

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

**Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934.**

Date of Report: April 1, 2014
(Date of earliest event reported)

MRI INTERVENTIONS, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)

000-54575
(Commission File
Number)

58-2394628
(I.R.S. Employer
Identification No.)

One Commerce Square, Suite 2550
Memphis, Tennessee
(Address of principal executive offices)

38103
(Zip Code)

(901) 522-9300
(Registrant's telephone number, including area code)

Not Applicable
(Former Name or Former Address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the Registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
 - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
 - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
 - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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Item 7.01. Regulation FD Disclosure.

MRI Interventions, Inc. (the “Company”) is posting an updated investor presentation to its website at <http://ir.stockpr.com/mriinterventions/presentations>. A copy of the investor presentation is being furnished herewith as Exhibit 99.1. The Company may use the investor presentation from time to time in conversations with analysts, investors and others.

The Company is furnishing the information contained in Exhibit 99.1 pursuant to Regulation FD. Such information is furnished pursuant to Item 7.01 of Form 8-K and shall not be deemed to be “filed” for the purposes of Section 18 of the Securities Exchange Act of 1934 (the “Exchange Act”), or otherwise subject to the liabilities of that section, nor shall it be deemed to be incorporated by reference in any filing under the Securities Act of 1933 or the Exchange Act, except as expressly set forth by specific reference in such filing.

The information contained in Exhibit 99.1 is summary information that is intended to be considered in the context of the Company’s filings with the Securities and Exchange Commission (“SEC”) and other public announcements that the Company may make from time to time, by press release or otherwise. The Company undertakes no duty or obligation to publicly update or revise the information contained in this report, although it may do so from time to time as its management believes is warranted. Any such updating may be made through the filing of other reports or documents with the SEC, through press releases or through other public disclosure.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

See Exhibit Index immediately following signature page.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

MRI INTERVENTIONS, INC.

By: /s/ Oscar Thomas
Oscar Thomas
Vice President, Business Affairs

Date: April 1, 2014

EXHIBIT INDEX

Exhibit No.	Description
99.1	MRI Interventions, Inc. investor presentation dated April 2014



Ticker: MRIC
**Investor
Presentation**

April 2014

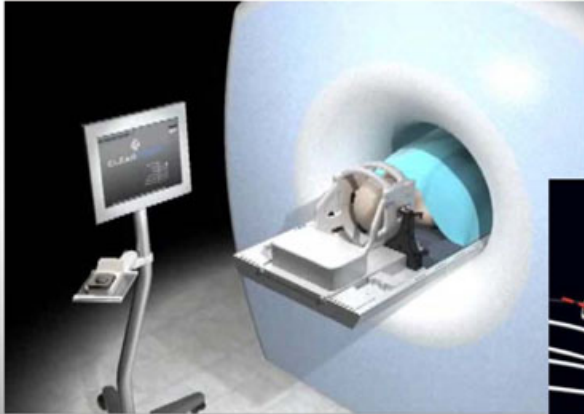


Forward-Looking Statements

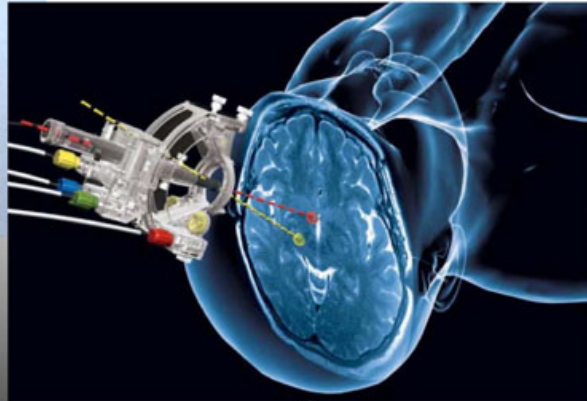
Certain matters in this presentation may constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements often can be identified by words such as "anticipates," "believes," "could," "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "projects," "should," "will," "would," or the negative of these words or other words of similar meaning. Forward-looking statements by their nature address matters that, to different degrees, are uncertain and involve risk. Uncertainties and risks may cause MRI Interventions' actual results and the timing of events to differ materially from those expressed in or implied by MRI Interventions' forward-looking statements. Particular uncertainties and risks include, among others: demand and market acceptance of our products; our ability to successfully expand, and achieve full productivity from, our sales and clinical support capabilities; availability of reimbursement from third party payors for procedures utilizing our products; the sufficiency of our cash resources to maintain planned commercialization efforts and research and development programs; our ability to successfully complete the development of, and to obtain regulatory clearance or approval for, our ClearTrace system; future actions of the FDA or any other regulatory body that could impact product development, manufacturing or sale; our ability to protect and enforce our intellectual property rights; our dependence on collaboration partners; the impact of competitive products and pricing; and the impact of the commercial and credit environment on us and our customers and suppliers. More detailed information on these and additional factors that could affect MRI Interventions' actual results are described in our filings with the Securities and Exchange Commission, including, without limitation, the annual report on Form 10-K filed on March 28, 2014. Except as required by law, MRI Interventions undertakes no obligation to publicly update or revise any forward-looking statements contained in this press release to reflect any change in MRI Interventions' expectations or any change in events, conditions or circumstances on which any such statements are based.

MRI Interventions (MRIC)

Next gen platform enabling real-time, MRI-guided, minimally invasive brain surgery



CLEARPOINT
neuro intervention system



Establishing the Gateway for the Delivery of Neurological Therapies

MRI Interventions

Company Highlights

ClearPoint Delivery Platform uniquely positions MRIC in the growing neuro market

First-to-Market in US and EU; Plus strong IP portfolio to protect our position

Significant commercial traction, FDA-cleared, CE-marked, 31 Clearpoint Systems installed

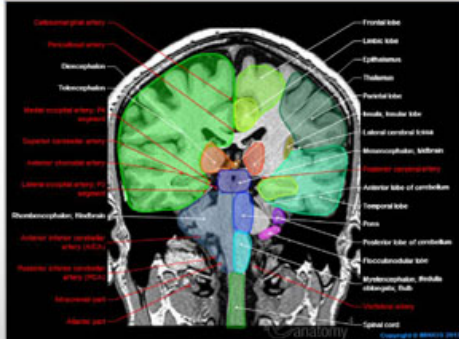
Attractive razor/razorblade business model with strong margins

Medtech company, plus significant biotech-like upside via drug delivery business

ClearTrace cardiac platform in development with Siemens

Neurological Disease - The Last Frontier in Medicine

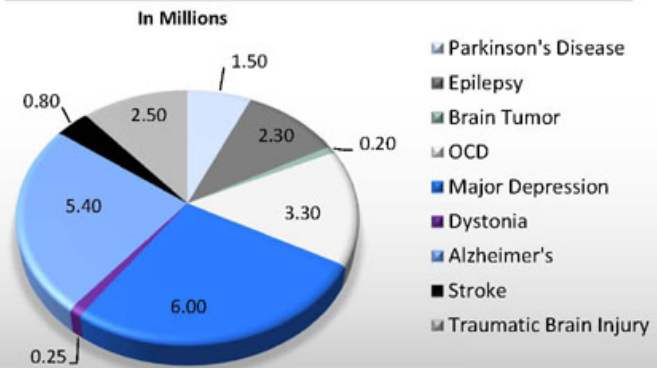
The Complex Human Brain



Challenges for Treatment

- 100 billion nerve cells
- 7,000 connections w/ each cell
- High metabolic demands
- Precision is paramount for delivering therapies

Neurological Disease and Disorder



Patient Population (U.S. Only)

- 22+ Million Patients
- Growing as population ages
- Major unmet medical need

Minimally Invasive, Visualized Procedures

Revolutionized Multiple Medical Specialities, Benefitted Millions of Patients



Cardiovascular Surgery
Revolutionized by fluoroscopy
in the late 1970's

Today:
1.5 million procedures/yr



Orthopedic Surgery
Revolutionized by arthroscopy
in the 1980's

Today:
1.2 million procedures/yr



Abdominal Surgery
Revolutionized by laparoscopy
in the late 1980's

Today:
4.0 million procedures/yr



Minimally Invasive Neurosurgery with ClearPoint®

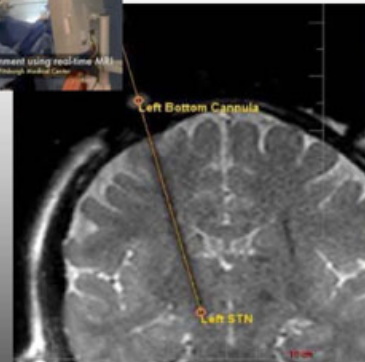
Without ClearPoint, minimally invasive neuro procedures are performed “blind”

Conventional Stereotactic Procedure



No visualization

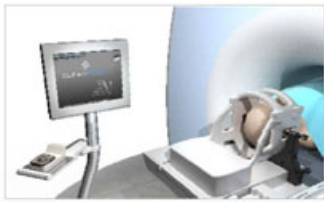
ClearPoint Neuro Procedure



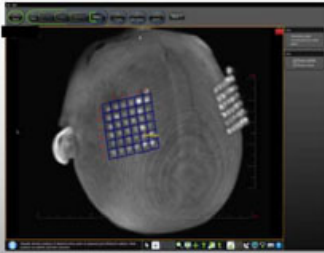
*“The move to real-time, MRI-guidance
for minimally invasive neurosurgical procedures is inevitable...”*

Dr. Stephan Chabardes - Universite Joseph Fourier

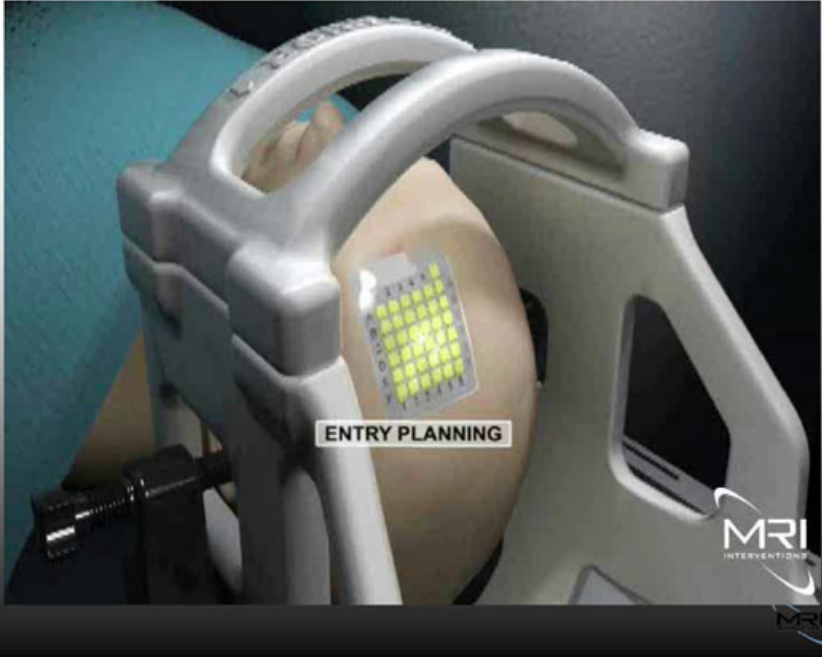
ClearPoint Procedure Overview



Target Selection & Entry Planning



8



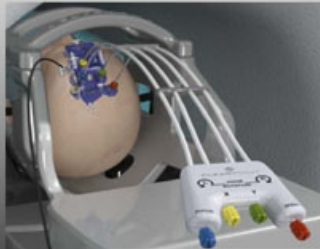
ClearPoint Procedure Overview

Trajectory Alignment & Device Insertion

SmartFrame® Trajectory Guide



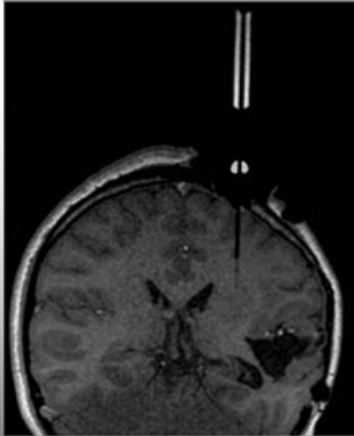
SmartFrame® Hand Controller



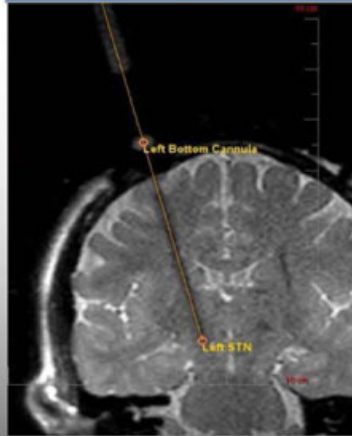
ClearPoint Procedure Overview

Delivery of Neurological Therapy

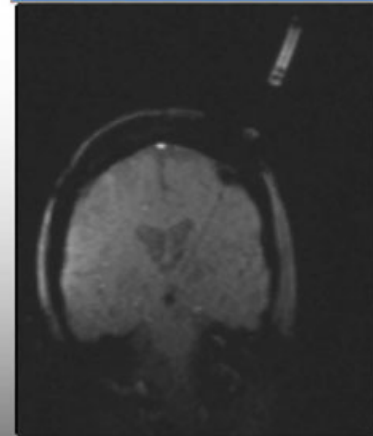
Drug Delivery



Asleep DBS



Laser Ablation



¹ The SmartFlow[®] cannula is presently FDA-cleared for injection of cytarabine, a chemotherapy drug, to the ventricles or removal of CSF from the ventricles during intracranial procedures. Delivery of other therapeutic agents using the SmartFlow cannula is investigational.

² MR Thermometry is an MRI-based functionality available on most MR scanner platforms and it is a feature built into products from several third party vendors. The ClearPoint system enables MRI-guided procedures and allows physicians to use this inherent MR capability during a procedure.

Support from Clinicians, Industry, and Academia

Leading Neurosurgeon Clinician Advisors



Dr. Philip Starr
ASSFN Past President



Dr. Paul Larson
UCSF & VA



Dr. Ali Rezai
CNS Past President

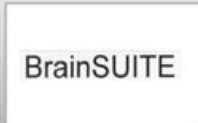


Dr. Krys Bankiewicz
Bankiewicz Lab, UCSF



Dr. Russ Lonser
OSU - NIH

Implemented Across All Major Scanner Platforms



Strong Peer-Reviewed Journal Support



The ClearPoint Difference

Without ClearPoint	With ClearPoint
No direct visualization, Performed in an operating room	Direct, high resolution visualization, Performed in an MRI Suite
Patient often must be awake for their own brain surgery	Patient under general anesthesia
Long procedures – Can be up to 8 hours	Short procedures – Can be 3 hours or less
Complex procedure, requires extensive training	Simple procedure, brief training
Poor economics for hospital and physician	Attractive economics for hospital and physician

ClearPoint is a win-win-win

Patients

Surgeons

Hospitals



ClearPoint Market Opportunity

US Patient Populations

Neuro Disorder	Patient Population	Treatment Resistant Patient Population
Parkinson's Disease	1,500,000	150,000
Epilepsy	2,300,000	250,000
Brain Tumor	200,000	30,000
OCD	3,300,000	100,000
Major Depression	6,000,000	1,200,000
Dystonia	250,000	25,000
Alzheimer's	5,400,000	500,000
Huntington's	30,000	30,000

Therapeutic Approaches

Deep Brain Stimulation	Direct Drug Delivery	Focal Ablation
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CLEARPOINT
neuro intervention system

ClearPoint "Gateway" Supports All of These Current and Emerging Therapeutic Approaches

2.2 million US - 4+ million WW and growing...



ClearPoint Market Opportunity

US Patient Populations

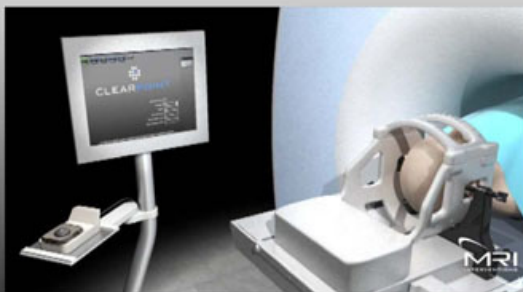
Therapeutic Approaches



ClearPoint Revenue Model

BUSINESS MODEL – RAZOR / RAZORBLADE

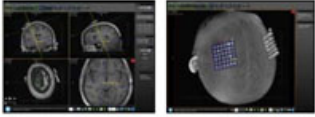
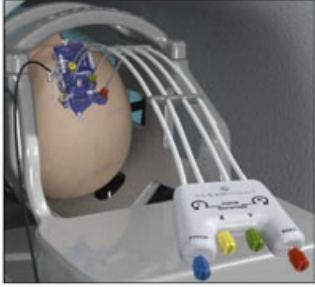
- ClearPoint Hardware/Software: \$130,000 ASP (paid upfront or over time)
- ClearPoint Disposables: \$7,300 ASP per procedure with strong margins
- Generate recurring revenue from the sale of disposables
- Procedures covered by existing reimbursement codes
- Platform system for minimally invasive neurosurgery



ClearPoint in the Hospital


Helping Patients / Adding Value

ClearPoint Technology




Hospital Marketing

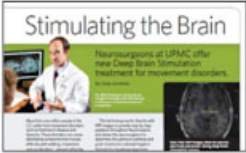
TV



Web



Print



Practice Building

Referring Physician Materials



Working with Advocacy Groups



Patient Awareness



ClearPoint Case Studies

Importance of the Platform



Patient Impact

Martin and Celeste – Parkinson's disease patients
DBS electrode placement with ClearPoint



Growing a Strong Base of Clinical Support

NEUROSURGEON PERSPECTIVE ON CLEARPOINT

The ClearPoint System “represents a major step forward in our ability to treat complex neurological diseases.”

Dr. Karl Sillay, Neurosurgeon, University of Wisconsin

“ClearPoint allows me to surgically treat patients I would not be able to treat using other platform systems.”

Dr. Hooman Azmi, Neurosurgeon, Hackensack Univ. Med. Center

“This approach effectively expands the spectrum of drugs that we can use to treat brain cancers by a hundred fold.”

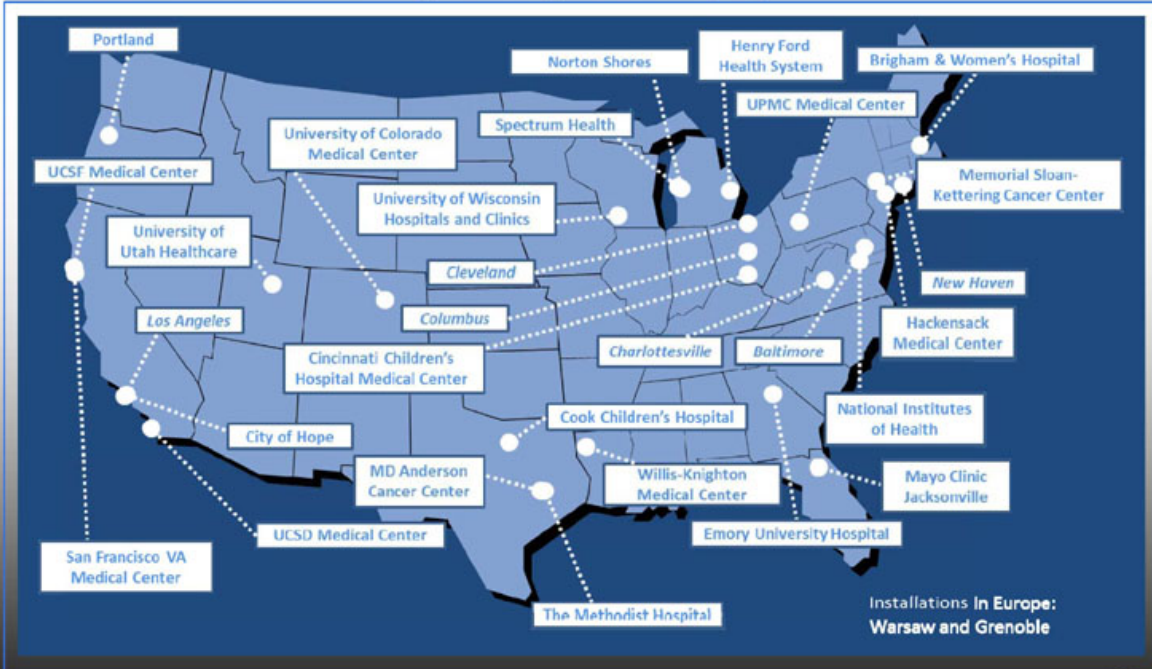
Dr. Clark Chen, Neurosurgeon, Univ of California San Diego



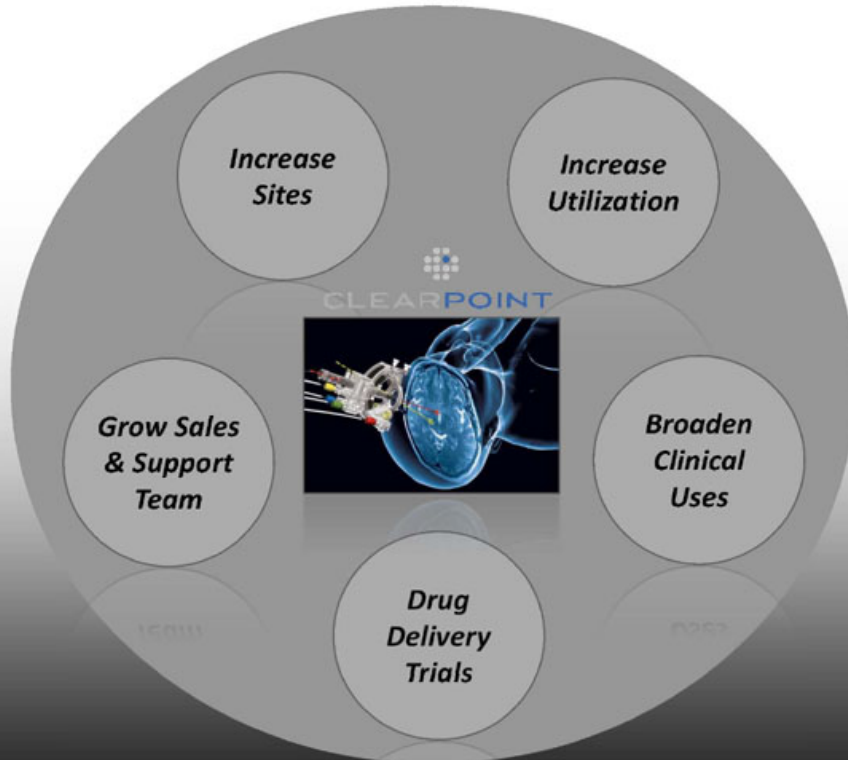
Drs. Sillay, Azmi, Chen and Larson have no equity interest in the Company and they are not consultants to the Company

Growing the ClearPoint Footprint

31 ClearPoint Sites (29 US, 2 Europe)



ClearPoint Growth Strategy



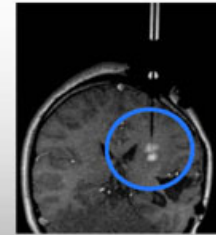
MRIC's Unique Opportunity in Drug Delivery

Major Challenges in Delivering Drugs to the Brain

- Blood brain barrier (BBB) blocks systemic delivery (pills, shots, IV) of almost all drugs – 98% of small molecules
- Direct injection without ClearPoint is blind, so target is frequently missed
 - Neopharm Trial - 51% of 572 catheters failed to meet all positioning criteria

Major Benefits of Drug Delivery with ClearPoint

- Neurosurgeon sees that target is reached
- Eliminates the Blood Brain Barrier issue
- Reduces/eliminates unwanted systemic side effects
- More selective to neurological target
- Reduces dosage levels (as little as 1/300th of systemic volume)



Business Model – MRIC Partners with Drug Companies and Researchers

- MRIC provides ClearPoint; Drug company provides drug candidate
- Drug company pays for trial
- If drug is approved, MRIC gets device revenues (~\$7000/case); Drug co gets drug revenues

Provides MRIC with “biotech-like upside” without “all or nothing downside”

MRIC's Unique Opportunity in Drug Delivery

Involvement in Investigational Drug Trials



AAV2-hAADC for Parkinson's disease - Phase 1 study at UCSF

- Sanofi - Genzyme
- The Michael J. Fox Foundation is supporting the trial



AAV2-GDNF for Parkinson's disease - Phase 1 study at the NIH

- uniQure, B.V.



Toca 511 for Brain Tumor - Phase 1, multicenter study

- Tocagen Inc.



IL13 for Brain Tumor – Phase 1 study at NIH

- Sponsored by NIH



Radio Immunotherapy for Brain Tumor – Phase 1 Study at MSK

- Sponsored by the Memorial Sloan-Kettering Cancer Center

GBM brain tumor drug delivered with ClearPoint would create an annual WW revenue opportunity for MRIC of over \$140 million (with regulatory approval for the drug)

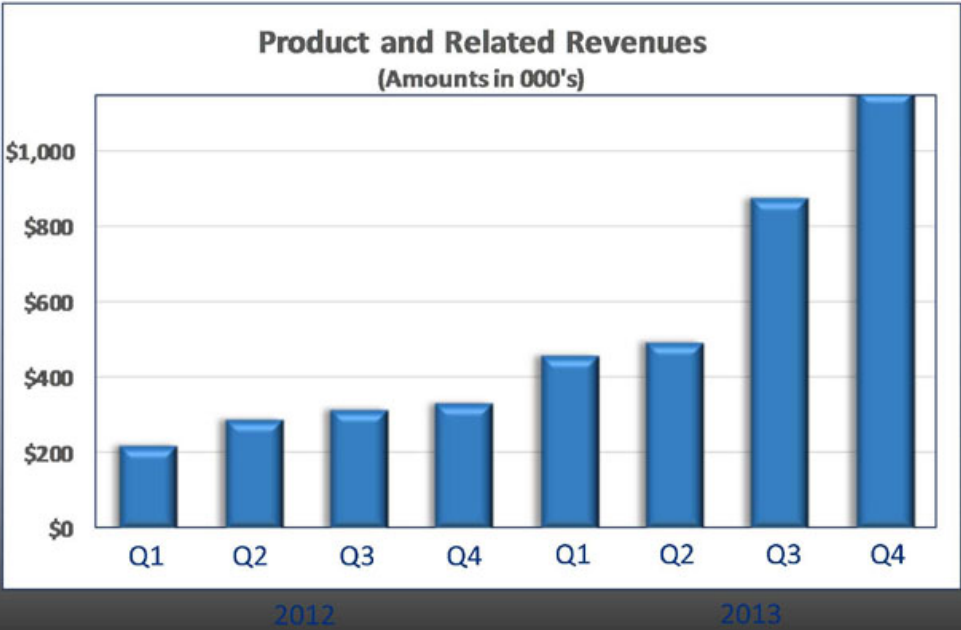
ClearPoint Commercialization

ClearPoint Sites / Sales, Marketing and Clinical Support Team



Financial Highlights

Revenue by Quarter



Financial Highlights

- Total product related revenues increased 226% Q4 2013 vs. Q4 2012
- Total product related revenues increased 156% in 2013 vs. 2012
- Disposable product revenues grew by 83% in Q4 2013 vs. Q4 2012
- Sold first service agreements in Q3 and Q4 of 2013

(amounts in 000's)	Quarters Ended December 31,		Years Ended December 31,	
	2013	2012	2013	2012
Revenues:				
Product Revenues	\$ 1,107,121	\$ 339,207	\$ 2,914,774	\$ 1,170,679
Other Service Revenues	53,659	-	82,037	-
Product Related Revenues	1,160,780	339,207	2,996,811	1,170,679
Development Service Revenues	15,650	127,067	283,764	541,182
Related party license revenues	-	1,396,374	650,000	3,346,374
Total revenues	\$ 1,176,430	\$ 1,862,648	\$ 3,930,575	\$ 5,058,235

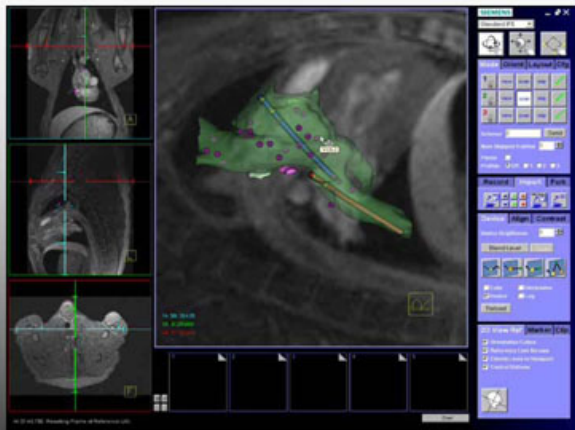
License fee revenues relate to amounts we received previously under our agreements with Boston Scientific. The revenue recognition period for those fees ended in March 2013.

ClearTrace® Cardiac Platform in Development



ClearTrace Cardiac Intervention System for minimally invasive surgical procedures in the heart.

Objective: Success rates of the Cox Maze open heart procedure but with a minimally-invasive catheter-based approach



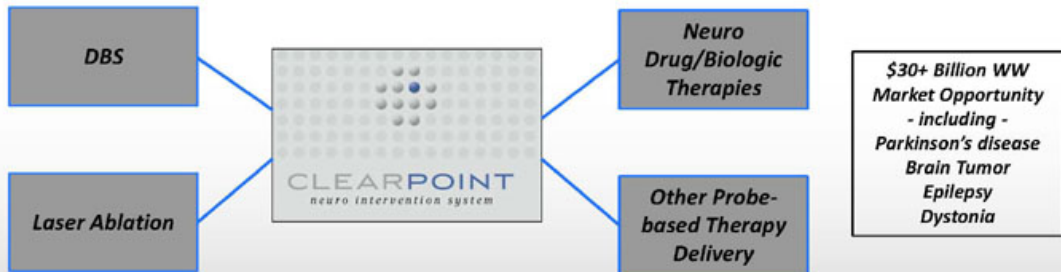
- 6.7 million Afib patients US / EU
\$33 billion aggregate mrkt opp.
- Pursuing market with Siemens, mutually exclusive partnership
- Expected European product launch Q4 2015

CAUTION: Investigational device. Limited by federal law to Investigational use.

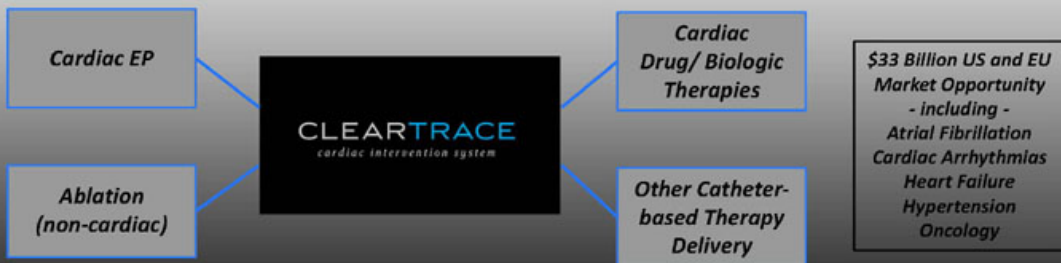


Strategic Position of the MRI Interventions Platforms

Proprietary Positioning in Multiple Major Markets



Leveraging Our Expertise to Launch Catheter-based Platform



Strong Intellectual Property

MRI Interventions Patent Portfolio

45+ U.S. Patents

45+ OUS Patents

45+ U.S.
Patent Applications

50+ OUS
Patent Applications



Issued patents cover, among other things: MRI-guided surgical systems that include software and devices; the SmartFrame® trajectory guide; other ClearPoint® disposable components; active intracranial probes; MRI-compatible catheters; MRI-safety technology

Key ClearPoint-related patents do not begin to expire until 2027

MRI Interventions

Company Highlights

ClearPoint Delivery Platform uniquely positions MRIC in the growing neuro market

First-to-Market in US and EU; Plus strong IP portfolio to protect our position

Significant commercial traction, FDA-cleared, CE-marked, 31 Clearpoint Systems installed

Attractive razor/razorblade business model with strong margins

Medtech company, plus significant biotech-like upside via drug delivery business

ClearTrace cardiac platform in development with Siemens



Ticker: MRIC
MRI Interventions, Inc.

Irvine, CA
Memphis TN

(901) 522-9300

info@mriinterventions.com



Descriptions of the Videos Included in this Presentation

This presentation includes six embedded videos. The following table (which is continued on the next two slides) provides the location of each video in the presentation and a description of each video:

Slide No.	Description
8 (right side)	<p>This video depicts the target selection and entry planning portion of a ClearPoint procedure. The video shows an animation of a patient and the ClearPoint system in use, along with images from the ClearPoint software that show MRI scans used to select a target site , trajectory to target and entry point on the SmartGrid® matrix.</p> <p>This video is an excerpt of the ClearPoint system demonstration video available on MRI Interventions' website at www.mriinterventions.com/clearpoint/demonstration-video.</p>
9 (right side)	<p>This video depicts the trajectory alignment and device insertion portion of a ClearPoint procedure. The video shows an animation of a patient and the ClearPoint system in use, along with images from the ClearPoint software that show MRI scans used to align the SmartFrame® trajectory guide along a planned trajectory and then depicts the insertion of a device into the target neuro anatomy.</p> <p>This video is an excerpt of the ClearPoint system demonstration video available on MRI Interventions' website at www.mriinterventions.com/clearpoint/demonstration-video.</p>
10	<p>The video on the far left depicts a series of MRI images that show the infusion of fluid into the brain. The video on the far right depicts a series of MRI images that show changes in brain tissue temperature, color-coded to correspond with the temperatures shown in the legend contained within the image window.</p>

Descriptions of the Videos Included in this Presentation (cont'd)

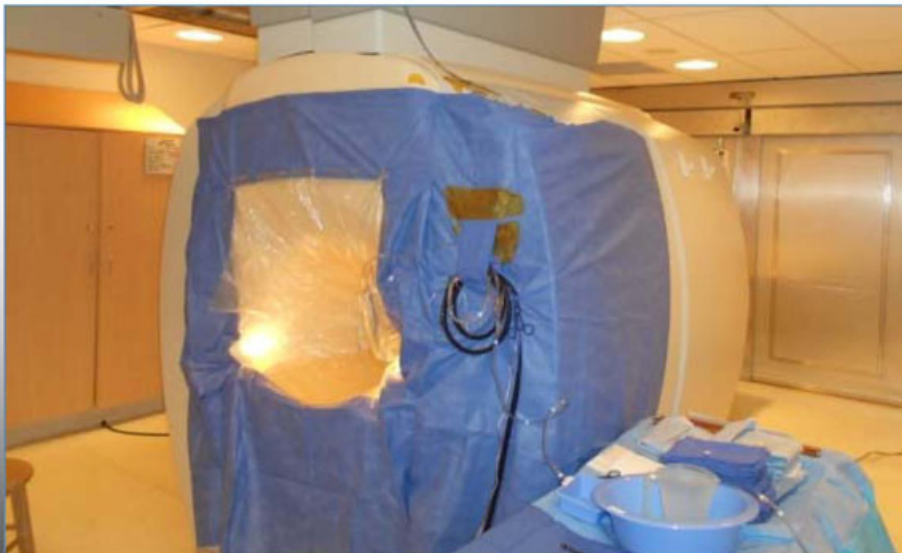
Slide No.	Description
18	<p>In the first portion of the video, a patient discusses living with Parkinson's disease, both before and after his DBS procedure, which was assisted by the ClearPoint system. The following is a transcript of his remarks in the video:</p> <p>"There would be days that I could not get out of the house because I could not walk. I would wake up in the morning and I would have to crawl around the floor for maybe a half an hour until I got my meds going. You know, children are pretty resilient, but when they see their dad crawling around on the floor at 7 o'clock in the morning because he can't walk, it really touched them."</p> <p>"Well I always knew there was an operation that could be done. The Clearpoint system made a big difference in my decision to go ahead. My life is changing and my kids' life, with me, is changing as well. It's truly beyond my expectations. You know, you're biking more together. You're playing tennis more together. I'll be at my sons' weddings. I'll be able to dance at those weddings. I would recommend that anyone who could do it definitely does do it. It is a life changing event."</p> <p>In the latter portion of the video, a patient discusses her Parkinson's disease prior to undergoing an DBS procedure. The following is a transcript of those remarks:</p> <p>"Falling at my house is a big concern, even out in the yard. I mean I'm 53 years old. I shouldn't have to worry about falling. Walking is tremendous. I freeze where I can't move. I mean you got the pain, you got the cramping, you got the fatigue. After I lost my job in November the doctor said it was time to really seriously look into deep brain stimulation. And if I want to get my life back I have to do something."</p> <p>The patient and her spouse also speak about her disease following the surgical procedure, which was assisted by the ClearPoint system.</p> <p>Spouse: "The surgery has given me back the woman that I married 34 years ago."</p> <p>Patient: "It's a blessing. I don't have that rigidity anymore. I am productive again. I am happy again. I am able to enjoy and do things I like to do again. I like to get out in my yard. I like to visit with my friends. I feel like there is nothing I can't do. It has given me my life back and I would do it again tomorrow."</p> <p>Spouse: "Slow up Celeste." [as he tries to catch up to her on a walk]</p> <p>These patient stories are available on MRI Interventions' website at http://www.mriinterventions.com/clearpoint/patient-stories.</p>

Descriptions of the Videos Included in this Presentation (cont'd)

Slide No.	Description
19	<p>In this video, Dr. Paul Larson, a neurosurgeon at UCSF Medical Center, speaks about his experience with the ClearPoint system. The following is a transcript of his remarks in the video:</p> <p>“It was tremendous. The system performed exactly to our expectations. The patient was asleep. The targeting in the software worked flawlessly. We were able to place electrodes with one penetration of the brain as opposed to two or three or four that we would have done in that patient with the traditional implantation.”</p> <p>“It changes things pretty substantially. The scanner allows us to see where we’re going, in real time. For surgeons, the procedure time gets cut down by a half or a third. And you have this immediate feedback. Is the electrode going to the right spot? From a patient standpoint there are tremendous advantages. You know, who would want to have an awake brain operation if you could be asleep for it?”</p>

ClearPoint Neuro Intervention System

ClearPoint Draping in Preparation for a Case in a Diagnostic MRI Suite



ClearPoint Neuro Intervention System

Selected ClearPoint Disposable Components

