



VENTRIPOINT DIAGNOSTICS LTD.

**MANAGEMENT'S DISCUSSION AND ANALYSIS
FORM 51-102F1**

For the year ended December 31, 2016

May 1, 2017

MANAGEMENT’S DISCUSSION AND ANALYSIS, NOVEMBER 29, 2016

This management’s discussion and analysis of operations and financial position (MD&A) should be read in conjunction with Ventripoint Diagnostics Ltd.’s (‘Ventripoint’ or the ‘Company’) audited consolidated financial statements and the corresponding notes thereto for the years ended December 31, 2016 and 2015. Ventripoint’s financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS).

Unless otherwise specified, all financial data is presented in Canadian dollars. This MD&A is as of May 1, 2017.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

In the interest of providing current and potential investors in Diagnostics with information regarding the Company’s future plans and operations, certain statements and information, which is included or referenced herein, contain “Forward-looking Statements.”

Forward-looking Statements include, but are not limited to, statements (collectively, “Statements”) with respect to status of technology, development, commercialization, market size, financing, general and administrative, and beyond. You are cautioned not to place undue reliance on forward-looking statements as there can be no assurance that the plans, intentions or expectations they are based on will occur. By their nature, forward-looking statements involve numerous assumptions, known and unknown, and risks and uncertainties, both general and specific, that contribute to the possibility that the predictions, forecasts, projections and other forward-looking statements will not occur.

Although the Company believes that the expectations represented by such forward-looking statements are reasonable, there can be no assurance that such expectations will prove to be correct. Some of the risks and other factors which could cause results to differ materially from those expressed in the forward-looking statements included or referenced herein include, but are not limited to, access to future funding (debt and/or equity) as described under the section titled “Liquidity”; general economics, business and market conditions as discussed in “Risks and Uncertainties – Financial”; the regulatory approval process as noted in “Risks and Uncertainties – Regulatory”; and the Company’s ability to secure additional capital as discussed in “Risks and Uncertainties – Continued Operations”. You are cautioned that the foregoing list of important factors is not exhaustive.

With respect to forward-looking statements contained in this MD&A, we have made several key assumptions including, but not limited to:

- The market for the Company’s planned product and service offerings is in excess of \$1 billion worldwide and is not subject to decline in the foreseeable future;
- The Company will be able to obtain financing in a timely manner on acceptable terms;
- The current tax and regulatory regimes will remain substantially unchanged;
- The Company will be able to obtain equipment and qualified personnel in a timely manner;
- The Company will successfully market its efficient, accurate and cost-effective heart diagnostic tool that uses standard echo images to deliver functional information about the heart;
- Product and service related approvals will be obtained from all necessary agencies in a timely

manner and without unplanned additional costs; and

- The Company will have sufficient resources to implement its strategies in a timely and effective manner.

The forward-looking statements contained or referenced herein are expressly qualified by this cautionary statement made as of this date. The Company disclaims any intention and has no obligation or responsibility, except as required by law, to update or revise any forward-looking statements.

OVERVIEW

Ventripoint is a medical device company engaged in the development and commercialization of its diagnostic tools to monitor patients with heart disease – a major cause of death in developed countries and a rapidly rising incidence in emerging countries. By using images produced from existing medical imaging systems, the Ventripoint Medical System (VMS™) generates accurate heart volumetric measurements and a three-dimensional model in a rapid and inexpensive manner. Ventripoint's solution produces critical heart information by processing standard information received from existing medical imaging equipment with its patented and proprietary methods incorporating Knowledge Based Reconstruction (KBR) algorithms and proprietary cardiac databases (sometimes called catalogues). The VMS enables medical professionals to economically obtain accurate three-dimensional models with critical volume and functional measurements of a patient's heart chambers in only a few minutes more than the time needed for a routine echocardiogram. Measuring volume and function is fundamental in evaluating patients to determine the severity and progression of their disease, assess the effectiveness of treatment, gauge prognosis and decide on the timing of surgical and pharmacological interventions. These key measurements and the 3D model for visual assessment provide medical professionals with some of the critical information necessary for clinical diagnosis and monitoring of their patients.

The Company's KBR method allows for the creation of a three-dimensional model of all the chambers of the heart, right and left ventricles and right and left atria, using images generated from existing 2D and 4D imaging equipment (real time 3D imaging is now considered to be 4D with time as the fourth dimension). The Company's technology platform is applicable to all heart diseases. The VMS system is based upon patented technology that Ventripoint has licensed on an exclusive basis from the University of Washington. The VMS has US-FDA marketing clearance, Health Canada license and European CE Mark for all patients, where right heart information is warranted or desired. In addition, the Company announced the granting of a license from Health Canada for all 4 chambers of the heart on March 2, 2017. The Company is in the early stages of commercialization. As further described below, current efforts are focused on:

- Marketing the 4-chamber VMS in Canada and other jurisdictions where "home-country approval" will facilitate product registration;
- Obtaining regulatory approvals for the 4-chamber VMS in other jurisdictions including the USA and Europe;
- Continued clinical evaluation of the 4-Chamber VMS to determine its optimal use in medical settings;
- Establishing partnerships to develop an integrated 2D ultrasound machine and expand the software analysis tools;

- Establishing a partnership to manufacture, market and distribute existing and future VMS products in China. The Company will retain the rights to market existing and any new devices outside of China; and
- Completing its VMS-4DE application to be used with 4D scanning equipment for the developed world where 4D systems are available but underused for volumetric measurements due to technical issues, which can likely be overcome by the KBR approach.

Since the commencement of operations, Ventripoint has been committed to commercializing its breakthrough technology to be used as a tool in the diagnosis and management of various heart related diseases, a market that today it estimates to be in excess of \$1 billion worldwide.

It is the Company's goal to have the first system on the mass market that addresses the need for an efficient, accurate and cost-effective heart diagnostic tool that uses standard 2D echo or 4D echo or MRI images to deliver 3D functional information for all 4 chambers of the heart. The ability to sustain the implementation of its commercialization strategies for its VMS is dependent upon the timely receipt of additional and sufficient operating capital.

HIGHLIGHTS AND CURRENT DEVELOPMENTS

The Company has made significant progress in implementing its development and commercialization plans. Approvals have been obtained in Canada, Europe and the USA to market the VMS for all other types of heart disease where the RV information is warranted or desired. The VMS product remains the only approved way to generate substantially equivalent results to the gold-standard MRI for right ventricular volumes using 2D echocardiography. The Company has recently received approval in Canada for all a major expansion of the VMS product to be applied to 4 chambers of the heart. The Company is building a sales and distribution team to capitalize on the recent product expansion. The Company is also looking to expand the product offering to include an integrated 2D system, which would do routine echocardiography as well as the 4C-VMS on a single device. The development of the 4C-VMS for semi-automated analysis of 4D is being considered, but requires a significant advancement of the 4D ultrasound machines, which is beyond the scope of the Company at this time. Since 2007, the Company has completed a number of equity and debt financings to fund its technology development and commercialization activities, and will likely continue to seek additional investments from both public and strategic investors.

Corporate Structure and Strategy

Late in 2015, the Company refocused its efforts on developing the VMS to analyze all 4 chambers of the heart in response to market research on the needs of the cardiology community. In the developed countries, cardiologists were asking to use 4D ultrasound scanning, which was not routinely used due to the difficulty in obtaining and analyzing the images. The 4D images continue to get better as the technology improves but it is estimated that 20-25% of patients will always need to be scanned using 2D ultrasound due to poor windows (body size and shape) for ultrasound. In the emerging world, 2D ultrasound is still dominant, but cardiologists would prefer one device with both VMS and routine echocardiographic functions. Hence, the Company developed a strategy to develop an integrated 2D ultrasound device in partnership with existing manufacturers and to expand both the 2D applications to all 4 chambers of the heart. The integrated VMS will take approximately a year to be developed and 6 months to be approved once a partner has been secured, so the Company has completed the development of a new model called the 2D-VMS-PLUS

machine and this has been approved in Canada and a submission filed for regulatory approvals for this new model in the USA, Europe and China.

The overall strategy is to have a suite of products available to allow customers with existing 2D ultrasound machines to purchase the VMS-PLUS and then upgrade to the integrated 2D-VMS machine when they are ready to buy new 2D ultrasound machines. The normal average life cycle of a cardiac ultrasound is 5 years and many are now past the end of their useful life. Thus, there is now a large opportunity to sell integrated 2D-VMS machines as replacement machines. Ultimately, the strategy will be to also develop the VMS analytical software package for 4D ultrasound as the 3D spatial data is already embedded in the 4D scans. The 4D ultrasound machines currently only provide readable images in about 50% of patients and so are clinically not used for chamber measurements. The Company still believes that the KBR approach is the best approach to build a semi-automated analysis package for 4D scans. There would still be a need for the 2D-VMS products in about a quarter of the patients and so those cardiologists wanting to use 4D would need to buy both products to effectively and efficiently examine all their patients.

The Company has appointed experts in ultrasound and biomedical commercialization. In November, 2015, the Company appointed Dave Willis to the Board of Directors (see NR November 4, 2015). Mr. Willis is an expert in the development and international sales of ultrasound equipment. Until recently, he was Vice President Competitive Strategy and Product Innovation at SonoSite-Fujifilm Ultrasound, where he was responsible for design input, launch and global training of 4 major product releases. He also served as Vice President of Sales and Marketing the Americas for Ultrasonix Medical Corp, where he managed sales forces in Canada, U.S.A, and South America. Mr. Willis had been with SonoSite Ultrasound previously as Vice President of General Imaging Business Unit, where he helped grow sales to \$65 million, and as Director of Product Marketing. In the 1990's, he had positions with ATL Ultrasound as Director of Clinical Marketing, Manager of Clinical Investigations, Senior Clinical Specialist, International Sales Specialist and Applications Specialist, where he managed a distribution network in Asia.

In Q1 2016, Dr. Don Segal was appointed as a Director (see NR February 15, 2016) of the Company. Dr. Segal is an entrepreneur with a successful history of starting companies both in the private and public sector. With approximately 40 years of experience in the healthcare industry, he has managed several start-up companies through to commercialization. He is currently the Chairman and CEO of United Biopharmaceuticals Inc. Previously he founded Joldon Diagnostics and spearheaded its amalgamation with Intercon Pharma and Helix Biotech to form Helix BioPharma Corp (TSX:HBP), where he was Chairman and CEO. During his tenure, the company was listed on the TSX and NYSE and raised significant funding from capital markets to support product commercialization. Dr. Segal's first company was Radioimmunoassay Inc. (RIA Inc), which was sold as a private company. Dr. Segal has a Ph.D. in Medical Sciences from the University of Guelph.

The Board elected to move the Company's development operations to Canada to begin the creation of the 4-chamber system as well as to upgrade the hardware and software for the VMS to be ready for the 4-chamber application. Accordingly, the Company established a new facility in Toronto, Canada in early 2016 (see NR February 15, 2016). There is an excellent pool of software and hardware engineers in Toronto to draw upon for the 4-chamber project at more reasonable cost than the Seattle location. In addition, there are government grants available for future development projects such as the VMS-4DE project.

The Company also elected to hire outside vendors for the 4-chamber development. Consequently, it hired Precision Image Analysis to build the new right atrium (RA) and left atrium (LA) catalogues using its internal image library. Over many years, the Company has amassed an excellent cardiac image library with both MRI and ultrasound image files from patients with a wide variety of cardiac conditions. This is a very valuable resource that anyone wishing to build catalogues would need to replicate. Consequently, the Company has been able to produce the new catalogues more quickly.

The Company was able to extend its license for the KBR technologies with the University of Washington to include the atria (See NR January 21, 2016). The building of new catalogues requires an iterative process of tracing the heart chambers and then verifying the accuracy of the tracings using the KBR algorithm and then retracing any images that have motion artefacts and other inaccuracies. The Company is pleased to report the catalogues have been created and tested for accuracy and been shown to yield results equivalent to MRI analysis. The Company has established relationships with two clinical centres to advise it on the development and testing of the 4-chamber user interface and catalogues. The clinical evaluation continues with a focus on optimization of scanning protocols and work flow.

The Company has also hired Walled Networks to assist it in the software and hardware upgrades. To date, they have redesigned the VMS-PLUS to be manufactured more easily, while reducing the foot print and weight of the machine. They have also made the VMS-PLUS more mobile and upgraded the computer hardware to current standards and to work with the newer digital 2D ultrasound machines. This was necessary as many of the components for the VMS were no longer available and newer ultrasound machines have evolved as well. The result is a much improved machine, which can be mass produced. The design of the VMS-PLUS hardware has been finalized and regulatory approval received in Canada and applied for in USA, Europe and China. The VMS-PLUS will require a new ISO60601 certification, which will happen immediately.

In Q4 2015, the Company entered into an agreement with Lishman Global Inc. to set up a self-financing joint venture in China to develop an integrated VMS-ultrasound machine, as well as to manufacture and market existing and new VMS machines in China. The Company retains all rights to market the Chinese-manufactured machines outside of China.

On September 23, 2016, the Company reported that a joint venture has been formed in China called Ma'anshan YuTian Medical Technology Co. Ltd (“**YuTian Technology**”). The first investments are complete and YuTian Technology is fully capitalized to meet its goals of product manufacturing, product development, certification, sales and marketing and the achievement of profitability within two years.

On October 31, 2016, the Company announced it had received payment from YuTian Technology to purchase the first batch of components to begin the manufacturing process of the VMS-PLUS heart analysis units in China. The first machine was constructed in 4Q16 and an additional 3 machines have been fabricated in 1Q17. Two machines will be used to facilitate the submission to the Chinese FDA for marketing approval and obtain appropriate certifications for medical use in hospitals in China. YuTian has applied to the C-FDA for approval of the VMS-PLUS with RV analysis software and expects to have marketing approval in 2017. The other two machines will be used to demonstrate the machine to leading cardiologists and distributors in China. Our Chinese partners are establishing a distribution network for medical devices for all of China.

Product Development

The Company continues to look for ways to make the VMS system easier to use, expand its capabilities and increase its value. In discussions with leading cardiologists, they have expressed the need for a volumetric analysis package for all 4-heart chambers. A prototype application for left ventricle analysis (LV) has been developed, which included the creation of a LV database from the existing inventory of heart images, which the Company has amassed over several years. This application has been used for clinical research by a major European heart centre, which reports that it is more accurate than existing analysis techniques, especially when the LV has been deformed in the setting of RV dysfunction. With the clearance in the United States of the RV database for all patients where RV analysis is desired or warranted (see NR, May 26, 2015), the Company has been encouraged to make commercially available databases for the other 3 chambers of the heart. While RV volume measurements are valuable in congenital heart diseases and pulmonary hypertension, there is an emerging demand for accurate volumetric measurements of the LA and RA to inform the selection of the appropriate monitoring and treatment of patients who require pacemakers, as well as those with acute heart attacks (myocardial infarctions). All the VMS analytical products; 2DE, 4DE or CMR (for use with MRI images) can use the same catalogues for the different heart chambers to generate volumetric measurements. Initially thought to be years away, Ventripoint has completed the development for the 4-chamber feature to be used with 2D ultrasound equipment and obtain regulatory clearance in Canada and commercial release.

The Company has focused on upgrading the VMS machine to a new model, the VMS-PLUS™. It's new and improved features include:

- a smaller cart which provides increased mobility,
- a new keyboard and viewing screen for a more ergonomic design,
- upgraded hardware to support wireless network connectivity,
- upgraded hardware to interface with new high-resolution, digital, 2D-ultrasound machines,
- VPN connection to the server to reduce the need for the hospital IT department during installation and ongoing functionality,
- upgraded software to facilitate the deployment of the whole-heart software suite,
- updated software to bring it up to current standards for hardware and software libraries.

The Company has heard from its regulatory advisors that the VMS-PLUS does not need to undergo clinical testing prior to final submission for regulatory approvals and commercial production. Accordingly, the Company is submitting to have the VMS-PLUS included in its product offering for the USA, Canada and Europe, now that the development and manufacturing facility in Toronto has passed an ISO audit (see NR June 24, 2016) and is ready to manufacture this new model in Canada.

Now that the 4-chamber system has been approved in Canada and the VMS-PLUS has been also approved in Canada, the Company can launch sales of the new 4C-2DE-VMS-PLUS product. The Company is building a sales and distribution team to capitalize on the recent product expansion. The clinical testing of the new system will continue with a focus on optimization of scanning and workflow.

An additional opportunity is emerging with the proliferation of 4D ultrasound equipment in the developed countries. The VMS technology can provide analysis of 4D ultrasound images of the heart

with the same accuracy as MRI. The development team has developed a prototype analytical software package to be used with 4D echocardiograms (VMS-4DE™) and one to be used with MRI images (VMS-CMR™). These have undergone initial clinical evaluation for accuracy and have been shown to be accurate when compared to the method of disks analysis of MRI images, which is the gold-standard technique. A group led by Dr. Kai Laser at the Center for Congenital Heart Defects, Bad Oeynhausen, Germany, has published the results of a clinical study that demonstrated the robust application of the VMS heart analysis technology using cardiac MRI (CMR) and 4D ultrasound imaging in a wide range of cardiac conditions (“[Knowledge-based reconstruction of right ventricular volumes using real-time three-dimensional echocardiographic as well as cardiac magnetic resonance images: comparison with a cardiac magnetic resonance standard.](#)” Laser KT, Horst JP, Barth P, Kelter-Klöpping A, Haas NA, Burchert W, Kececioglu D, Körperich H. J Am Soc Echocardiogr. 27(10):1087-97, 2014). An accurate 4D analysis approach is needed as the current 4D ultrasound analysis approaches are widely accepted as inaccurate in calculating volumes except for normal LV volumes, which can easily be calculated from 2DE scans.

The current use of 4DE in cardiology is for research purposes and for isolated structures of the heart, such as valves. The Company believes that the VMS approach can overcome the limitations of 4DE concerning coverage, image quality and lack of feasibility when looking at volumetric functional assessments and allow its use for routine clinical assessments of the heart. Indeed, the German study confirms the accuracy and precision using selected, good-quality, readable 4D studies. The VMS-4DE product needs additional work on the user interface to increase the ease of use and the hardware for the 4D scans needs to evolve to increase the overall feasibility of obtaining readable images, prior to embarking on commercialization.

The Company will be seeking government assistance in Canada to offset the costs of the VMS-4DE development. The Company is also exploring the merits of using KBR-assisted automated border detection with research groups that specialize in creating algorithms for border detection. Should one of these groups determine they can produce a better algorithm, the Company would enter into an agreement to seek additional research funding for the project. The Company is also seeking partners to assist in commercializing the VMS-4DE product. Ventripoint will announce any agreements if and when they are completed.

Clinical Evaluations and Demonstration of Meritorious Use

The Company has completed clinical enrolment for two clinical trials in the United States which were designed to show substantial equivalency between the gold-standard MRI method and the 2D-ultrasound, VMS-2DE™ technique in Tetralogy of Fallot (TOF) and Pulmonary Arterial Hypertension (PAH) and has an ongoing study to examine the ability of RV analysis with the VMS tools to identify heart failure patients who will be re-admitted to hospital within 30 to 90 days.

Pulmonary Arterial Hypertension: On May 2, 2012 the Company announced that it had initiated a clinical trial in pulmonary hypertension and on October 10, 2013, the Company announced that the clinical trial achieved all its primary endpoints of accurately measuring the volume and ejection fraction of the right heart as compared to the traditional MRI analysis using the method of summation of disks. The results of the clinical trial demonstrated that the calculated parameters between right ventricular volumes computed from echocardiograms by VMS and MRI images computed with Simpson's rule were within the pre-specified 10% range for each of the mean difference and 95% confidence interval (4.8+/-1.4% for EDV, 1.8+/-1.5% for ESV, and 2.0+/-0.7% for EF).

On November 15, 2013, the Company announced that the FDA had closed its review of the Company's 510(k) application for approval of the VMS for use in PAH.

The Company consulted with the Agency and determined a modified submission would be favorably received. On January 23, 2014, the Company submitted a revised 510(k) application and on March 10, 2014, the Company received clearance from the FDA to market the VMS device for use in adults with PAH in the United States. The VMS was the first ultrasound system to be cleared as substantially equivalent to MRI for right ventricle analysis.

All Heart Disease: Right heart function remains a significant prognostic parameter for all heart disease. On May 26th, 2015, the Company announced that the US FDA had given Market Clearance for the VMS for use in all heart disease patients where RV analysis was warranted or desired.

Heart disease is the number one killer of adults, taking more lives each year than all forms of cancer combined. With more than 27 million individuals in the U.S. alone that are living with cardiac disease, there is not a single person that will not be affected by this statistic at some point in their life. This Market Clearance will greatly increase the marketability of the VMS product as it is recommended by the ASE guidelines that a RV volumetric analysis be done on heart patients.

Tetralogy of Fallot (TOF): On June 24, 2013 the Company announced that the TOF clinical trial had stopped recruiting as it had achieved the goal of 75 evaluable cases. The Company has elected not to analyze the TOF study data as the RV application to the FDA was approved and allows for analysis of all patients where the RV analysis is warranted or desired.

Re-Admission Study: The Company is discussing with major cardiac centres in Canada and the US the initiation of clinical studies in left heart failure to determine if analysis of the RV using VMS during initial and subsequent patient admissions to a hospital would reduce the re-admission rate within 30 days, which is currently 21% in the US. It is estimated that over 1 million re-admissions happen annually in the US. In 2004 alone, the cost to Medicare for heart failure re-admissions totalled \$17.4 billion (http://www.heart.org/idc/groups/heart-public/@wcm/@private/@hcm/@gwtg/documents/downloadable/ucm_432944.pdf). In the US, Medicare and Medicaid withhold a percentage of billings from hospitals with higher than acceptable re-admission rates. The withholding was 1% in fiscal year (FY) 2013, 2% in FY2014 and 3% in FY2015. Two thirds of hospitals, or 2,213 hospitals, were penalized in FY2013, which ended September 30, 2013, for a total of \$280 - \$320 million at the 1% level (<http://www.advisory.com/Daily-Briefing/2013/08/05/CMS-2225-hospitals-will-pay-readmissions-penalties-next-year>). It has been reported that 2,600 hospitals were penalized in FY2014 and 2,592 hospitals will receive lower payments for every Medicare patient that stays in the hospital for FY2015. The total penalty for FY2015 at the 3% level in the fourth year of the program was estimated to be \$420 million (<http://www.khn.org/news/half-of-nations-hospitals-fail-again-to-escape-medicare-readmission-penalties/>).

While the penalties for high re-admission rates are significant to hospitals, a larger issue is bed utilization. The average cardiac admission lasts for 6.5 days and generates about 50% of the revenue per bed-day than for average admissions. Thus, the cardiac re-admissions significantly affect the hospitals' average revenues per bed-day. Some procedures, where patients are hospitalized for a few days, generate 5 times greater revenue per bed-day than a routine cardiac admission. Accordingly, hospitals would benefit in two ways by acquiring a VMS; lower penalties and higher revenues from bed utilization.

Patients in left heart failure do not routinely undergo functional RV analysis and yet research studies using MRI have shown that functional RV analysis is prognostic. The recent imaging guideline has recommended functional right heart assessments for all patients.

On November 11, 2014, the Company announced that the Montefiore-Einstein Center for Heart and Vascular Care in the Bronx, New York City, had begun a clinical study.

Dr. Mario Garcia and Dr. Ileana Piña are leading the study. Dr. Piña is a nationally renowned cardiologist known for her work in heart failure and development of multidisciplinary clinical interventions to improve patient rehabilitation outcomes. Dr. Piña serves as advisor/consultant to the FDA's Center for Devices and Radiological Health and their section of Epidemiology. She is also a consultant to Novartis Pharmaceuticals and GE HealthCare. She is the author/co-author of over 100 publications in print, and a world-renowned speaker on heart failure management. Dr. Piña was on the writing committee of the new American Heart Association Guidelines for the Prevention of Heart Disease. Mario J. Garcia, MD, is Chief of the Division of Cardiology and Co-Director of the Montefiore-Einstein Center for Heart and Vascular Care. Dr. Garcia is an internationally known leader in the development and clinical advancement of cardiac diagnostic technology, including cardiac CT, echocardiography and cardiac magnetic resonance imaging. Dr. Garcia is board-certified in cardiovascular medicine, internal medicine and echocardiography.

Montefiore Medical Center is a 1,418-bed general medical and surgical facility in the Bronx, New York. It ranked among the top hospitals nationally in Cardiology and Heart Surgery, in *U.S. News & World Report's* "America's Best Hospitals" 2014-2015 survey. Through its enduring partnership with Albert Einstein College of Medicine, it combines clinical care with research to deliver the most current treatments available.

The pilot trial will evaluate the ability of VMS analysis to identify the patients who will return within 30 days and determine the degree RV function is impaired in this group. If a positive correlation can be established between RV function and re-admission to hospital, a second study looking at treatment modifications to prevent or delay re-admissions will be initiated. This study has the potential to revolutionize how cardiac patients are assessed and save the healthcare system billions of dollars by reducing re-admission rates as more appropriate therapy is applied to those patients in left-heart failure with right-heart involvement.

The Company has done an analysis of the effect of a 5% reduction in re-admission rate and determined the average hospital would benefit with \$1.3 million in new or recovered revenue from better bed and MRI usage, as well as recovery of penalties and re-imbursements for the VMS procedures themselves. The study will also look at 90 day re-admission rates to determine additional benefits from functional RV analysis.

To date, 155 patients have been enrolled in the Montefiore study. An interim analysis failed to show a significant correlation between 30-day re-admission and RV size and function. More patients will be required to definitively determine the correlation (or lack thereof). In light of the current uncertainty in the healthcare environment in the USA, the study has been halted pending the resolution of the changes in the Affordable Care Act that may eliminate the penalties for cardiac re-admissions.

The Company has been reviewing other applications where the volume and function of different heart chambers have been shown in recent studies to correlate with the progress of heart disease or medical interventions. The current foci are:

1. Cardiotoxicity of chemotherapy treatments for cancer. There is a growing literature base to show all chemotherapy agents are cardiotoxic, with many patients developing chronic heart disease following cancer therapy. A recent study published in [Echo Res Pract.](#) (2016, Sept 3(3): 79-84) entitled “Right heart function deteriorates in breast cancer patients undergoing anthracycline-based chemotherapy”, by a group led by Dr. Boczar at the University of Ottawa Heart Institute, Ottawa, Ontario, Canada, concluded: “This study demonstrates that breast cancer patients receiving anthracycline-based chemotherapy experience adverse effects on both right atrial size and RV function”. The Company intends to contact cardiologists within cancer centers to determine the need to accurately determine RA and RV size and function during and after cancer therapy using the 4C-2DE-VMS-PLUS.

There are 1.7M new cancer patients/year in the USA as people now have a lifetime risk of cancer is 42% in men and 38% in women. Cancer has surpassed cardiovascular disease as the number one killer in the USA with 600,000 deaths per year. The leading cause of death in cancer, for both women and men (27%), is lung cancer where RV failure is major risk. Direct medical costs for cancer in the US in 2013 were \$74.8B billion and \$30B (40%) were for inpatient hospital stays. In the USA, there are more than 1,400 cancer-care facilities, which are accredited by the Commission on Cancer of the American College of Surgeons. These centers have been adding cardiologist to their staff as cardiotoxicity is now well established.

2. Cardiac resynchronization therapy (CRT) or the implantation of pacemakers continues to be standard practice for patients with arrhythmias. There are 600,000 pacemaker implantation a year worldwide at a cost of \$18-\$60B or USD\$30,000-\$100,000 per patient. While 1/3 of the time this procedure improves heart function, 2/3 the time is does nothing or causes additional stress on the heart. More and more cardiologists are asking for accurate volumes and ejection fractions for RA and LA to determine who should receive a pacemaker. The assessment using 4-C-2DE-VMS-PLUS has the ability to provide accurate information in a rapid and easy manner and has the potential to save healthcare system significant costs due to unwarranted pacemaker implantations.
3. High blood pressure of hypertension continues to be a major risk factor for heart attacks and other cardiac conditions. A recent study published in the New England Journal of Medicine (the number one clinical journal) reported “The number of persons with hypertension is increasing, and an estimated 44% of the 64 million U.S. adults with hypertension did not have this condition under control in 2014. Thus, there is an enormous potential for improving population health by expanding treatment and improving control...not only would prevent about 56,000 cardiovascular events and 13,000 deaths from cardiovascular causes annually but also would result in cost savings.”

The volume of the left atrium (LA) is a direct indication of the degree of control of blood pressure over an extended period of time and is correlated to mortality with larger volumes indicating earlier death. There is a large opportunity here to measure LA volume and identify the 44% of people with uncontrolled hypertension. Such a screening process could easily be done with the 4C-2DE-VMS-PLUS using conventional 2D ultrasound. Every cardiologist has access to a 2D ultrasound service or machine and so could begin this cost-reduction program immediately. Once again the key is accurate, reliable and rapid assessment of LA volume.

The Company will be focusing on the above three applications and approaching leading cardiologists who have published in these areas to further advance the state-of-the-art towards measuring heart chamber volumes routinely.

Commercialization – Strategies and Implementation

The successful launch and adoption of a new medical device requires acceptance by multiple groups. Among the most fundamental is a credible independent validation of meritorious use of the VMS in clinical-care settings. It is essential that the ultimate payers for healthcare (e.g. government, third party insurers) receive the appropriate professional recommendations with supporting justifications and verify the device represents a medically effective and financially efficient tool that fits within the healthcare industry's complex set of business and patient-care needs.

The Company believes the support of thought leaders is the first building block to gaining the endorsement of the payers. Accordingly, the Company has collaborated with leading echocardiologists and institutions in the field of Congenital Heart Disease (CHD), PAH and other heart conditions. Establishing luminary sites across multiple geographies has and will enable the Company to best select those studies that address clinically relevant challenges and solidify the medical benefits of its VMS system in clinical settings, as well as to disseminate the study results more broadly. Ventripoint is now installed at leading cardiac sites in the US, Europe, Canada and China. To build VMS awareness in the Company's targeted medical professional market segments, these VMS deployments were designed to produce publications in leading medical journals and presentations at conferences. When possible, the Company attends the conferences where the results of these clinical studies are being first presented to the medical community.

In May 2013, the Company exhibited at the annual Congress of the Association of Pediatric Cardiologists (AEPC) in London, UK. In July 2013, the Company exhibited at the Annual Congress of the American Society for Echocardiography (ASE) in Minneapolis, USA. In October 2013, the Company exhibited at the 8th European Echocardiography Course in Congenital Heart Disease in Bologna, Italy.

In June, 2013 the Company exhibited in collaboration with Toshiba Medical Systems Europe, at the 11th International Symposium entitled "Echocardiography Today and Tomorrow" in St. Wolfgang, Austria. The conference was focused on the right heart and included a workshop, where case studies using the Ventripoint VMS were presented by the group from Elisabethinen Hospital, Linz, Austria, which also organized the conference. Dr. Lang from the University of Chicago also presented his PAH data.

In July, 2013, when the Company exhibited at the 24th Scientific Sessions of the American Society of Echocardiology in Minneapolis, Minnesota three scientific papers were presented by three groups of researchers discussing the clinical use of the VMS.

1. A multicentre group from the University of Chicago and Elisabethinen Hospital in Linz, Austria presented a study entitled “Three-dimensional Modeling of the Right Ventricle from Two-Dimensional Transthoracic Echocardiographic Images: Utility of Knowledge-Based Reconstruction in Pulmonary Arterial Hypertension”. Dr. Lang from the University of Chicago and past President of the ASE stated; *“The Ventripoint 3D system provides reproducible measurements of RV volumes in pulmonary arterial hypertension patients. The clinical accuracy of VMS helps obtain valuable information that can impact patient care”*.
2. A group led by Dr. Laser from the Heart and Diabetes Center NRW (HDZ NRW), Bad Oeynhausen, Germany reported on the first use of the prototype VMS-4DE™ software, which analyses 4D ultrasound cardiac images, in a paper entitled; *“Right ventricular volumetry in healthy children and young adults by RT3DE - New axis, new quantification tool with promising results”*.
3. A group led by Dr. Soriano from the Seattle Children’s Hospital reported on their early experiences with the VMS in a number of children with a broad range of heart problems in a paper entitled; *“Echocardiographic 3D Reconstruction Accurately and Precisely Measures Right Ventricular End Diastolic Volumes: Preliminary Pediatric Experience in a Single Institution”*. Dr. Soriano commented “Our ongoing research experience with the Ventripoint equipment has been very positive and we look forward to applying it routinely once it is available for clinical usage in the USA”.

In July 2013, the cardiology group from the University of Chicago, led by Dr. Roberto Lang, published a paper entitled *“Three-Dimensional Modeling of the Right Ventricle from Two-Dimensional Transthoracic Echocardiographic Images: Utility of Knowledge-Based Reconstruction* in Pulmonary Arterial Hypertension”* in the Journal of the American Society of Echocardiography, [Volume 26, Issue 8](#) , Pages 860-867, August 2013. The paper concludes: “Three-dimensional reconstruction of the RV endocardium from 2D transthoracic echocardiographic images obtained in patients with Pulmonary Arterial Hypertension (PAH), as accomplished by Knowledge-Based Reconstruction (KBR), is feasible, accurate, and reproducible”.

On April 2, 2014, the Company reported on the completion of two clinical studies, one in PAH and one in congenital heart disease. Both studies verify the utility of the VMS in monitoring patients after treatment to determine if the therapy has been effective.

Dr. Johannes Schwaiger of the Department of Cardiology at Royal Free Hospital in London will be lecturing at the 13th International Pulmonary Hypertension Forum in Lisbon on his experiences using the VMS to verify a significant change in RV ejection fraction after novel targeted treatments, which resulted in significant improvements in patients with PAH in a session entitled *“Progress and future challenges in the management of PAH”*.

Dr. Henrik Brunand and his group at the Rikshospitalet University Hospital in Oslo, Norway, published a paper in the Congenital Heart Disease Journal entitled *“Right Ventricular Volumes Assessed by Echocardiographic Three-dimensional Knowledge-based Reconstruction Compared with Magnetic Resonance Imaging in a Clinical Setting”*. The paper reports on patients with Congenital Heart Disease who had undergone pulmonary valve replacement and found excellent feasibility (97% of patients could be assessed) with VMS and clinically useful correlations with MRI for RV volumes. The paper concludes with the comment *“Knowledge-based reconstruction [VMS] may replace MRI measurements for serial follow-up...”*

On November 5, 2014, the Company reported that the group from L'hôpital Universitaire Necker-Enfants Malades in Paris, France had published a paper entitled: "*Knowledge-based 3D reconstruction compared to MRI for evaluation of right ventricular volumes and function in congenital heart diseases affecting the right ventricle*" in [*Archives of Cardiovascular Diseases*](#), Volume 107(9), 491-500. For the first time, along with a wide range of patients with congenital heart disease (CHD), patients with all stages of repaired Hypoplastic Left-Heart Syndrome (HLHS) were studied. The VMS allowed for repeated evaluation of these very ill children, while MRI continues to be very difficult and dangerous to perform. This is of particular concern in these HLHS patients. The paper concludes: "*3D-KR ... provides accurate and reproducible measurements of RV volumes. This new technique can be used as an accurate routine tool to assess RV function in CHD*".

In April, 2015, a paper titled "Accuracy and Test-Retest Reproducibility of Two-Dimensional Knowledge-Based Volumetric Reconstruction of the Right Ventricle in Pulmonary Hypertension" was accepted for publication in the *Journal of the American Society of Echocardiography*. The full article is available at <http://www.onlinejase.com/article/S0894-7317%2815%2900142-X/references>.

The study design compared the accuracy of the measurements performed by the cardiologists who independently performed an echocardiogram on the same patient and then analyzed the scans. This "test-retest" design is unique in that a majority of studies comparing measurements performed by different individuals are typically completed with the observers using the same echocardiographical images. This type of study method reflects the real world clinical use of echocardiography, where patients receive echocardiograms on different days performed by different cardiologists and they are used to assess if changes in heart function have occurred. An accurate, reproducible procedure is absolutely necessary to make therapeutic decisions.

This clinical study demonstrated that the VMS analysis of the right heart is reproducible between operators. This means that the cardiologist can trust previous test results regardless of the examiner, so long as the echocardiogram was analyzed using the VMS. Further, the study determined that results produced by VMS were more accurate and reproducible than Fractional-Area Change, which is one of the methods of estimating right-heart function recommended by the ASE imaging guidelines. The imaging guidelines, published by the American Society of Echocardiography (ASE) in the *Journal of the ASE*, are written by experts in the field of echocardiography and cardiology, and provide a recommended standard of care.

This VMS validation and awareness campaign was intended to engage the support and endorsement of opinion leaders and to position VMS for broad acceptance by clinicians in Canada, Europe and in the US.

In June 2016, the Company exhibited at the 27th Scientific Sessions of the American Society of Echocardiography in Seattle. There continues to be more scientific presentations on RV each year at this major congress. This year there were also papers on the evaluation of the LA and RV and the limitations of existing techniques.

From November 2013 until March 2014, the Company was focused solely on obtaining FDA clearance and minimal efforts were put towards sales and marketing. With the FDA clearance received on March 10, 2014, the Company re-initiated contact with the cardiology community in the United States, Europe and Canada to promote clinical use and sales. The Company became focused on initial marketing strategies, which included:

- Exhibiting at the annual meeting of the American Society for Echocardiography in June, 2014 in Portland, Oregon and attending other conferences to meet with cardiologists.
- Contacting American cardiologists who have previously indicated an interest in functional heart analysis,
- Signing up distributors in the rest of the world,
- Furthering discussions with select leading ultrasound manufacturers for collaborations on technology integration,
- Advancing hospital-sponsored clinical studies into new applications for the VMS, and
- Re-evaluating marketplace acceptance of a pay-per-use structure in patients with left heart failure, while maintaining the current capital purchase approach in Pulmonary Hypertension and Congenital Heart Disease applications.

The Company exhibited at the EuroEcho Conference in Vienna from December 3-6, 2014. More than 3,500 participants who focus on echocardiology attended EuroEcho-Imaging 2014, which is the official annual meeting of the European Association of Cardiovascular Imaging, a registered branch of the European Society of Cardiology.

The Company attended the American College of Cardiology Scientific Sessions, March 14-16th, 2015, in San Diego, CA. We met with key potential customers who have asked for our time to engage in further discussions with regard to our product. The event was an excellent opportunity to communicate directly with those customers currently interested in purchasing a VMS system.

The Company exhibited at American Society of Echocardiography Scientific Session (ASE 2015) held in Boston in June 2015. Cardiologists at this major conference indicated that they wanted an ability to analyze the volumes for all 4 chambers of the heart.

On March 30, 2015, the Company announced the appointment of PYP Enterprises LLC (PYP) to be the exclusive distributor to the US military hospitals including the VA hospitals. PYP Enterprises LLC is a preferred provider of services to the Department of Defense and is designated as a service-disabled, veteran-owned, small business (SDVOSB) by the US Department of Defense. The US Department of Defense is required to purchase products worth 6% of its budget from SDVOSBs and the VA is required to spend 3% of its annual budget on products from SDVOSBs. This agreement has lapsed due to the need to expand the VMS product to 4 chambers and it is unclear if it will be re-instated with this partner.

On September 2, 2014, the Company announced that it had signed a distribution agreement with Shandong Realcan Pharmaceuticals Co. Ltd (“Realcan”, Shenzen Exchange:002589). The Company was informed in March, 2015 by Realcan that they were not ready to move forward with the distribution agreement and investment. The agreement has been terminated and all rights returned to the Company.

Chinese Partnership for Development, Manufacturing and Distribution

In Q4 2015, the Company entered into an agreement with Lishman Global Inc. to set up a self-financing joint venture in China to develop an integrated VMS-ultrasound machine, as well as to manufacture and market existing and new VMS machines in China. The Company retains all rights to market the Chinese-manufactured machines outside of China. An initial investment in Ventripoint Diagnostics Ltd. of CDN\$500,000 was received by the Company (see NR November

10, 2015) and a follow-on investment of \$150,000 was received in December 2016. The agreement anticipates an additional CDN\$2.1M will be invested by Chinese entities who will be part of the joint venture. Due to market conditions and capital on hand, the additional investment has been postponed.

On September 23, 2016, the Company reported that a joint venture has been formed in China called Ma'anshan YuTian Medical Technology Co. Ltd (“**YuTian Technology**”). YuTian Technology is situated in the city of Ma'anshan in Anhui Province. Shanghai YuTian is the largest shareholder in YuTian Technology and the investors include Anhui Province Hi-Tech Venture Capital Investment Co. Ltd. and Ma'anshan Economic and Development Zone Venture Capital Investment Co. Ltd. The first investments are complete and YuTian Technology is fully capitalized to meet its goals of product manufacturing, product development, certification, sales and marketing and the achievement of profitability within the next two years.

On October 31, 2016, the Company announced it had received \$240,534 from YuTian Technology to purchase the first batch of components to begin the manufacturing process of the VMS-PLUS heart analysis units in China. Thus, the Company with its Chinese Partners is accessing the market in China. This is a major milestone as the opportunity in China continues to expand. The first machine was constructed in December 2016 and an additional 3 machine have been fabricated in 1Q17. Two machines will be used to facilitate the submission to the Chinese FDA for marketing approval and obtain appropriate certifications for medical use in hospitals in China. YuTian has applied to the C-FDA for approval of the VMS-PLUS with RV analysis software and expects to have marketing approval in 2017. The other two machines will be used to demonstrate the machine to leading cardiologists and distributors in China. Our Chinese partners are establishing a distribution network for medical devices for all of China.

The Company is pleased to report that Shanghai Yutian has formed a JV company in China called Ma'anshan YuTian Medical Technology Co. Ltd (“**YuTian Technology**”). YuTian Technology is situated in the city of Ma'anshan in Anhui Province. Shanghai YuTian Medical Investment Co. Ltd. is the largest shareholder in YuTian Technology and the investors include Anhui Province Hi-Tech Venture Capital Investment Co. Ltd. and Ma'anshan Economic and Development Zone Venture Capital Investment Co. Ltd. The first investments are complete and YuTian Technology is fully capitalized to meet its goals of product manufacturing, product development, certification, sales and marketing and the achievement of profitability within the next two years.

In addition, YuTian Technology has paid in advance \$240,534 to purchase the first batch of components to begin the manufacturing process of the VMS-PLUS heart analysis units in China. This is a major milestone as the opportunity in China continues to expand and we feel with manufacturing now beginning, the Company is in a position to drive tremendous value for our shareholders in the quarters to come. The first machines are expected to be constructed by the end of the year and will be used to facilitate the submission to the Chinese FDA for marketing approval, as well as to demonstrate the machine to distributors in China. Our Chinese partners are establishing a distribution network for all of China.

The market for medical instruments in China is approximately \$7 billion per year and growing rapidly as the healthcare system is improved and extended. There are over 14,000 hospitals in China and 25% of cases are for cardiovascular disease. In the last 3 years, over 2,000 new hospitals have been built and the government health insurance now covers 90% of the population.

In addition, the Company is evaluating the integration of its technology with existing ultrasound

devices and analysis packages. The Company continues to discuss with manufacturers of ultrasound equipment and analytic software the merits of combining the VMS with their systems to allow for a complete heart analysis using 2D ultrasound. The Company will disclose any agreements, to the limit possible for such commercial agreements, should they arise.

Regulatory

Canada and Europe As previously reported, the Company has received Health Canada approval and has also received the European CE Mark approval to market its VMS product and service offering.

On March 27, 2012 the Company was notified that it had received Notified Body approval to market its pulmonary hypertension application in Europe. On May 4, 2012 the Company was notified that it had received Health Canada approval to market its pulmonary hypertension application in Canada.

On April 17, 2013 the Company was notified that it had received Notified Body approval to market its NRV™ application in Europe. On April 25, 2012 Health Canada approved the Company's application for approval of the NRV database in Canada.

On November 11, 2014, the Company received a renewal of its European CE Mark.

In December, 2014, the Company successfully completed an ISO 13485 re-certification audit, which is carried out every three years.

On March 2, 2017, the Company announced it had received a license to market the VMS-PLUS with the 4-Chamber analysis package from Health Canada.

United States On March 10, 2014, the Company received clearance from the FDA to market the VMS device for use in adults with PAH in the United States. The VMS is the first ultrasound system to be cleared as equivalent to MRI for right ventricle analysis.

The Company completed an initial Establishment Inspection by the U.S. Food and Drug Administration (FDA) on January 8, 2015. This initial Establishment Inspection following 510(k) clearance of the Ventripoint Medical System in March, 2014, was started on December 29, 2014 at the Company's Bellevue, Washington location. It was a pre-announced Good Manufacturing Practices (GMP) facility inspection. It was a very detailed inspection of our Quality System as it relates to Federal Regulations. The inspection reported only two minor observations, as noted on FDA Form 483, that were easily addressed.

On May 26, 2015, the Company announced that the US FDA had granted Marketing Clearance for Ventripoint's NRV catalogue, which was developed to provide right ventricular volumes of individuals being evaluated, regardless of their cardiac diagnosis. Previous submissions to the FDA required us to prove the methodology, safety, and accuracy of the entire VMS product to the reviewers, which was challenging with such novel technology. By referring to our cleared product throughout any future submissions as a Predicate Device, our path forward becomes much more predictable. This approval will also allow us to formulate additional submissions for expansion of the databases to other heart chambers.

FINANCIAL HIGHLIGHTS

These Financial Highlights should be read in conjunction with Ventripoint Diagnostics Ltd.'s audited annual consolidated financial statements and the corresponding notes thereto for the years ended December 31, 2016 and 2015.

Change in Reporting and Functional Currency to CDN\$ - January 1, 2016

Effective January 1, 2016, Ventripoint changed the functional and financial statement presentation currency to Canadian dollars as a result of the closing of the Company's operations in the U.S. and the move of those operations to Toronto, Canada. The Company's fixed assets have been transferred into the Canadian parent company, Diagnostics, from the wholly-owned U.S. subsidiary, Ventripoint Inc.

The change in functional currency from U.S. dollars to Canadian dollars is accounted for prospectively from January 1, 2016. The exchange rate used to translate US\$ assets and liabilities that are *not* subject to revaluation at each reporting date (i.e. fixed assets, intangible assets and shareholders' equity accounts other than retained earnings) in the statement of financial position to reflect the change in functional currency on adoption is \$1.39.

Items included in the financial statements of the U.S. subsidiary company are measured using the US dollar, and are translated into Canadian dollars upon consolidation with the parent company, Ventripoint Diagnostics Ltd. Prior year comparable information is restated to reflect the change in presentation currency. The exchange rates used to translate the audited annual consolidated statement of financial position to reflect the change in presentation currency as at December 31, 2016 and December 31, 2015 are \$1.31 and \$1.39 respectively, while the average exchange rates used to translate the consolidated statement of comprehensive income for the years ended December 31, 2016 and December 31, 2015 are \$1.32 and \$1.27, respectively.

Unless otherwise specified, all financial data herein is presented in Canadian dollars.

Common Share Consolidation – December 7, 2015

At the Shareholders Meeting on October 13, 2015, the shareholders approved a resolution providing the Board with the discretion to enact a share consolidation of up to 10:1. The consolidation took effect on December 7, 2015 at a ratio of 10:1.

The amounts of all common shares, warrants, options and other derivatives, and all share prices in this MD&A have been adjusted to reflect post consolidation values.

Capital Transactions

The fully diluted share capital of the Company as of May 1, 2017 is as follows:

	Issued and Outstanding				
	Common Shares	Convertible Debentures	Warrants	Options	Fully Diluted
Reverse takeover - 2007 Ventripoint and Diagnostics	2,432,845		7,881	115,285	2,556,011
Stock for services and payment of debt	2,764,751		405,149		3,169,900
Option grants net of expirations and forfeitures				1,103,980	1,103,980
DSUs exercised	150,000				150,000
Warrants cancelled/expired			(4,104,195)		(4,104,195)
Common stock offering - 2007 - 2012	8,596,874		2,783,401	52,635	11,432,910
Debenture offerings - 2009 - 2012			576,174		576,174
Warrants exercised - 2008 - 2012	651,056		(651,056)		0
Common stock offering – 2013	933,700		493,626		1,427,326
Unit Debenture offering -2013	110,000				110,000
Convertible Debenture offerings - 2013	234,000	728,000	689,900		1,651,900
Debenture conversions - 2014	1,000,000				1,000,000
Common stock offering - 2014	2,557,643		1,388,870		3,946,513
Short-term Debenture offering - 2014			348,340		348,340
Options exercised - 2014 - 2015	72,500			(72,500)	0
Convertible Debenture offering - 2015	150,000				150,000
Common stock offerings - 2015	7,818,181		2,480,000		10,298,181
Extension of convertible debentures - 2016		651,666	4,086,665		4,738,331
Common stock offerings - Oct & Dec 2016	4,666,668		4,666,668		9,333,336
Warrants exercised - 2017	5,704,131		(5,704,131)		0
Stock options exercised - 2017	375,000			(375,000)	0
Stock options granted - 2017				200,000	200,000
Conversion of debentures - 2017	766,666	(766,666)			0
Cash repayment of convertible debentures - 2017		(109,000)			(109,000)
Shares for Debt offering - March, 2017	1,575,000	(504,000)	1,575,000		2,646,000
Common stock offering - March, 2017	10,779,493		10,779,493		21,558,986
Issued and outstanding, May 1, 2017	51,338,508	0	19,821,785	824,400	71,984,692

As of May 1, 2017, officers and directors held 3.14% of the outstanding common shares of the Company (5.59% on a fully diluted basis).

Equity and Debt Transactions - 2017 year to date

a. Unit Private Placement

On March 24, 2017 the Company announced that it had closed a non-brokered private placement (the "Private Placement") of 10,496,938 units ("Units") at \$0.32 per Unit for total gross proceeds of \$3,359,020. Existing shareholders subscribed for \$1.9M and new shareholders subscribed for \$1.4M of the Private Placement. Each Unit consists of one common share of Ventripoint ("Common Share") and one Common Share warrant ("Warrant"), with each Warrant entitling the holder thereof to acquire one Common Share at a price of \$0.50 per Common Share for a period of 2 years after the issuance of the Warrant. Dr. George Adams, the Chief Executive Officer and a Director of the Corporation, subscribed for 312,000 Units in the Private Placement.

The Company paid cash finder's fees of \$188,030 (5.6% of the Private Placement) and issued an aggregate of 282,555 Common Shares (2.7% of the Private Placement) and 282,555 non-transferable Common Share purchase warrants (2.7% Private Placement, the "Finder's Warrants") to finders in connection with the Private Placement. Each Finder's Warrant is exercisable into one Common Share at a price of \$0.50 per Common Share for a period of two years from the date of issuance.

b. Shares for Debt Unit Private Placement

In addition to the Private Placement, on March 21, 2017, the Company closed a shares-for-debt transaction (the "Shares for Debt") with holders of debentures previously issued by the Company (the "Debentures"). The Company issued to the holders of Debentures a total of 1,575,000 of the Units in payment of \$504,000 of amounts due under such Debentures. Dr. George Adams, the Chief Executive Officer and a Director of the Company, received 312,500 Units pursuant to the Shares for Debt.

c. Debenture conversions and repayments

During March, 2017 holders of \$115,000 in Convertible Debentures converted the debentures into 766,667 Common Shares, and the Company repaid in cash the remaining \$109,000 in outstanding Debentures, leaving the Company debt free by March 31, 2017.

d. Warrant and Option exercises

Year-to-date, the Company has issued 5,704,130 Common Shares due to the exercise of warrants at exercise prices between \$0.15 and \$0.40, for total proceeds received of \$1,118,236. In addition, 375,000 shares have been issued as a result of the exercise of stock options for proceeds of \$60,750. The Common Shares issued due to these warrant and stock option exercises are free-trading.

e. Stock Option grants

On January 6, 2017 the Company announced that FronTier Consulting Ltd. ('FronTier') has been retained for 12 months to provide IR services for a fee of \$6,000 payable on a quarterly basis, and to provide additional marketing consulting services for \$60,000. Under the terms of the agreement the Company also issued 200,000 stock options to FronTier at an exercise price of \$0.15, vesting in equal quarterly installments over 12 months and expiring two years from the date of grant.

Equity and Debt Transactions - 2016

a. June 2016 Outstanding Warrants Amended

On June 16, 2016 the TSXV Exchange approved the amendment of 4,118,069 outstanding warrants issued from 6 private placements on August 21, 2013, October 22, 2013, June 20, 2014, December 31, 2014, June 4, 2015, and September 29, 2015. The Warrants were amended as follows:

- i. The expiry date of each series of warrants was extended for an additional two years from the original expiry date.
- ii. The exercise price of all of the Warrants was amended to \$0.40.
- iii. The Warrants, as amended, include an accelerated expiry provision such that the exercise period of each of the classes of the Warrants will be reduced to 30 days if for any 10 consecutive trading days during the unexpired term of such class of Warrants (the "Premium Trading Days") the closing price of the Company's common shares exceeds the amended exercise price by 25% or more (which would be a trading price of \$0.50 per common share or higher), with the 30-day expiry period to begin no more than 7 calendar days after the 10th Premium Trading Day.

b. Unit Private Placement

On October 4, 2016 the Company announced that it had closed the first tranche of its non-brokered private placement. The first tranche involved the issuance of 2,000,001 units ("Units") at a price of \$0.15 per Unit for gross proceeds of \$300,000. Each Unit consists of one common share of Ventripoint and one common share warrant. Each warrant will entitle the holder thereof to acquire one additional common share at an exercise price of \$0.30 per common share for a period of 2 years after the issuance of the warrant, subject to acceleration in certain events. The common shares and the warrants acquired by the subscribers are subject to a hold period of four months plus one day from the date of closing of the private placement.

On December 16, 2016 the second tranche of the private placement was closed with the issuance of 2,666,667 Units at \$0.15 per Unit for gross proceeds of \$400,000. Dr. George Adams, the CEO and a Director of the Company, subscribed for 660,000 Units in the second tranche.

Two of the subscribers in the first tranche accepted Units as payment in full of \$38,000 in the outstanding convertible debentures issued on August 21, 2013, as a shares-for-debt transaction. One of the subscribers in the second tranche accepted Units as payment of outstanding consulting fees of the Company in a shares-for-debt transaction.

c. Shares for Debt

On November 7, 2016, the Company issued 461,538 common shares to holders of outstanding unsecured convertible debentures issued on October 22, 2013, as payment in full of \$60,000 interest owing under the Debentures.

On September 17, 2016 the Company issued 214,225 common shares in payment for \$31,920 in interest due August 21, 2016, on unsecured convertible debentures issued originally August 1, 2013.

d. Convertible Debentures Extended with Warrants

On August 21, 2016, and October 22, 2016 the Company amended \$228,000 of the August 21, 2013 Convertible Debentures and \$385,000 of the October 22, 2013 Convertible Debentures, such that the maturity date of the Convertible Debentures was extended for a period of 24 months to August 21, 2018 and October 22, 2018, respectively (the “Amended Debentures”). In consideration for agreeing to extend the maturity date, the Company issued to the debenture holders an aggregate of 1,519,998 and 2,566,667 common share purchase warrants, respectively for the August and October amendments, exercisable a price of \$0.15 per common share for two years from the date of issuance. In all other respects, the terms of the original Convertible Debentures remain unchanged. Two of the debenture holders opted to take repayment of \$38,000 of the August 21, 2013 Convertible Debentures in Units of the Private Placement (b) on October 4, 2016.

e. Convertible Debentures Extended with Amended Conversion Price

On October 22, 2016, holders of \$115,000 of the October 22, 2013 Convertible Debentures opted at maturity to extend the debentures for two years to October 22, 2018 and to have the debenture conversion price reduced from \$1.00 to \$0.15 per common share (the “Amended Conversion Debentures”). The Amended Conversion Debentures were also amended to add a clause whereby, if the Company issues common shares or convertible securities which are convertible into common shares at a conversion price which is lower than the amended conversion price of \$0.15, the Company will apply to the TSXV Exchange to amend the conversion price of the Amended Conversion Debentures to the 10-day volume-weighted market price of the common shares.

f. Repayment of Short-term Convertible Debentures

The unsecured Short-term Convertible Debentures issued on March 25, 2015 were fully repaid in cash on March 25, 2016.

g. Stock Option grants

On November 17, 2016 the Board of Directors approved the grant of 160,400 stock options to consultants in payment for their services. These stock options are for a term of two years, 150,000 of which are exercisable at \$0.15 per common share and 10,400 are exercisable at \$0.30 per common share. In addition, the Board approved the grant of 75,000 stock options to a Director in payment for his additional services. These options are for a term of 10 years and are exercisable at \$0.17 per common share.

On April 11, 2016 the Company granted 75,000 stock options to a director who joined the Board of Directors in February, 2016, in recognition of his future services on the Board. The stock options to purchase common shares of the Company are exercisable at \$0.18 per common share, mature on April 11, 2026, and vest immediately. Also on April 11, 2016 a consultant was granted 100,000 stock options, exercisable at \$0.18 per common share maturing on April 11, 2019, and vesting quarterly over the first year.

e. *Deferred Stock Unit grants and exercise*

On February 5, 2016 two Directors were granted a total of 37,500 Deferred Share Units (“DSUs”) in recognition of their past and future services to the Company. On February 26, 2016 the Company issued 82,500 common shares upon the exercise of DSUs by a Director who stepped down from the Board of Directors after many years of service, including 15,000 of the DSU’s issued in February. DSU’s are expensed at each grant date and measured at the five-day volume weighted average trading price of the Company’s common shares on the day prior to the day the DSUs were granted. Under the terms of the Company’s Deferred Share Unit Plan holders of DSUs may redeem each DSU for one common share upon the termination of their services to the Company, at no cost to the holder.

Outstanding Warrants

The following table reflects warrants outstanding at May 1, 2017. All warrants are exercisable.

Quantity	Remaining Avg Contractual Life	Exercise Price
165,000	1.48	\$0.15
3,556,667	1.58	\$0.30
3,445,606	1.79	\$0.40
12,354,493	1.90	\$0.50
300,000	0.53	\$1.10
19,821,766	1.80	\$0.45

Outstanding Options

The following table shows the stock options outstanding at May 1, 2017:

Grant Price Range	Options Outstanding			Options Exercisable		
	# of options	weighted avg remaining life	weighted avg exercise price	# of options	weighted avg remaining life	weighted avg exercise price
< \$0.60	235,400	3.99	\$0.17	135,400	5.70	\$0.18
\$0.60 - \$1.00	489,000	1.81	\$0.89	472,333	1.78	\$0.90
\$1.01 - \$1.25	100,000	3.40	\$1.25	100,000	3.40	\$1.25
	824,400	2.62	\$0.70	707,733	2.76	\$0.81

Notes and Debentures

As at May 1, 2017, all debentures have been converted, repaid in cash or repaid in Units in the Shares for Debt Unit Private Placement on March 21, 2017 (see *Equity and Debt Transactions - 2017* (b) above).

The following is a summary of the face amounts of the Notes and Debentures outstanding at May 1, 2017, December 31, 2016 and December 31, 2015. The Company is now debt free.

	Cash due on maturity			Maturity Date
	May 1, 2017	Dec. 31, 2016	Dec. 31, 2015	
3 Year Convertible Debentures issued 10/22/2013	-	-	500,000	10-22-2016
3 Year Convertible Debentures issued 8/21/2013	-	-	266,000	8-21-2016
Extended Convertible Debentures with Warrants	-	228,000	-	8-21-2018
Amended Convertible Debentures with Warrants	-	385,000	-	10-22-2018
Extended, Amended Conversion Price Debentures	-	115,000	-	10-22-2018
Short-Term Convertible Debentures	-	-	250,000	3-25-2016
Total Debt	\$0	\$728,000	\$1,016,000	

Selected Quarterly Information

The selected fourth quarter and annual information below is from the Company's audited condensed consolidated financial statements for the years ended December 31, 2016 and 2015.

	Quarter ended December 31		Year ended December 31	
	2016	2015	2016	2015
Revenue	201,647	758	209,479	51,295
Cost of revenue	181,038	16,610	237,118	63,802
Gross margin	20,609	(15,852)	(27,639)	(12,507)
Operating expenses	430,488	541,861	2,034,283	1,832,670
Loss from operations	(409,879)	(557,713)	(2,061,922)	(1,845,177)
Non-operating income (loss)	(171,605)	490,193	(561,830)	77,776
Loss and comprehensive loss	(581,484)	(67,520)	(2,623,752)	(1,767,401)
Basic and diluted loss per share	(0.02)	0.00	(0.10)	(0.08)
Total assets			672,502	2,177,913
Total liabilities			2,922,344	2,447,348

In 2016 the Company received a \$240,534 order from Ma'anshan YuTian Medical Technology Co. Ltd, from China, to purchase the first batch of components to begin the manufacturing process of the VMS-PLUS heart analysis units in China. This order was for the components for 10 VMS units, which will be used to facilitate the submission to the Chinese FDA for marketing approval, as well as to demonstrate the machine to distributors in China.

As the final shipment was made in January, 2017, \$201,631 was recognized in revenue in 2016, and the remaining \$38,903 will show as revenue in 2017.

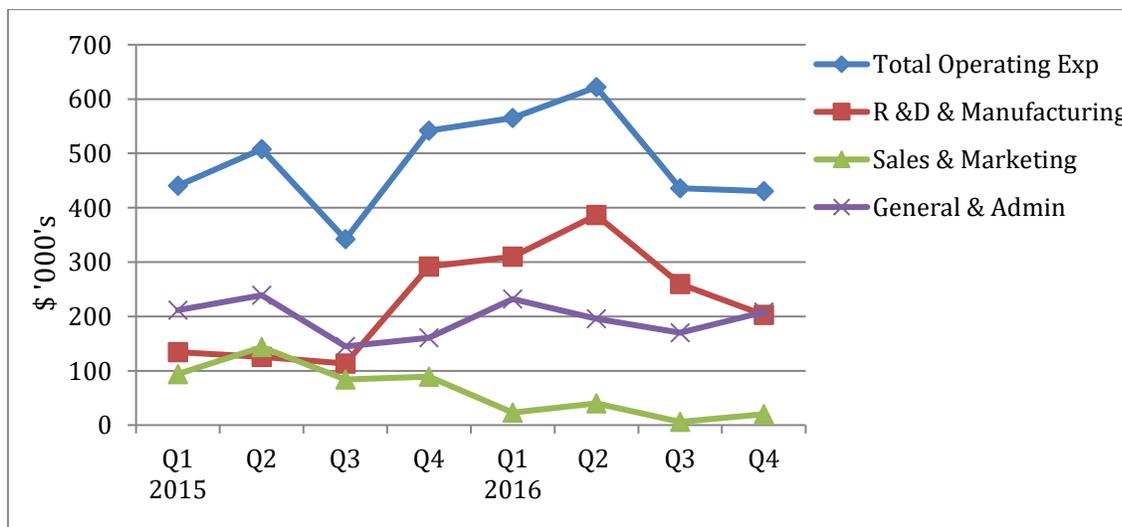
Revenue in 2016 also included \$7,700 of annual service and maintenance contract income, which is recognized evenly over the term of the contract. All of these contracts mature in either 2016 or 2017. Revenue in 2015 also included \$27,000 in product sales.

Year end total assets varies significantly depending on the cash balance. In 2015 the Company raise \$3.4 cash in common share and debenture issuances. In 2016 cash financing raised was only \$637,000, so cash at December 31, 2016 was \$191,000. However, in 2017 year to date, with the Unit Private Placement and warrant and stock options exercises, the Company has raised \$4.5 million, which will be used to fund the hiring of sales and marketing personnel and to begin marketing the 4-Chamber VMS-Plus.

The increase in liabilities from December 31, 2015 to December 31, 2016 is entirely due to the increase in Derivative Liabilities, which is the value of warrants and conversion features on debentures, derived from either the Black Scholes model or a bi-nomial model. This is a non-cash liability and varies depending on current interest rates, the Company’s stock volatility, and time to maturity.

While the accounting value of the outstanding debentures at year end 2015 and 2016 was the same, in fact, the actual face value of the Company’s net debt, was lower by \$288,000 by the end of 2016, and has now been fully paid out.

Operating Expenses



Operating expenses increased in the first half of 2016 as the Company ramped up its development activities for the 4 chamber product, however, in Q3 and Q4 2016 a lack of funds necessitated the temporary curtailment of development activities until additional financing could be raised.

In Q4, 2015 the Company elected to hire outside vendors for the development of the 4-chamber product. Consequently, it hired Precision Image Analysis to build the new right atrium (RA) and left atrium (LA) catalogues using its internal image library.

The Company also hired Walled Networks to assist it in the software and hardware upgrades. In 2016 Walled Networks worked with the Company to redesign the VMS-PLUS to be manufactured more easily while reducing the foot print and weight of the machine. As well, they made the VMS-PLUS more mobile, and upgraded the computer hardware to current standards. This was necessary as many of the components for the VMS were no longer available. The result is a much improved machine, which can be mass manufactured in Canada or China.

Walled Networks has also done an extensive updating of the VMS software to bring it up to current standards for hardware and software libraries, and to upgrade the software to facilitate the deployment of the 4-chamber software suite.

Sales and marketing expenses were minimal in 2016 due to the Company's decision to suspend direct sales efforts until the 4-chamber databases are available. For 2017, the Company will begin to re-focus activities on sales and marketing.

Non-Operating Income and Expense

The components of non-operating income and expense for the fourth quarter and annual periods ended December 31, 2016 and 2015 are as follows:

	Quarter ended December 31		Year ended December 31	
	2016	2016	2016	2015
<i>Finance costs:</i>				
Interest expense on notes and debentures	21,905	34,360	95,223	186,874
Accretion of derivatives issued with debentures	27,760	143,470	342,914	532,390
Transaction costs	8,229	4,685	8,229	37,753
Bank service charges and other	788	1,002	3,003	3,978
<i>Total finance costs</i>	58,682	183,517	449,369	760,995
Foreign currency differences	(7,964)	13,193	(8,427)	130,529
<i>Non-operating loss (gain) before Revaluation Adjustment</i>	50,718	196,710	440,942	891,524
Derivative liabilities revaluation adjustment	120,887	(686,904)	120,887	(969,300)
Total non-operating loss (gain)	171,605	(490,194)	561,829	(77,776)

Finance costs were lower in 2016 due to lower debt levels. The higher foreign exchange expense in 2015 was due to the operations being located in the US, while financing was raised in Canada. Now that the operations are in Canada, foreign exchange costs are only incurred on the purchase of some inventory items sourced in the US.

Derivative liabilities revaluation adjustments are due to the revaluation of the Company's warrants and the conversion features of debentures at each period end. The revaluation loss in 2016 and the gain in 2015 is non-cash and the size depends on current risk free interest rates, stock price at the valuation date, volatility of the Company's stock price, and the expected life of the option or warrant, the estimated number of options or warrants that will actually be exercised in future periods and the expected annual dividend rate for future periods. These revaluation adjustments can change substantially depending on changes in any of these factors, and can have a substantial impact on the net loss each period, but have no impact on the Company's cash.

Liquidity

Liquid assets and liabilities	As at	
	December 31, 2016	December 31, 2015
Cash and equivalents	191,282	1,975,006
Amounts receivable	128,922	64,212
Inventory	11,969	-
<i>Current liquid assets</i>	332,173	2,039,218
Accounts payable and accrued liabilities	1,522,112	1,525,543
Interest payable	21,401	23,366
Debentures & notes - cash due at maturity	728,000	1,016,000
<i>Cash liabilities</i>	2,271,513	2,564,909
Working capital deficit	(1,939,340)	(525,691)

Total financing raised in 2015 was \$3.4 million, leaving a substantial cash balance at year end. The Company then repaid \$209,000 in debentures in cash on December 31, 2015 and \$160,000 in debentures in cash on March 25, 2016.

In 2016, new financing only provided \$637,000 in cash proceeds, while at the same time the cost of the development of the 4-chamber product and the VMS-PLUS was being incurred throughout the year, so liquidity at year end was very low. However, in March and April 2017 the Company has raised over \$4.5 million, and is now debt free.

Accounts receivable consist entirely of refundable Canadian sales tax. At year end accrued liabilities included \$571,120 (December 31, 2015 - \$537,160) of accrued but unpaid compensation payable to the Company's CEO.

Contractual Cash Obligations

The Company has the following contractual cash obligations, payable in US\$, as of May 1, 2017:

US \$	2017	2018	2019 - 2025	Total
University of Washington Technology License				
Minimum Annual Royalty	\$50,000	\$50,000	\$300,000	\$400,000
Total contractual commitments for the period	\$50,000	\$50,000	\$300,000	\$400,000

The Minimum Annual Royalty under the Technology License Agreement with the University of Washington is payable each year for the term of the Technology License to 2026. The Annual Royalty is the lower of 3% of sales, net of direct distribution costs, or US\$50,000.

RISKS AND UNCERTAINTIES

Financial The Company's success in raising new operating capital has enabled it to finalize its VMS development and implement initial commercialization strategies. The Company may require additional operating capital to sustain and grow the level of its operations and to further implement its commercialization strategies. The Company is in discussions with multiple parties related to its financing, development and commercialization efforts to secure sufficient additional capital and resources for commercialization of its VMS and the expansion and enhancements of product applications and to achieve cash flow break-even. The need, success and timing of additional financings and/or strategic relationships cannot be projected with any certainty and their ultimate success is necessary for the Company to continue operations and to achieve its near term commercial and development milestones.

The Company anticipates that it will be able to restructure or refinance its debt as it comes due.

Regulatory In May, 2015 the Company received clearance from the FDA to market its application in the United States for the expanded Indications for Use of its VMS product which states; "The VMS system is indicated for use where RV (right ventricle) volumes and ejection fractions are warranted or desired." This means physicians in the U.S. can now use the VMS on patients that they believe will benefit from assessment of RV function, without being limited to a specific condition.

In March 2017, the Company announced that it has received a license from Health Canada for the new VMS-PLUS™ machine and the 4-chamber (4C) heart analysis system. This is an expansion of the VMS heart analysis product to include right atrium (RA), left atrium (LA) and left ventricle (LV) chambers of the heart. The VMS was already licensed in Canada for use for the right ventricle (RV). This expansion allows for the determination of volume and function for all four chambers of the heart using conventional 2D ultrasound, which could only be provided by MRI until now.

Continued Operations Without sufficient additional capital being secured in a timely manner, Company operations may have to be curtailed; the result of which could render the Company unable to pursue commercialization of its products and services, or to continue its operations.

CRITICAL ACCOUNTING ESTIMATES

The Company's audited annual consolidated financial statements have been prepared in accordance with the International Financial Reporting Standards. Certain accounting policies require that management make appropriate decisions with respect to the formulation of estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. The Company's primary critical accounting estimates relate to the valuation of its issued common stock warrants and stock options. The Company applies the fair value method for valuing stock option grants and the issuances of warrants. The fair value is estimated on the date of grant or issue, and the warrants are revalued at each balance sheet date using the Black-Scholes option pricing model or specialized bi-nomial models required to reflect the impact of the acceleration of the expiry date under certain circumstances. In order to calculate the fair value of options granted and warrants at issuance and for period end revaluation, the following information is required: stock price at date of grant, issue or revaluation, exercise price of option or warrant, and vesting periods. In addition, are the following where management is required to make assumptions: risk-free interest rate, volatility of the Company's stock price, expected life of the option or warrant, the estimated number of options or warrants that will actually be exercised in future periods and the expected annual

dividend rate for future periods. See Notes 8 and 9 of the December 31, 2016 audited consolidated financial statements for weighted average assumptions used to determine the fair value of the Company's options and warrants. Other accounting judgements include the designation of the Canadian dollar as the Company's functional currency.

ADDITIONAL INFORMATION

Additional information relating to the Company can also be found on SEDAR at www.sedar.com.