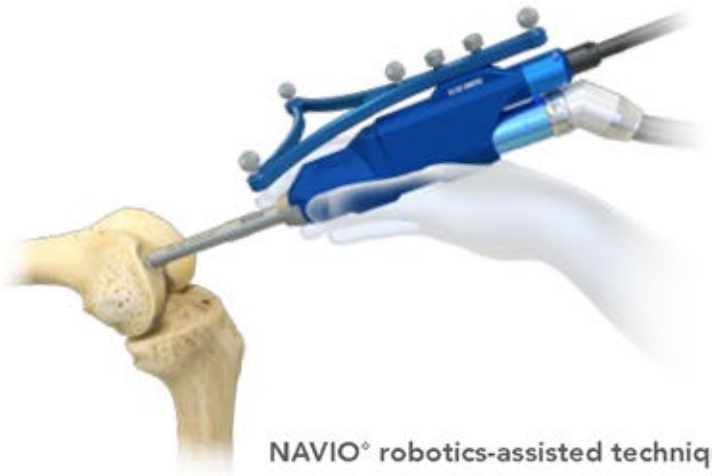
- Less pain[1]
- A more normal feeling knee[1]
- Smaller incisions[2]
- Quicker rehabilitation[1]

Partial knee replacement with traditional techniques

Using traditional surgical methods, cutting blocks or guides are placed on the thigh bone (femur) and shin bone (tibia) to help direct a surgical saw in removing the diseased bone and cartilage. This method has been considered technically challenging, as accurately placing these blocks can be difficult. In recent years, advanced surgical techniques using robotic assistance have been developed to provide a higher level of accuracy and precision.[3]

Shin bone (tibia) guide

Thigh bone (femur) guide



NAVIO® robotics-assisted technique

Partial knee replacement with NAVIO® robotic assistance

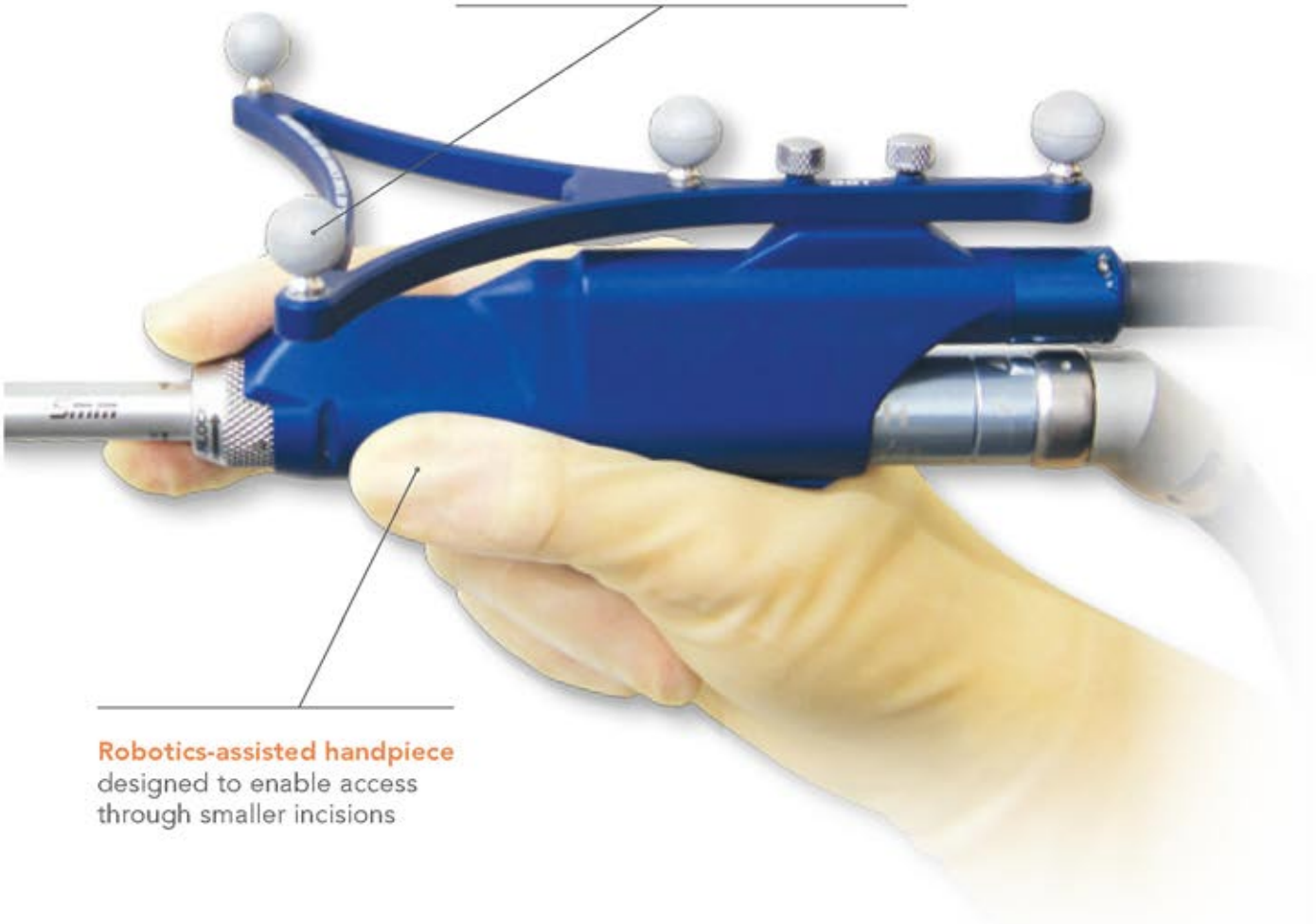
The NAVIO Surgical System provides robotic assistance through an advanced computer program that relays precise information about your knee to a robotics-assisted handpiece used by the surgeon during the procedure. By collecting patient-specific information, the surgeon is able to establish spacial boundaries for the robotics-assisted handpiece to assist in removing the damaged surfaces of your knee, balance your joint, and position the implant with accuracy and precision.[3]

NAVIO Surgical System

Computer assistance
designed to ensure consistent and accurate results

Advanced planning software allows the surgeon to tailor the procedure to each patient.

Advanced instrumentation
designed to enforce bone resurfacing within the surgeon-defined plan



Robotics-assisted handpiece
designed to enable access through smaller incisions

Preparation

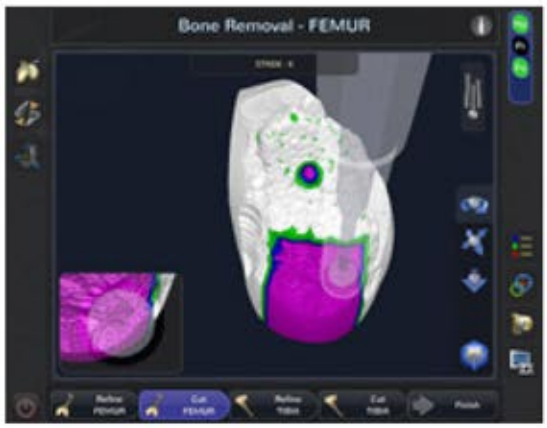
Follow your physician's instructions on how to prepare leading up to surgery. Some surgeons may request thorough medical and dental evaluations. Let your doctor know if you are taking any medications.

Consider how the surgery and recovery process will affect your daily activities. Move items and furniture in your home so they are easier to access while your mobility is limited. Remove clutter and obstacles that could be tripping hazards. Have a plan; preparing meals ahead of time and arranging visitors to help with everyday chores will make your recovery smoother.

What to expect in surgery

The surgeon will typically make a 4" - 6" incision along the front of your knee, just to the side of the knee cap, to access the damaged area and inspect the knee. Special trackers are secured to both the thigh bone (femur) and shin bone (tibia) with four, 4mm pins that are placed through small incisions in the skin. These trackers are crucial to the precision of the system as they provide a constant reference point for the computer navigation as the surgeon collects your anatomical data and prepares the joint surfaces.

The anatomical data collected is used to generate a 3-dimensional virtual model of your knee, which the surgeon uses to precisely plan your partial knee replacement. With the NAVIO® system, proper implant placement and knee balance, important to a successful surgery, are first achieved virtually.



When the surgical plan is set, the NAVIO system's robotics-assisted handpiece is used by the surgeon to accurately resurface the joint as he or she guides the instrument over the damaged femoral and tibial bone. After the damaged bone and cartilage have been removed and the implants are in place, the incision is thoroughly cleaned and closed to complete the procedure.

Postoperative

Immediately after surgery you will be transferred to the recovery room. In addition to the incision along your knee, there will be two small incisions on both your thigh and lower leg where the tracker pins were placed. Ice packs and analgesics may be used to reduce swelling and manage pain.

Each patient's postoperative care will vary, as severity of injury, surgeon care and other factors can vary. Early movement of your operative knee with assistance is encouraged. Patients are typically allowed to walk with the assistance of a cane, crutches or walker shortly after surgery. A physical therapist will prescribe exercises to help restore knee strength and function, and increase range of motion. It is common for your knee to experience swelling, stiffness and tightness. Follow up visits may be scheduled to check up on your condition and progress as you recover.

Your physician will instruct you when it's appropriate to return to various activities. How quickly you recover depends on factors such as knee pain, flexibility, strength, and balance.

Complications

As with any surgical procedure, there are risks involved with partial knee replacement, which may include, but are not limited to:

- **Blood clots.** Your physician may prescribe medication to help prevent blood clots.
- **Infection.** Antibiotics may be given before the surgery and continued afterward to help prevent infection.
- **Injury to nerves or vessels.** While rare, nerve and blood vessel damage may occur during the procedure.[4]
- **Other risks.** Individual patient risks should be discussed with your surgeon.

Disclaimer

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4 American Association of Orthopaedic Surgeons (2014). AAOS.org

SPECTRUM ORTHOPAEDICS

NAVIO®
Total Knee Replacement Surgery

WHAT YOU NEED TO KNOW ABOUT

Total knee replacement surgery with the NAVIO® Surgical System

Michael L. Lykins, DO

More than 600,000 total knee replacement procedures are performed each year in the U.S. and more than 90% of these patients experience a dramatic relief in knee pain and are better able to perform common activities.[1] The NAVIO® Surgical System delivers robotics-assisted tools designed to help tailor your total knee replacement surgery to the unique shape and motion of your knee.

Robotics-assisted knee replacement planning with the NAVIO® System

The total knee replacement procedure starts with your unique anatomy in mind. By the time your procedure is complete, the damaged bones and cartilage within your knee joint will be removed and replaced with new implant components. Each of these implant components must fit precisely and be aligned to your natural anatomy if they are to provide you with the best outcome possible. The challenge of aligning your implant and preparing your bones to accept it can be complex, invasive and time consuming because no two knee joints are exactly the same.

The NAVIO® Surgical System is designed to help your surgeon not only plan your surgery based on your unique anatomy, but also position your total knee implant using a combination of computer and robotic assistance. The NAVIO® procedure starts with an advanced computer system that gathers precise anatomic and alignment information about your joint that your surgeon will use to create your specific surgical plan.

Advanced instrumentation designed to enforce bone resurfacing within the surgeon defined plan

Computer assistance designed to ensure consistent and accurate results

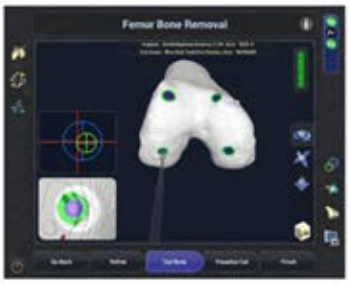
Robotics-assisted handpiece designed to enable access through smaller incisions

This extra layer of data collection and planning is designed to help ensure your knee procedure is performed exactly as your surgeon intends and that your implant is positioned as accurately as possible for the best long-term outcome.

SPECTRUM ORTHOPAEDICS

NAVIO® Robotics-Assisted Total Knee Replacement Surgery

CT-Free



Other robotic-assisted knee replacement systems use computerized tomography, or CT, scans to help a surgeon visualize a patient's knee anatomy. While CT scans are effective at showing the layers of knee anatomy, they can expose the patient to potentially harmful radiation. In fact, a single CT scan is equivalent to the radiation exposure received in 48 chest X-rays. [2]

The NAVIO® system eliminates the need for CT scans by using an advanced computer program to collect anatomic and alignment information about your knee. Once captured, this information is used to build a precise, computer-rendered 3D model of your knee that your surgeon will use to plan your surgery.

Total Knee Replacement Surgery without rods

Another method that can be used to determine the anatomic alignment of your new implants uses long, metal devices called intramedullary (IM) rods that are drilled into the central canal of the bone to show the alignment of the knee in relation to the hip. These rods are then used to attach the cutting guides necessary to guide the surgeon's saw blade as it shapes the bones to accept the new implants.

Because the NAVIO® system has already gathered the anatomic alignment information about your knee, it eliminates the need for IM rods. Instead, your surgeon will use the system's handheld robotics-assisted tool (the NAVIO® handpiece) to accurately position the NAVIO-specific cut guides which are held in place with a few small pins instead of the IM rod. This process leaves the central canal of your bone untouched. Implant alignment is a crucial factor in determining how long the implant will last [3,4].

NAVIO® Brings Robotics-assisted Precision to Total Knee Surgery

After removing the cutting guides, the prosthetic knee implants are implanted and your knee is checked to make sure it moves and is balanced correctly. It is important to understand that the NAVIO® system doesn't replace your surgeon. The procedure remains in the skilled hands of your surgeon, with the NAVIO® system providing extra layers of planning, accuracy and precision.

Michael L. Lykins, DO
Orthopaedic Surgeon

Dr. Michael L. Lykins is a board-certified orthopaedic surgeon with expertise in total joint replacement, knee, and shoulder arthroscopy, hand surgery, and has a special interest in sports medicine.

Dr. Lykins graduated from medical school in 1989 from Ohio University College of Medicine. He completed his internship and residency in orthopaedics at Doctor's Hospital of Stark County, where he was the chief surgery resident. While completing his studies, Dr. Lykins received several scholarships, honors, and awards of excellence.

Dr. Lykins volunteers in his community. He has been the Washington Massillon Tigers High School team physician for the past 19 years. He enjoys spending time with his family and is a recreational avid golfer. He is a faithful fan of all Cleveland sports and a die-hard Cleveland Browns fan.

Important safety notes

Individual results of joint replacement vary. Implants are intended to relieve knee pain and improve function, but may not produce the same feel or function as your original knee. There are potential risks with knee replacement surgery such as loosening, wear and infection that may result in the need for additional surgery. Patients should not perform high impact activities such as running and jumping unless their surgeon tells them that the bone has healed and these activities are acceptable. Early device failure, breakage or loosening may occur if a surgeon's limitations on activity level are not followed.

Disclaimer

Individual results may vary. There are risks associated with any surgical procedure including NAVIO-enabled Knee Replacement. NAVIO® is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Consult your physician for details to determine if NAVIO® is right for you.

American Academy of Orthopaedic Surgeon website, accessed March 7, 2017 //orthoinfo.aaos.org/topic.cfm?topic=A00389 • Ponzio DY, Lonner JH, Preoperative Mapping in Unicompartmental Knee Arthroplasty Using Computed Tomography Scans Is Associated with Radiation Exposure a..., J Arthroplasty (2014) • Collier, Matthew, et al., "Patient, Implant, and Alignment Factors Associated With Revision of Medial Compartment Unicondylar Arthroplasty.", Jour of Arthro, Vol 21 No 6, Suppl. 2, 2006. • Hernigou, Ph, Deschamps, G., "Alignment Influences Wear in the Knee after Medial Unicompartmental Arthroplasty.", Clin Orthop Relat Res., Volume 423, June 2004, pp 161-165

All information provided on this website is for information purposes only. Every patient's case is unique and each patient should follow his or her doctor's specific instructions. Please discuss nutrition, medication and treatment options with your doctor to make sure you are getting the proper care for your particular situation. If you are seeking this information in an emergency situation, please call 911 and seek emergency help.

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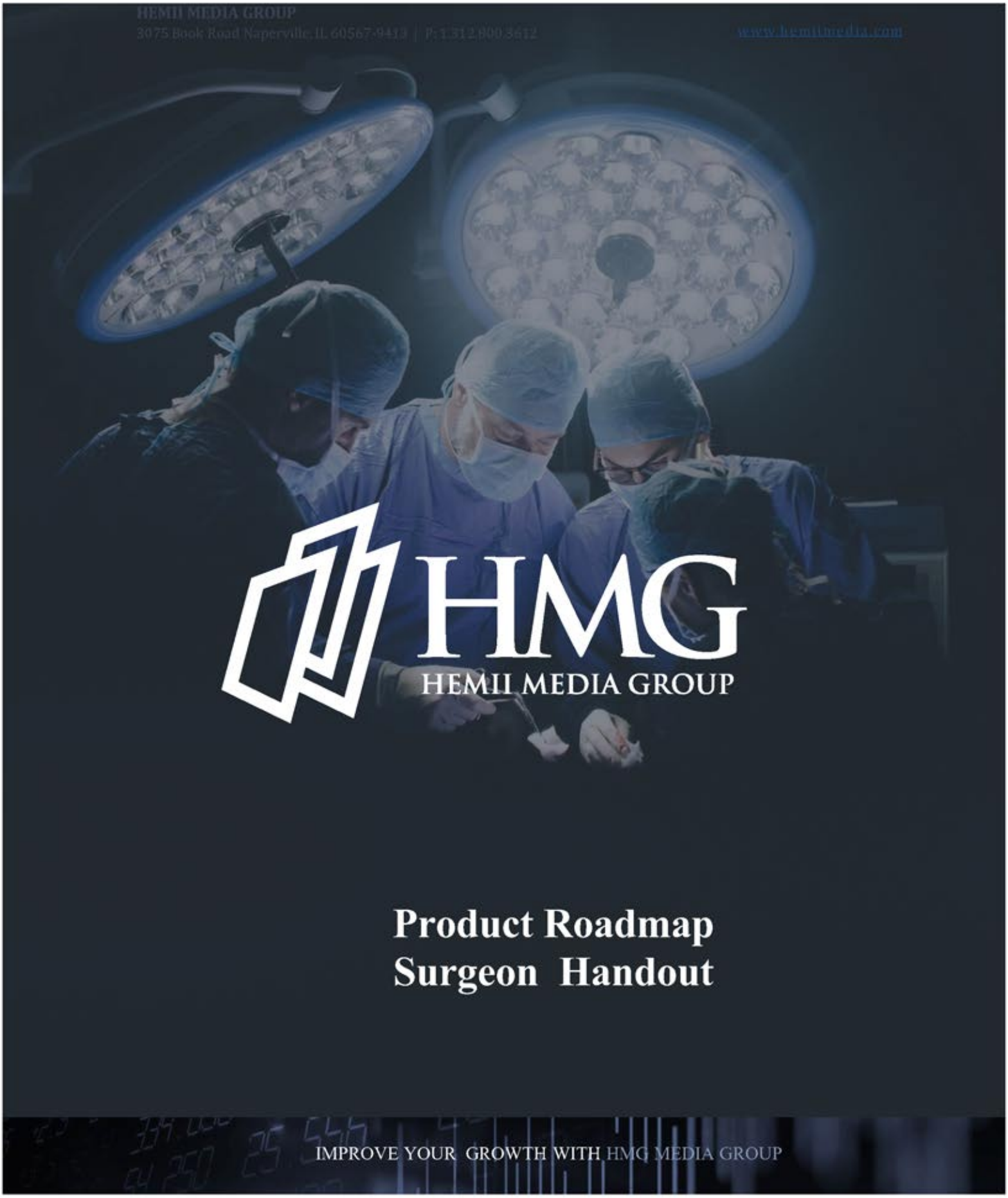

Product Roadmap
Surgeon Handout

IMPROVE YOUR GROWTH WITH HMG MEDIA GROUP

The power of robotics in your skilled hands

The NAVIO Surgical System provides accuracy, flexibility and confidence utilizing real-time imaging (without the need for preoperative CT), hand-held robotics, a portable cart, and multiple partial and total knee implant options in an economically sound[1] platform.

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NAVIO®

Surgical System

Supporting healthcare professionals

The need for improvements in healthcare

Patients are demanding improved quality of life

Knee arthroplasty has a highly successful track record as a surgical intervention, yet patient satisfaction ratings indicate 10–30% of patients remain dissatisfied.[2–6]

Running an effective practice is dependent on reproducible results and improving patient outcomes[7]

Reduce readmissions and complications[7]

Readmissions are considered to be a quality indicator in many healthcare systems and in many instances hospitals are financially penalized for avoidable readmissions (e.g. Medicare Hospital Readmission Reduction Program)[8]

Why NAVIO®?

The NAVIO Surgical System is designed to aid surgeons in component positioning, ligament balancing and bone preparation – key factors that can drive implant survivorship.[9,10]

The NAVIO Surgical System does this without requiring a CT scan and allows surgeons, staff and patients the experience of a patient-specific plan without the extra steps associated with other image-based robotic-assisted technologies that can increase cost or delay surgery[1].

Accuracy

Flexibility

Confidence

- ✓ Real-time imaging
- ✓ Handheld robotics
- ✓ Portable cart
- ✓ Multiple implant options
- ✓ Economically sound[1]

Next generation of robotics

How it works

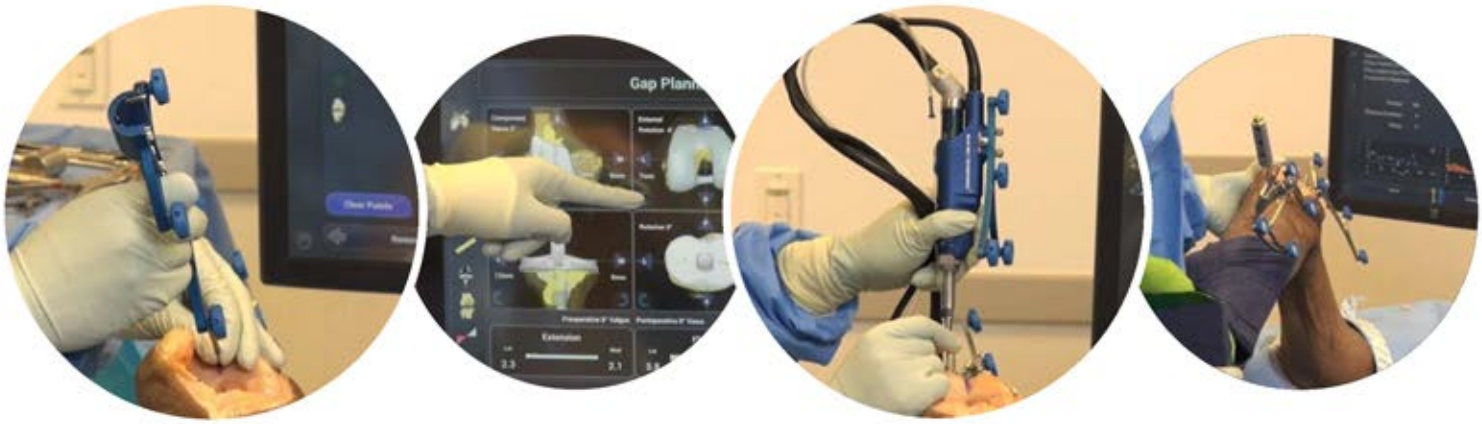
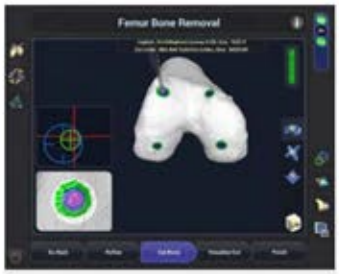


Image-free registration

- A 3D model of the patient's cartilage and bone is captured through direct surface mapping, eliminating the need for a CT scan

Patient specific planning

- 3D implant planning provides confidence in sizing, placement, and resection depth
- For total and unicompartmental knees, patient-specific planning allows the surgeon to place implant components virtually and predict postoperative joint laxity at the time of surgery without being locked into a plan before verifying the severity of the disease
- Soft tissue balancing can be viewed throughout the full range of motion



Robotics-assisted bone preparation

- Patented NAVIO® handheld burring technology removes only the bone determined by the surgeon plan
- Bone removal is seen on the NAVIO screen in real-time allowing the surgeon to continually assess patient anatomy against the plan

Confirmation

- For UKA and TKA, confirm postoperative joint laxity versus planned
- Varus/valgus balance is assessed to confirm the achieved long-leg alignment
- Flexibility to perform and evaluate ligament releases

Accuracy | Flexibility | Confidence

Real-time imaging

Eliminates time and costs associated with preoperative CT imaging

- Simplifies the surgical process
- Reduces radiation exposure for patients
  - The mean dose associated with the preoperative CT for robotic-assisted knee arthroplasty is equivalent to 48 chest radiographs[11]
  - Furthermore, one or more additional CT scans were obtained in 25% of patients, according to one study of 211 patients[11]
- Enables office staff to focus on patient care by eliminating the need to spend time managing payer approvals for preoperative imaging
- Saves the healthcare system incremental cost of CT

Image-based robotics-assisted workflow

NAVIO® **image-free** robotics-assisted workflow

Provides the confidence of handheld robotics

The NAVIO® handpiece accurately removes bone identified by the surgeon approved, patient-specific plan[12]

Accuracy

Flexibility

Confidence

The NAVIO handpiece offers a unique and flexible approach to knee arthroplasty

- Places robotics-assisted surgery in your hands
- Allows flexibility of multiple bone removal options [Bur | Saw | Combo]
- Provides accurate burring for bulk bone removal or fine tune adjustments

1. Handpiece
2. Tracking array
3. Infrared reflective discs
4. High speed internal drill
5. Interchangeable guard
6. Cutting bur

Flexibility

Portable cart with a small footprint

- Easily move the cart from OR to OR or facility to facility, providing flexibility and efficiencies
- Features simple calibration and a footprint designed for use in the surgery center or hospital

Flexibility

Confidence

Implant options

Provides the flexibility of multiple implant options for partial and total knees to accommodate surgeon and patient needs

JOURNEY II BCS

JOURNEY II CR

JOURNEY II XR*

Supports the JOURNEY® II Total Knee which is designed for normal function, smoother recovery and improved patient satisfaction

JOURNEY UNI

JOURNEY PFJ

JOURNEY II CR

Components made with OXINIUM® alloy, an advanced material shown to be 4,900 times more resistant to abrasion[18], more than twice as hard[19], and has a coefficient of friction that is up to half that of CoCr[20]

STRIDE

Supports STRIDE UNI, designed to be optimized for robotics

ZUK UNI

GENESIS II PS/CR

LEGION PRIMARY BCS/CR

Offers a selection of implant options with a strong clinical heritage including ZUK UNI[13], GENESIS® II[14] and LEGION® Primary[15-17]

*NAVIO with JOURNEY II XR not available for commercial use until 2018

Confidence

Economically sound[1]

A cost effective[1] approach to building a cutting-edge surgical practice, designed to deliver outcomes predictable to the plan

- Distinguishing technology can draw patient interest and grow case volume[21-22]
- Potential to increase patient volume by offering advanced surgical techniques and increasing access to unicompartmental and patellofemoral procedures
- Episode of care costs are decreased with the elimination of a preoperative CT

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Execute the Plan for Success

BLUEPRINT® Marketing Tasklist

smith&nephew
NAVIO®
Surgical System

Prepared For: _____ BLUEPRINT® Program Budget: _____

Prepared By: _____ Co-Marketing Budget: _____

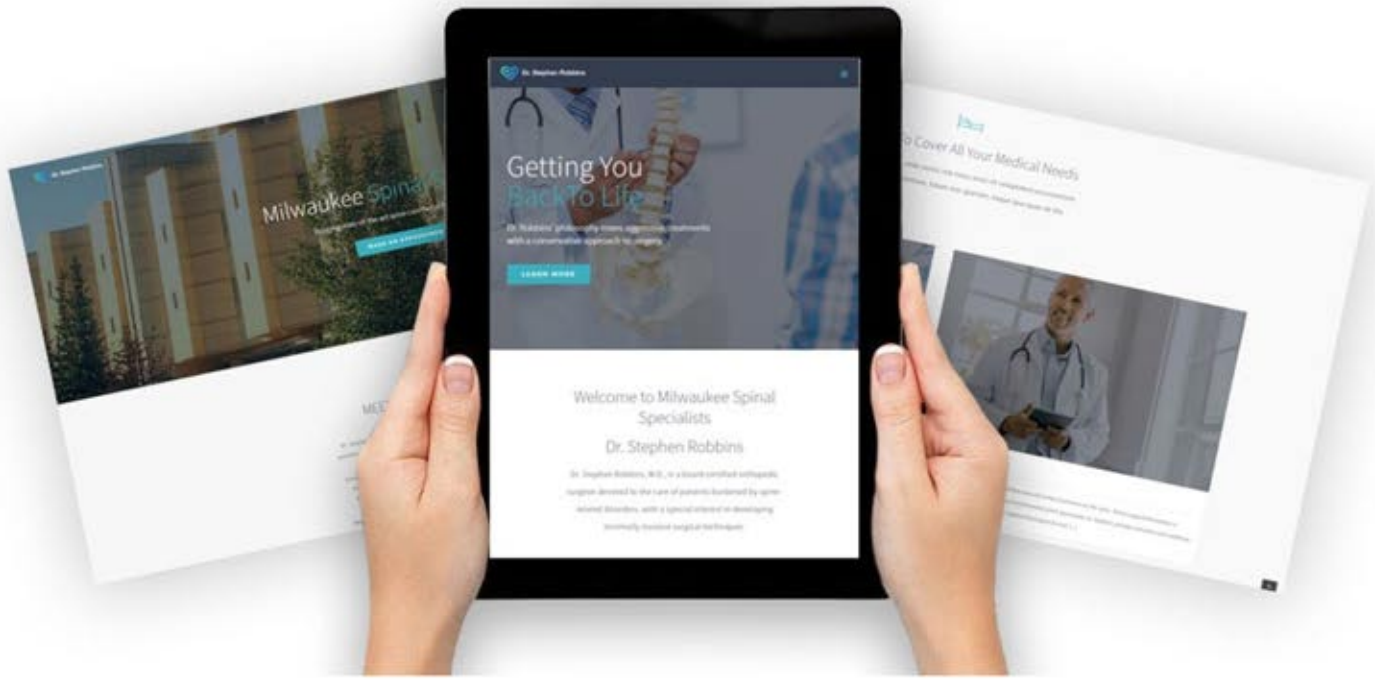
Install Date: _____ Facility Marketing Department Budget: _____

AUDIENCE	PLAN	OWNER	BUDGET $$$	BUDGET SOURCE (Blueprint, Co-Marketing or Facility)	TIMING (Start Date/End)	STATUS/COMMENTS
All Audiences	☐ Website update ☐ NAVIO Solutions pages on H2U website ☐ NAVIO Solutions content on all applicable sections of the hospital site ☐ Add NAVIO Surgery content to surgeons/clinical practice website ☐ Add content/links to NAVIO patient page ☐ Add surgeons to Profile of Excellence NAVIO Surgery locator web page				Within 30 days of Install Deadline	Content in the hospital website and individual practice websites based on all content activities Background links in the pages describing the hospital's NAVIO program will be evident in NAVIO Website
Internal Hospital Community	☐ Letter or news item OR introductory communication to all employees and staff introducing technology ☐ NAVIO Solutions patient model fact sheet sent • Invite media partners ☐ Host a Hug an NAVIO Solutions Hospital Breakfast					
Referring	☐ Identify target markets ☐ Identify referrers in primary, secondary and tertiary markets ☐ Develop a list with specialties, names and addresses ☐ Conduct user visits or letter from Chief of Surgery to promote NAVIO Solutions surgeon-introducing technology • Include patient education materials, such as a postcard/note				Within 30 days of Install Deadline	
	☐ Schedule a series of referring physician events (dinners) to present on NAVIO Solutions • Develop and send invitations to referring physicians from the participating NAVIO Surgeon				Within 30 days of Install Deadline	
Community Audience (Local and Extended Community Outreach)	☐ Reach out to community-based organizations such the Chamber of Commerce or senior citizen groups for health assessment event opportunities				Within 30 days of Install Deadline	
	☐ Reach out to HR departments of local companies or corporations for event/health or wellness fairs				Within 30 days of Install Deadline	
	☐ Reach out to conference coordinators/grand-rounds/health groups for health awareness events				Within 30 days of Install Deadline	
Public Relations and Media Outreach	☐ Press release • Acquisition of first NAVIO system • First NAVIO case • Ongoing NAVIO Program achievements and milestones				Within 3 days of Install Deadline	
	☐ Media outreach • Contact local TV news programs for radio station morning shows and print outlets for a story on NAVIO Solutions				Within 30 days of Install Deadline	
	☐ Introduce the NAVIO technology, at local dinner events such as "Medical Meal"				Within 30 days of Install Deadline	
Advertising	☐ Develop/customize patient education materials to store in office and distribute through other outreach initiatives				Within 30 days of Install Deadline	
	☐ Develop NAVIO Program brand for outdoors, print ads • Staff brand messaging and creative slogan • Include patient testimonials ☐ Print and roll-outs				Within 30 days of Install Deadline	
	☐ Develop NAVIO Solutions TV commercials ☐ Have TV air-ready					
	☐ Create NAVIO Solutions web on the "The Medical Minute" ☐ Check daily ad visits					
	☐ Create collateral set ☐ Check billboard inventory in area ☐ Develop an in-office brand package for NAVIO Solutions Program					
	☐ R.O.I. Video Magazine or local healthcare publication ads ☐ Select three or 4 high magazine ad					
	☐ Create collateral set ☐ Check billboard inventory in area ☐ Develop an in-office brand package for NAVIO Solutions Program					
	☐ Determine social and wireless patient enrolling brand kit for targeted wireless campaign • Use existing contact list to offer database targeting list					
	☐ Create online campaign • Make final website landing page with strong call to action (included in existing page) • NAVIO collected for use per clinic campaign • Create banner ads					
	☐ Develop NAVIO Solutions social media brand campaign • Facebook, Twitter, Instagram, Google+, other					
	☐ Establish QR cards to send to/and generated offline • Develop QR code • Determine QR branding, patient onboarding process • Determine QR outcome integrated in online and social branding					
	☐ Host patient education seminars at facility, community library, partnering local media, senior citizen centers, or other					

WEBSITE DESIGN & DEVELOPMENT

The Power A New Website

HMG website packages provide you with the ability to build virtually any design style. Our professionally designed sites are built entirely with your options and requested content.



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Microsite

- Seperate Dedicate Content Delivery Microsite optimized to be coded conducive to current Search Engine Algorthyms
- This is a strategy often used because it has proven to be highly effective.
- Robotic-Assisted Materials can be downloaded
- It allows an easy space for potential patients to learn about options for care i.e. conservative, partial and total knee replacement etc.
- Video's can be uploaded
- Patient testimonials
- Implant details
- Anatomical descriptions and approaches as well as terminology
- Surgeon Locator
- Location to sign up for Seminars/Events and patient contacts are gathered and routed for follow up.

NAVIO

Marketing Launch Overview

Brand program materials

Add robotics content to website

Internal NAVIO event

Local press release

Establish a series of patient lectures

Engage local media

CBS abc NBC FOX

Identify other unique opportunities in market

Identify and target physician referrals

First 30 Days

- **Design patient education materials**
  - Brochures to be at all events and PCP initiatives
  - Patient Guides
- **Develop signage/posters/banners for facility and surgeon clinics**
  - Educating on Robotic Assistance and the benefits of it.
  - Promoting the benefits and availability of this new technology in treating patients in the Avera Health system.
  - Flyers promoting the events will be strategically available at multiple sites of patient access.
- **Introduce technology on websites**
  - Coordinate with facility web designer
  - Coordinate with surgeon's practice(s) web designer
  - Implement "microsite" strategy.
  - This allows us to direct traffic and easily track it.
  - Begin a PPC Google AdWords campaign
  - Surgeon Locator
- **Begin Planning "Meet the Robot" event.**
  - Date
  - Time
  - Location
  - Participants

Design Collateral Materials

Patient education content and templates using your brand guidelines.

NAVIO brochure

Knee pain
discussion guide

Procedure guide

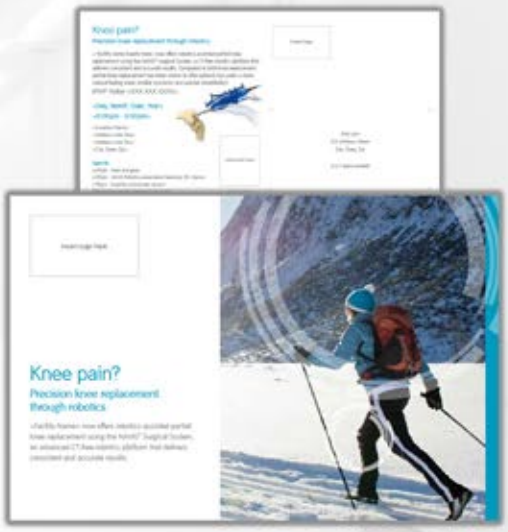
Design Collateral Materials

NAVIO Robotics signage, print ads, mail campaigns content and templates

Signage

Print ads

Why print? 80% of seniors read a local daily newspaper



Mail campaigns

Why direct mail? Direct Mail allows for predictive modeling and cloning based on data obtained from consumer lists – very targeted approach

Surgeon and Center Database

This is a new technique we have been using that can be highly effective.

If the surgeon/surgeon's office has been keeping records of the people who have come through clinic in the past this can be a very low cost high reward group. As you might guess, 9 out of 10 patients who are seen and need a knee procedure often do not get one for various reasons so this is a great audience to target. Our third party agency who is HIPPA trained and compliant understand how to reach out to this group professionally and encourage them to attend upcoming patient seminars. Patients who maybe were not ready to have their knee addressed are now. Many of them were seen before NAVIO was released and robotic-assisted surgery may be the new technology they have been waiting for.

We need to work with who can give us access to the electronic data records so that we can scrub them appropriately so we are targeting correctly.

If we are lucky enough to get access to the surgery centers database, they too can be a valuable asset. Maybe they had a shoulder surgery three years ago and need a partial knee today? They all have friends and people talk.

Newspaper Review

- Newspaper has served us well. 65-85% of our seminars come from this medium.
- A large number of people in our demographic are still reading the newspaper.
- We like to use more than one of them if possible. *(Carrie is going to supply us with local papers that will allow us to target appropriately yet not blow the budget.)*
- We look for those that target the geography and demographics.

Facebook & Instagram Advertising

smith&nephew

Benefits of using Facebook to target your audience:

- We find your target customers among the 890 million people on Facebook everyday*
- We drive people to your brand with one click from the most engaging places on Facebook
- We measure how your ads are performing and optimize them for even higher returns

We create & manage any Facebook/ Instagram ad campaign:

- We test different ad creative and ad copy for best results
- We Measure the performance of your ads

We develop your audience by targeting:

- Income
- Interest Criteria
- Geography
- Demographics
- Home Ownership
- Buying
- Habits
- Profile keywords

Target a community of more than 400M on Instagram!

- We share your brand with a highly engaged audience in a creative, high-quality environment.
- We drive mass awareness an audience with placement in the top ad position of Instagram's feed

Facebook
Desktop News Feed & Right Column

Mobile News Feed

Instagram
Mobile News Feed

Brand Awareness vs. *Lead Generation*

Highly Targeted Audience of:
27,000 People

Location: New Albany, OH + 35 mi.
Age: 40+
Gender: All
Interests: Knee Arthritis, Knee Examination, Medial Knee Injuries, Petellofemoral Sydrome, Tear of Meniscus, Smith and Nephew, Surgeons, etc.

Lead Generation is the best solution to achieving as many contacts/Leads as possible. Facebook's Data Base will automatically fill in all of the users information into a form so all the user is expected to do is hit submit. These forms are highly customizable.

Google Network

Google Search:

The Google AdWords is based on a "Pay Per Click" model (PPC), so you only pay when someone clicks on your ad. Pay as you go for guaranteed traffic! Additionally, you are reaching users in live time who are searching for keywords in relation to your product.

Google Display:

Display Advertising offers trackable, interactive, rich media ads that can be delivered at scale to highly targeted audiences. We use some of the most effective targeting solutions to deliver our client's value propositions to their ideal customers across every online device.

Google Partner

Search Ad Placements

smith&nephew

Google Search:

Sample Keywords	Estimated Searches/Mo.
Knee Pain	600
Knee Replacement	180
Arthroscopy	170
Partial Knee Replacement	80
Orthopedic Surgeon	270
Total Knee Replacement	55

Google Display:

Contextual Keywords	Impressions/Wk
Knee Replacement Surgery	100K – 150K
Knee Surgeon	15K-20K
Knee Surgery	150K-200K
Knee Doctor	15K – 20K
Knee Surgery Doctor	50K – 100K

Targeting:

- Contextual Targeting
- Interest-Based Targeting
- Site Topic Targeting
- Placement Targeting

Display Ad Placements

Google Display Network

NAVIO® Commercial Example

PLACEHOLDER (NWH Commercial) I highly recommend an informational video discussing knee replacement and the value of having robotic-assistance on your website.

This will help differentiate your position with your competition in the area. I have done partials for years but NAVIO gives me advantages that directly correlate to better care.

Local News Coverage Example

PLACEHOLDER (ASC/ Medical Center)

If you have a prominent person in the community or a celebrity that would make a good testimonial then sometimes we can get the local media to pick it up. Usually it works best coming from your office and looks less like an ad from Implant Co. Do you have a relationship with anyone from the local media?

Video

In 2016, online video accounted for 64% of all consumer internet traffic and is expected to rise to 79% by 2018

of consumers watch videos online every week

is the average conversion rate for websites using video, compared to 2.9% for those that don't

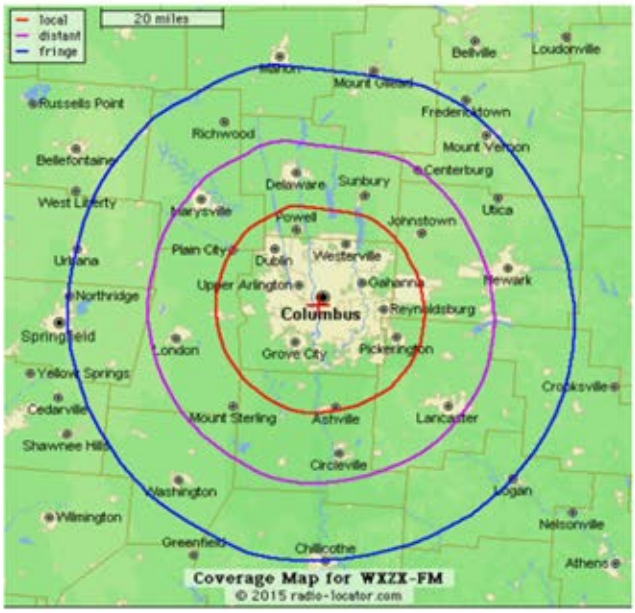
of brand websites feature video content

4 times as many consumers would rather watch a video about a product than read about it

of marketers claim video produces more conversions than any other content

Costs for video production varies across markets: (low as $15K-High of $25K)

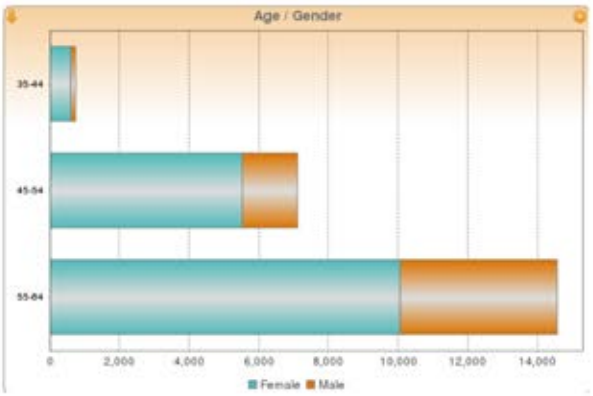
Radio

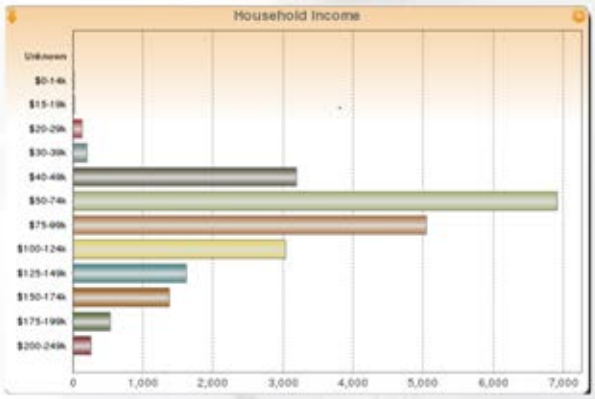


- We have maps for all radio stations to assure coverage.
- We make sure our demographic is being captured
- It cost more to focus on a specific time of run so we do our best to negotiate this.
- We include a strong call to action to sign up for the event.
- Have you found it effective in the Toledo market?

Avera 70 mile radius yields Potential 22,423

This is for those in the Elevated, High & Extreme Risk data base.

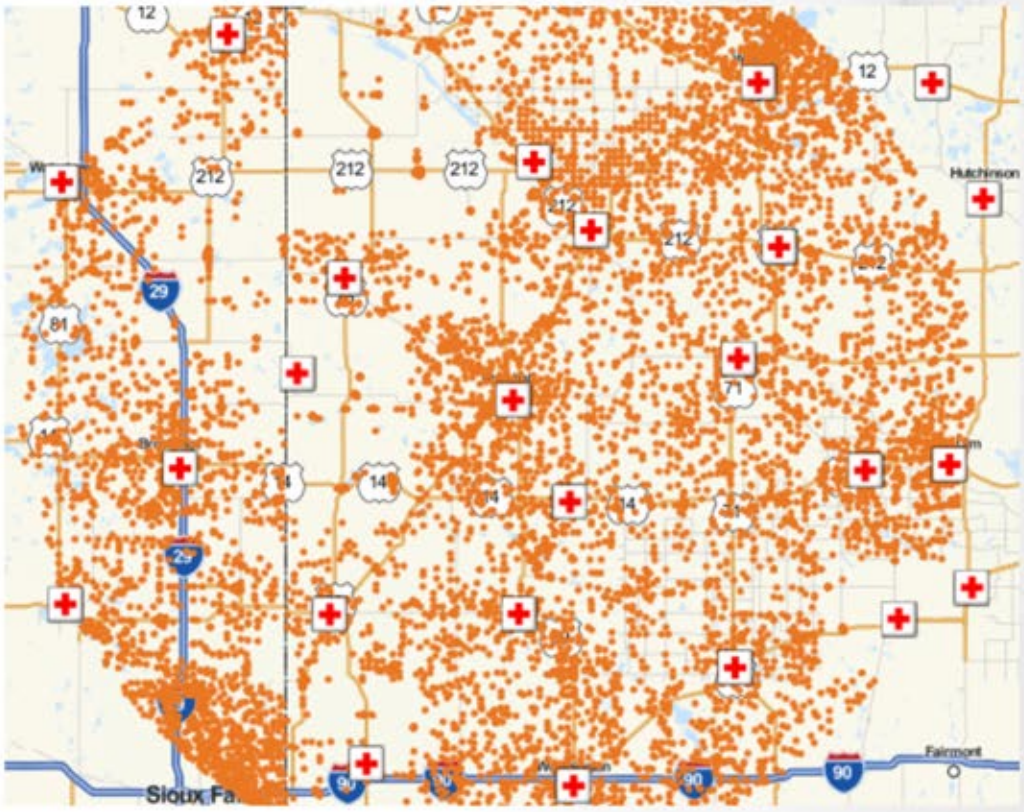


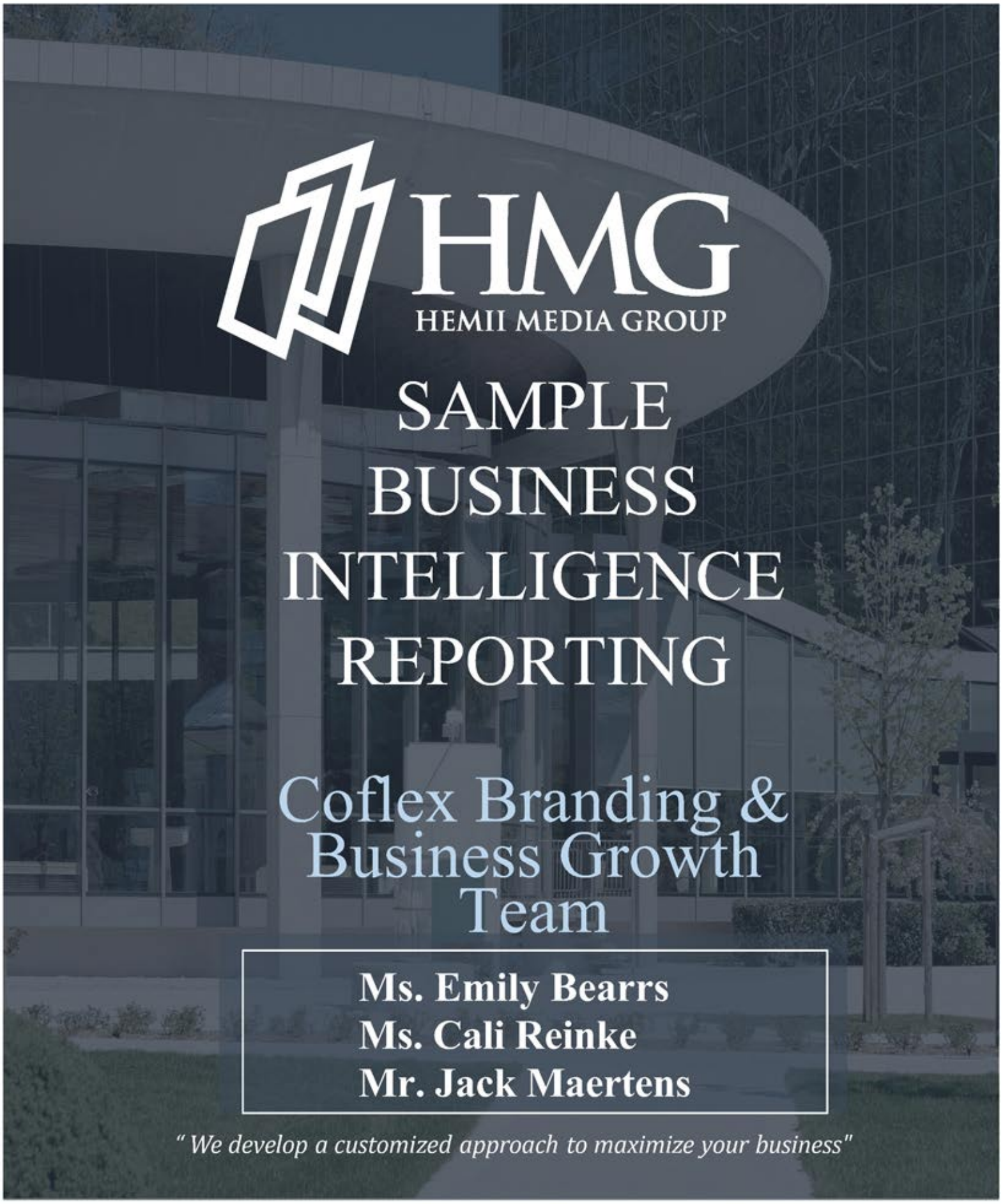


For direct mail, email campaigns and targeting

- Example of Targeting Criteria
  - 70 mile radius of Center
  - Ages 40-64
  - Optimized insurance payers
    - AND fits criteria:
      - Modeling high risk for Osteoarthritis, surgery
  - Self reported conditions
    - Arthritis, joint pain, OTC pain, Rx pain

Hospitals Noted





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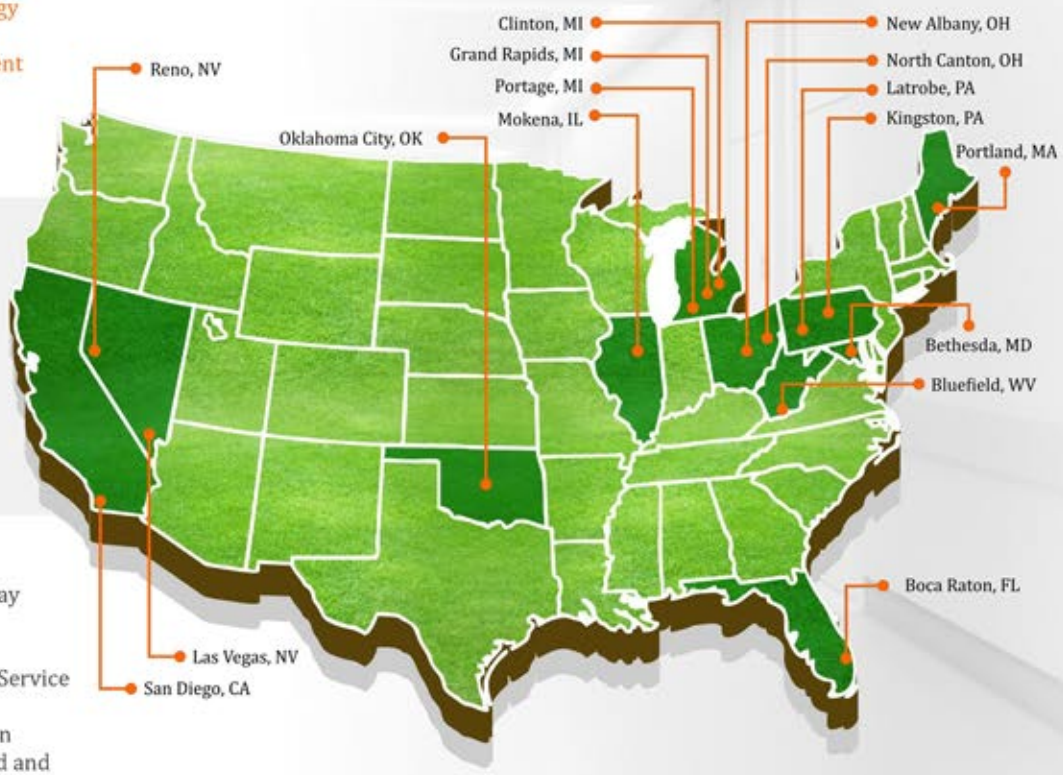
Introduction

Smith & Nephew Joint Reconstruction Division conducted locally targeted, joint Co-Op Digital Marketing campaigns with SN surgeons to educate local consumers regarding the following SN implant technologies:

- VERILAST Knee
- VISIONAIRE Patient-Matched Technology
- Partial Knee Replacement
- JOURNEY II Uni Partial Knee Replacement
- ZUK Partial Knee Replacement
- VERILAST Hip
- Direct Anterior Approach

The digital display of choice for these campaigns was Google Display advertising. Display advertising offers trackable, interactive, rich media ads that can be delivered at scale to highly targeted audiences. We use some of the most effective targeting solutions to deliver our surgeon's and Smith & Nephew branded content to the ideal consumer across every online device.



Annual Statistics

2017 SN Co-Op Joint Recon & NAVIO Display Advertising Campaigns:

- 19 Individual Campaigns
- Total Y-T-D Impressions Across All SN Service Offerings: 758,943
- Total Y-T-D New Appt Calls Into Surgeon Practices: 1,584 – Includes Unanswered and Repeat Callers.

SUCCESS STORY

SurgiCare of Boca Raton

- Total # of Impressions: 56,342
- Total # of Clicks: 1,692
- Average CPC: $ 7.38
- Total Campaign Spend: $ 12,500
- Monthly Campaign Spend: $ 4,166
- Average Daily Spend: $ 138.88
- Average Daily Clicks: 18.80
- SN Co-Op Spend: $ 6,250
- Total Cost Per Lead: $ 145
- Total SN Cost Per Lead: $ 72
- Total Campaign Leads: 86
- Appointments Prior To 2 Events: 23
- Surgeries Scheduled Prior to Events: 6
- Surgeries Post Event #1: 8

Boca Raton, FL

- SN Comm. Manager: Jack Maertens
- SN Technology: NAVIO Robotic Surgical System
- Campaign Period: April - May, 2017 & Sept - Nov 2, 2017
- Campaign Duration: 3.5 Months TL
- Campaign Demographics/Radius: 25 Miles

SUCCESS STORY

Dr. PK

- Total # of Impressions: 105,914
- Total # of Clicks: 2,184
- Average CPC: $ 6.18
- Total Campaign Spend: $ 13,500
- Monthly Campaign Spend: $ 1,500
- Average Daily Spend: $ 50.00
- Average Daily Clicks: 8.08
- SN Co-Op Spend: $ 6,750
- Total Combined SN Spend: $ 6,750
- Appointments Into Practice: 64
- Confirmed Surgical Cases Scheduled: 8
- SN Projected Gross Revenue:
  $4,500/Case x 8 Cases = $36,000
  $36,000 - $ 6,975 - Net: $. 29,025

Las Vegas, NV

- SN Comm. Manager: Marcy Black
- SN Technology: VERILAST Knee & Hip
- Campaign Period: February - November 2017
- Campaign Duration: 9.0 Months
- Campaign Demographics/Radius: 25 Miles

SUCCESS STORY

MOrthopedic Hospital

- Total # of Impressions: 77,517
- Total # of Clicks: 2,324
- Average CPC: $ 6.02
- Total Campaign Spend: $ 14,000
- Monthly Campaign Spend: $ 3,500
- Average Daily Spend: $ 113.82
- Average Daily Clicks: 18.89
- Total SN Cost Per Lead: $ 91
- Total Campaign Leads: 77
- Calls Into Campaign: 56
- Form Fills Into Campaign: 21

Oklahoma City, OK

- SN Comm. Manager: Robert Plush
- SN Technology: NAVIO Robotic Surgical System
- Campaign Period: July - October, 2017
- Campaign Duration: 4 Months
- Campaign Demographics/Radius: 50 Miles

SUCCESS STORY

ON

- Total # of Impressions: 77,517
- Total # of Clicks: 2,324
- Average CPC: $ 6.02
- Total Campaign Spend: $ 14,000
- Monthly Campaign Spend: $ 3,500
- Average Daily Spend: $ 113.82
- Average Daily Clicks: 18.89
- Total SN Cost Per Lead: $ 91
- Total Campaign Leads: 77
- Calls Into Campaign: 56
- Form Fills Into Campaign: 21

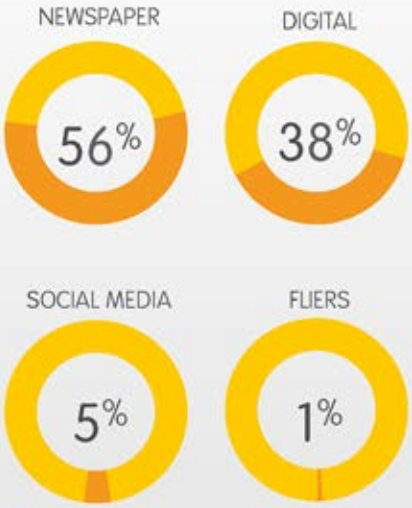
New Albany, OH

- SN Comm. Manager:
- SN Technology: NAVIO Robotic Surgical System
- Campaign Period: July - October, 2017
- Campaign Duration: 4 Months
- Campaign Demographics/Radius: 50 Miles

Mediums Used For Advertising

Robotic Surgical System

Of the 296 combined attendees, the following represents the response percentages per medium used:



Campaign Areas:

1. Canton - 25%
2. Massillon - 18%
3. No. Canton - 11%
4. Canal Fulton - 5%
5. Ravenna - 5%
6. Stow - 4%
7. Sugarcreek - 4%
8. Atwater - 4%
9. Collectively - 24% - 3% Each:
   - A Alliance
   - B Bolivar
   - C Dover
   - D East Sparta
   - E Louiseville,
   - F Navarre
   - G New Philadelphia
   - H Uniontown

Additional Towns Captured:
Fairlawn, Dundee, Hartville, Marshallville, Tallemadge, East Canton, Green, Smithville, Clinton, Dennison, Cuyahoga Falls, Copley, Homeworth

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Q4 - 2017

NAVIO™ Robotic Surgical System
Events Report

smith&nephew

Robotic Surgical System

Timeline of events/seminars etc.
that drove activity.

Q4 - 2017

New NAVIO Cases: 50

Event #1

September 26, 2017

- Pre-leads for PPC: 12
- # of Event Attendees: 117
- #Leads generated at the event: 31
- Microsite Developed
- Surgeon Interviews Completed
- Patient Interviews Scheduled

Event #2

October 24, 2017

- Pre-leads from PPC Campaign: 7
- # of Event Attendees: 88
- # of Leads generated at the event: 44

Event #3

November 7, 2017

- Pre-leads from PPC Campaign: 8
- # of Event Attendees: 91
- #Leads generated at the event: 31
- #Leads generated post event: 4

Totals for All 3 Events:

- Pre-leads from PPC Campaigns: 27
- # of Event Attendees: 296
- #Leads generated at events: 108
- #Leads generated post events: 4
- New Leads Generated From Stand-Alone, 7 Month PPC Campaign: 63

Timeline of events/seminars etc.
that drove activity.

Robotic Surgical System

Event Activities

By Surgeon

Dr. A:

September	3
October	1
November	16

Dr. B:

September	10
October	6
November	8

Dr. C:

September	1
November	4

Dr. D:

November	6

Graph View

	Sept.	Oct.	Nov.
Dr. A	3	1	16
Dr. B	10	6	8
Dr. C	1	0	4
Dr. D	0	0	6

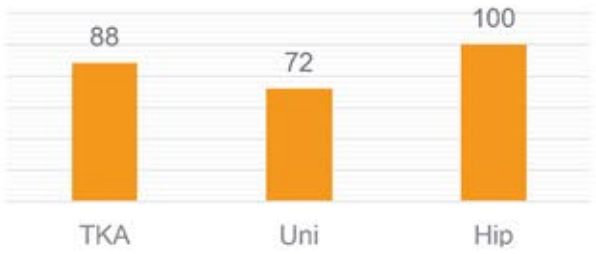
Total Joint Replacements **2016**

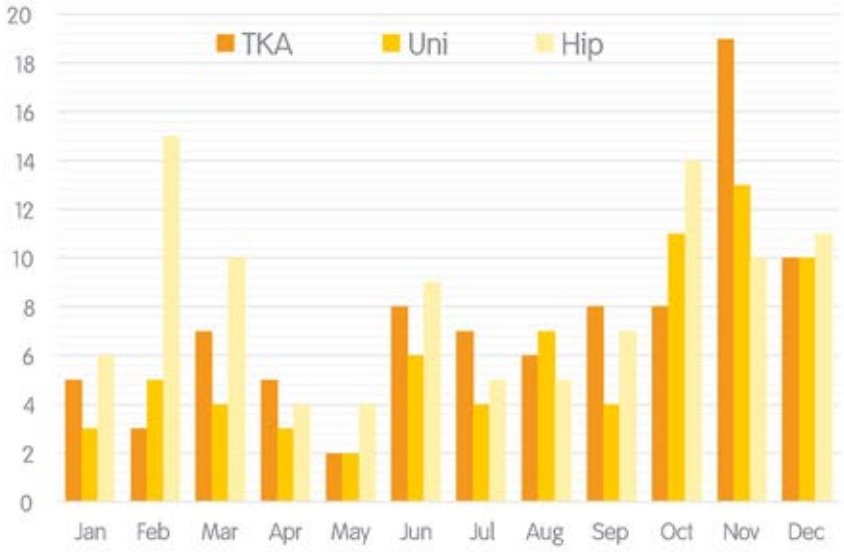
Robotic Surgical System

Month	TKA	Uni	Hip
Jan	5	3	6
Feb	3	5	15
Mar	7	4	10
Apr	5	3	4
May	2	2	4
Jun	8	6	9
Jul	7	4	5
Aug	6	7	5
Sep	8	4	7
Oct	8	11	14
Nov	19	13	10
Dec	10	10	11
Total	88	72	100

TOTAL

260





Robotic Surgical System

Month	TKA	Uni	Hip
Jan	5	11	8
Feb	8	8	5
Mar	4	9	11
Apr	11	4	5
May	8	9	4
Jun	7	8	9
Jul	8	1	7
Aug	6	12	10
Sep	7	9	5
Oct	16	14	12
Nov	8	14	16
Dec	22	12	24
Total	110	111	116

TOTAL

337

Total Joint Replacements **2017**

★Halo affect identified for Non-Navio procedures

Robotic Surgical System

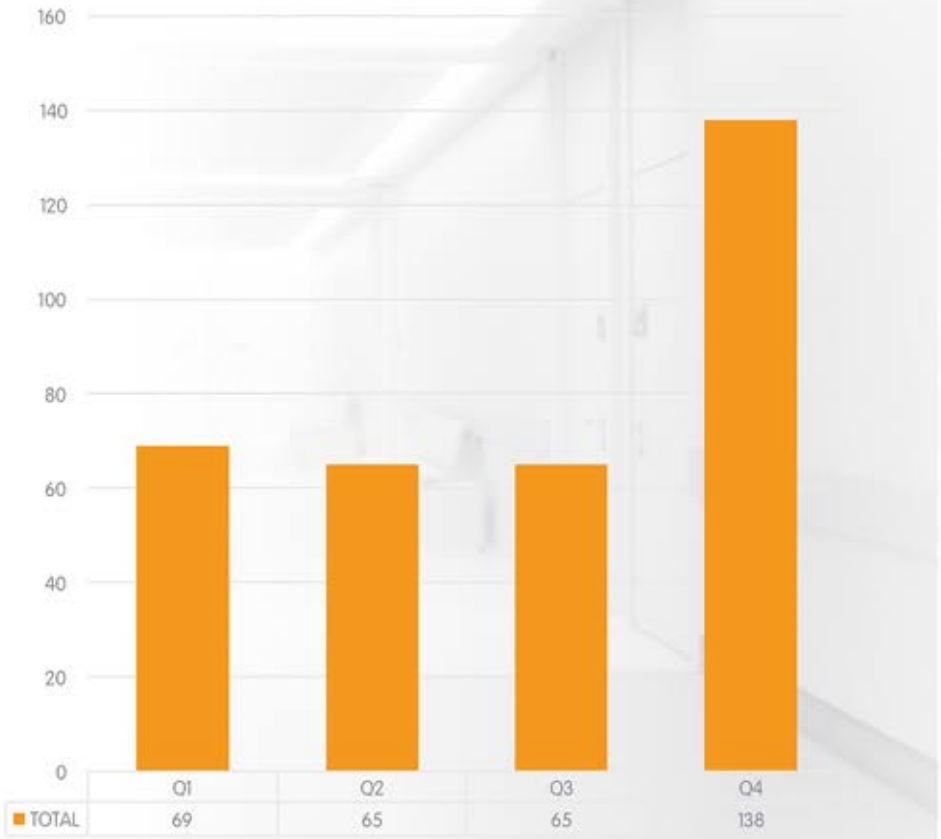
FIRST QUARTER 2017	
TKA	17
UNI	28
HIP	24

SECOND QUARTER 2017	
TKA	26
UNI	21
HIP	18

THIRD QUARTER 2017	
TKA	21
UNI	22
HIP	22

FORTH QUARTER 2017	
TKA	46
UNI	40
HIP	52

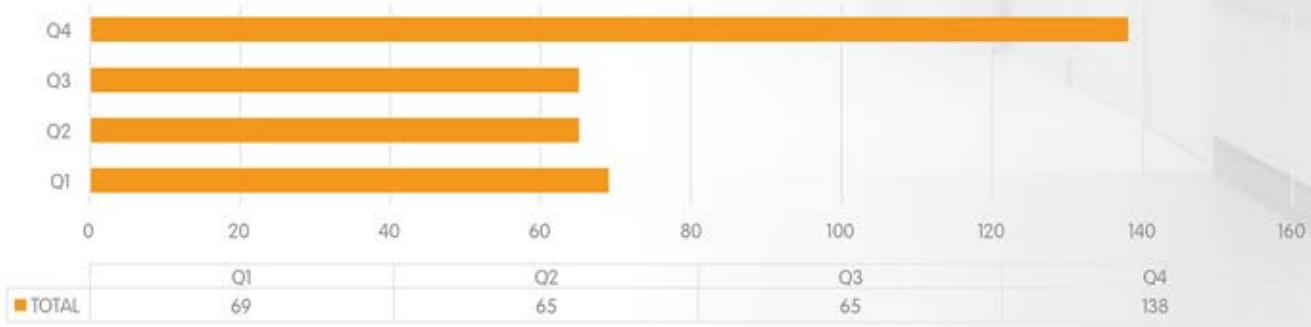
Quarterly Results **2017**



Robotic Surgical System

2017

FIRST QUARTER 2017		SECOND QUARTER 2017		THIRD QUARTER 2017		FORTH QUARTER 2017	
TKA	17	TKA	26	TKA	21	TKA	46
UNI	28	UNI	21	UNI	22	UNI	40
HIP	24	HIP	18	HIP	22	HIP	52



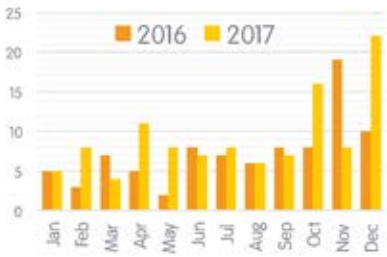
	Q1	Q2	Q3	Q4
TOTAL	69	65	65	138

Years of **Progression**

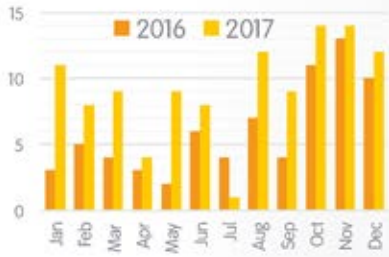
Robotic Surgical System

2016	2017
TOTAL	TOTAL
260	337

TKA	2016	2017	Status
Jan	5	5	▲
Feb	3	8	▲
Mar	7	4	▼
Apr	5	11	▲
May	2	8	▲
Jun	8	7	▼
Jul	7	8	▲
Aug	6	6	●
Sep	8	7	▼
Oct	8	16	▲
Nov	19	8	▼
Dec	10	22	▲
Total	88	110	▲



UNI	2016	2017	Status
Jan	3	11	▲
Feb	5	8	▲
Mar	4	9	▲
Apr	3	4	▲
May	2	9	▲
Jun	6	8	▲
Jul	4	1	▼
Aug	7	12	▲
Sep	4	9	▲
Oct	11	14	▲
Nov	13	14	▲
Dec	10	12	▲
Total	72	111	▲



HIP	2016	2017	Status
Jan	6	8	▲
Feb	15	5	▼
Mar	10	11	▲
Apr	4	5	▲
May	4	4	●
Jun	9	9	●
Jul	5	7	▲
Aug	5	10	▲
Sep	7	5	▼
Oct	14	12	▼
Nov	10	16	▲
Dec	11	24	▲
Total	100	116	▲