# VENTRIPOINT DIAGNOSTICS LTD.

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

**For the year ended December 31, 2017**

**April 30, 2018**

# MANAGEMENT'S DISCUSSION AND ANALYSIS, NOVEMBER 29, 2017

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, 2017 and 2016. 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 April 30, 2018.

## CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

In the interest of providing current and potential investors in Ventripoint 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.

## Stock Market Award

On February 22, 2018, the Company was named to the 2018 TSX Venture 50, a ranking of the top performers on the TSX Venture Exchange during 2017. It was a historical year for Ventripoint, our employees and shareholders, who saw the Company increase its market capitalization by 384% and share price appreciation of 258%, while trading 206 million shares on the TSX Venture Exchange and 250 million shares on all exchanges. This despite having only 50 million shares issued.

## 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, a form of Artificial Intelligence (AI) 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 and proprietary 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, and received CE Mark on December 15, 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 Europe and other jurisdictions where "home-country approval" or CE mark approval will facilitate product registration;
- Obtaining regulatory approvals for the 4-chamber VMS+ in other jurisdictions including the USA and China;
- 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 using advanced artificial intelligence (AI) approaches;
- 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;
- 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; and
- Further advancing and developing the technology and product to extend and expand its acceptance and usability.

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 to reduce the cost of healthcare for these patients by billions of dollars 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 or 4D echocardiography 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 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 received approval in Canada and Europe (CE Mark) for a major expansion of the VMS product, which now can be applied to all 4 chambers of the heart. The Company is building a sales and distribution team to capitalize on this product expansion. The Company is also looking to expand the product offering to include an integrated 2D system, which would do routine 2D echocardiography as well as the 4C-VMS on a single device. The Company recently invented a new way to track ultrasound probes and has built a prototype device to demonstrate its ability to speed up image capture and reduce the artefacts due to patient movement during scanning (see NR on November 27, 2017). The development of the 4C-VMS for semi-automated analysis of 4D is being

considered, but requires a significant improvement of the 4D ultrasound images, 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 echocardiography 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 and 4D 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+ machine and this has been approved in Canada and Europe.

The overall strategy is to have a suite of products available to allow customers with existing 2D ultrasound machines to purchase the VMS+ 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 5-7 years and many are now past the end of their useful life. Thus, there is now a large emerging 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 and so no additional hardware will be required. The 4D ultrasound machines currently only provide readable images in about 50% of patients and so are clinically not used for global heart measurements. The Company still believes that the KBR approach is the best approach to build a semi-automated analysis package for 4D scans. To this end the Company and Ryerson University have secured a Canadian Government NSERC grant to develop AI-based automation tools (see NR March 20, 2018). 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.

On July 1, 2017, Brian Leck was appointed as Vice-President of Direct Worldwide Sales. Brian has extensive experience in the healthcare industry. He has worked in a variety of companies with a breadth of vibrant products focused on hospital care areas. In his most recent position, he was the Vice President/General Manager for Global Direct Sales for Fujifilm-Sonosite, Inc, which sells portable ultrasound devices into office and hospital care areas. Mr. Leck has now left the Company.

Also on July 1, 2017, Mehran Mehrtash was appointed as Vice President, Worldwide Distributor Sales. Mehran Mehrtash is an experienced international executive in the healthcare industry. He most recently served as the Vice President/General Manager of the Global Distribution Division for Sonosite Inc. In this capacity he led global indirect operations including independent distributors in emerging markets in Latin America, Europe, Africa, Asia, and the Middle East as well as Fujifilm subsidiaries in China, India and Japan. From 2007 to 2015 Mr. Mehrtash was based in Singapore where he led the Asia Pacific & Middle East region with full P&L responsibility and annual revenue growth of 20%. Prior to that Mr. Mehrtash worked for ConvaTec Inc, a former division of Bristol Myers Squibb during which time he managed all direct and distributor commercial and operational priorities for the Asia Pacific region, including: Greater China, South Korea, India and the ASEAN markets. Among many accomplishments, Mr. Mehrtash led the establishment of Sonosite's regional headquarters in Singapore and a direct subsidiary in South Korea, as well as rapid expansion of the ConvaTec China team, which grew from a total of 10 staff members in 2008 to more than 100 in early 2011, resulting in a tripling of its annual sales. The Asia Pacific regional leadership teams he established comprised of sales, marketing, and functional support staff in human relations, finance, regulatory, and operations.

On August 1, 2017, Desmond Hirson was appointed as Vice-President, Development and Operations. Desmond is a seasoned executive and has over 20 years of experience in commercializing medical devices and managing product development, manufacturing operations, and regulatory and quality assurance. He has had multiple successes in start-up ventures including three exits at Sonosite Inc, VisualSonics and DICOMIT Inc. Desmond joined VisualSonics in 2003 as Vice President, Engineering, and led a development team to commercialize novel ultrasound technology from prototype to market success in cardiovascular, cancer and other areas of preclinical research that also resulted in ground breaking clinical applications. VisualSonics was purchased by SonoSite, a Seattle based ultrasound company in 2010 followed by the sale of SonoSite and VisualSonics to FUJIFILM of Japan in late 2011. At that time Desmond became Vice President Engineering and General Manager of FUJIFILM VisualSonics. Prior to this Desmond developed

ultrasound technology for hospital PACS systems, ultrasound image processing and 3D visualization. Desmond holds a master's degree in electrical engineering and is co-inventor on a number of patents.

On December 12, 2017, the Company announced that it had appointed Dr. Alvira Macanovic as the Manager of Regulatory Affairs and Quality Assurance, received the ISO60601 safety certificate for the VMS+ device and moved its Development and Manufacturing Centre, as well as its Corporate Offices.

Dr. Macanovic has over 10 years of experience in pharmaceutical and medical device related industries where she has worked with researchers, start-ups, SMEs, and multi-national companies to commercialize technologies in multiple therapeutic areas. She has developed regulatory and quality strategies and plans to deliver high quality, safe, and reliable medical device products to market efficiently and cost-effectively. Most recently, as Director of Regulatory Affairs and Quality Assurance at a medical imaging company, she oversaw all aspects of the regulatory affairs/quality operations and activities for the successful launch of their products in Canada, the United States, and China. Previously, Dr. Macanovic worked for a non-profit organization supported through the Centres of Excellence for Commercialization and Research to commercialize medical imaging and digital pathology technologies. She obtained a Bachelor of Science in Biochemistry from McGill University and a PhD in Chemistry from Concordia University.

On January 10, 2018, the Company announced the appointment of David McPhedran as Director of Sales for North America. Dave McPhedran is an experienced leader in the healthcare industry. Previously, he was Director of Sales for imaging in Western Canada for Siemens Healthcare, where his team achieved sales targets of $35M per year. Dave has also worked for Becton Dickinson and Johnson & Johnson in sales and marketing. He received his Bachelor of Science degree from the University of Waterloo.

David McPhedran stated: "Ventripoint is an impressive company with innovative products to improve patient cardiac diagnosis and care. I have engaged numerous cardiologists across Canada and can report that they are very interested in Ventripoint's technology as it helps to address the need for affordable, accurate cardiac measurement tools."

On February 6, 2018, the Company announced that Dr. Andriy Shmatukha has joined the Ventripoint team as software developer to advance the Ventripoint products and technology. Dr. Shmatukha is a qualified network administrator with over 18 years of medical device R&D experience with emphasis on diagnostic cardiac imaging, including the development of image analysis algorithms and associated software. At his tenure at GE Healthcare he was responsible for quality assurance of clinical trials for medical software. He is an inventor on multiple patents in image analysis algorithms and device hardware. As a research engineer at Sunnybrook Health Sciences Center (Toronto, Canada), he developed DICOM application software to manipulate medical images to allow them to be analysed and stored in a hospital Picture Archiving and Communication Systems (PACS) environment. At Utrecht University Medical Center (Utrecht, The Netherlands), he developed MRI imaging procedures and image analysis algorithms for real-time MRI guidance of minimally-invasive thermal therapies.

On March 14, 2018, the Company created a Business Advisory Committee (BAC) and appointed Dr. Samuel Schwartz as the inaugural Chairman. The BAC will provide senior management and the Board of Directors with strategic advice on matters including, but not limited to, financing alternatives and opportunities, market opportunities, human resource insights, and new technology

perspectives, in addition to carrying out special assignments. Sam is the founder of The Strategic Law Group. He previously was the Managing Partner of the Toronto office of DLA Piper Canada LLP, where he practiced in the areas of corporate/commercial, corporate finance, structuring, and securities law, including merchant banking and public and private company transactions. His diverse client base included Canadian and foreign companies involved in the life sciences, biotechnology, and computer hardware and software. Sam has regularly assisted established as well as start-up companies in accessing the capital markets both in Canada and the United States. In addition, he has assembled professional teams to assist Canadian companies in their business development efforts worldwide. Among Sam's community involvements, he served on the Strategic Planning Committee of the Baycrest Centre for Geriatric Care; the National Board of Directors of the Canadian Friends of Hebrew University; the National Campaign Cabinet of the Canadian Cancer Society; and the Board of Directors of Mount Sinai Hospital Foundation. He also served on the Board of Governors of York University and is presently a Life Honorary Governor of the University. Sam received his JD and LLB from Osgoode Hall Law School of York University and was called to the Ontario Bar in 1974 and the Alberta Bar in 1978. Previously, he received an MA degree from York University and a BA degree from the University of Toronto. In 2010, he was recognized by Osgoode Hall Law School by being awarded a Gold Key for Outstanding Achievement. In 2015, he was awarded an Honorary Doctorate Degree from York University for Outstanding Contributions to the Canadian Community.

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 also hired Walled Networks to assist it in the software and hardware upgrades. They redesigned the VMS+ to be manufactured more easily, while reducing the foot print and weight of the machine. They also made the VMS+ more mobile and upgraded the computer hardware to current standards and to work with the newer, higher-resolution, 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+ hardware has been finalized and regulatory approval received in Canada and in Europe. The VMS+ has received ISO60601 certification, which is the international standard for laboratory equipment to be used in a medical setting.

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+ 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 including ISO60601 (China version). YuTian has applied to the Chinese FDA for approval of the VMS+ with RV analysis software and expects to have marketing approval in 2018. 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) was 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. 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, those at risk for atrial fibrillation (AF), as well as people with chronic hypertension. 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 has obtained regulatory clearance in Canada and Europe in 2017. The VMS+ is available for commercial release in Canada and Europe now that ISO60601 certification has been received.

The Company has also focused on upgrading the VMS machine to a new model, the VMS+. 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 development and manufacturing facility in Toronto passed an ISO audit in June 2016 (see NR June 24, 2016) and more recently on May 26, 2017, as well as a surprise audit in August, 2017 (it is routine to have surprise audits), and is approved to manufacture this new model in Canada for worldwide use.

## Sales and Marketing

Now that the 4-chamber system has been approved in Canada and the VMS+ has been also approved in Canada, the Company has launched a sales effort for the new 4C-2DE-VMS+ product. The Company is building a sales and distribution team for global sales and marketing.

The Company has reviewed its sales approach and has met with a number of existing and potential customers to determine the highest value propositions in defined cardiac care settings. Ventripoint has identified three settings where the VMS is regarded as critical to providing the best cardiac diagnosis and monitoring. This process has been completed and a direct sales effort has begun in Canada and Europe. These sales calls will further validate the sales materials and are expected to generate sales.

The marketing team has prioritized sales in Europe and Canada. While initially markets in Asia and regions in the Middle East were viewed as good places to build awareness, it became obvious that these regions would wait until leaders in the field in Canada and Europe were using the VMS+. The Company will restart discussions with potential distributors in Iran, Singapore, Thailand, U.A.E. and Saudi Arabia, when it has significant sales in western countries.

With the approval of the CE Mark in December 2017, the Company has initiated its marketing plan for Europe by attending the Euroecho conference in Lisbon in December 2017. This was an excellent platform to build awareness and to engage clinical leaders. Follow-up meetings are continuing with a number of leaders expressing the need for the VMS+.

The next phase will be the United States markets. We are expecting marketing clearance for the 4-Chamber VMS sometime in 2018. The Company announced that it had applied for FDA marketing clearance in January 2018. The Company is working with the agency to complete the review as quickly as possible. When Market Clearance has been received, the Company will implement its launch strategy regarding representatives, locations and defining regional initiatives.

The Company has also been interviewing leading cardiologists to identify specific cardiac conditions where clinical studies would verify the need for the VMS. These experts have identified,

uncontrolled hypertension (50 million people in the USA), normal and high-risk pregnancies, cancer chemotherapy, congenital heart disease and technically-difficult imaging (20-30% of all echocardiograms) as highest-value applications.

Ventripoint has identified enthusiastic cardiologists in Canada and Europe, who wish to conduct clinical trials to verify the importance of chamber volumes in all these clinical settings and is working with them to develop protocols and begin the studies.

On February 21, 2018, the Company announced the installation of the VMS+ whole heart analysis system at the University of Alberta Mazankowski Alberta Heart Institute under the supervision of Dr. Jonathan Windram, Staff Cardiologist, Northern Alberta Adult Congenital Heart Program and Associate Clinical Professor of Medicine, Division of Cardiology, Department of Medicine, University of Alberta Mazankowski Alberta Heart Institute. The first study will address technically-difficult patients and the ability of the VMS+ to reduce the use of contrast media.

"We look forward to beginning new clinical studies that will utilize Ventripoint's new multiple chamber analysis capabilities," stated Dr. Windram.

The Mazankowski Alberta Heart Institute is the advanced cardiac care center for Edmonton, Northern and North-Central Alberta, Northern BC, Saskatchewan, Manitoba, Yukon and Northwest Territories. Located on the Walter C. Mackenzie Health Sciences Centre Campus in Edmonton, Mazankowski is physically integrated with the University of Alberta and Stollery Children's Hospitals, making it one of the very few heart institutes to accommodate both adult and pediatric patients. The Mazankowski has one of the most technologically advanced Echo Labs in the world providing leading-edge imaging techniques such as 3D, contrast, myocardial perfusion, speckle tracking and interventional echo.

A focus in the latter part of 2017 was the Middle East and North Africa (MENA) region, where heart disease is particularly prevalent. On November 15, 2017 the Company announced it had signed a memorandum of understanding (MOU) to establish a partnership with the SEED Group, a group of diversified companies owned and chaired by The Private Office of Sheikh Saeed Al Maktoum of Dubai, United Arab Emirates. The partnership was initially to focus on making hospitals, doctors and officials aware of the unique features of the VMS+ through research, conferences and opportunities designed to demonstrate its population health applications, however the Company has put this initiative on hold while it focuses its efforts on sales and research in Canada, Europe and USA.

In Q2 2017, the Company commissioned a market survey for Canada. The study shows there were ~150 cardiac ultrasound machines purchased in each of the last 5 years. Data from a number of one-on-one interviews with cardiologists confirmed the need for better heart-chamber quantification in cancer patients, paediatrics, where contrast-media is routinely injected, and in high-risk pregnancies, as well as providing suggestions of other areas of application where current methods are either unreliable or too costly and so are not done.

The Company has hired a new application specialist who will accompany sales staff on sales calls and train new users. She has undergone in-depth training in Toronto and will continue to interface with clinical centres as well as being available for sales calls.

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-4D) and one to be used with MRI images (VMS-CM). 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. To this end, the Company announced (see NR March 20, 2018) its participation in a Natural Sciences and Engineering Research Council (NSERC) Engage grant for the development of automatic detection of all four chambers of the heart in echocardiographic views using artificial intelligence (AI), which will reduce time spent on analysis and training costs, and improve accuracy and comparability.

The NSERC funding has enabled us to partner with a top researcher at Ryerson University's Department of Computer Science, Dr. Konstantinos Derpanis, on a project to further advance the Al capabilities that are already imbedded in our VMS+ products.

The further development of such technologies is consistent with Ventripoint's corporate mission of being a leader in providing medical products that use AI to enhance the productivity, accuracy and consistency of cardiac measurements. The benefits of this technology can also be extended to other modalities and imaging technologies, such as MRI and CT, to further expand the use of AI in the field of Medical Imaging.

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 Demonstrations 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 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.

## Independent Clinical Studies

On August 21, 2017 the Company announced that the cardiology group at Royal Free Hospital in London, UK has published a study entitled "Two-dimensional knowledge-based volumetric reconstruction of the right ventricle documents short-term improvement in pulmonary hypertension" in Echocardiography, volume 34, pages 817–824.

This study confirms the ability of the VMS Heart Analysis System (referred to in the paper as "two-dimensional knowledge-based volumetric reconstruction" or "2DKBR") to follow patients with enlarged right ventricles (RV) and accurately measure small but medically-significant changes in volume and function. This ability to monitor clinical outcomes shortly after the initiation of therapy is important to determine if the therapy is working well or if a new therapeutic approach is required. The VMS detected the remodelling of the RV to reduce its size in patients who improved and an increase in RV size in patients with worse clinical outcomes including death.

"Ventricular remodelling in PAH can be differentiated into two patterns: adaptive remodelling with concentric hypertrophy and preserved function, and maladaptive remodelling with eccentric

hypertrophy and worsening function. Our study shows that within several months a change from one pattern to the other can occur with medical therapy," stated the authors.

The publication concluded; "2DKBR can be reliably used in a busy clinical setting to follow-up right-ventricular indices in pulmonary hypertension…"

The need for reliable quantification of all 4 chambers of the heart is emerging as doctors cannot rely on the results from previous exams due to the large variations between observers using conventional analysis techniques. The VMS+ has excellent reproducibility as published in the above-mentioned study and others. Looking at the evolution of the patient's heart (remodelling) is a better way to understand the particular type of heart disease, but is not done now due to the variability from exam to exam. This ability to standardize the analysis within a hospital, as well as between hospitals is becoming more important as patients are admitted at different sites. The need to "redo" cardiac exams is a costly and unnecessary process if the VMS+ was used.

*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-medicares-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+.

There are 1.7M new cancer patients/year in the USA. The 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. Technically-difficult imaging is a continual problem in echocardiography. About 20-30% of patients yield unreadable images using conventional 2D echo due to their particular anatomy. When a result is needed, a contrast medium is injected into the patient while the study is re-done to increase the contrast between the heart muscle and the blood. This results in a readable image about 80% of the time, but has a number of drawbacks. It takes extra time as the study needs to be redone. It requires a patient to approve an infusion and requires an IV nurse to be summoned to do the infusion, which can also take time. As well, the contrast media is expensive and only provides one view (typically apical 4-chamber view). With conventional 2D echo, there are usually some views that can be difficult to interpret due to either borders that are not easily distinguishable or areas of drop out (fading). The VMS only needs a small number of points to analyze the heart and once the heart can be located in the views, other parts become recognizable. The Company believes it can significantly reduce the use of contrast media, which would save time, money and patient discomfort. The Company has identified a leading cardiologist interested in performing a clinical trial to verify the meritorious use of the VMS+ in this application.

3. High blood pressure of hypertension continues to be a major risk factor for heart attacks and other cardiac conditions. A 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 U.S. adults with hypertension did not have this condition under control in 2014. The definition of hypertension has recently been revised and narrowed, so there are 100 million people in the United States with hypertension, of which 44 million are not adequately treated. 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 $5B 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+ using conventional 2D ultrasound. Every cardiologist has access to a 2D ultrasound service or machine and so could begin this cost-reduction program

immediately. 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 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 lectured 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 echocardiagram 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 27$^{th}$ 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. In 2016, 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 the American Society of Echocardiography Scientific Session (ASE) 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 December 6-8th, 2017, the Company exhibited at EuroEcho Imaging 2017 conference in Lisbon. Many leaders in echocardiography visited the booth and reviewed the new 4C-2DE-VMS+ product, which had not received CE Mark at that time. On December 15, 2017, the product received the CE Mark and the sales team is now following up with clinicians who requested additional information at the conference.

In April 2018, the Company exhibited at the 20th annual Canadian Society of Echocardiography conference in Toronto. The gathering is attended by cardiologists and sonographers, and is the largest single gathering in Canada with over 600 attendees. This was an opportunity to showcase our latest VMS+ system, which demonstrated volumetric measures for all 4 chambers of the heart. This new system was well received by clinicians who appreciated the value of ultrasound 3D visualization with fast and accurate measurements, equivalent to the gold standard MRI for all heart chambers. High profile cardiologists from all the main cardiac centers in Canada visited the booth and expressed interest in this unique product. This gave us the opportunity to engage with potential customers and to collect prospects and leads to contribute to our expanding sales effort.

## 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+ 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+ 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 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** The Company has received Health Canada approval and has 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.

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

On May 26, 2017, Ventripoint successfully completed an ISO 13485 re-certification audit, which is carried out every three years, as well as a surprise audit in August, 2017.

On December 12, 2017, the Company announced it had received ISO60601 certification for the VMS+.

In January, 2018, the Company announced it had received the CE Mark for the VMS+ with the 4-Chamber analysis package.

**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 US FDA on January 8, 2015. This initial Establishment Inspection, following 510(k) clearance of the Ventripoint Medical System in March, 2014, at the Company's Bellevue, Washington location, 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.

On January 17, 2018, the Company announced it had submitted a traditional 510(k) application to the US Food and Drug Administration's (FDA) Center for Devices and Radiological Health (CDRH) to request clearance for sale of the VMS+ whole-heart analysis system. The Company submitted the 510(k) to extend the capabilities of our current model to all 4 chambers of the heart. The submission uses the existing VMS as the predicate device and provides testing data to show that the databases for the left atrium, right atrium and left ventricle perform equally well in assessing the chamber volumes in a wide variety of heart conditions, and shapes and sizes of hearts. The volumes and ejection fraction determination by VMS+ were equivalent to MRI measurements, which is the gold standard for these types of cardiac assessments. The data also demonstrate excellent reproducibility between operators.

# FINANCIAL HIGHLIGHTS

These Financial Highlights should be read in conjunction with Ventripoint Diagnostics Ltd.'s audited consolidated financial statements for the years ended December 31, 2017 and 2016 and the corresponding notes thereto. Unless otherwise specified, all financial data herein is presented in Canadian dollars.

## Capital Transactions

The fully diluted share capital of the Company as of April 30, 2018 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 | | 405,129 | | 3,169,880 |
| Option grants net of expirations & forfeitures | | | | 1,010,980 | 1,010,980 |
| Options exercised | 72,500 | | | (72,500) | 0 |
| DSUs exercised | 150,000 | | | | 150,000 |
| Warrants cancelled/expired | | | (4,104,195) | | (4,104,195) |
| Warrants exercised - 2008 - 2012 | 651,056 | | (651,056) | | 0 |
| Debenture offerings - 2009 - 2014 | 110,000 | | 924,514 | | 1,034,514 |
| Convertible Debenture offerings - 2013 | 234,000 | 728,000 | 689,900 | | 1,651,900 |
| Debenture conversions - 2014 | 1,000,000 | | | | 1,000,000 |
| Convertible Debenture offering - 2015 | 150,000 | | | | 150,000 |
| Common stock offerings - 2007 - 2014 | 12,088,217 | | 4,665,897 | 52,635 | 16,806,749 |
| Common stock offerings - 2015 | 7,818,181 | | 2,480,000 | | 10,298,181 |
| Common stock offerings - 2016 | 4,666,668 | | 4,666,668 | | 9,333,336 |
| Extension of convertible debentures - 2016 | | 651,666 | 4,086,666 | | 4,738,332 |
| **2017 activity:** | | | | | |
| Warrants exercised | 5,904,130 | | (5,904,130) | | 0 |
| Warrants expired | | | (300,000) | | (300,000) |
| Stock options granted, net of expiries, cancellations | | | | 2,708,000 | 2,708,000 |
| Stock options exercised - 2017 | 425,000 | | | (425,000) | 0 |
| 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 | 10,779,494 | | 10,779,493 | | 21,558,987 |
| **2018 year to date activity:** | | | | | |
| Warrants exercised | 1,010,000 | | (1,010,000) | | 0 |
| Options granted | | | | 220,000 | 220,000 |
| Options exercised | 250,000 | | | (250,000) | 0 |
| Options expired/forfeited | | | | (500,000) | (500,000) |
| Shares issued for debt | 499,899 | | | | 499,899 |
| **Issued and outstanding, April 30, 2018** | **53,348,407** | **0** | **18,311,766** | **2,809,400** | **74,469,573** |

As of April 30, 2018, Officers and Directors held 3.99% of the outstanding common shares of the Company (7.33% on a fully diluted basis).

## Capital Transactions - 2018 Year-to-Date

*Stock option grants*

Effective January 1, 2018, the new Director of North American Sales was granted 50,000 stock options of the Company, with an exercise price of $0.25, a term of 5 years, and vest quarterly over 3 years.

On March 20, 2018, the Board of Directors granted 120,000 stock options to employees and 50,000 options to the Chair of the Company's new Business Advisory Committee. The options have an exercise price of $0.32, a term of 5 years and vest quarterly over 3 years.

*Shares for debt issuances*

On April 5, 2018, the Company issued to the CEO 375,000 common shares of the Company in payment of outstanding back pay, accrued from 2013 through 2016, of $120,000. The shares were issued at a deemed price of $0.32 per common share in a Shares for Debt transaction (see NR March 29, 2018).

Also on April 5, 2018, the Company issued 28,125 shares to a consultant in payment of $9,000 of consulting fees in common shares at a deemed price of $0.32 and 96,774 shares in payment of a $30,000 quarterly work fee due to financial consultants under a financial and strategic advisory services contract at a deemed price of $0.31.

The common shares issued for these shares for debt transactions are all free-trading.

*Warrant exercises*

Year to date to April 30, 2018, the Company has issued 1,010,000 common shares due to the exercise of warrants, all at an exercise price of $0.30 for total cash proceeds received of $303,000. The common shares issued for these warrant exercises are free-trading.

*Stock option exercises*

Year to date in 2018, 250,000 shares have been issued as a result of the exercise of stock options for proceeds of $52,500. The common shares issued for these stock option exercises are free-trading.

## Capital Transactions - 2017

*Unit Private Placement*

On March 24, 2017 the Company announced that it had closed a non-brokered 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 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 two years after the issuance of the Warrant. Dr. George Adams, the CEO and a Director of the Company, subscribed for 312,000 Units.

The Company paid cash finder's fees of $188,030 and issued an aggregate of 282,555 common shares and 282,555 non-transferable common share purchase warrants (the "Finder's Warrants") to finders in connection with the 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.

*Shares for Debt Unit Private Placement*

On March 21, 2017, as part of the Private Placement, the Company closed a shares-for-debt transaction ("Shares for Debt") with holders of debentures. The Company issued a total of 1,575,000 Units in payment of $504,000 of debentures payable. Dr. George Adams, the CEO and a Director of the Company, received 312,500 Units pursuant to the Shares for Debt.

*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.

*Warrant and Option Exercises*

In 2017, the Company issued 5,904,130 common shares due to the exercise of warrants at exercise prices between $0.15 and $0.40, for total proceeds received of $1,250,236. In addition, 425,000 shares were issued as a result of the exercise of stock options for proceeds of $68,250.

*Stock Option Grants*

On January 6, 2017 the Company announced that FronTier Consulting Ltd.('FronTier') was retained for 12 months to provide IR services. Under the terms of the agreement Frontier received 200,000 stock options at an exercise price of $0.15, vesting in equal quarterly installments over 12 months and expiring 2 years from the date of grant.

On May 2, 2017 the Board of Directors granted 445,000 common stock options to six consultants in payment for their services, with an exercise of $0.32 per share, a 2 year term and vesting quarterly over one year. In addition, the Board granted 100,000 stock options to the CFO of the Company, with an exercise price of $0.32 and a maturity date of May 2, 2022, which vested immediately.

On June 19, 2017 the Board of Directors granted 50,000 options to a consultant of the Company, with an exercise price of $0.32, vesting immediately and maturing in 1 year.

Effective July 1, 2017, as a condition of their employment, the Company granted to two new Vice-Presidents 250,000 stock options each, at an exercise price of $0.32 for a term of 5 years, vesting quarterly over two years.

On August 14, 2017 the Board of Directors granted to the new Vice President, Development and Operations 250,000 options at an exercise price of $0.32 for a term of 5 years, vesting quarterly over 2 years. The Board also granted each of the three new Vice Presidents a further 250,000 stock options each at an exercise price of $0.32 for a term of 5 years, vesting quarterly over 3 years. The CEO and CFO were each granted 100,000 stock options each at $0.32 for a term of 5 years, to replace their vested stock options, which were cancelled on July 1, 2017. In addition, the CEO was granted 300,000 new stock options at the same price and term.

On December 4, 2017 the Board of Directors granted 70,000 stock options to new employees at an exercise price of $0.25, with a term of 5 years, and vesting quarterly over 3 years. In addition, 150,000 stock options were granted to consultants with an exercise price of $0.25, a term of one year, and vesting immediately.

*Deferred Share Units grants*

On August 14, 2017, the Company granted a total of 300,000 Deferred Share Units (DSUs) to four independent Directors in recognition of their past and future services to the Company. Under the terms of the Company's Deferred Share Unit Plan, holders of DSUs may redeem each DSU for one share of common stock upon the termination of their services to the Company at no cost to the holder.

## Outstanding Warrants

The following table reflects warrants outstanding at April 30, 2018. All warrants are exercisable.

| Exercise Price | Quantity | Remaining Avg Contractual Life |
|---|---|---|
| $0.15 | 165,000 | 0.48 |
| $0.30 | 2,346,667 | 0.62 |
| $0.40 | 3,445,606 | 0.79 |
| $0.50 | 12,354,493 | 0.90 |
| **$0.45** | **18,311,766** | **0.84** |

## Outstanding Options

The following table shows the stock options outstanding at April 30, 2018:

| | Options Outstanding | | | Options Exercisable | | |
|---|---|---|---|---|---|---|
| **Grant Price Range** | **# of options** | **weighted avg remaining life** | **weighted avg exercise price** | **# of options** | **weighted avg remaining life** | **weighted avg exercise price** |
| ≤ $0.25 | 195,000 | 5.91 | $0.22 | 84,999 | 7.56 | $0.19 |
| ≤ $0.32 | 2,275,400 | 3.56 | $0.32 | 1,306,650 | 3.23 | $0.32 |
| $0.33 - $1.25 | 389,000 | 1.32 | $0.95 | 389,000 | 1.32 | $0.95 |
| | 2,859,400 | 3.42 | $0.40 | 1,780,649 | 3.02 | $0.45 |

## Notes and Debentures

The Company was debt free by March 31, 2017. All outstanding debentures with a maturity value of $728,000, were converted, repaid in cash or repaid in Units in the Shares for Debt private placement (see *Capital Transactions - 2017* above).

## Profit and Loss

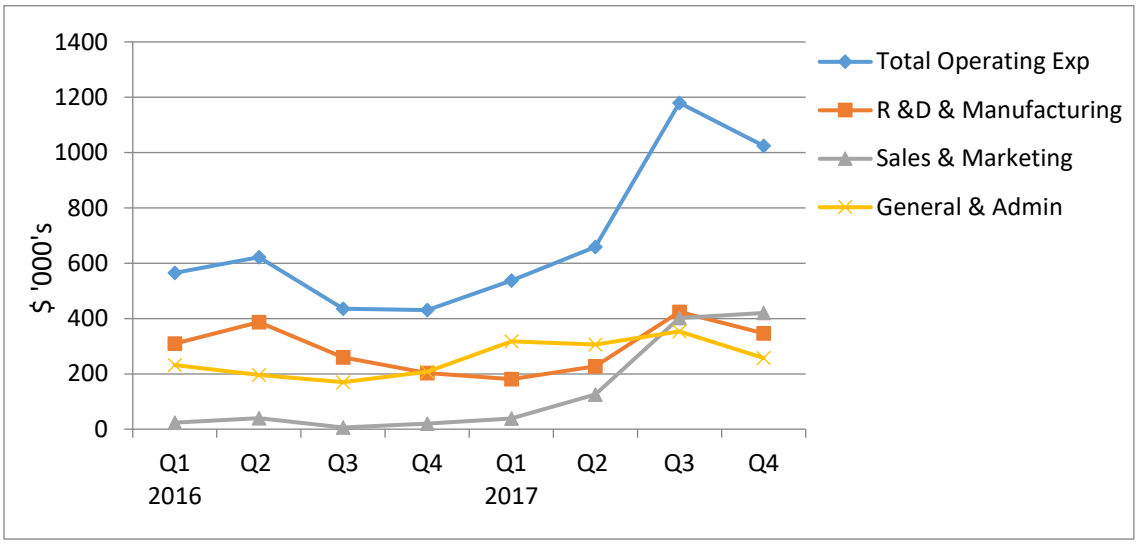
The summary annual information below is from the Company's audited consolidated financial statements for the years ended December 31, 2017 and 2016.

| | Three months ended December 31 | | Year ended December 31 | |
|---|---|---|---|---|
| | **2017** | **2016** | **2017** | **2016** |
| Revenue | 1 | 201,632 | 38,905 | 209,479 |
| Cost of Goods Sold | 1,587 | 181,038 | 40,001 | 237,118 |
| **Gross margin** | (1,586) | 20,594 | (1,096) | (27,639) |
| General & Administration | 257,381 | 208,009 | 1,223,156 | 792,120 |
| Research & Development | 346,560 | 202,514 | 1,178,908 | 1,156,864 |
| Sales & Marketing | 420,071 | 19,965 | 988,791 | 85,299 |
| **Total Operating Expenses** | 1,024,012 | 430,488 | 3,390,855 | 2,034,283 |
| **Loss from Operations** | **(1,025,598)** | **(409,894)** | **(3,391,951)** | **(2,061,922)** |
| Non-operating Income (Loss) | (937,730) | (171,605) | (311,251) | (561,830) |
| **Loss and Comprehensive Loss** | **(1,963,328)** | **(581,499)** | **(3,703,202)** | **(2,623,752)** |
| **Basic and diluted loss per share** | (0.04) | (0.02) | (0.08) | (0.10) |

In 2017 the Company finalized the development of the 4-Chamber software package and the updated VMS+ product, and submitted them for product testing and regulatory approval. On March 2, 2017, the Company announced it had received a license to market the VMS+ with the 4-Chamber analysis package from Health Canada. CE Mark was received on December 15, 2017, and on January 17, 2018 the Company announced it had submitted a full 501(k) application to the FDA for approval. With much of the year taken up with regulatory activities, and the ramping up of a sales and marketing team, which began in July, and the long sales cycle for capital acquisitions by hospitals, the Company did not expect to see revenue from the 4-C VMS+ in 2017.

Cost of goods sold includes the Minimum Annual Royalty payable to the University of Washington each year. This has been reduced to US$5,000 per annum from US$50,000, effective September 9, 2016.

## Operating Expenses




Operating expenses increased year over year from 2016 by approximately $1.36M. Of this increase $488K is non-cash expense due to the issuance of stock options and the granting of Deferred Share Units to independent Directors.

*Sales and Marketing*

Sales and marketing expenses were the biggest increase in costs in 2017. Salaries, consulting fees, and travel expenses for marketing and sales activities accounted for $590,000 of the Company's increased operating expenses, as the Company built up its sales team and investigated market opportunities worldwide.

In July, the Company hired two very experienced sales Vice Presidents to manage worldwide direct sales and worldwide distributor sales. As well, the Company hired a consultant to conduct advanced market research in Q2 to determine the best positioning of the products in the Canadian marketplace and in Q3 the consultant began selling actively to Canadian hospitals. The Company engaged another sales consultant to investigate opportunities in international markets.

*Research & Development*

Effective August 1, 2017, Desmond Hirson was appointed as Vice-President, Development and Operations. Mr. Hirson is a seasoned executive with over 20 years of experience in commercializing medical devices and managing product development, manufacturing operations, regulatory and quality assurance. He was brought on to re-build the in-house manufacturing, regulatory compliance and development operations, which had been outsourced to Walled Networks since early 2016 for the development of the new 4-Chamber VMS+ product.

In Q4 2017, operations were taken completely in-house with the hiring of 6 employees and the set up of new offices at 2 Sheppard Ave East.

*General & Administration*

Additional financial consulting and IR costs in 2017 related to the increased stock market activity and the financing in March, contributed to higher G&A costs.

## Non-Operating Income and Expense

The components of non-operating income and expense for the years ended December 31, 2017 and 2016 are as follows:

| | Year ended December 31 | |
|---|---|---|
| | **2017** | **2016** |
| *Finance costs*: | | |
| Interest expense on notes and debentures | 18,981 | 95,223 |
| Accretion of derivatives issued with debentures | 13,907 | 342,914 |
| Transaction costs | 405,598 | 8,229 |
| Bank service charges and other | 4,983 | 3,003 |
| *Total Finance costs* | 443,469 | 449,370 |
| Gain on shares issued for debt | (133,942) | |
| Other expense (income) | (27,908) | |
| Loss on amendment of debentures | | 314,299 |
| Derivative liabilities revaluation adjustment | 42,161 | (193,412) |
| Foreign currency differences | (12,529) | (8,427) |
| **Total non-operating loss (income)** | 311,251 | 561,830 |

Transaction costs in 2017 consist of $123,533 of non-cash Finders Warrants issued in connection with the March 23, 2017 Private Placement, and $282,000 of cash costs for legal and regulatory fees, and cash finders' fees for the Private Placement. With the retirement of all debentures in March, 2017, the finance costs consisted only of bank costs for the remainder of the year.

The Derivative liabilities revaluation adjustment expense of $42,161 in 2017, represents the net increase in the fair market value of the Company's outstanding derivatives (warrants and conversion features on convertible debentures), calculated at the time of each warrant exercise, convertible debenture retirement or conversion transaction, as well as at the end of the period. The fair value of the derivatives depends on a number of factors, including; stock price at date of revaluation, exercise price, risk-free interest rate, volatility of the Company's stock price, expected life of derivative, the estimated number of warrants that will actually be exercised in future periods and the expected annual dividend rate for future periods.

The Gain on shares issued for debt of $133,942 arose from the repayment of $504,000 of debentures through the Shares for Debt transaction on March 21, 2017. The accreted fair value of the debentures of $423,753 plus the fair value of the conversion features of $213,709 at the repayment date, exceeded the fair value of the Units issued (1,575,000 Units at $0.32 - $504,000) to extinguish the debentures, resulting in the gain.

Other income includes the forgiveness of part of the Minimum Annual Royalty for 2016 owing to the University of Washington (see Contractual Cash Obligations below), and, in March 2017, $109,000 of the debentures were repaid in cash, which resulted in a gain on retirement of the debentures of $10,400.

## STATEMENT OF FINANCIAL POSITION

| | Year ended December 31st | | Year over Year Increase |
|---|---|---|---|
| | 2017 | 2016 | (Reduction) |
| Cash | 1,358,923 | 191,282 | 1,167,641 |
| Refundable GST | 99,809 | 128,922 | (29,113) |
| Inventory | 50,582 | 11,968 | 38,614 |
| Prepaids | 113,387 | 278,832 | (165,445) |
| | 1,622,701 | 611,004 | 1,011,697 |
| Fixed Asset | 49,915 | 24,158 | 25,757 |
| Intangible Assets | 37,340 | 37,340 | 0 |
| | 87,255 | 61,498 | 25,757 |
| **Total Assets** | 1,709,956 | 672,502 | 1,037,454 |
| Accounts payable & Accrued Liabilities | 1,152,366 | 1,522,112 | (369,746) |
| Deferred Revenue | - | 38,902 | (38,902) |
| Debentures - accreted fair value | - | 597,122 | (597,122) |
| Interest Payable | - | 21,401 | (21,401) |
| Non-cash Derivative Liabilities | 2,183,831 | 742,808 | 1,441,023 |
| **Total Liabilities** | 3,336,197 | 2,922,345 | 413,852 |
| Share Capital | 26,565,366 | 22,881,118 | 3,684,248 |
| Contributed Surplus | 4,344,397 | 3,701,841 | 642,556 |
| Deficit | (32,536,004) | (28,832,802) | (3,703,202) |
| **Total Equity** | (1,626,241) | (2,249,843) | 623,602 |
| | 1,709,956 | 672,502 | 1,037,454 |
| **Working capital** | 470,335 | (911,748) | 1,382,083 |

*Liquidity*

Year over year the Company's working capital position improved significantly by almost $1.4M as a result of the March, 2017 Private Placement, which raised cash proceeds of $3,359,000.

The funds were used to pay down $150,000 in debentures and accrued interest, as well as to reduce accounts payable by $370,000 by year end. The remaining debentures, with a face value of $504,000 and $115,000 were retired with Units in the Shares for Debt Private Placement or by conversion to common shares, respectively, leaving the Company debt free by the end March, 2017.

*Changes in Assets & Liabilities*

In 2016, R&D operations were outsourced to a consulting firm, Walled Networks (which accounted for much of the Refundable GST). In Q4 2017, the Company brought its R&D operations back in-house, which required the purchase of $39K of furniture and equipment. In December, 2017, the Company began purchasing inventory in anticipation of potential sales.

At December 31, 2017 accrued liabilities included $365,000 of accrued but unpaid compensation payable to the Company's CEO. Of this amount, $120,000 was paid in common shares on April 5, 2018.

Deferred Revenue at the end of 2016 represented collections on sales in late 2016, which were only recognized as revenue in early 2017. The large Prepaids balance in 2016 was due to the prepayment of $140,921 in IR services received and expensed in 2017, and the prepayment of $32,995 in inventory, which was delivered in January, 2017 for the fulfillment of the sales.

The Derivative Liabilities are the fair value of the Companies outstanding warrants and conversion features on any outstanding convertible debentures. These are revalued at each balance sheet date using the methodology outlined below in Critical Accounting Estimates. As the warrants are not publicly traded, this is only an approximation of value, which is not a cash liability that the Company will ever have to pay out. Either the warrants will be exercised, in which case the Company will receive the cash exercise price, or the warrants will expire. Of the 18.3M warrants currently outstanding, 90% of them have maturity dates within the next 12 months. The remaining 10% mature by September 29, 2019.

*Shareholders Equity*

Share capital increased by $3.7M year over year, which is roughly the value of the shares issued for the Private Placements, conversion of debt and exercise of warrants and options, net of the value of the warrants issued in the Placements. The Contributed Surplus increase of $642,000 is attributable to Share Based Compensation, DSU grants, and the Finders Units issued in the Private Placement, all of which were non-cash expenses in the Profit and Loss.

## CONTRACTUAL COMMITMENTS

The Company has the following contractual cash obligations as of April 30, 2018:

| CDN$ | 2018 | 2019 | 2020 | 2021-2027 | Total |
|---|---|---|---|---|---|
| Premises lease | $ 29,670 | $ 45,575 | $ 46,799 | $ 84,727 | $ 206,771 |
| University of Washington Technology License Minimum Annual Royalty | - | 6,490 | 6,490 | 45,430 | 64,900 |
| Total contractual commitments for the | $ 29,670 | $ 52,065 | $ 53,289 | $ 130,157 | $ 271,671 |

The Minimum Annual Royalty (MAR) due to the University of Washington under the Technology License Agreement was US$50,000 until September, 2016, when the underlying Licensed Patent expired, in recognition of which, at the end of 2017 the MAR was reduced to US$5,000, retroactively from September, 2016. The full US$50,000 MAR was accrued during 2016, but has now been amended pro rata to US$30,068. A recovery of US$13,932 (CDN$ - $18,084) was recognized as Other Income in the 2017 financial statements.

On October 1, 2017 the Company entered into a 5 year lease for office premises at 2 Sheppard Avenue East, Suite 605, Toronto, Ontario. The cash obligations shown above are the annual Base Rent due over the term of the lease.

## 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 technology 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.

*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.

On January 17, 2018 the Company announced it had submitted a 510(k) application to the FDA to request clearance for sale of the new VMS+ product 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. 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.

The VMS+ and the 4C system received European CE Mark on December 15, 2017.

In March, 2017, the Company received a license from Health Canada for the VMS+ and the 4C heart analysis system. The VMS was already licensed in Canada for use for the right ventricle (RV).

*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 Binomial model 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, 2017 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.*