

***Ventripoint***  
Diagnostics Ltd.

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**3D Cardiac Reconstructions from 2D  
Echo with the Accuracy of MRI using  
Artificial Intelligence**

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# VMS Compared to MRI

FACTOR	MRI	VMS™
Capital Cost	\$2 – 4 million	\$50,000
Patient Risk	Sedation	Patient awake
Convenience	1 <sup>st</sup> appt to cardiologist 2 <sup>nd</sup> appt to MRI 3 <sup>rd</sup> appt to cardiologist	1 <sup>st</sup> appt in cardiologist office
Scan Time	1 – 2 hours	5 minutes
Image availability	1 – 2 days	Immediately
Analysis	Radiologist	In-office sonographer
Analysis Time	15 – 45 minutes	10 minutes
Reader	Radiologist – 15 minutes	Cardiologist – 5 minutes

# Overview

**Ventripoint** is a medical imaging solutions company

Post-clinical trials

FDA Approved/Health Canada/CE Mark

Focused on cardiovascular disease and cancer complications

## The Ventripoint VMS+ System

- Augments inexpensive and widely available **ultrasound** equipment
- Uses **Artificial Intelligence** to create 3D images and numerical data
- Volumetric data quality is **equivalent to MRI** without the cost
- Addresses critical clinical requirements across the broad spectrum of **cardio-vascular disease** conditions

# Artificial Intelligence (AI) Reconstruction

- VMS+ Provides **Accurate** volumes from all standard 2D ultrasound images
- Fast
- Reproducible
- Easy to use



You get **results**

- Volume
- Ejection Fraction
- 3D Surface Reconstruction
- Valvular assessment

# Value Proposition

**VMS+:** An **affordable, accurate** diagnostic platform providing **volumetric cardiac assessment** for **all** four cardiac chambers and valves, equivalent to MRI...

*All from the convenience, cost-effectiveness, and ease of 2D Ultrasound.*

# The Process

VMS analysis is done through location of anatomical landmarks in multiple views and reconstructions using AI to determine heart chamber volumes.

Good fit is defined by border alignment and overall coverage.

Results equivalent to MRI - the gold standard in medical imaging

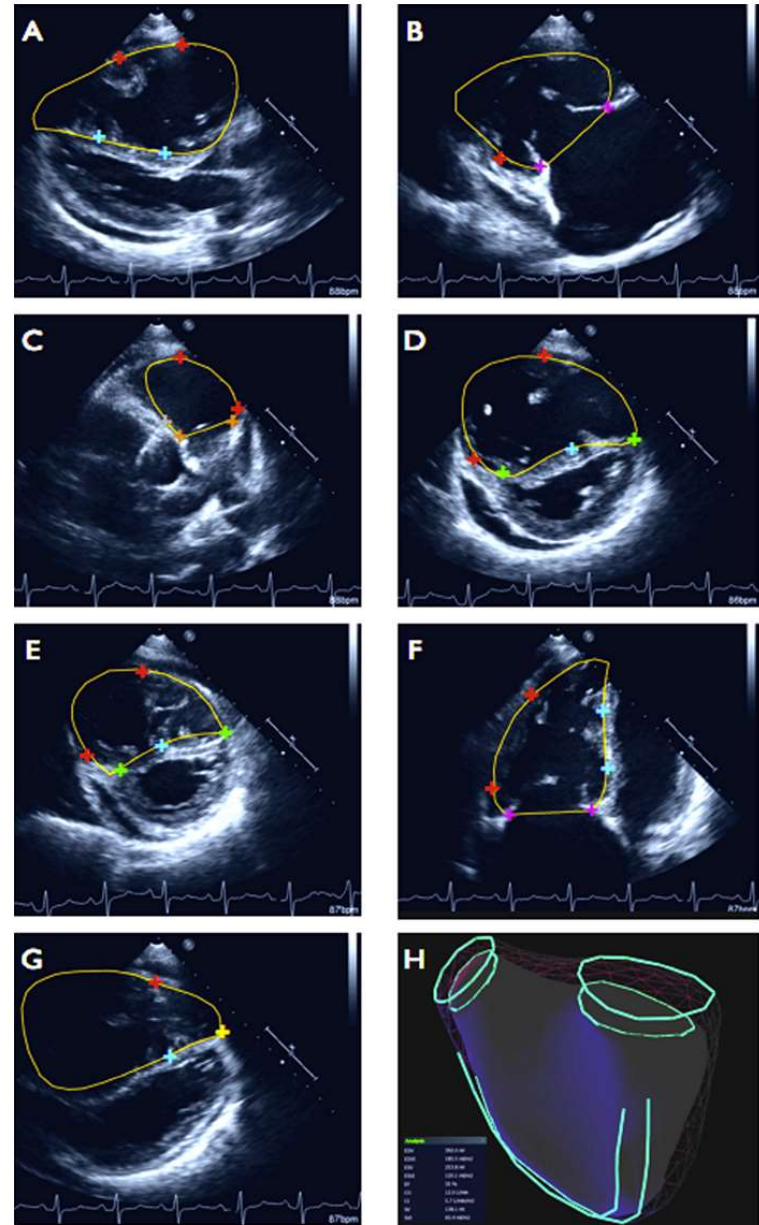
**Table 2** RV volumes and EF by 2D KBR versus CMRI

Measurement	2D KBR	CMRI	<i>P</i> *
RV EDV (mL)	179 ± 66	176 ± 61	.16
RV ESV (mL)	107 ± 47	106 ± 47	.63
RV SV (mL)	73 ± 27	70 ± 26	.26
RV EF (%)	42 ± 10	41 ± 11	.66

*EDV*, End-diastolic volume; *EF*, ejection fraction; *ESV*, end-systolic volume; *SV*, stroke volume.

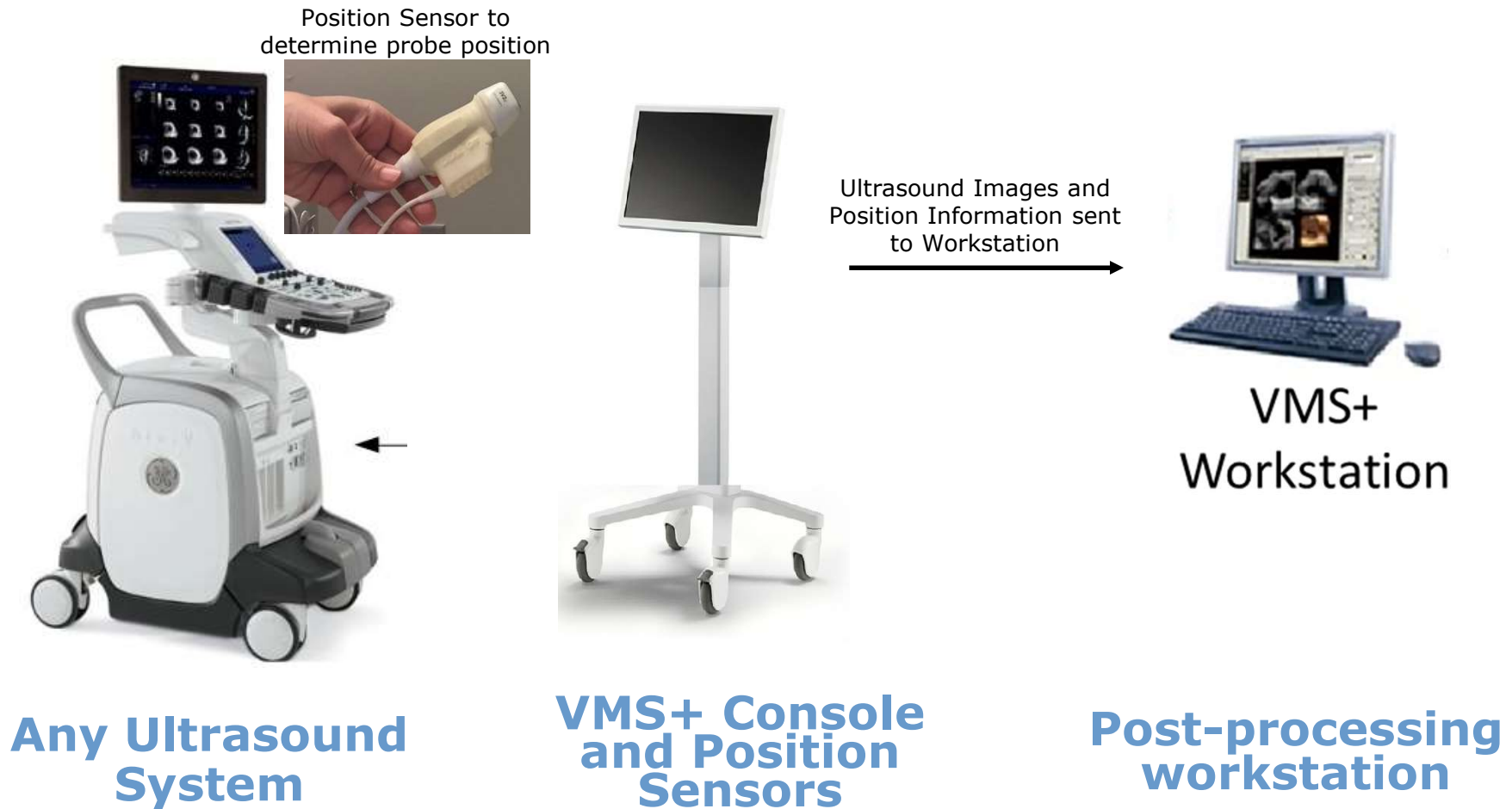
Data are expressed as mean ± SD; *n* = 27 (one patient excluded because of movement artifact during 2D KBR study).

\*Paired Student's *t* test.





# The Product



# Key Accomplishments 2018

## VMS+ Products and Regulatory

- 2D hardware/software – approved FDA, CE Mark, Health Canada
- 3D software only – approved FDA, CE Mark, Health Canada
- ISO13485:2016 Certified, ISO60601 certified

## Technology Development

- Patent application for new tracking technology
- Approved government funding to extend AI technology to 4D
- Strong R&D program: hardware and software development

## Sales

- Mazankowski/Stollery for studies in contrast, pregnancy, CHD
- University of Chicago (Dr. Lang) for 4C evaluation of patients
- MD Anderson Cancer Center for routine use in cancer
- St. Michael's Hospital (Toronto) for routine clinical use in patients



# Key Milestones 1Q19

## Technology Development

- 2D - Completion of VMS3.0 validation testing
- 4D - Extend AI technology to beating heart, LVMI, wall motion
- Patent applications for new technologies under development

## VMS+ Product Development and Regulatory

- 2D - VMS3.0 approval by CE Mark, Health Canada
- Licensing of Chinese manufacturing facility by C-FDA
- Approval of VMS-RV in China and first sales

## Validate Meritorious Use and Economic Benefits

- Publish Sarcoidosis study showing benefits of VMS+ (Europe)
- Completion of clinical study to verify VMS+ reduces use of contrast media in heart attack/cancer patients (Canada)

# Key Milestones 2Q19

## Validate New Applications

- Publication of Contrast study (Edmonton)
- 4C validation (Chicago)
- Cancer (Houston)
- Begin stress echo clinical study (Kingston)
- Begin heart failure study (New York)
- Begin CHD study (London)
- Begin pregnancy study (Edmonton)

## Regulatory

- US-FDA clearance of VMS+3.0

## Sales

- Perform demonstrations of VMS3.0 to top-tier cardiac centres in USA, Canada and Europe
- Complete pending sales in Canada and USA

# What Problems Does VMS+ Solve?

1. Heart damage in 20-30% of **oncology patients** which are **more likely to die from heart problems** after cancer therapy. MD Anderson is #1 cancer hospital in the world and is beginning routine use of VMS+ in 4Q18.
2. **Cost and Extra Time for contrast media** (US\$100/vial) for the **15-25% of ultrasound studies are "unreadable"**. (Trend is more "unreadable" studies as obesity and extensive cardiac disease are increasing, even in children at 17%).
3. **Congenital Heart Disease (CHD)**: Patients require follow-up every three months for life and **current measurements are too unreliable** to trust.

# Market for VMS Heart Analysis Units

Application	USA	Canada	Europe	Total
Cancer	10,000	1,000	15,000	26,000
Contrast media	2,000	200	3,000	5,500
CHD	4,000	400	6,000	11,000
Total	16,000	1,600	24,000	41,600

# Revenue Model

- Existing CPC code for 3D reconstructions from 2D ultrasound studies
- Current re-imbursement is USD\$98-200
- Capital Revenue model
  - Sale for USD\$50,000 with annual license fee of USD\$5,000
- SaaS Revenue model
  - Charge USD\$25-50 per use for access to analysis software
  - Charge USD\$50-100 per case for analysis (this is the trend in CMR and CT)

# Total Potential Revenue for VMS Heart Analysis Units

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Total	16,000	1,600	24,000	41,600
Annual Revenue				
Purchase model@\$50k*	\$100M	\$8M	\$150M	\$258M
SaaS@\$50/case	\$800M	\$80M	\$1,200M	\$2B

\* Product life assumed to be 8 years



# Ventripoint Capital Structure

TSXV: VPT	Sept 18, 2007
QTCQB: VPTDF	Oct 23, 2018
Recent share price	C\$.16
52-week range	C\$.15-\$.51
Market cap	~C\$10M
Ownership:	
Insiders	3.9%
Public Float	96.1%
Cash (1Q19)	C\$1.5M
Debt (convertible at C\$.155, due 2022)	1.5M
Shares issued	62.2M
Fully diluted	104M
Warrants-exercise price at \$.175-.50	28.0M
Options – exercise price of \$.15-\$1.25	3.8M
<b>Liquidity - 300M shares traded 2017 (TSXV50 Award)</b>	
- 100M shares traded 2018	

# Summary

- \$2 Billion Market – MRI quality level at ultrasound costs
- FDA, Canada & Europe regulatory approvals
- Well defined and unmet clinical need endorsed by American Society of Echocardiology and American Heart Association
- Unique patented and proprietary AI technology – new machine learning algorithms under development
- Clinical trials completed and validated by respected experts
- Installations in leading clinical centers, including MD Anderson, Univ of Chicago
- Many expansion products and applications in the pipeline