Forward-looking statements

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Not all products and/or indications are available in all territories. For safety information, and/or product information, go to: btg-im.com | ekoscorp.com | galimedical.com | pneumrx.com | therasphere.com | varithena.com
## Agenda

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
</tr>
</thead>
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<tr>
<td>11.00</td>
<td>Welcome and Introduction</td>
<td>Louise Makin</td>
</tr>
<tr>
<td>11.15</td>
<td>IM Overview &amp; Customer Strategy</td>
<td>Dr Frank Facchini, John Sylvester</td>
</tr>
<tr>
<td>11.40</td>
<td>Interventional Oncology</td>
<td>Duncan Kennedy, Peter Pattison, Laurent Domas</td>
</tr>
<tr>
<td>12.20</td>
<td>Lunch Break</td>
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<tr>
<td>13.20</td>
<td>Interventional Vascular</td>
<td>John Sylvester</td>
</tr>
<tr>
<td>14.00</td>
<td>PneumRx</td>
<td>Dianne Blanco</td>
</tr>
<tr>
<td>14.40</td>
<td>Innovation &amp; Development</td>
<td>Melanie Lee, Peter Stratford</td>
</tr>
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<td>15.20</td>
<td>Tea Break</td>
<td></td>
</tr>
<tr>
<td>15.35</td>
<td>Views from the Field</td>
<td>Dr Sean Tutton, Dr Joey Steele, Dr Steve Solomon</td>
</tr>
<tr>
<td>16.15</td>
<td>Q&amp;A</td>
<td></td>
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<tr>
<td>17.00</td>
<td>Drinks Reception</td>
<td></td>
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</tbody>
</table>
BTG’s journey

2004-2007
Restructuring
• Focus on Life Sciences
• Reduced costs, return to profit
• Mapped out potential areas of growth

2008-2010
Building infrastructure
• Acquired antidote products
• Built US sales & marketing infrastructure
• Commenced US direct sales

2011-2017
Focus on IM therapies
• Built portfolio & capabilities through 6 acquisitions
• Established scalable growth platform

2017+
Sustained value creation
• Double-digit product sales growth
• Disciplined investments to drive sustained growth

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• Focus on Life Sciences
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2017+
Sustained value creation
• Double-digit product sales growth
• Disciplined investments to drive sustained growth
Building on our portfolio of leading-edge therapies

Interventional Medicine

Varithena®
Injectable microfoam clinically proven to reduce the symptoms and improve the appearance of varicose veins

PneumRx® Coils
Shape-memory metal coils clinically proven to improve quality of life, lung function and exercise capacity of patients with severe emphysema

Interventional Vascular
Ultrasonic catheter drug delivery device used in the treatment of severe blood clots
Anchoring catheters and microcatheters offering options for physicians in the crossing of complex lesions and arterial blockages

Interventional Oncology
Embolic, drug-eluting beads and radioactive microspheres to treat tumours in the liver
Cryoablation needles to treat tumours in the kidney

Established
Pharmaceuticals
Acute care antidote products offering medication for patients with little or no other treatment options

Establishing new therapies
Sustainable businesses
Cash generation

Licensing
Royalties relating to products subject to BTG intellectual property and licence agreements

Annual sales
Early Stage
High Growth
Established
Investing to deliver sustained growth and shareholder value

Double-digit product sales growth

Strong free cash flow generation

Investments across multiple drivers of growth

Innovation & Development

Commercial

M&A
## Differentiated therapies in underpenetrated markets

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Indications</th>
<th>Annual patients*</th>
<th>Current number of procedures p.a.†</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTERVENTIONAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ONCOLOGY</strong></td>
<td>Liver and kidney tumours</td>
<td>c. 325,000</td>
<td>c. 25,000 with BTG products</td>
</tr>
<tr>
<td><strong>INTERVENTIONAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VASCULAR</strong></td>
<td>Severe blood clots</td>
<td>c. 2-3m</td>
<td>c. 150,000</td>
</tr>
<tr>
<td><strong>PneumRx®</strong></td>
<td>Severe emphysema</td>
<td>&gt; 4m</td>
<td>c. 900 with PneumRx® Coils</td>
</tr>
<tr>
<td><strong>Varithena®</strong></td>
<td>Symptomatic varicose veins</td>
<td>c. 2.5m†</td>
<td>c. 700k below the knee c. 800k GSV</td>
</tr>
</tbody>
</table>

*Company estimates
†US only
Multiple investment opportunities in Interventional Medicine therapies

Themes
- Smart access
- Local delivery
- Enhanced safety
- Value for money
- Precision medicine
- Patient friendly

Technology platforms
- Radiation
- Embolisation
- Ablation
- Coil and foam technology
- Enhanced drug delivery

Existing and potential therapy area targets
- Liver
- Kidney
- Lung
- Bone
- Neuro
- Vascular
- Prostate
- Pain
Reaching further with Interventional Medicine
BTG Interventional Medicine
Frank Facchini, John Sylvester
Frank Facchini, MD, FSIR
Chief Medical Officer

Dr. Facchini is a practicing Interventional Radiologist. He is certified by the American Board of Radiology, and holds a Certificate of Added Qualification in Interventional Radiology.

Frank entered industry in 2005 working with Boston Scientific as a Medical Director of the Oncology division. He has since served as the Medical Director and Chief Medical Officer of various public and private companies including Angiodynamics.

Frank joined BTG in 2016 and as Chief Medical Officer he manages the global Medical Affairs functions of the Interventional Oncology, Vascular, Pulmonology and medical input on the vigilance function.
History of Interventional Medicine

• Interventional Radiology originated in the early 1960s when Charles Dotter, an angiographer, proclaimed:

“The angiographic catheter can be more than a tool for passive means for diagnostic observation; used with imagination, it can become an important surgical instrument”

• Interventional Medicine is a contemporary, specialty agnostic term, that evolved from multiple providers performing minimally invasive image-guided procedures (MIIPs)

• The evolution was predicted by John Kaufman in 1990

• Retention of patients and procedures will be facilitated by:
  – Focus on longitudinal clinical care
  – Expanding knowledge of disease states
  – Technology driven with extensive knowledge of entire disease
  – Clinically relevant, complete training and continuing education

• This is an important opportunity for BTG

“Those who don’t know history are doomed to repeat it.” – Edmund Burke
The changing healthcare landscape favours minimally invasive therapies

Minimally invasive therapies enable you to deliver more quality care, less invasively, so you can:

i. Reduce the per capita cost of care
ii. Minimise risk to patient
iii. Improve health outcomes
iv. Improve the patient care experience

“Efficiency savings which result from interventional treatments relate to decreased in-hospital stays, reduced occupancy of operating theatres, avoidance of general anaesthesia and a shift to more day-case procedures. In turn, these offer significant reductions in morbidity and mortality in comparison to conventional surgery”

Royal College of Radiologists

Cost pressures

Focus on outcomes

Patient experience

American College of Radiology
The benefits of minimally invasive therapies are evident
Positive feedback

Wow, wish this convo was happening when I was dealing with fibroids in rural Iowa! tinyurl.com/m4cx4ar #LadyProblems #womenshealth

The Intervventional Initiative
Published by Susan Jackson on March 16, 2016
During National Women’s Health Week, we have a short video to help women learn more about a minimally invasive, image-guided procedure (MiPP) to treat infertility - helping couples conceive naturally. https://vimeo.com/668837091

So glad this knowledge is getting out there so people can ...
By Charlene Sues on August 18, 2016
Informative and well done! So glad this knowledge is getting out there so people can make an informed decision regarding their health care.

Great stories of modern medicine
By Nicole on August 4, 2016
Great documentary shining light on the modern, cutting edge medicine that’s changing and saving people’s lives everyday.
Mastering procedural precision and contribution to full care pathway

- Down staging (curative intent)
- Options for younger patients (tolerability, less complications…)
- Combining IM therapies with other modalities doesn’t typically cause additive toxicities

Disruptive

- As diseases are detected earlier, minimally invasive therapies may become curative
- In oncology, minimally invasive therapies are much less dependent on tumour biology than most biological systemic treatments and offer options to a broader patient population

Improve systemic treatment

- Faster recovery enables outpatient procedures ➔ cost effective

Save time (shorter hospital stay)

- Minimally invasive, lower infections, faster recovery ➔ cost effective

Save money

- Shorter hospital stay, less complications, more cost effective than most systemic treatments

Less procedure complication
John Sylvester joined BTG in January 2011, following the acquisition of Biocompatibles. John joined Biocompatibles in 2005 and was appointed to the Board in the same year.

His career covers a series of commercial roles for Rio Tinto Zinc plc, ICI plc and English China Clays where he was General Manager for their European and Asian Operations. Previously he was with Baxter Healthcare where he was VP Marketing for their European Medication delivery business.

John has been responsible for BTG’s overall commercial operations for the past 7 years. He firstly led the Interventional Oncology business building the portfolio and establishing direct sales on three continents and now leads the Interventional Vascular business as well as our M&A activities.
Interventional Radiologists (IRs):

• Apply technology to give better patient outcomes
• Are hungry for more procedures
• Need data to drive adoption of our offering
  – PRODUCTS
  – PROCEDURES
  – PATIENTS
Developing leading-edge products that appeal to the desire to apply technology for the benefit of patients

There's a willingness for the IR and hospital systems to adopt, and pay for, innovative products.
Developing new procedures that offer our customers an additional income stream

Liver segmentectomy with conventional open procedure vs. Liver segmentectomy using TheraSphere®

The ability of TheraSphere® to ablate an entire segment of the liver has provided the minimally invasive alternative to an open surgical procedure.
Providing clinical data is important

Number of published papers on BTG Beads

Providing the IRs with high-level clinical data gives them a greater voice in the debate over patient treatment options
Interventional Oncology

Duncan Kennedy, Peter Pattison, Laurent Domas
Peter Pattison joined BTG in July 2013 following the acquisition of TheraSphere®, a medical device used in the treatment of liver cancer, from Nordion Inc.

At Nordion, Peter held a series of senior commercial roles, most recently Vice President of Sales, Marketing and Business Development for the company’s Targeted Therapies division that included TheraSphere®. Prior to working at Nordion, Peter served as General Manager for the Asian/American Discovery Pharmacology business unit at MDS Pharma Services, a global Contract Research Organization. Peter started his career at Roche in Switzerland.

Peter has been the general manager of BTG’s Interventional Oncology (IO) business since 2014 and takes over from Duncan Kennedy as head of the IO business in January 2018.
A differentiated, multi-modality customer offering

<table>
<thead>
<tr>
<th>Systemic</th>
<th>Interventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Beam Radiation</td>
<td>Targeted local delivery of radiation</td>
</tr>
<tr>
<td>“irradiate it”</td>
<td>Ability to tailor dose to individual tumour</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>Dual action embolisation and targeted drug delivery</td>
</tr>
<tr>
<td>“poison it”</td>
<td>Ability to see precise location of beads</td>
</tr>
<tr>
<td>Open surgery</td>
<td>Controlled destruction of tumour while sparing</td>
</tr>
<tr>
<td>“remove it”</td>
<td>healthy tissue</td>
</tr>
</tbody>
</table>
Laurent Domas first trained as an Engineer in Biology and biomaterials science from the UTC (University of Compiègne, France). He has a PhD in Health Sciences specialising in Biophysics - Medical imaging and implantable materials – from Paris University (Paris XI).

Laurent Domas pursued his whole career in Interventional Radiology and Interventional Oncology. He entered the Medical Industry in 1993 when he joined Guerbet Biomedical (that later became BioSphere Medical) where he held several positions in R&D and Clinical. He then joined Sirtex Medical in 2008 and was Head of the Strategy and Clinical Development department.

Laurent joined BTG in 2014 and is the R&D Head of the Interventional Oncology portfolio.
Liver cancer is one of the most fatal cancers

After pancreatic cancer, liver cancer is the deadliest cancer with the second lowest five year survival rates of only 14%¹
Liver cancer is set to rise
Examples of projections in the United States

Observed and projected incidence of hepatocellular carcinoma (HCC; per 100,000 person-years) in SEER 18, by age group in (A) males, and (B) females. Shaded bands show point-wise 95% confidence limits.

Example of liver cancer staging
The Barcelona Clinic Liver Cancer staging system

Trend to also use IM therapies at an earlier stage to complement surgery (downstage and downsize)
• Insoluble radioactive glass microspheres for the treatment of liver tumours

• Microspheres deliver a high-dose of radiation using yttrium-90 via the hepatic artery into the tumour

• Microspheres are trapped in the tumour capillaries where they emit beta radiation

• Very high concentration of radioactivity per sphere (50x greater than direct competitor)

• Differentiated product:
  – *Simplicit*\textsuperscript{90}Y™ dosimetry software cleared
  – β\textsuperscript{ETA}™ Radiation Safety Programme launched
  – Flexible 90\textsuperscript{Y} product with a range of doses that can be tailored to each patient
Supporting customers with value-added services

- A customised, easy-to-use dosimetry planning software
- Personalises dosimetry to meet individual patient needs and simplifies $^{90}$Y radioembolisation workflow
- Standardises and improves reproducibility in dosimetry planning and enables post-treatment verification to assess absorbed dose delivered for each patient

- An exclusive service from BTG that enables patients and their physicians to stay connected before, during and after treatment
- IO providers are set up for success under MACRA (Medicare Access and CHIP Reauthorisation Act, 2015) through automated collection of patient reported outcomes (PROs)
- Empowers patients and reduces physician burden through online delivery of the right information at the right time
### Indication

<table>
<thead>
<tr>
<th>Indication</th>
<th>Trial description</th>
<th>Detail</th>
<th>End-points</th>
<th>Timing (CY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatocellular Carcinoma</td>
<td>Patients randomised (1:1) to TheraSphere® followed by sorafenib vs. sorafenib</td>
<td>Global Phase III trial; 520 Patients</td>
<td>Primary: Overall Survival (OS)</td>
<td>2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multicentre (up to 100 sites in N. America, EU and Asia)</td>
<td>Secondary: TTP, TTUP, TTSP, Tumor Response, QoL, Safety</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td><em>ClinicalTrials.gov ref: NCT01556490</em></td>
<td></td>
</tr>
<tr>
<td>Metastatic Colorectal Carcinoma</td>
<td>Patients randomised (1:1) to TheraSphere® + 2nd line chemo vs. 2nd line chemo</td>
<td>Global Phase III trial; 420 (actual 280)</td>
<td>Primary: PFS &amp; HPFS</td>
<td>2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multicentre (up to 100 sites in US, Canada, EU, Asia)</td>
<td>Secondary: OS, TTSP, Disease Control Rate, QoL, Safety</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td><em>ClinicalTrials.gov ref: NCT01483027</em></td>
<td></td>
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<tr>
<td>Dosimetry in HCC</td>
<td>Retrospective evaluation of dosimetry in TheraSphere® using Simplicit®90Y™ software</td>
<td>Global trial; up to 300 Patients</td>
<td>Primary: correlation between dose and adverse events</td>
<td>2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multicentre in N. America, EU and Asia</td>
<td>Secondary: Tumour absorbed dose, safety, OR, OS</td>
<td></td>
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</tbody>
</table>
Embolic and drug-eluting beads

• CE marked primarily for embolisation of malignant hypervascular tumours
• Capable of uniform loading and controlled local and sustained elution of doxorubicin or irinotecan as a secondary action
• Available in a range of calibrated sizes
• >400 published clinical papers on Beads
• DC Bead LUMI™ launched in EU & Canada, LC Bead LUMI™ launched in the US
• Collaboration with Philips’ Interventional Oncology Solution ‘OncoSuite’
How drug-eluting beads work
Pre-treatment imaging

The injection of Contrast Media makes the tumour appear brighter than the normal liver.

24-hour post-treatment imaging

The radiopaque beads indicate the proper deposition of the device in the tumour.
Going outside the liver: Galil Medical

- Market leader in cryoablation of kidney cancer
- Ongoing studies in lung and bone metastases
- Investing to accelerate product innovation
  - Ablation centre of excellence for BTG
  - Several new products in the pipeline
    - Systems and needle improvements
    - Other ablation modalities
Cryoablation uses extremely cold temperatures to destroy target tissue

• To conduct cryoablation, Galil Medical Cryoablation Needles are used in conjunction with a Galil Medical Cryoablation System to convert high-pressure gas to either a very cold freezing application or to a warm thawing application
  – Cryoablation is minimally invasive: thin cryoablation needles (1.5mm – 2.4mm diameter) are placed directly into the target tissue
Kidney cancer is a common malignancy and is associated with significant mortality

- In the US during 2015, there were:
  - 61,560 new cases diagnosed\(^1\)
  - 14,080 deaths from this cancer\(^1\)
- Use of cross-sectional imaging has increased the detection of small renal cell carcinoma (RCC)\(^2,3\)
- Center for Disease Control (US) expects Kidney cancer to continue increase over the next decade\(^5\)


Significant clinical development to expand use of cryoablation

<table>
<thead>
<tr>
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<th>Trial description</th>
<th>Detail</th>
<th>End-points</th>
<th>Timing (CY)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bone metastases</strong></td>
<td><strong>MOTION</strong> Single arm study to assess efficacy of cryoablation for palliation of painful metastases</td>
<td>65 Patients; multicentre (11 sites);</td>
<td>Primary: Difference in worst pain</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ClinicalTrials.gov ref: NCT02511678</td>
<td>Secondary: Responders, QoL, physical function, change in analgesic use, reduction in pain, and safety</td>
<td></td>
</tr>
<tr>
<td><strong>Lung metastases</strong></td>
<td><strong>SOLSTICE</strong> Single arm study to assess safety and efficacy of cryoablation in patients with pulmonary metastatic disease (tumours ≤ 3.5cm)</td>
<td>130 Patients/ 226 tumours, multicentre (10 sites);</td>
<td>Primary: Tumour control</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ClinicalTrials.gov ref: NCT01957787</td>
<td>Secondary: OS, TTP, QoL, safety</td>
<td>with 2-year follow-up</td>
</tr>
<tr>
<td><strong>Lung metastases</strong></td>
<td><strong>ECLIPSE</strong> Single arm study to assess safety and efficacy of cryoablation in patients with pulmonary metastatic disease (tumours ≤ 3.5cm)</td>
<td>Pilot Study, 40 Patients/60 tumours, multicentre (4 sites);</td>
<td>Primary: Tumour control</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ClinicalTrials.gov ref: NCT01307501</td>
<td>Secondary: OS, TTP, Safety</td>
<td>with 5-year follow-up</td>
</tr>
</tbody>
</table>
Multiple investments support sustained growth across the Interventional Oncology portfolio

- TheraSphere® Phase III trials
- Cryoablation lung and bone metastases studies
- Product registries
- SIO collaboration
- 40x Investigator Initiated Studies
- Advanced dosimetry software for 90Y (Simplicit90Y™) and TARGET study
- IO Loop™ pilot study
- Pipeline of new ablation products
In the last three years we have invested significantly in geographic expansion and scalable support platforms:

- Direct sales activities established in EMEA, Canada and Asia
  - Selling direct in 11 EMEA territories; intending to continue expansion
  - Regional hub established in Hong Kong; direct sales team in Taiwan
  - Direct sales team in Canada

- Ongoing commercial expansion progress in Japan and China with partners

- Distributor network established in LatAm
  - Multiple product approvals achieved and more in progress

- Delivering >25% ex-US revenue CAGR from 2013; represents ~20% of total IO revenue
The next frontier…?

**External Beam Radiation**
- **“irradiate it”**
  - Radio-embolisation, TheraSphere®

**Systemic Chemotherapy**
- **“poison it”**
  - TACE with Drug-Eluting Beads, LUMI™, DC Bead®

**Conventional Surgery**
- **“remove it”**
  - Ablation, Cryoablation, Microwave Galil Medical

**Immunotherapy**
- **“cure it?”**
  - Interventional Oncology Portfolio
    - LUMI™, DC Bead®, TheraSphere®, Galil Medical
Questions
Interventional Vascular

John Sylvester
EKOS® treats thrombus over the body

- Thrombus is blood clot formed in vascular system impeding blood flow, as a result of occlusions, injury or damage to endothelial lining of the blood vessel, stasis or hypercoagulability

- **Deep Vein Thrombosis (DVT)**, which includes thrombus in the deep veins and upper extremity

- **Peripheral Arterial Occlusions (PAO)**, occlusions that often include thrombus in the major peripheral arteries

- **Pulmonary Embolism (PE)** is where thrombus has lodged in the pulmonary artery
EKOS® Markets & Competitive Landscape

- Well positioned in fastest growing clot market (PE)
- Leverage opportunity with Roxwood products with peripheral arterial occlusions (PAO)

Annual segment growth* (US)
- DVT: 5-7%
- PE: 25%+
- PAO: 2%

Annual segment procedures* (US)
- DVT: 70k
- PE: 15k
- PAO: 50k

Annual incidence* (US)
- DVT: 600k
- PE: 300k
- PAO: 50k

*BTG estimates
A unique method of action: EKOS® Acoustic Pulse Thrombolysis™

Features
- 5.4 Fr catheter
- 106 and 135 cm working length
- 6, 12, 18, 24, 30, 40 and 50 cm treatment zones
Investing in data to drive more patients & procedures

OPTALYSE PE study
Same efficacy but over a shorter treatment time, using less harmful lytic

<table>
<thead>
<tr>
<th>OPTALYSE PE RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>All treatment groups reduced RV/LV ratio with efficacy similar to the current 12/24 hour regimen.(^5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration (hr)</th>
<th>#Pts</th>
<th>Total r-TPA Dose (one/two catheters)</th>
<th>Reduction in RV/LV</th>
<th>No. of Bleeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>26</td>
<td>4mg/8mg</td>
<td>24%</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>26</td>
<td>4mg/8mg</td>
<td>23%</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>27</td>
<td>6mg/12mg</td>
<td>26%</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>18</td>
<td>12mg/24mg</td>
<td>26%</td>
<td>2</td>
</tr>
<tr>
<td>ULTIMA Study 15 hrs</td>
<td>30</td>
<td>20mg + Heparin</td>
<td>23%*</td>
<td>0</td>
</tr>
<tr>
<td>SEATTLE II Study 12/24 hrs</td>
<td>150</td>
<td>24mg</td>
<td>25%</td>
<td>15</td>
</tr>
</tbody>
</table>

*Based on the difference between the baseline and the follow-up mean values.
### Definition

Arterial Occlusion is a blockage of an artery

### High prevalence

- ~25% of patients with CAD
- ~40% of patients with PAD

### Result

Significant impact on patient: Angina/chest pain, MI, claudication or pain while walking, leg amputation, death

### Complicating factors

- Fibrotic Cap / Tortuosity / Anatomy location / Calcification / Lesion Length

### Primary Failure Mechanism

- Inadequate Guidewire Support / Poor Alignment

*Failure to successfully bridge the occlusion is the #1 cause for bypass surgery*
Roxwood products

MicroCross®

CenterCross®
A revolutionary support catheter

• Aids interventional physicians in crossing difficult to treat periphery and coronary arterial occlusions
• Provides guidewire access beyond the lesion for definitive therapy (PTA balloon / Stenting / Atherectomy)
Roxwood products
How Roxwood complements the existing EKOS business

Primary strategy
Wire Escalation
$100-$200 / wire

Existing secondary strategy
CTO Crossing Device
$2,000-$3,000 / device + capital costs to power each device

Bridging the gap between two existing treatment options for occlusion crossing, enabling our customers to do more procedures
Accessing and treating occlusions – conventional versus minimally invasive

Bypass Access

Peripheral

Coronary

Interventional Access

Groin

Radial

Tibial
What next?
Creating a unique business model – avoiding the commodity trap
What next?
‘Pillars and Fillers’ growth strategy
Questions
Dianne Blanco joined BTG in February 2017 as head of PneumRx. She brings over 25 years of medical device experience to BTG, ranging from Board Director to founder/CEO of a European device company to President of Baxter International’s Medication Delivery Division.

Dianne was founder of Orteq, Ltd, a medical device company specialising in meniscal scaffolds, and served as its Executive Board Director and CEO for 9 years. She was previously at Baxter International where she served as President of several significant global medical device operations, including five years running Baxter Europe Medication Delivery.

Dianne is member of the Board of Directors for Innoblative Designs, Inc., a start-up focused on RF ablation, and Stentys SA, a cardiovascular stent company. She also served on the board of Eucomed, the European medical device industry.
BTG acquired PneumRx in 2015

Themes
- Smart access
- Local delivery
- Enhanced safety
- Value for money
- Precision medicine
- Patient friendly

Technology platforms
- Radiation
- Embolisation
- Ablation
- Coil technology
- Foam technology
- Enhanced drug delivery

Existing and potential therapy area targets
- Liver
- Kidney
- Lung
- Bone
- Neuro
- Vascular
- Prostate
- Pain

BTG Interventional Medicine
**PneumRx is laying the foundations for a successful BTG business in the lung space**

- Partnering with Interventional Pulmonologists to provide differentiated solutions for patients with lung disease
- Evidence-centered strategy: clinical outcomes, patient selection, patient referral, procedure optimisation
- Exploration of adjacent growth opportunities aligned with BTG’s Interventional Medicine strategy

PneumRx® Coils are the only minimally invasive, non-surgical treatment option proven to effectively treat patients with severe emphysema independent of collateral ventilation status
PneumRx represents an early-stage interventional medicine opportunity
Our Customer: The Interventional Pulmonologist (IP)

- Emerging medical sub-specialty focussed bronchoscopic diagnostic and therapeutic interventions
- Motivated physician group seeking advanced treatment options to address unmet patient need
- US board certification and fellowship training programmes formalised in 2014
- Opportunity to be the partner of choice for the Interventional Pulmonology specialist
The PneumRx® Coil is enabling Interventional Pulmonologists to improve the treatment of their patients.
Chronic Obstructive Pulmonary Disease represents a significant global unmet medical need

Total COPD
23m

Diagnosed COPD
7m

Primary Emphysema
4m

GOLD III/IV
1.2m

1. Global Health 2015
What is emphysema?

- Form of chronic obstructive pulmonary disease (COPD)
- Damage to air sacs results in poor oxygen exchange
- **Chronic, progressive, and irreversible**
- Limited treatment options for emphysema patients
- Progressive decline in quality of life
The emphysema patient’s journey

Early-Stage Disease

Symptoms impact everyday activities

Medication relieve symptoms

Severe Emphysema

Unable to perform daily activities

“take a deep breath, hold it for 3 seconds, now take another deep breath without exhaling…this is what every breath feels like in the severe emphysema patient”

Dr. Jerry Criner, Temple University

Patient is referred to an Interventional Pulmonologist, who can offer novel treatments, such as the PneumRx® Coil therapy
The PneumRx® Coil is the only minimally invasive, non-surgical option for all severe emphysema patients

Reduces air trapping and hyperinflation in the lungs of advanced emphysema patients

The PneumRx® Coil improves:

• Shortness of Breath
• Lung Function
• Quality of Life

Fig. x-ray after bilateral Coil implantation
How the PneumRx® Coil works: Patient Testimonial
Competing treatment options for the severe emphysema patient

Surgical lung volume reduction (LVRS)
- ~5% mortality rate
- small minority of patients benefit
- Patients don’t want surgery

Lung Transplant
- not an option for most emphysema patients
- risk factors
- shortage of donor organs

Endobronchial valves
- ~60% of patients have disqualifying disease conditions
Opportunity to lead in the treatment of advanced emphysema
Clinical evidence supports inclusion in International COPD guidelines

“Management strategies for advanced COPD are not limited to pharmacologic treatments, and should be complemented by appropriate non-pharmacologic interventions.”

“In select patients with advanced emphysema, bronchoscopic interventions reduces end-expiratory lung volume and improves exercise tolerance, health status, and lung function at 6-12 months following treatment”
The PneumRx® Coil is differentiated and building strong clinical evidence.
Commitment to continual evidence generation

Clinical Evidence
>1500 treated emphysema patients
European Registry, REVOLENS, RENEW

Data mining and analytics

US PMA

ELEVATE TRIAL
Prospective validation of responder profile

FDA Approval (2018)

Patient Selection and Treatment Planning (2019)
PneumRx® Coils
Progress and Growth Drivers

Recent progress
- US PMA review progressing
  - Targeting 2018 approval and launch
- EU medical education programme established
- Initiating ELEVATE study
  - Prospective study to confirm patient responder profile

Growth drivers
- Potential US approval and launch
- EU reimbursement progress
- Adoption of patient selection criteria
- Quantitative CT service roll-out to support treatment planning
- ELEVATE study outcome will support therapy adoption and reimbursement
PneumRx is laying the foundations for a successful BTG business in the lung space

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Questions
Innovation & Development at BTG

Melanie Lee, Peter Stratford
Melanie joined BTG as Chief Scientific Officer in 2014 having previously served as a Non-Executive Director at BTG from 2010.

During her career, Melanie has led R&D through many major mergers and integrations across the full range of company sizes from start-up to large pharma and with medical modalities spanning small molecules, biologic agents and devices. She has worked at GlaxoWellcome, Celltech/UCB, and as CEO of Syntaxin and NightstaRx, a Syncona, Wellcome Trust Company.

Melanie has an academic grounding in molecular genetics and human cell cycle. She was cited for contribution in Sir Paul Nurse’ Nobel Prize for Medicine to cell cycle research in eukaryotic systems with human cell cycle and cancer biology.

She is currently a Non-Executive Director on the Board of Sanofi and has held previous non-executive positions at Cancer Research UK, Chairman CRT, Lundbeck A/S and NightstaRx Ltd. Melanie also served as a Council Member for the Academy of Medical Sciences.
Peter Stratford joined BTG in January 2011, following the acquisition of Biocompatibles. Since then Peter has been head of BTG’s product innovation and a member of the leadership team.

Peter joined Biocompatibles in 1990 and was appointed to the Board in 2002. He took the role of Group Director Research and Development in 1998 and transitioned that Group to the current oncology products focus following the divestiture of the Cardiovascular and Eye Care groups to Abbott Laboratories and CooperVision respectively.

He joined Biocompatibles Cardiovascular Division Management Team at its creation in 1993 and was responsible for the development of the range of cardiovascular devices including the coronary stent and drug eluting stent.

Peter has a BSc in Chemistry, an MSc in Polymer Synthesis and a PhD from Lancaster University. He is an inventor on over 200 patents.
Multiple investment opportunities in IM therapies

Bringing opportunities to life

Providing broad therapeutic solutions around products

Smart access
Local delivery
Enhanced safety
Value for money
Precision medicine
Patient friendly

Our pipeline accelerators

Radiation
Embolisation
Ablation
Coil and foam technology
Enhanced drug delivery

BTG R&D

Our broad experience of organ systems

Liver
Kidney
Lung
Bone
Neuro
Vascular
Prostate
Pain

Multiple investment opportunities in IM therapies
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BTG R&D

Our broad experience of organ systems

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Neuro
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Prostate
Pain
Tailoring our R&D around IM therapies

Working with interventional physicians to secure patient benefit

Leveraging relationships to build customer perspective on IM

Customer Insights
so BTG can invent the product that truly moves the needle for the customer

Medical affairs and education
information and training and commercial support for indication expansion

Portfolio Management
Improved performance and Value generation

Regulatory Strategies
by BU & platform applied to projects enabling robust operational execution

Design
Strong design element in each project ensures usability to make customers ‘want’ to use the product

Commercial / R&D equipping projects with all considerations for efficient market entry

Clinical Operations
‘own’ the procedure and ensure clinical sites are trained and data integrity is high

Developing innovative IM products and differentiated technologies that can enable new procedures

Essential Engine Room to generate clinical data to help drive more patients
BTG has over 320 R&D employees in North America & Europe

North America
1. Seattle, WA – EKOS®
2. Santa Clara, CA – PneumRx®
3. Arden Hills, MN – GALIL™
4. Ottawa, ON – TheraSphere®

Europe
Our Interventional Medicine therapy platforms

Conventional treatment options

- Drug therapy
- Radiation therapy
- Surgery

Minimally invasive treatment options

- **Beads:** Embolic, Drug-eluting, Radiopaque - LUMI™
- **Catheter directed thrombectomy:** EKOS® ultrasound assisted catheter to deliver local dose thrombolytic agent (tPA)
- **Selective Internal Radiation Technology:** TheraSphere® radioactive microspheres
- **Ablative Treatments:** Galil needles, TheraSphere® in liver segmentectomy
- **Coil Treatment:** PneumRx® Coils replacing lung volume reduction surgery

Targeted procedures for improved patient outcomes
Pipeline Building: R&D pipeline accelerators

- **Beads / TheraSphere®**
  - Expanding our product range; explore indications beyond HCC and mCRC
  - Integrated offerings to simplify procedures and improve outcomes

- **Ablation**
  - Indication expansion to lung and bone metastases
  - Product development for surgical specialties

- **New therapy area: Bone**
  - Explore opportunities to develop to an integrated bone solution
  - Build on data in bone metastases with spinal data and pain endpoints

- **Immuno-oncology**
  - Explore how BTG products synergise in combination with I-O agents
  - Forge strategic alliances with companies to offer BTG IM expertise

- **Novel IV products**
  - Roxwood Medical acquisition to provide specialty catheters
  - Move towards tougher obstructions and smaller vessels

- **Expanding lung expertise**
  - Product development in the COPD space
  - Long term oncology and vascular adjacencies identified
Expanding our product range in multiple organs

Using versatility of platforms to explore indications beyond HCC
- Metastatic colorectal cancer (mCRC)
- Intrahepatic cholangiocarcinoma (ICC)
- Neuroendocrine tumours (NETs)
- Prostate artery embolisation (PAE)
- Bariatric artery embolisation (BAE)

Creating integrated offerings that make procedures easier and improve outcomes
- Develop TheraSphere® as flexible, dosimetry-driven, personalised treatment
  - SIMPLICITY US approval
  - TARGET/READY/ STOP-HCC (subgroup)
- Create complementary products to support embolisation
  - Radiopaque Bead
- Delivery systems
  - Build on Philips, Siemens & Mirada relationships to improve image guided therapy

Proprietary drug delivery from Drug-Eluting Beads
- Vandetanib Bead – multi-tyrosine kinase inhibitor in a preloaded radiopaque DEB platform – VEROOnA (FIM) Study: Enrolling and treating patients since Aug-17.
- Local delivery of novel immuno-therapeutics
Transform ablative therapies through product leadership grounded in solid scientific foundation

Product Leadership
- Visual-Ice® MRI compatible Console and Needles
  - Received CE Mark and 510(K) clearance from FDA for the console
  - Needles are in development
- Robust pipeline to extend our lead in cryoablation and add other energy forms to our ablation portfolio

Ablation of Lung Tissue
- ECLIPSE and SOLSTICE to evaluate safety and efficacy of cryoablation for pulmonary metastases
- ECLIPSE local tumour control of 94% (49/52) was achieved at one year
- SOLSTICE two year outcome data pending

Ablation of Bone Metastases
- MOTION study for 510(k) labelling expansion now completed enrolment
- Opportunities to develop to an integrated bone solution with multiple ablation modalities

Minimally invasive ablative therapies for multiple specialties
- Building a portfolio to allow for therapy delivery through needles or flexible catheters to serve multiple specialities
- Mirada – Ablation guidance software to provide pre-treatment planning, intra-procedure needle placement and confirmation
- Partnerships to ensure interoperability with robotic and navigation products
Minimally invasive, image-guided treatment of bone/joint disorders

- >1.4 million US patients are diagnosed with cancer annually
- 70% will develop bone metastases
- Spine – most common site for bone metastases from solid tumours

- Better cancer treatments drive numbers of patients with spinal mets
- Complications of pain and compression
- Better screening driving early observation and opportunity to treat

- **Access, Ablation and Augmentation** drive spine procedures for the IR
- Opportunities to develop to an integrated bone solution needed by user

- **MOTION** study of cryoablation of painful bone metastases now completed enrolment
- Opportunity to build upon data with spinal data with existing network, include non-oncology endpoints (pain reduction)

- Multiple IR **musculoskeletal procedural adjacencies** could follow
Activating the immune system with IM therapies to fight cancer

Treat locally with minimally-invasive loco-regional devices (LRT)

Act systemically through influencing the immune system

- Tumour antigens presented to the immune system
- Abscopal effect – reach distant tumours through immune response
- Synergy with immuno-therapeutics

Adapted from Duffy et al. 2017. J Hepatol. 66(3):545-551
**Escalating evidence and interest in IM therapies to fight cancer**

Combining worlds of immuno-oncology and interventional oncology

“Exploring the synergy between immune checkpoint inhibitors and ablative and transarterial therapies offers **tremendous opportunities** for immuno-oncology and interventional oncology”

“Tumour-directed immunotherapy has the potential to **improve the response rate and increase the number of tumour indications** that respond to immunotherapy”
Exploiting the strengths of BTG’s IM portfolio

- **Broad range of approaches** which influence cancer immunity
- **Ability to access broad range of organs/solid tumours**
- **Expertise** in IM therapies and strong relationships with IR community, in a field currently characterised by imprecise control of tumour targeting
- **Well tolerated products** and offer limited side effect burden as combination therapy

Understand and optimise their contribution to the emergent immuno-oncology field

- Research how to **maximise the immune response** to IM therapies through preclinical and clinical research, to differentiate BTG products
- Explore **synergy with systemic biologic agents** (e.g. checkpoint inhibitors) to improve clinical outcomes
- Survey emergent technologies that offer the strongest scientific rationale for combination with BTG products, **forge strategic alliances** with other companies to be at the fore front of therapeutic breakthrough
Research underway through wealth of research partnerships, collaborating with our customers

Society of Interventional Oncology Partnership
- Funded **independent research grants with 4 leading institutions** to support research evaluating immune stimulation with our LRT
- More grants to be awarded in early 2018

Investigator Initiated Study (IIS) Programme
- Exploring the immune response with radioembolisation, chemoembolisation and cryoablation in a broad range of tumour types
- NCT03203837 – Dr. Robert Lewandowski, Northwestern, Biomarker Analyses in Hepatocellular Carcinoma Patients Treated with TheraSphere®
- NCT03035331 – Dr. Yi Lin, Mayo Clinic, Cryosurgery, cell therapy and pembrolizumab in treating patients with Non-Hodgkins Lymphoma

Collaborative Research Partnerships
- Conducting **basic research** to optimise use of LRT in combination with immunotherapy
- Forging **strategic alliances** with companies to offer BTG IM expertise and be at the forefront of therapeutic breakthrough
Product acquisition and development to expand vascular portfolio

Roxwood Medical
- Complements portfolio with specialty catheters used in the treatment of patients with severe coronary and peripheral artery disease
- Help physicians to cross complex arterial lesions and arterial blockages, enabling treatments such as angioplasty, stenting or atherectomy

EKOS®
- Uses ultrasound-accelerated thrombolysis to dissolve severe blood clots
- Based on strong clinical evidence, it is the only device cleared by the FDA to treat pulmonary embolism, where use is growing strongly
- Completion of Pulmonary Embolism and Post Thrombotic Syndrome clinical data
- New US Generator Device (PT4) able to drive two core wires to enable bilateral treatment
- Opportunities with next generation device (Large Vessel Device) and software, improved ultrasound protocols and catheters

Treat more resilient occlusions and move to smaller vessels
- Mechanical thrombectomy devices for calcified occlusions
- Swift mechanical intervention in ischaemic stroke, rapid patient ID very important, (neuro)
- CV disease adjacencies
Expanding lung expertise

PneumRx® Coil for COPD – broad solution approach

• Enabling interventionalists to manage their patients:
  - QCT service for patient selection
  - Digital innovation for patient management
  - Medical education and training for physician & patients
  - Extensive clinical data – also ‘real world’ evidence

Lung Cancer adjacency provides large opportunity

• At risk patient identification enables early patient ID with high degree of accuracy
• Early nodule diagnosis with improved CT technology provides patient population
• Surgical treatment not applicable (risk:benefit) if lesions too small
• Opportunity for percutaneous & bronchoscopic access combined with diagnosis & ablation
• Imaging, robotics, pathology and ablation integrated solution

Pulmonary vascular disease – highly innovative area

• Future opportunity for BTG combining IP with existing IV business
Technology drivers for continued growth in the evolving world of image-guided precision medicine

- Advances in Disease Imaging
- Better Access for Local Targeting
- Smarter Therapeutic Payloads
### BTG portfolio vision – direction of travel

<table>
<thead>
<tr>
<th>Today</th>
<th>Next 2-5 years</th>
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</thead>
<tbody>
<tr>
<td>Beads / TheraSphere®</td>
<td>• Proprietary drug-eluting bead – Vandetanib clinical data in the liver</td>
</tr>
<tr>
<td>Ablation</td>
<td>• TS Dosimetry; Extended label (PMA) for TS; Broaden TS access to organs</td>
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<tr>
<td>New therapy area: Bone</td>
<td>• Biomaterials product range extension CoE Camberley</td>
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<tr>
<td>Immuno-oncology</td>
<td>• Expand to Liver, Lung and Bone with multiple ablation modalities, broaden the portfolio with needles and flexible catheters.</td>
</tr>
<tr>
<td>Novel IV products</td>
<td>• CoE Galil</td>
</tr>
<tr>
<td>Expanding lung expertise</td>
<td>• Stronger positioning in Bone (MOTION trial)</td>
</tr>
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#### Today
- **Beads / TheraSphere®**
  - Broad product range for embolisation
  - New visible bead – LUMI™, Drug-eluting TheraSphere® – liver therapy

- **Ablation**
  - Cryo probes – broad range of applications
  - MRI compatible
  - ICE pack benchtop

- **New therapy area: Bone**
  - MOTION study fully recruited, demonstrated facility of cryo in bone. High growth opportunity with improved cancer survival

- **Immuno-oncology**
  - Strong IM platforms with potential to positively impact immune system response to cancer

- **Novel IV products**
  - PE treatment with EKOS® catheters
  - Positive Deep Vein Thrombosis results
  - OPTALYSE revolutionises treatment regime
  - Addition to portfolio - Roxwood

- **Expanding lung expertise**
  - COPD PneumRx® Coils for Lung Volume Reduction

#### Next 2-5 years
- • Stronger positioning in Bone (MOTION trial)
- • Integrated bone solution for three As (Access, Ablation and Augmentation)
- • Spinal metastases increasing from solid tumour primaries post treatment

- • Investigation of role of IM therapies to stimulate immune system response
- • Investigation of IM platforms to synergise with immuno-oncology biological systemic agents for solid tumour response

- • Demonstrating advantages of ultrasound in rapid resolution of PE
- • Additions to portfolio e.g. mechanical thrombectomy – Vetex
- • Broadening knowledge of adjacencies (e.g. small vessels, neuro)

- • Stronger positioning in Lung (SOLSTICE, ECLIPSE trials)
- • Flexible needles for ablation treatment through bronchoscope
- • Development of integrated Bronchoscopy solutions
Questions
Views from the Field
Joseph R. Steele, MD, FSIR

Board-certified physician in Diagnostic and Interventional Radiology. Dr. Steele completed residency training at the University of Texas Southwestern followed by a fellowship in interventional radiology at the Washington University Mallinckrodt Institute of Radiology.

Dr. Steele currently serves on the University of Texas MD Anderson Cancer Center executive leadership team as the Division Head of Diagnostic Imaging. He is directly responsible for five departments, over 175 faculty members and nearly 1000 employees with an operating budget of over $1bn and a funded research portfolio of over $15m.

Dr. Steele is a Professor of Interventional Radiology who continues to practice and participate in the training of residents and fellows, and has held leadership positions in the Society of Interventional Radiology, Radiological Society of North America and the American College of Radiology.

In addition to his clinical and academic career, Dr. Steele has been heavily involved in industry with a wide range of experience from early stage and startup companies, to publically traded corporations. He has served on numerous scientific advisory boards, as the Chief Medical Officer of Adient Medical and a Principal at MedicaSafe,Inc. He is a consultant to the Texas Medical Center accelerator and other private equity and venture capital firms.
A framework to understand healthcare value in Interventional Medicine

- Member of the Senior Leadership Team, University of Texas MD Anderson Cancer Center
- Texas Medical Center in Houston, Texas
  - Largest medical center in the world (>125K employees)
  - Largest cancer center in the world ($4.7bn in gross revenue, 20K employees)
- Division Head with sole responsibility for all diagnostic imaging and interventional radiology
- I represent the BTG customer

Today’s focus:
1. Patient value
2. Clinical value
3. Financial value
1. Patient Value

• The patient is the ultimate customer in the healthcare delivery chain
• Patient desires:
  – Cured of their ailment and return to normal activity as fast as possible
    • Minimal in hospital stay
  – No pain and limited discomfort
  – Less cost
    • Expenses are shifting to patients with the growth of high deductible insurance plans, larger co-pays and tightening insurance networks
1. Patient Value

• Patients and families are becoming more informed consumers of healthcare
  – Researching and exploring many options of therapy

• The ‘patient experience’ is becoming paramount
  – Actively measured through HCAHPS and CGCAHPS, Press Ganey, Leap Frog, US New & WR
    • Providers and hospitals
  – Contingent reimbursement from Medicare and soon commercial payors

Example:
• Liver surgery or radiation therapy v. GALIL™ cryotherapy or TheraSphere® Y90 radioembolisation
  – Rapid recovery
  – Minimize patient discomfort
  – Lower total cost
2. Clinical Value

• Whatever therapeutic alternative you provide, it has to work
• Interventional medicine provides similarly effective treatments with less morbidity
  – Radiation segmentectomy with TheraSphere® Y90 vs. conventional surgery
  – GALIL™ cryotherapy vs. conventional surgery
  – EKOS® lysis vs. conventional surgery
• Interventional Medicine provides a route to a previously unavailable treatment

Example:
• TheraSphere® Y90 radioembolisation resulting in a downstage or bridge to liver transplant
3. Financial Value

• Healthcare organisations must remain financially viable – no money, no mission
• Reimbursement in the US market is changing and uncertain
• Interventional medicine provides a ‘belt and braces’ approach that will be successful in both a fee-for-service model or alternative payment model
• Fee-for-service model: focus on growth and volume
  • Emerging minimal invasive technologies will continue to take market share
    – Open surgical and time consuming alternatives (e.g. radiation therapy) are at risk
  • The patient market is growing
    – Aging worldwide population results in a larger number of patients with cancer
    – Better cancer therapies are leading to cures and cancer as a ‘chronic condition’, such that many patients will live to survive multiple cancers and various different therapies
• A bigger piece of a growing pie
3. Financial Value

• Alternative payment models (e.g. value based purchasing, ACO, medical homes, bundled payments)
  – Bundled model (orthopedics and cardiology)
    • Payment is for all services/supplies over an extended period of time
      – Expense over time becomes king
      – Low morbidity and low complications
      – GALIL™ cryotherapy v. liver resection
  – Population health model (per patient per month – diabetes care, Kaiser)
    • A group of patients over a period of time, care for all conditions
      – Low cost solution that is durable
      – Societal costs (return to work, ancillary care charges)
Summary

• Interventional Medicine delivers:
  1. Patient value
  2. Clinical value
  3. Financial value

• BTG has a suite of products that provide proven solutions and are well positioned within oncology, vascular and pulmonology

• These products will continue to provide value to the physician regardless of the direction future healthcare reimbursement takes
Stephen B. Solomon, MD, FSIR

Stephen Solomon, MD is Chief of Interventional Radiology at Memorial Sloan-Kettering Cancer Center in New York and Professor of Radiology of the Weill Cornell Medical College. He received his AB from Harvard University and his MD from Yale University. He completed his radiology training at Johns Hopkins Hospital and stayed on the faculty with an appointment in Radiology and Urology.

Dr. Solomon’s research has focused on image-guided, minimally invasive therapies. His current research is in the field of image-guided, tumor ablation, and he studies the interplay between ablation and the immune system. He has done work with radiofrequency energy, cryotherapy, focused ultrasound, microwave energy, and electroporation.

Dr. Solomon has been active in medical technology development and a consultant to many medical device companies. He has been an entrepreneur in the interventional radiology, pulmonary, cardiology, and gastroenterology spaces and helped develop the Biosense technology that was ultimately purchased by Johnson & Johnson.

Dr. Solomon was a founder of Aspire Bariatrics and has work in a variety of private equity firms focuses on the healthcare sector. He has also been a consultant to the FDA.
The fourth pillar of cancer care

- Surgical Oncology
- Medical Oncology
- Radiation Oncology
- Interventional Oncology
BTG is leading the way in Interventional Oncology

Interventional Oncology Tool Box

• Tumour Ablation (Cryo)

• Embolisation
  – Radioembolisation
  – Drug-Eluting Beads
  – Bland Embolisation

• Tissue Acquisition

• Spinal Augmentation

• Venous Access

• Palliation
  – Pleurex, Tenckhoff, Nephrostomy, Biliary

• Thrombolysis

BTG’s customer offering

- BeadBlock®
- DC Bead®
- LC Bead®
- LC BeadLUMI™
- TheraSphere®
- GALIL™ CRYOABLATION
- EKOS®
Forged partnership in research

- FDA approval of devices often does not require the large clinical trials required of drugs
- Oncology is a competitive space (e.g. radiation, surgery)
- Oncology is data driven
- Oncology is guideline driven

BTG trials
- EPOCH – Randomised radioembolisation trial for colon cancer
- STOP-HCC – Radioembolisation for primary liver cancer
- READY – Radioembolisation Registry
- SOLSTICE - Lung cryoablation
- ACCESS PTS – Thrombolysis with EKOS®
- OPTALYSE – Thrombolysis with EKOS® for pulmonary embolus
**Massachusetts General Hospital**
A Pilot Study of Cryoablation Combined with Immune Checkpoint Inhibitor Therapy in Patients with PD-1 Refractory Metastatic Melanoma: Prospective Clinical Research and Correlative Laboratory Studies

**Centre Hospitalier Universitaire Vaudois**
Investigating the Immunobiology of Hepatocellular Carcinoma in Patients Undergoing Y90 Radioembolisation

**Memorial Sloan Kettering Cancer Center**
T-Cell Clonality and Cancer Neoantigen Presentation Following Interventional Oncology (IO) Therapies: Which IO Techniques Optimally Stimulate the Immune System?

**University of Pennsylvania**
TAEVax: Immunobiologic Treatment Effects of Embolization in a Rat HCC Model
“Imagine where we can go”
Sean M. Tutton, MD, FSIR, has been the Director of the Division of Vascular & Interventional Radiology at the Medical College of Wisconsin since 2014.

Dr. Tutton received his degree from the New Jersey School of Medicine and completed his training at the Feinberg School of Medicine, Northwestern University in 1997.

Dr. Tutton joined the Medical College of Wisconsin Division of Vascular & Interventional Radiology in 2005.

He also received board certification in Hospice and Palliative Care in 2012. Clinical areas of interest include treatment and palliation of skeletal malignancies focusing on bone and soft tissue tumour related pain and pathologic fractures.

Dr. Tutton's research focus is on advancing the art of interventional radiology through research in ablation and stabilization for patients suffering from painful osteoporotic and cancer related spine and pelvic fractures.
The important role of Interventional Medicine in the care of patients

Growth opportunities in Interventional Medicine

- Cancer therapies
  - Interventional Oncology
  - Non-cancerous tumours
  - Symptoms management
  - Musculoskeletal and spine minimally invasive treatments

- Vascular disease

- Pulmonary disease

Two great case studies …
Case study 1: minimally invasive Cryoablation over Surgery
The best therapy choice for a busy young mother’s tumour

“They looked at me as a whole, a young mom, an active and fit person, and found a solution that fit everything; my lifestyle and my family”
Zoe returned to her exercise routine and lifting her children **within 2 weeks** after her cryoablation procedure.
Case study 2: an example of curative therapies
A metastatic Colorectal Carcinoma (mCRC) patient

Background

• 44 year old male presented May 2016 with abdominal pain and weight loss
• Unfortunately diagnosed with a cancer of the sigmoid colon with large liver metastasis
• Underwent 5 cycles FOLFIRINOX chemotherapy

Large metastases not amenable to surgery
Case study 2: an example of curative therapies
A metastatic Colorectal Carcinoma (mCRC) patient

The solution: Liver Directed Therapy with TheraSphere® Radioembolisation
Case study 2: an example of curative therapies
A metastatic Colorectal Carcinoma (mCRC) patient

The result: tumour much smaller now allowing surgical resection
Case study 2: an example of curative therapies
A metastatic Colorectal Carcinoma (mCRC) patient

• Interventional Oncology Liver Directed Therapy
  – Y90 radioembolisation of the liver
  – Good response in combination with chemotherapy
  – Hepatic resection for cure

“Interventional radiology gave me my shot”
Cancer is becoming a chronic disease
Symptom management is the next Blue Ocean

- A grandmother’s breast cancer journey
  - Pain
  - Skeletal metastases
Summary: The Future of Medicine Promises Value-Based Care

• Interventional Medicine delivers image-guided minimally invasive therapies that are cost-effective and allow patients to recover rapidly
• BTG has correctly identified the need to provide complete solutions in cancer care
  – Ablation-Embolisation-Symptom’s Management
• BTG has aggressively developed and acquired effective cancer therapies providing a comprehensive solution for the interventionalist
• BTG is expanding their product offerings in other pillars of medicine including vascular, pulmonary, and immunotherapy
Questions
Thank you