

## **Management's Report on Financial Position and Operating Results**

For the three months ended March 31, 2015

#### LETTER TO SHAREHOLDERS

Dear Fellow Shareholder,

The first quarter of 2015 saw continued success following key achievements in the second half of 2014.

After graduating to the TSX in November 2014, we have focused on diversifying our retail and institutional investor base in North America. A few weeks ago, we started trading on the OTCQX marketplace in the United States under the symbol "IMMVF". This allowed us to introduce the Company to new investors and retail brokers in the U.S., and to trade in U.S. dollars, at a time when immunotherapy has emerged as one of the most promising class of cancer treatments. Our outreach to American investors, both retail and institutional, will gather pace as the year goes on.

Earlier this year, we announced clearance from Health Canada to conduct a Phase I clinical study in healthy adults with a DepoVax™-based vaccine against Respiratory Syncytial Virus (RSV). The study, co-funded by Immunovaccine and the Canadian Institutes of Health Research (CIHR), will provide the first clinical experience with DepoVax™ for the prevention of an infectious disease.

In March we announced the start of our first Phase 2 clinical study for our lead cancer immunotherapy, DPX-Survivac, in the most common form of lymphoma, Diffuse Large B cell Lymphoma (DLBCL). Our earlier data in ovarian cancer suggested that combining DPX-Survivac with the immune enhancer cyclophosphamide has the potential to provide a clinical benefit. The lymphoma study is designed to establish the clinical efficacy of this same combination of DPX-Survivac and cyclophosphamide in this patient population with a high unmet medical need. We hope to release early results from this trial before the end of this year.

In the past few months, academic and industry partnership discussions for DPX-Survivac have accelerated. As reported last year, Canada's NCIC Clinical Trials Group (NCIC CTG) has committed to conducting a large randomized Phase 2 trial, focusing on ovarian cancer patients with no measurable disease following surgery and chemotherapy. The FDA has granted DPX-Survivac Fast Track designation for this patient population late last year, which will help us accelerate this program. In preparation for this trial, we are finalizing studies to determine optimal dosage and timing of vaccine injections to achieve the best outcomes for patients.

Other clinical investigators are interested in exploring the efficacy of DPX-Survivac in combination with breakthrough immunotherapies to identify treatment strategies that may be particularly helpful for patients with various cancers.

The interest in our underlying platform technology DepoVax<sup>™</sup> has also increased. We are working with the Dana Farber Cancer Institute to advance their HPV-related cancer vaccine formulated in DepoVax<sup>™</sup>. This vaccine will be used to treat patients with head and neck, anal and cervical cancers in a Phase 1 study, which is funded by the Dana Farber Cancer institute and the Stand Up to Cancer (SU2C)/ Farrah Fawcett Foundation (FFF).

We are also continuing our research in the biodefense arena. In January, we announced that a study led by the National Institutes of Health demonstrated that three different recombinant protective antigen (rPA) vaccines formulated with the Company's DepoVax™ enhancement technology, protected animals against a lethal anthrax challenge after a single vaccination. We are now actively seeking commercial partnerships with the owner of an anthrax antigen to advance this program.

Our partnering strategy will be key in accelerating the clinical development of our various initiatives in oncology and infectious disease. Fred Ors, Chief Business Officer, who joined the management team in April, will help implement this strategy. Fred will help us develop new commercial and research relationships that can provide non-dilutive funding opportunities as we seek revenue opportunities.

We thank you for your support while we work hard to deliver on all these programs.

Marc Mansour

Chief Executive Officer

## MANAGEMENT DISCUSSION AND ANALYSIS ("MD&A")

The following analysis provides a review of the unaudited interim condensed consolidated results of operations, financial condition and cash flows for the three months ended March 31, 2015 ("Q1 2015"), with information compared to the three months ended March 31, 2014 ("Q1 2014"), for Immunovaccine Inc. ("Immunovaccine", "IMV" or the "Corporation"). This analysis should also be read in conjunction with the information contained in the audited consolidated financial statements and related notes for the year ended December 31, 2014 and the year ended December 31, 2013.

The Corporation prepares its audited annual consolidated financial statements in accordance International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB").

Additional information regarding the business of the Corporation, including the Corporation's Annual Information Form, is available on SEDAR at www.sedar.com.

Amounts presented in this MD&A are approximate and have been rounded to the nearest thousand except for per share data. All amounts are presented in Canadian dollars.

Statistical information and other data relating to the pharmaceutical and biotechnology industry included in this MD&A are derived from recognized industry reports published by industry analysts, industry associations and/or independent consulting and data compilation organizations. Market data and industry forecasts used throughout this MD&A were obtained from various publicly available sources. Although the Corporation believes that these independent sources are generally reliable, the accuracy and completeness of the information from such sources are not guaranteed and have not been independently verified.

#### FORWARD-LOOKING STATEMENTS

Certain statements in this MD&A may constitute "forward-looking" statements which involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Corporation, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. When used in this MD&A, such statements use such words as "will", "may", "could", "intends", "potential", "plans", "believes", "expects", "projects", "estimates", "anticipates", "continue", "potential", "predicts" or "should" and other similar terminology. These statements reflect current expectations regarding future events and operating performance and speak only as of the date of this MD&A. Forward looking statements include, among others:

- statements with respect to the sufficiency of the Corporation's financial resources to support its activities;
- potential sources of funding;
- the Corporation's ability to obtain necessary funding on favorable terms or at all;
- the Corporation's expected expenditures and accumulated deficit level;
- the Corporation's expected outcomes from ongoing research and research collaborations;
- the Corporation's business strategy;
- the Corporation's exploration of opportunities to maximize shareholder value as part of the ordinary course of its business through collaborations, strategic partnerships and other transactions with third parties, which may or may not include plans for merger and acquisitions activities;
- the Corporation's plans for the research and development of certain product candidates;
- the Corporation's strategy for protecting its intellectual property;
- the Corporation's ability to identify licensable products or research suitable for licensing and commercialization;
- the Corporation's ability to obtain licences on commercially reasonable terms;
- the Corporation's plans for generating revenue;
- the Corporation's plans for future clinical trials; and
- the Corporation's hiring and retention of skilled staff.

Forward-looking statements involve significant risks and uncertainties, should not be read as guarantees of future performance or results, and will not necessarily be accurate indications of whether or not such results will be

achieved. A number of factors could cause actual results to differ materially from the results discussed in the forward-looking statements, including, but not limited to, the factors discussed in the Annual Information Form of the Corporation for the year ended December 31, 2014, under the heading "Risk Factors and Uncertainties". Although the forward-looking statements contained in this MD&A are based upon what management of the Corporation believes are reasonable assumptions, the Corporation cannot assure investors that actual results will be consistent with these forward-looking statements and should not be unduly relied upon by investors.

Actual results and developments are likely to differ, and may differ materially, from those expressed or implied by the forward-looking statements contained in this MD&A. Such statements are based on a number of assumptions which may prove to be incorrect, including, but not limited to, assumptions about:

- obtaining additional funding on reasonable terms when necessary;
- positive results of pre-clinical and clinical tests;
- the Corporation's ability to successfully develop existing and new products;
- the Corporation's ability to attract and retain skilled staff;
- the products and technology offered by the Corporation's competitors;
- general business and economic conditions;
- the Corporation's ability to protect patents and proprietary rights;
- the Corporation's ability to manufacture its products and to meet demand; and
- regulatory approvals.

These statements reflect management's current beliefs and are based on information currently available to management. The information contained herein is dated as of May 12, 2015; the date of the Board's approval of the MD&A and the Fiscal 2014 audited annual consolidated financial statements. A more detailed assessment of the risks that could cause actual results to materially differ from current expectations is contained in the section entitled "Risk Assessment" of this MD&A.

#### CORPORATION OVERVIEW

Immunovaccine is a clinical stage biopharmaceutical company that discovers and develops products that activate the immune system to treat cancer and infectious diseases. Immunovaccine has built a proprietary product platform that is used to create highly immunogenic vaccines. The Corporation's proprietary DepoVax<sup>TM</sup> adjuvanting/delivery platform is believed to produce a strong, high-quality immune response that has a specific and sustained immune effect, and enables the Corporation to pursue vaccine candidates in cancer, infectious diseases and potentially other vaccine applications.

The DepoVax<sup>TM</sup> platform is being used in multiple vaccine candidates, including two cancer vaccine candidates that have completed Phase 1 clinical trials. One of the Corporation's cancer vaccine candidates is being tested in a company-sponsored Phase 2 trial in lymphoma and is expected to enter a large, randomized Phase 2 trial in ovarian cancer in collaboration with the National Cancer Institutes of Canada Clinical Trials Group ("NCIC-CTG"). The Corporation's infectious disease vaccine against respiratory syncytial virus ("RSV") will enter into Phase 1 clinical trials in the first half of 2015. The Corporation has research collaborations with several research organizations, including the National Institutes of Health ("NIH") and the Dana Farber Cancer Institute ("DFCI") in the U.S. The Corporation has licensed the delivery technology to Zoetis, formerly the animal health division of Pfizer, Inc. ("Pfizer"), for the development of vaccines for livestock. The common shares of the Corporation are currently listed on the Toronto Stock Exchange ("TSX") under the symbol "IMV" and trades on the OTCQX under the symbol "IMMVF".

Based in Halifax, Nova Scotia, the Corporation had 23 full-time and part-time employees and three part-time consultants as at March 31, 2015. Being involved in a scientific and technical business, the Corporation requires staff with significant education, training and scientific knowledge that cannot be recruited or replaced easily. As a result, the Corporation recruits talented expertise locally, nationally and internationally. The business of the Corporation requires personnel with specialized skills and knowledge in the fields of basic and applied immunology, chemistry, formulation research and analytical chemistry method development. The Corporation has trained scientists with broad experience in these fields including seven employees holding PhD degrees and eight holding MSc or MBA degrees. In addition to the core team, the Corporation has also assembled a Scientific Advisory Board

("SAB") of experienced and internationally recognized scientific advisors to assist management in dealing with industry-related issues and how these issues may affect the Corporation's scientific research and product development.

#### **BUSINESS STRATEGY**

Operating Strategy

The DepoVax<sup>TM</sup> vaccine delivery platform drives the operating strategy for the Corporation. All of the Corporation's vaccines in human and animal health rely on this adjuvanting platform to improve their effectiveness against cancer and infectious diseases.

The Corporation has two clinical-stage cancer vaccines: DPX-Survivac; and DPX-0907. Immunovaccine believes the principles behind a successful therapeutic cancer vaccine should include a targeted antigen and an effective adjuvanting and vaccine delivery technology, combined with a complementary therapeutic strategy. Antigens used in both DPX-Survivac and DPX-0907 are believed to specifically target tumor cells without harming normal, healthy cells. These antigens are combined with the Corporation's DepoVax<sup>TM</sup> platform in an effort to optimize the presentation of these antigens to the immune system, potentially resulting in an enhanced immune response. To be successful against cancer, the Corporation believes the vaccine must be administered in the right therapeutic setting, ideally soon after a tumor has been identified and treated by surgery, chemotherapy and/or other therapies that reduce tumor bulk. Immunovaccine also believes that the effect of the vaccine may be enhanced if an immune modulator is used simultaneously to prevent a patient's immune system from overriding the positive response to the vaccine.

Using the same DepoVax<sup>TM</sup> adjuvanting platform and working with commercial and academic partners, the Corporation is also developing vaccines for infectious diseases, including respiratory syncytial virus and biodefense vaccines that may protect against anthrax. The Corporation engages in research collaborations which may lead to additional vaccine products. Pre-clinical studies have indicated that the platform may allow the development of enhanced vaccines for a wide range of cancer and infectious diseases by potentially generating a stronger and more durable immune response more quickly than is possible with existing delivery methods. For vaccines that are unusually non-immunogenic, the platform may significantly reduce the number of immunizations required. The Corporation's goal is to advance additional vaccines that show promising results into human clinical trials.

## Financing and Partnering Strategy

Immunovaccine relies on equity financing and non-dilutive private and public partnerships to fund its development programs. Applying this strategy, the Corporation has obtained more than \$15 million in government funding, including interest-free loans and government grants. The Corporation completed an \$11.2 million equity raise in a combined prospectus and private placement offering on September 4, 2014. In August 2013, the Corporation obtained a \$5 million secured loan from the Province of Nova Scotia, available in four equal installments based on the Corporation meeting certain milestones, three of which have been met to date. The Corporation received the first installment of \$1.25 million on August 9, 2013, the second installment of \$1.25 million on June 9, 2014 and the third installment of \$1.25 million on August 8, 2014.

In addition to using its own resources to develop its products through clinical trials, the Corporation is also involved in various partnerships and collaborations to accelerate the development of its DepoVax<sup>TM</sup>-based products. The Corporation announced a collaboration with NCIC CTG, an organization supported by the Canadian Cancer Society, in which NCIC CTG will sponsor and conduct a Phase 2 study of the Corporation's lead cancer vaccine, DPX-Survivac. The Corporation is currently in discussions with potential partners to test DPX-Survivac in combination with other immunotherapies in clinical trials. DPX-Survivac will also be tested in an investigator-initiated Phase 2 study in glioblastoma patients in Italy, once regulatory clearance is received. Other programs include a clinical research collaboration with the Canadian Centre for Vaccinology ("CCfV") for a Phase 1 clinical trial of a RSV vaccine funded by the Canadian Institutes of Health Research ("CIHR"); a research partnership with the NIH for vaccines against bio-terrorism threats; and a collaboration with the Dana Farber Cancer Institute for producing a DepoVax based vaccine for Human Papilloma virus ("HPV") related cancers funded by the Stand Up to Cancer-Farrah Fawcett Foundation in the US. The underlying goal of these types of partnerships is to produce pre-clinical

and clinical data that will lead to licensing agreements, either to allow the use of the Corporation's DepoVax<sup>TM</sup> platform by others or provide access to specific pipeline product candidates. Collaborations may lead to licensing agreements for antigens for new vaccines using DepoVax<sup>TM</sup>.

Immunovaccine has developed a commercial relationship with Zoetis, formerly the animal health division of Pfizer, which has licensed the Corporation's delivery technology platform to develop vaccines for livestock. Immunovaccine has also recently in-licensed exclusively an RSV antigen to expand its pipeline of vaccine candidates.

The Corporation intends to be opportunistic in the development of its products by exploring a variety of possible avenues, including co-development through potential collaborations, strategic partnerships or other transactions with third parties, and merger and acquisitions opportunities. The Corporation intends to seek additional equity and non-dilutive funding and partnerships to advance the development of the vaccine candidates.

#### PLATFORM AND PRODUCTS IN DEVELOPMENT

DepoVax<sup>TM</sup> Vaccine Enhancement Platform

DepoVax<sup>TM</sup> is a lipid depot-based vaccine delivery and enhancement platform that is believed to be easy to use, chemically stable and has the flexibility to incorporate a variety of antigens. The DepoVax<sup>TM</sup> platform forms the basis of Immunovaccine's therapeutic cancer and infectious diseases vaccine candidates.

The DepoVax<sup>TM</sup> platform is a combination of antigens, plus adjuvant (immune enhancers) formulated in liposomes and then suspended in oil. With the ability to retain the active components in the oil phase, the DepoVax<sup>TM</sup> platform creates a long-lasting "depot effect" that prolongs the exposure of vaccine ingredients to immune cells at the site of vaccination.

This unique formulation is expected to provide extended chemical stability. DepoVax<sup>TM</sup>-based products are lyophilized and stored in a dry format, which provides the added benefit of an extended shelf life. The DepoVax<sup>TM</sup> formulation is designed to be easy to re-suspend and administer.

The Corporation believes one of the significant advantages of the DepoVax<sup>TM</sup> platform is its versatility. The DepoVax<sup>TM</sup> platform can be combined with a variety of antigens, including recombinant proteins, synthetic peptides and nucleic acids, viruses and a wide range of adjuvants, which provides the flexibility to develop many different vaccine products using a single platform.

DepoVax<sup>TM</sup>-formulated vaccines have shown an ability to induce rapid and robust immune responses that may protect against disease agents with as little as one dose. The potential single-dose capability is a key factor for developing rapid response vaccines for pandemics and disease outbreaks.

The Corporation believes the ability of DepoVax<sup>TM</sup> to induce robust cellular immune responses makes the platform uniquely suitable for therapeutic cancer vaccines, which are designed to specifically target tumor cells and to help patients remain in remission and combat the dissemination of micro-metastases. DepoVax<sup>TM</sup> can induce antigen-specific "poly-functional" cellular responses, which are postulated to be required for effective tumor control.

#### DPX-Survivac

DPX-Survivac uses survivin-based antigens licensed from Merck KGaA, on a world-wide exclusive basis, and formulated in the DepoVax<sup>TM</sup> vaccine delivery platform. Survivin is a major tumor-associated antigen over-expressed in several cancers including ovarian cancer cells, making it a viable target for immunotherapy. DepoVax<sup>TM</sup> delivers the survivin-based antigens in a lipid depot-based format designed to generate a strong and prolonged immune response.

Survivin is essential for the survival of cancer cells and is an inhibitor of cancer cell death, known as apoptosis. The presence of survivin in cancer cells is believed to make them susceptible to a survivin-specific vaccine. The Corporation's survivin-based vaccine candidate, DPX-Survivac, aims to train the immune system to recognize and

kill survivin-containing cancer cells, with the intent to provide a clinical benefit to patients in the form of delaying cancer progression and/or increasing overall survival. The National Cancer Institute in the USA has recognized survivin as a promising antigen for cancer treatment based on its specificity, over-expression in cancer cells and immunogenicity potential.

The Corporation believes DPX-Survivac could have broad commercial potential as a therapeutic cancer vaccine because it may be applicable for the treatment of multiple solid tumors and hematological cancers, including ovarian, glioblastoma, prostate, breast, pancreatic, multiple myeloma, B-cell lymphoma, and melanoma, among other cancers. The Corporation intends to proceed with pre-clinical testing of DPX-Survivac in a broader range of cancer indications to evaluate additional opportunities.

Immunovaccine has completed a Phase 1 clinical trial of DPX-Survivac, conducted at six clinical sites in the US and Canada. In addition, the Corporation has received clearance for both the Phase 1 clinical trial and a randomized Phase 2 trial by both the US Food and Drug Administration ("FDA") and Health Canada. The Phase 1 trial was an open-label clinical trial designed to evaluate sequentially the safety of two DPX-Survivac dosing regimens in 18 patients. This Phase 1 clinical trial was to establish the safety and immunogenicity of DPX-Survivac in patients with advanced ovarian cancer.

The Corporation released interim results in October 2012, in January 2013 and final detailed positive results in June 2013 on the Phase 1 clinical trial. The analysis, which includes all 18 patients enrolled in the study, confirmed that 12 of the 18 patients, who received the DPX-Survivac combination therapy, demonstrated antigen-specific immune responses. They were measured by at least one of the study's three immune monitoring assays (ELISpot, tetramer analysis and multi-parametric intracellular cell staining). In 11 of 12 patients, the immune responses were confirmed by two assays (five patients) or three assays (six patients) performed. These immune responses were established with one or two vaccinations and further increased or maintained with follow-up booster vaccinations. Importantly, polyfunctional CD8 responses were reported, indicating the activation of high quality CD8 T cells, and the responses were maintained with booster vaccinations. The activation and maintenance of these specific immune cells is of particular interest in immunotherapy since CD8 T cells are implicated in identifying cancer cells, infiltrating tumors and killing cancer targets.

Also, in the Phase 1 clinical trial, DPX-Survivac was deemed well-tolerated with no significant systemic adverse events reported in any patients recruited in this study. Reported adverse events were primarily related to grade 1-2 injection site reactions, which were experienced by the majority of patients after repeated vaccinations. Those patients presenting the strongest immune responses were more likely to exhibit more pronounced injection site reactions. Grade 3 injection site ulcerations, which were an expected adverse event with this vaccine, were experienced by three patients during the trial. Upon a six month follow-up for the majority of patients, a trend of delayed progression was observed in patients who had strong immune responses to DPX-Survivac. The trend of delayed cancer progression, which was not statistically significant, may be attributed to the therapy or may be attributed to other unrelated factors.

The Corporation announced in August 2013, that Canada's NCIC CTG, an organization supported by the Canadian Cancer Society, has agreed to sponsor and conduct a randomized Phase 2 study of Immunovaccine's cancer vaccine, DPX-Survivac, in patients with advanced ovarian cancer. The NCIC CTG is a Canadian-based academic clinical trials cooperative group conducting large multi-center clinical trials across Canada and internationally. The study is designed to assess whether IMV's vaccine therapy can delay or prevent cancer recurrence.

The Phase 2 trial will be a randomized, blinded, placebo-controlled study with DPX-Survivac in combination with low dose oral cyclophosphamide as an immune modulator. The study is expected to enroll approximately 250 patients with ovarian cancer at an estimated 20 clinical centers.

Patients in the trial will have undergone surgery and standard post-operative chemotherapy. Patients will be randomized to two groups, one receiving the combination vaccine therapy and another receiving a placebo vaccine and cyclophosphamide. Immune responses and disease-related biomarkers including CA125 will be measured for correlative analyses. The results may guide further development of DPX-Survivac.

The agreement between NCIC CTG and Immunovaccine will provide a framework for the NCIC CTG to sponsor the randomized Phase 2 trial and assume responsibility for conducting the trial in accordance with good clinical practice, in a significantly more capital efficient manner than if the trial was conducted by the Corporation as a sponsor. The Corporation has been evaluating plans to fund the balance of NCIC CTG-sponsored clinical trial costs either through equity or non-dilutive partnerships or both.

The Corporation has recently announced it received FDA fast track designation for DPX-Survivac. The designation is intended for patients with no measurable disease after their initial surgery and chemotherapy. This population represent the cohort of ovarian cancer patients that is intended to be enrolled in the NCIC-CTG sponsored trial.

An ongoing Phase 1b trial will continue to enroll patients to further optimize the dose and schedule of vaccinations that will be employed in the randomized Phase 2 trial to be sponsored by the NCIC CTG. Interestingly, a patient enrolled in the Phase 1b with stable disease and rising blood levels of the cancer biomarker CA-125, experienced a 43% reduction in the size of her tumor within five months and the tumor remained stable for over a year. This patient benefited from the therapy for at least a year. The partial response ("PR"), defined as a shrinking of tumor size by at least 30%, using Response Evaluation Criteria In Solid Tumors ("RECIST 1.1"), was accompanied by reduction in levels of a commonly used ovarian cancer biomarker ("CA 125") and a significant increase in vaccine-induced immune responses in this patient. The durable clinical response observed highlights the therapeutic potential of DPX-Survivac for ovarian cancer patients.

The Corporation also announced in May 2013 it had signed an agreement with Professor Marianna Nuti, Ph.D., Department of Experimental Medicine at the University of Rome, to conduct an investigator-led trial on DPX-Survivac in patients with glioblastoma. This multicenter study based in Rome will be conducted in collaboration with neurosurgeons and oncologists coordinated by Professor Maurizio Salvati, M.D. The randomized, placebo-controlled study is expected to enroll up to 50 patients with newly diagnosed brain tumors that have been maximally resected. Testing DPX-Survivac in glioblastoma patients is pending regulatory clearance from the Italian Medicines Agency ("AIFA").

Immunovaccine highlighted results demonstrating that metronomic cyclophosphamide ("mCPA"), an immune modulating agent, enhanced the immunogenicity of DepoVax<sup>TM</sup>-based vaccines in preclinical cancer models consistent with previously reported Phase 1 data showing a similar enhancement of DPX-Survivac in patients. Importantly, the animal studies demonstrated the combination therapy's ability to eliminate advanced tumors that could not be treated with vaccine or mCPA alone. Tumors exposed to the combination therapy specifically exhibited an increase in T cell activation markers, suggesting increased immune-mediated anti-tumor activity at the tumor site with the vaccine/mCPA therapy and further supporting the use of the combination therapy in clinical trials. This work has recently been published in the peer reviewed scientific journal *Oncoimmunology*.

The Corporation has initiated a Phase 2 clinical trial in diffuse large B cell lymphoma ("DLBCL") in Canada. The efficacy Phase 2 trialwas launched at the Ottawa Hospital Research Institute and will add the Odette-Sunnybrook Cancer Centre in Q2 2015. Researchers will seek to enroll up to 24 patients, with the first patient already dosed in March 2015. The open label study is designed to determine the objective response rate of patients with recurrent survivin-expressing DLBCL when treated with DPX-Survivac in combination with low dose oral cyclophosphamide. Immunovaccine expects to have initial clinical data from this study available approximately Q4 2015.

The Corporation is pursuing opportunities for additional trials, including combination therapies with DPX-Survivac and other compounds such as anti-PD1 in a variety of indications.

#### DPX-0907

DPX-0907 combines the Corporation's DepoVax<sup>™</sup> delivery technology with seven HLA-A2-restricted cancer-specific antigens licensed from Immunotope. The vaccine is designed to stimulate an immune response specific to cancer antigens that are believed to be involved in critical tumor cell processes. The seven peptide antigens in DPX-0907 are believed to be present on the surface of breast, ovarian and prostate cancer cells. In pre-clinical studies, the seven antigens could not be found on the surface of normal cells, and therefore, DPX-0907 is expected to kill tumor cells without harming normal, healthy cells.

The Corporation believes DPX-0907 has particular utility for the treatment of ovarian, breast and prostate cancers. The multi-antigen approach of DPX-0907 addresses the heterogeneity of cancers in patients and ensures that more than one antigen is targeted in a cancer patient to ensure that an immune response continues to recognize the cancer as the tumor evolves, displaying different antigens at different times.

The Corporation has completed a Phase 1 clinical trial of DPX-0907 and the results of the trial were released in June 2011, with more detailed results published in the Journal of Translational Medicine in August 2012. The Phase 1 trial was conducted at five centers in the US. In this open-label, dose-escalating trial, patients received three injections (0.25 mL or 1 mL doses) of the active immune therapy DPX-0907, three weeks apart.

The Phase 1 trial met the primary objective of safety with overall results demonstrating that DPX-0907 is generally well-tolerated by all patients and is considered safe at both dose levels. There were no vaccine-related serious adverse events reported. Final safety was assessed in 11 patients in the 0.25 mL dose group and 11 patients in the 1.0 mL dose group.

The secondary objective was to assess whether administration of DPX-0907 could generate an immune response specific to the seven cancer antigens. Immunovaccine performed a detailed analysis of patients' blood samples that showed cell-mediated immunity (CMI) to vaccine targets in all three breast cancer patients, 5 of 6 ovarian cancer patients, and 3 of 9 prostate cancer patients. Both dose levels produced a targeted immune response in vaccinated patients. The immunogenicity results were based on an analysis of nine evaluable patients in the 0.25 mL dose group and nine evaluable patients in the 1 mL dose group.

This study also demonstrated a key association between the achievement of immune responses during the study and the patients' level of disease. The breast and ovarian cancer patients who responded well to prior therapies responded favorably, with the majority of these patients (8 out of 9) producing the desired immunity. In contrast, the majority of prostate cancer patients who had more advanced disease and were less responsive to prior therapies exhibited a lower immune response rate.

The Corporation had signed an Investigator-Initiated Study Agreement for the ongoing evaluation of its DPX-0907 cancer vaccine at the Busto Arsizio Hospital in Milan, Italy, however due to unforeseen extended delays at the clinical site, the Corporation has determined not to proceed with this trial. The Corporation is currently exploring other opportunities for commercialization of DPX-0907 and is considering investigator funded trials or partnership opportunities at various stages of clinical development, including at the Phase 1 and Phase 2 clinical trial stages.

## Infectious Diseases

A significant component of the Corporation's business strategy is leveraging the DepoVax<sup>TM</sup> platform within infectious and other diseases. The DepoVax<sup>TM</sup>-adjuvanting platform has the potential to generate a rapid and robust immune response, often in a single dose. The unique vaccine enhancement and single-dose capability could prove to be beneficial in targeting difficult infectious and other disease candidates.

The Corporation is performing pre-clinical research activities for a vaccine targeting RSV, which is the second leading cause of respiratory illness in infants, the elderly and the immunosuppressed. Currently, there is no vaccine available for this virus and Immunovaccine is seeking to develop a novel vaccine formulation to be used in the elderly and healthy adults, including women of child-bearing age. The novel RSV antigen being evaluated in DepoVax<sup>TM</sup> is based on the short hydrophobic protein present on the surface of the RSV virion. This vaccine has a unique mechanism of action, in that the resultant antibodies bind to and destroy infected cells rather than directly bind and neutralize free virus. The Corporation tested the immunogenicity and efficacy in appropriate RSV challenge models, such as mice, to produce the pre-clinical data required to support a clinical trial application (CTA) leading to a Phase 1 clinical trial in Canada.

Immunovaccine recently obtained clearance from Health Canada to conduct a Phase 1 clinical study of its RSV vaccine in healthy adults. The RSV vaccine is formulated in Immunovaccine's proprietary DepoVax<sup>TM</sup> adjuvanting platform and is initially being developed to protect the elderly population from infection. The Phase 1 study, which will be the first clinical trial of a DepoVax<sup>TM</sup>-based vaccine in an infectious disease indication, will evaluate the safety and immune response profile of the RSV vaccine candidate in healthy adults. The study, conducted at the

Canadian Center for Vaccinology in Halifax, will enroll 40 healthy adults 50 to 64 years of age. The vaccine will be tested at two different vaccine dose levels and study investigators will assess the vaccine's safety and immune response profile following one or two immunizations of each dose level. The trial is being co-funded by Immunovaccine. Immunovaccine has recently exclusively in-licensed the RSV antigen from VIB, a non-profit life sciences research institute funded by the Flemish government, to expand its pipeline of vaccine candidates.

#### Bio-terrorism

The Corporation entered into a research collaboration with the NIH to advance the development of next generation bio-defense vaccines against the most threatening biological agents. These novel vaccine candidates are being evaluated as part of studies funded by the NIH, which was initiated in the first quarter of 2012 and are currently ongoing. Study findings suggested that the DepoVax<sup>TM</sup>-based vaccines provided a more rapid and long-lasting immune response as compared to the licensed anthrax vaccine BioThrax®, with fewer doses. The studies, which have been conducted under the NIAID Preclinical Services Program, were designed to test multiple DepoVax<sup>TM</sup>-formulated anthrax vaccines in non-human primates and rabbits, specifically examining immunogenicity and safety after either one or two doses of the vaccine. Study investigators compared the DepoVax<sup>TM</sup>-based vaccines to BioThrax®, the only commercially available anthrax vaccine, which requires at least two doses to produce immune responses in animal models.

The initial study in non-human primates focused on the immunogenicity of DepoVax<sup>TM</sup>-based anthrax vaccines. In that study, a single dose of DepoVax<sup>TM</sup>-formulated anthrax vaccine produced sustained toxin neutralizing antibody ("TNA") titres in six of ten animals, starting on day 21 and 49, while animals who received one dose of BioThrax® had no detectable TNA titres. Upon a second dose of DepoVax<sup>TM</sup>-formulated vaccine, there was a significant increase in anthrax TNAs in all immunized animals. In addition, vaccination with DepoVax<sup>TM</sup>-formulated vaccines resulted in no visible injection site reactions and there was no evidence of systemic or local safety issues.

The next set of studies determined the ability of DepoVax<sup>TM</sup>-formulated anthrax vaccines to protect against an inhaled lethal challenge of anthrax. A single dose of DepoVax<sup>TM</sup> containing five micrograms of rPA protected rabbits exposed to a lethal anthrax dose. The DepoVax<sup>TM</sup> formulated vaccines began producing detectable and potentially protective toxin neutralizing antibodies in as little as 14 days, with maximal protective antibody levels achieved within 28 days following a single vaccination. The titres were sustained for at least 70 days at which time a lethal anthrax challenge was performed. In these studies, neutralizing antibodies rose further in animals receiving a second dose of the DepoVax<sup>TM</sup> rPA vaccine. In non-human primate studies, two doses containing rPA formulated in DepoVax<sup>TM</sup> triggered sustained toxin neutralizing antibodies sufficient to protect them from a lethal anthrax challenge. A single dose response was not evaluated in this model.

The Corporation announced additional positive results from challenge studies in rabbits in April 2014 as well as in non-human primates in October 2014. These follow on studies focused on examining the single dose capacity of a DepoVax<sup>TM</sup>-formulated vaccine in these animal species. In the rabbit study, there was 100% protection of rabbits from a lethal anthrax challenge following vaccination, with as little as 0.33 micrograms of mrPA formulated in DepoVax<sup>TM</sup>, delivered as a single dose. A dose response was observed in the first 28 days following vaccination, with higher amounts of mrPA formulated in DepoVax<sup>TM</sup>, producing higher levels of neutralizing antibodies during this period. The neutralizing titers measured on day 28 suggest that animals may be protected within one month of a single immunization. In a non-human primate study, the ability of a single dose of DepoVax<sup>TM</sup>-formulated anthrax vaccine was demonstrated. In all animals immunized with the DepoVax<sup>TM</sup>-based vaccine, antibody titers generally peaked in the first 28 days then persisted until at least day 70, when animals were exposed to the disease agent. In contrast, animals in the control group receiving BioThrax® required a second dose to produce protective neutralizing titers.

In January 2015, the Corporation announced that a rabbit study has confirmed that three different recombinant protective antigen vaccines formulated with its novel DepoVax<sup>TM</sup> enhancement technology, protected animals against a lethal anthrax challenge after a single vaccination. The study was designed to evaluate the early protection potential of single-dose DepoVax<sup>TM</sup>-rPA vaccines. A very low dose of rPA that is known to provide partial protection in the rabbit model was used. This allowed a comparison of the potency of the various rPA vaccines formulated in DepoVax<sup>TM</sup>. In this experiment, rabbits were exposed to a lethal dose of the anthrax causing bacterial spores (*B. anthracis*) 28 days following a single vaccination. The DepoVax<sup>TM</sup>-rPA vaccines provided good

protection to animals against anthrax with a single dose, protecting a total of 15 of 24 animals across the three different rPA sources. As expected, control animals injected with a saline solution all succumbed to the anthrax challenge. Animals given a placebo DepoVax<sup>TM</sup> vaccine with no antigen also succumbed to anthrax, demonstrating that protection is mediated by the combination of DepoVax and rPA.

Data generated from these research studies is expected to facilitate access to various funding mechanisms and support the clinical development of DepoVax<sup>TM</sup>-based vaccine candidates.

In addition to our work on a novel anthrax vaccine, our collaboration with the NIH led to the testing of novel vaccine candidates to protect against Ebola virus disease. In August 2014, the Corporation has announced that a DepoVax<sup>TM</sup>-formulated Ebola virus vaccine was highly efficacious in a non-human primate challenge study. In this study, four cynomolgus macaque subjects received two doses of the DepoVax<sup>TM</sup>-formulated vaccine, one at study initiation and a second on Day 56. They were then challenged on day 70 with a lethal dose of the wild type Zaire strain of the Ebola virus. The Zaire strain is believed to be the most lethal among Ebola viruses and is responsible for the current Ebola virus outbreak in Western Africa. More than two weeks following exposure to the virus, all vaccinated subjects were alive with no disease symptoms. The two control animals in this study succumbed to the infection within seven days. While the pre-clinical results were promising, the Corporation decided not to pursue the development of an Ebola virus vaccine, for the time being, due to the highly competitive landscape for Ebola vaccines, the early-stage nature of Immunovaccine's Ebola vaccine development program and a rapidly dwindling number of clinical cases in which to test innovative novel vaccine candidates.

## Licensing opportunities

While the Corporation is now focused on developing a pipeline of cancer immunotherapies as well as vaccines for infectious diseases and bioterrorism applications, it is also pursuing opportunities to license the Corporation's platform technology to other parties interested in creating enhanced vaccines on an application by application basis. In 2008, the Corporation signed a license agreement with Zoetis, formerly the animal health division of Pfizer, which represented the Corporation's first milestone in validating the DepoVax<sup>TM</sup> platform technology. The Corporation has multiple licensing agreements with Zoetis for the use of the Corporation's delivery technology in cattle and other livestock vaccine applications. These license agreements include upfront signing fees, milestone payments and royalties from future vaccine sales.

Immunovaccine intends to pursue additional licensing and revenue opportunities to help fund the research and development of its vaccine candidates.

#### MARKET OVERVIEW

#### Therapeutic cancer vaccines

Cancer is considered one of the most widespread and prevalent diseases globally. According to Cancer Research UK, 2012 statistics show that 14.1 million new cases of cancer were diagnosed and 8.2 million individuals died from the disease. Conventional cancer treatment involves surgery to remove the tumor when possible, as well as chemotherapy and radiation. Chemotherapies are widely used despite their associated toxicities because they interfere with the ability of cancer cells to grow and spread. Tumors often develop resistance to chemotherapies however, limiting their efficacy in preventing tumor recurrence. Despite recent advances, independent sources note a high unmet medical need in cancer therapy, noting the median survival rate remains poor. Cancer immunotherapies, including therapeutic cancer vaccines, potentially provide a new and effective treatment. Andrew Baum, an analyst at CITIGROUP, has projected that immunotherapies, including vaccines, will dominate cancer therapy by the year 2020, representing a market up to a \$35 billion.

Cancer immunotherapy seeks to harness the immune system to assist in the destruction of tumors and to prevent their recurrence. There has been significant excitement in the field of cancer immunotherapy stemming from recent clinical success in prolonging patient survival with novel compounds. The ability to apply these appropriately has resulted from a greater understanding of the immune dysfunction that is characteristic of cancer. One area in which there have been significant breakthroughs has been in the area of checkpoint inhibitors, compounds that target key regulatory molecules of the immune system. Yervoy (anti-CTLA-4, or ipilumumab, developed by Bristol-Myers

Squibb) was the first compound in this class to be approved for use in advanced metastatic melanoma. In cancer, these regulators (CTLA-4 and more recently PD-1 and its ligand PD-L1) act to inhibit CD8 T cell mediated antitumor immune responses that are crucial for tumor control. Monoclonal antibodies that target PD-1 and PD-L1 have shown unusual efficacy in cancer patients, with a significant percentage of patients experiencing durable response to these therapies. Several of these compounds are in advanced clinical trials, with one compound, Merck's Keytruda (pembrolizumab), receiving FDA approval in September of 2014 for advanced melanoma patients who have stopped responding to other therapies. Bristol-Myers Squibb's compound nivolumab (Opdivo) is also approved in the US and Japan.

In addition to clinical development of the above compounds utilized alone, there also has been additional development using these compounds in combination. Notably, the use of the PD-1 inhibitor, Opdivo, in combination with the anti-CTLA-4 inhibitor, Yervoy, has entered Phase 3 clinical trials in metastatic melanoma and renal cell carcinoma, after promising data in earlier trials. At the 2015 American Association of Cancer Research meeting and simultaneously published in the *New England Journal of Medicine*, it was reported that the combination in metastatic melanoma demonstrated an objective response rate of 61% as compared to 11% for Yervoy alone. There are also a number of other inhibitors in clinical development that are currently being studied in combination with these inhibitors, many at an early clinical stage.

Despite significant excitement regarding the clinical potential of these inhibitors, there is an acceptance that more will be needed in a majority of patients. It will not be enough just to block the ability of tumors to inhibit the immune system. Key opinion leaders in the field have indicated that the ideal combination, with checkpoint inhibitors, is likely to be a therapy that drives tumor specific immune responses. These include novel cancer vaccines and T cell based therapies. These therapies fit well with checkpoint inhibition therapy because they simultaneously activate strong tumor specific immune responses, while 'releasing the brakes' on immune suppression. The success of such combinations should allow pharmaceutical companies to significantly expand the market of their checkpoint inhibitors, which are currently effective in approximately 10% to 30% of patients.

Pharmaceutical companies, including Merck and AstraZeneca, are becoming more receptive to combining their checkpoint inhibitors with clinical compounds belonging to other pharmaceutical and biotechnology companies. Recently, several pharmaceutical companies and large cap NASDAQ listed biotechnology companies have announced collaborations to test combination immunotherapies in clinical trials.

Cancer vaccines have potential to become an important component of these novel combination immunotherapies which may offer synergistic benefits. As important T cell activation therapies, the Corporation believes that cancer vaccines will become an essential part of a multi-pronged approach for the treatment of cancer.

The global market for cancer vaccines, including both prophylactic and therapeutic vaccines, was USD\$1.6 billion in 2010, and is expected to reach \$4.3 billion by 2019. While the majority of this reflects sales of prophylactic vaccines, the area of therapeutic cancer vaccines is projected by some industry analysts to experience significant growth. Major pharmaceutical players, such as GSK and Merck KGaA, have therapeutic cancer vaccines currently advancing in Phase 3 clinical trials.

#### Infectious Diseases

Vaccines are credited with saving millions of lives since their introduction into medical practice and the healthcare system. The reduction in morbidity and mortality caused by many infectious diseases world-wide can be directly correlated to currently available vaccines. According to data from the U.S. Centers for Disease Control and Prevention ("CDC"), ten infectious diseases have been at least 90% eradicated in the United States thanks to vaccines.

However, during the past decade, diseases thought to be under control or retreating, such as plague, diphtheria, yellow fever, dengue, meningitis, influenza and malaria, have re-emerged. While the effort to control these known infectious diseases continues, more than 30 emerging diseases have been identified in humans for the first time over the past two decades.

There is an increased awareness of the impact of current and emerging infectious diseases. Demand for newer treatments and vaccines are growing globally. Decision Resources reports that the world-wide market for vaccines against infectious diseases more than doubled between 2005 and 2011. The global market for infectious diseases treatment was valued at USD\$90.4 billion in 2009. According to TechNavio's analysts, the global preventable vaccines market is expected to grow at a fast pace at a Compound Annual Growth rate (CAGR) of 10.16% from 2014-2019.

Many infectious diseases lack effective prophylactic vaccines, and the industry faces a variety of challenges in vaccine design and production. Adjuvants and delivery methods are viewed as key technologies for the success of future vaccines. Efforts to decrease treatment duration and develop single-dose vaccines are a strong focus at the research level to improve patient compliance and decrease monitoring of therapy by the healthcare provider. Better diagnostics are being sought for many infectious diseases. This advance could result in additional market expansion by increasing the number of patients identified for vaccine treatment. The Corporation believes this current market landscape offers significant commercial opportunities for both its technology platform and vaccines.

Pharmaceutical companies dominating this infectious diseases vaccine market include Sanofi Pasteur, GSK, Novartis, Merck and Johnson & Johnson. Additionally, government and non-profit institutions play a significant role in vaccine development in both industrialized and developing markets. Support for infectious diseases vaccine development and commercialization is available to companies through government and non-profit funding and granting mechanisms.

## Respiratory Syncytial Virus (RSV)

RSV is a respiratory virus that infects the lungs and breathing passages. It can be severe in infants, the elderly, and patients with compromised immune systems. RSV is the single most common cause of severe respiratory illness in infants under the age of one and is more often being recognized as an important cause of respiratory illness in older adults. Globally, it is estimated that 64 million cases of RSV infection occur annually, with 160,000 deaths. A vaccine targeted to strengthen the immunity of adults to this virus will lower their risk of contracting infection later in life, and also create a 'cocoon' of protection in the adult population (i.e. parents, grandparents and caregivers) to protect vulnerable infants from contracting this virus.

In North America, RSV is the most frequent cause of hospitalization in the first two years of life. Specifically in Canada, RSV-associated lower respiratory tract illness ("LRTI") in young children accounts for over 12,000 hospitalizations annually in up to 2% of the birth cohort. In Canadian adults, 2% to 3% of all respiratory admissions annually can be attributed to RSV infection.

There is currently no vaccine available for the prevention of RSV. The only product available today to help protect against severe RSV disease is Synagis, a monthly injection given during peak RSV season and indicated only for specific groups of infants at high risk. No cost-effective, feasible, effective treatment has been found which alters the natural history of RSV infection. Systematic meta-analyses of inhaled bronchodilators, glucocorticoids, antibiotics, inhaled heliox, nebulized deoxyribonuclease and epinephrine do not demonstrate any significant clinical benefit. The mainstay of care for most patients remains supportive.

While RSV has been recognized as a potentially serious problem for adults for 30 years, there has been limited documentation of the extent of RSV infections. High-risk adults include those with chronic heart disease, chronic lung disease, or compromised immune systems and the elderly, which includes those 65 years or older.

The World Health Organization (WHO) has designated RSV as a high-priority target for vaccine development. RSV is a significant problem in the elderly, particularly if they reside in a long-term care facility or participate in other senior day-care programs. RSV attack rates in nursing homes in the USA are approximately 5% to 10% per year with a 2% to 8% case fatality rate, amounting to approximately 10,000 deaths per year among persons greater than 64 years of age. Among elderly persons followed for 3 consecutive winters, RSV infection accounted for 10.6% of hospitalizations for pneumonia, 11.4% of hospitalizations for obstructive pulmonary disease, 5.4% for congestive heart failure and 7.2% for asthma.

There is high unmet need in the RSV market in general and in the elderly population in particular. With no vaccine currently available, the RSV market is dominated by AstraZeneca's Synagis, an active prophylactic treatment for the pediatric population. The market has remained consistent in recent years as there has been a lack of new entrants and the only pipeline drugs in development for prophylaxis in patients are currently in Phase 1/2. The lack of competitive products will allow Synagis to remain in command of this market with the possible threat of Synagis biosimilars entering the US as early as 2016.

A vaccine would likely provide patients with a stronger efficacy profile and a more sustained immune response. IMV expects that the development of a vaccine with these improved characteristics will expand the market potential, adding the elderly and immunocompromised patients. With these new patient populations, market forecasts could approach \$1 billion.

Although there have been relatively few transactions related to RSV over the past decade, a renewed interest in the area due to new technologies and early research into new methods of addressing immunity, such as maternal immunity transfer for pediatric RSV, could change this over the next several years. Most transactions and alliances that have taken place in this sector have minimized the risk with a relatively modest upfront payment, followed by larger milestone payments subject to successful progression through clinical development and commercialization.

#### Bio-defense

Anthrax disease is caused by the bacteria Bacillus anthracis. Infection in humans occurs under natural circumstances after contact with contaminated livestock. Infection in humans most often involves the skin, gastrointestinal tract, or lungs. However, the ability to produce and weaponize the anthrax spores generates a possibility for it to be disseminated as a bioweapon, as evidenced by the sending of anthrax spore laden letters to US Congress members in 2001. For this reason, there have been substantial investments made in the acquisition of medical countermeasures for the Strategic National Stockpile ("SNS") as well as focused research, development and procurement activities.

According to the US Center for Bio-security's review of the US government's federal budget for fiscal 2014, funds for civilian bio-defense total USD\$6.69 billion. Of that total, USD\$5.86 billion (88%) is budgeted for programs that have both bio-defense and non bio-defense goals and applications, and USD\$835 million (12%) is budgeted for programs that have objectives solely related to bio-defense.

US government-funding programs for civilian bio-defense are intended to address a range of scientific, public health, healthcare, national security, and international security issues in addition to bio-defense. Programs with both bio-defense and non bio-defense goals and applications include those that fund basic scientific research in infectious diseases pathogenesis and immunology, programs to improve planning and operations related to public health preparedness, and programs to improve preparedness and response for a range of other disasters.

An example of programs with both bio-defense and non bio-defense goals includes NIAID Bio-defense Research Program, which, in addition to funding pre-clinical and clinical research toward bio-defense countermeasures, funds basic infectious diseases pathogenesis and immunology research with implications for a multitude of other diseases. Immunovaccine's platform technology and products have application to many of these programs.

A recent report by GBI Research states that as the potential threat of biological terrorist attacks continue to command the attention of governments around the globe, anthrax and smallpox remain amongst the most researched diseases in the bio-defense industry.

The next-generation of anthrax vaccines has focused largely on the use of rPA as the antigen. The rPA-based vaccines however, require the use of potent adjuvants or adjuvant platforms, such as DepoVax<sup>TM</sup>, to achieve single dose capability. The ideal anthrax vaccine will provide rapid protection with a single dose, generate a durable immune response, and have enhanced stability for stockpiling purposes. DepoVax<sup>TM</sup> is expected to provide these characteristics.

#### Animal Health Market

According to industry sources, the world animal health market, defined as a sector spanning veterinary pharmaceuticals, biologics and medicated feed additives, was approximately USD\$23 billion in 2013. The animal vaccine market subdivided into livestock, companion animal and other smaller segments including equine, poultry and aquatic, makes up approximately 20% of the total animal health market. Europe is the leading market for veterinary vaccines followed closely by North America. Asia-Pacific is the fastest growing market for veterinary vaccines.

The world-wide livestock vaccine market is comprised primarily of cattle and swine vaccines, along with, to a lesser extent, vaccines for sheep, poultry and other food animals. There are only a few players in the animal vaccine market including Zoetis, Boehringer Ingelheim, Merial, Merck Animal Health, Novartis and AgriLabs. The majority of today's vaccines for the livestock market require a booster administration, which increases the handling. Therefore, a vaccine that requires fewer doses (one dose, in some cases) for efficacy could be a significant innovation and have the potential to replace existing products.

#### RECENT AND ANNUAL DEVELOPMENTS

Key developments and achievements

- On April 27, 2015, the Corporation announced it had been approved to trade on the OTCQX® Best Marketplace in the United States under the symbol "IMMVF". The Company will continue to trade on the Toronto Stock Exchange under the symbol "IMV".
- On April 16, 2015, the Corporation announced that Frederic Ors joined Immunovaccine's senior management team as Chief Business Officer. The Corporation also announced the voting results of the annual and special meeting of shareholders of the Corporation held in Halifax, Nova Scotia.
- On March 24, 2015, the Corporation announced that it has treated the first patient with diffuse large B cell lymphoma (DLBCL) in a Phase 2 clinical study of its lead cancer immunotherapy DPX-Survivac. The Company-sponsored trial is evaluating DPX-Survivac in combination with oral cyclophosphamide, an immune modulating agent, in patients with recurrent DLBCL. DPX-Survivac is designed to activate killer T cells of the immune system against the survivin antigen found in a wide variety of solid tumors and blood cancers.
- On January 28, 2015, the Corporation announced results that three different recombinant protective antigen ("rPA") vaccines formulated with its novel DepoVax<sup>TM</sup> enhancement technology protected animals against a lethal anthrax challenge after a single vaccination. The NIH led study demonstrates the potential of DepoVax<sup>TM</sup> as a universal enabler of single dose rPA-based anthrax vaccines. The anthrax challenge study was designed to evaluate the early protection potential of single dose DepoVax<sup>TM</sup>-rPA vaccines. A very low dose of rPA that is known to provide partial protection in the rabbit model was used. This allowed a comparison of the potency of the various rPA vaccines formulated in DepoVax<sup>TM</sup>.
- On January 20, 2015, the Corporation received clearance from Health Canada to conduct a Phase 1 clinical study of its respiratory syncytial virus vaccine in healthy adults. The RSV vaccine is formulated in Immunovaccine's proprietary DepoVax<sup>TM</sup> adjuvanting platform and is initially being developed to protect the elderly population from infection. The Phase 1 study, which will be the first clinical trial of a DepoVax<sup>TM</sup>-based vaccine in an infectious disease indication, will evaluate the safety and immune response profile of the RSV vaccine candidate in healthy adults. The study, conducted at the Canadian Center for Vaccinology in Halifax, will enroll 40 healthy adults 50 to 64 years of age. The vaccine will be tested at two different vaccine dose levels and study investigators will assess the vaccine's safety and immune response profile following one or two immunizations of each dose level. The trial is being cofunded by Immunovaccine and the CIHR.

## SUMMARY OF QUARTERLY RESULTS

The following consolidated quarterly data was drawn from the audited annual consolidated financial statements and the unaudited interim condensed consolidated financial statements. All values discussed below are rounded to the nearest thousand. The information is reported on an IFRS basis.

Ouarter Ended In	Total Revenue	Total Expenses	Loss	<b>Basic and Diluted Loss</b>
Quarter Ended In	\$	\$	\$	Per Share \$
Q1 - March 31, 2015	-	1,769,000	(1,769,000)	(0.02)
Q4 - December 31, 2014	-	2,032,000	(2,032,000)	(0.02)
Q3 - September 30, 2014	-	1,263,000	(1,263,000)	(0.02)
Q2 - June 30, 2014	-	1,330,000	(1,330,000)	(0.02)
Q1 - March 31, 2014	-	1,943,000	(1,943,000)	(0.02)
Q4 - December 31, 2013*	-	826,000	(826,000)	(0.02)
Q3 - September 30, 2013	-	1,537,000	(1,306,000)	(0.01)
Q2 - June 30, 2013	-	965,000	(965,000)	(0.01)
Q1 - March 31, 2013	-	1,585,000	(1,585,000)	(0.02)

<sup>\*</sup> Under IFRS, the \$1,250,000 low-bearing interest government loan from the Province of Nova Scotia received in August 2013 must be initially valued at fair value and the difference between the fair value of the loans and the contribution received must be treated as government assistance. The loan was originally recorded at book value and subsequently adjusted at year end.

Results for the three months ended March 31, 2015 ("Q1 Fiscal 2015"), compared to the three months ended March 31, 2014 ("Q1 Fiscal 2014").

## Net loss and comprehensive loss

The net loss and comprehensive loss of \$1,769,000 for Q1 Fiscal 2015 was \$174,000 lower than the net loss and comprehensive loss for Q1 Fiscal 2014. This relates mainly to the \$146,000 decrease in business development expenses and \$119,000 decrease in research and development costs, offset by an increase of \$40,000 in general and administrative expenses and an increase of \$51,000 of accreted interest.

#### **Operating expenses**

Overall operating expenses decreased by \$174,000 during Q1 Fiscal 2015 compared to Q1 Fiscal 2015. Explanations of the nature of costs incurred, along with explanations of changes in those costs are discussed below:

Research and development ("R&D") expenses

R&D expenses include salaries and benefits, expenses associated with the Phase 1 and Phase 1b clinical trials of DPX-Survivac, pre-clinical research on RSV, consulting fees paid to various independent contractors who possess specific expertise required by the Corporation, the cost of animal care facilities, lab supplies, peptides and other chemicals, rental of lab facilities, insurance, as well as other minor R&D related expenses. These R&D costs are offset by government loans and assistance and by investment tax credits received in relation to the R&D expenses incurred.

The Corporation's R&D efforts and related expenses for Q1 Fiscal 2015 included costs surrounding the Corporation's Phase 1b clinical trial of DPX-Survivac and costs related to the Corporation's ongoing R&D activities associated with the investigation, analysis and evaluation of other potential vaccine candidates and technologies.

Research and development expenses consist of the following:

	Q1 Fiscal 2015	Q1 Fiscal 2014
	\$	\$
General research and development expenses	302,000	290,000
DPX-Survivac preclinical and clinical expenses	193,000	227,000
Salaries and benefits	299,000	322,000
Stock-based compensation	97,000	269,000
Depreciation of equipment and amortization of intangible	19,000	23,000
Government loans and assistance	(52,000)	(152,000)
Investment tax credits	(65,000)	(67,000)
Total	793,000	912,000

The largest component of R&D expense for Q1 Fiscal 2015 was the preclinical work performed on the Corporation's RSV infectious disease program.

While the Corporation was originally expecting the DPX-Survivac Phase 1b clinical trial to be nearing completion, the Corporation decided to expand the Phase 1b clinical study with 18 additional patients. The Phase 1b clinical trial is designed to optimize and confirm the dose and schedule of vaccinations that will be used in the randomized Phase 2 trial to be sponsored by the NCIC CTG.

The government loans and assistance recorded in Q1 Fiscal 2015 consisted mainly of a repayable government loan for the clinical manufacturing costs for DPX-RSV, compared to the non-repayable government grant for the RSV pre-clinical studies in Q1 Fiscal 2014. Stock-based compensation expense decreased by \$172,000 due to the costs associated with the Chief Executive Officer being relocated to general and administrative expenses.

*General and administrative* ("G&A") *expenses* 

General and administrative expenses of \$724,000 represented 41% of total expenses for Q1 Fiscal 2015 compared to the general and administrative expense for Q1 Fiscal 2014 of \$684,000, an overall increase of \$40,000 (6%).

G&A expenses include salaries and benefits, directors' fees, legal fees, audit and taxation costs, consulting fees, travel, rental of office facilities, insurance, regulatory fees, stock-based compensation, depreciation of equipment and other minor office expenses.

General and administrative expenses consist of the following:

	Q1 Fiscal 2015	Q1 Fiscal 2014
	\$	\$
General and adminstrative expenses, excluding salaries	453,000	493,000
Salaries and benefits	157,000	56,000
Stock-based compensation	111,000	133,000
Depreciation of equipment	3,000	2,000
Total	724,000	684,000

G&A expenses, excluding salaries, decreased by \$40,000 due mainly to the decrease of \$141,000 in legal and audit fees compared to Q1 Fiscal 2014, offset by the increase of \$53,000 in consulting fees due to the search firm paid to identify an additional senior executive officer, a \$19,000 increase in directors fees, a \$19,000 increase in interest due to the government loan from the Province of Nova Scotia and a \$15,000 increase in foreign exchange loss.

Salaries and benefits increased by \$101,000 due mainly to the relocation of the Chief Executive Officer salary.

#### Business development expenses

The Corporation's business development activities decreased in Q1 Fiscal 2015 by \$146,000, compared to Q1 Fiscal 2014, to a total of \$153,000. This is due to a decrease of \$171,000 in consulting fees due to the departure of the business development consultant in September 2014. The Corporation hired a new Chief Business Officer to handle the responsibilities of business development. This is offset by an increase in marketing and public relations of \$13,000 due to the increased number of press releases and an increase in legal fees of \$10,000.

## CASH FLOWS, LIQUIDITY AND CAPITAL RESOURCES

At March 31, 2015, the Corporation had cash and cash equivalents of \$8,557,000 and working capital of \$9,085,000, compared to \$10,662,000 and \$10,456,000, respectively at December 31, 2014.

Since the Corporation's inception, the Corporation's operations have been financed through the issuance of shares, debt, revenue from animal health licenses, interest income on funds available for investment, government assistance and tax credits.

During the three months ended March 31, 2015, cash of \$2,038,000 was used in operating activities. This included the reported net loss of \$1,769,000 prior to being decreased for non-cash amortization, non-cash depreciation, non-cash accretion of long-term debt and non-cash stock-based compensation. The Corporation had a net use of cash of \$597,000 as a result of changes in working capital balances.

Sources of cash raised through financing activities were \$9,000 through the exercise of stock options. Use of cash through financing activities was \$16,000 in repayment of long-term debt.

During the three months ended March 31, 2015, the Corporation purchased \$61,000 worth of equipment for ongoing research and operating activities.

The Corporation aims to maintain adequate cash and cash resources to support planned activities which include the completion of the Phase 1b DPX-Survivac clinical trial program in patients with ovarian cancer, the Phase 2 DPX-Survivac clinical trial in patients with lymphoma, other research and development activities, business development efforts, administration costs, and intellectual property maintenance and expansion. At December 31, 2014, the Corporation had approximately \$9.8 million of existing and identified potential sources of cash including:

- cash and equivalents of \$8.6 million; and
- amounts receivable and investment tax credits receivable of \$1.2 million.

For Q1 Fiscal 2015, the Corporation's quarterly "cash burn rate" (defined as net loss for the period adjusted for non-cash transactions including amortization, depreciation, accretion of long-term debt, and stock-based compensation) was approximately \$1.4 million. The Corporation forecasts the cash burn rate to be between \$1.4 million to \$1.5 million per quarter over the next 12 months, as it executes the Phase 2 clinical trial for DPX-Survivac in lymphoma and the clinical studies for DPX-RSV.

It is common for early-stage biotechnology companies to require additional funding to further develop product-candidates until successful commercialization of at least one product candidate. Immunovaccine's product candidates are still in the early-development stage of the product cycle and therefore are not generating revenue to fund operations. The Corporation continuously monitors its liquidity position, the status of its development programs including those of its partners, cash forecasts for completing various stages of development, the potential to license or co-develop each vaccine candidate, and continues to actively pursue alternatives to raise capital, including the sale of its equity securities, debt and non-dilutive funding.

Management believes that its cash resources of \$8.6 million and additional potential cash resources of \$1.2 million will be sufficient to fund operations for the next twelve months to execute the strategy of executing the Phase 2 trial of DPX-Survivac in lymphoma and start the Phase 1 trial in DPX-RSV, while maintaining adequate working capital well into 2016. Management further believes there are discretionary expenditures within the current cash forecast which could be reduced in the event that the identified potential sources of cash are not realized or receipt is delayed. The Corporation continually reassesses the adequacy of its cash resources since should either positive

research results be obtained from existing research projects and/or potential collaboration opportunities identified, then additional funding may be required.

### **USE OF PROCEEDS**

The following table provides an update on the anticipated use of proceeds raised in the 2014 Public Offering, along with amounts actually expended.

(in millions)	Previously disclosed (\$)	Additional proceeds(1) (\$)	Spent to Date (\$)	Remaining to be spent (\$)
Clinical trial research in multiple indications, including ovarian cancer and lymphoma, as well as activities to ensure regulatory compliance of cancer vaccine candidates, DPX-Survivac and DPX-0907	1.5	1.0	0.6	1.9
Preclinical efficacy and safety studies of infectious disease vaccine candidates, formulation and analytical development, that include one or more of DPX-RSV, Ebola and anthrax	1.0	-	0.5	0.5
General Corporate Purposes	5.4	1.4	2.5	4.3
TOTAL	7.9	2.4	3.6	6.7

<sup>(1)</sup> Additional proceeds available due to partial exercise of the Over-Allotment Option and 2014 Private Placement

## CONTRACTUAL OBLIGATIONS

The following table outlines the contractual maturities and estimated maturities for long-term debt repayable based on a percentage of revenues for the Corporation's financial liabilities.

Contractual	Payments Due by Period					
Obligations	Total	Less than 1 year	1 - 3 years	4 - 5 years	After 5 years	
Accounts payable and accrued liabilities	933,545	933,545	-	-	-	
Amounts due to directors	56,834	56,834	-	-	-	
Long-term debt	14,217,048	192,171	378,024	3,953,322	9,693,531	
Operating Leases	245,225	155,676	89,549	-	-	
TOTAL	15,452,652	1,338,226	467,573	3,953,322	9,693,531	

## RELATED PARTY TRANSACTIONS

During the three months ended March 31, 2014, the Corporation was charged nil (three months ended March 31, 2014 - \$105,595) for business development consulting fees by a non-executive director. The non-executive director resigned from the Board of Directors on September 25, 2014.

# DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROLS OVER FINANCIAL REPORTING

For the first time this quarter, following the graduation of the Corporation to the Toronto Stock Exchange in November 2014, the Corporation's Chief Executive Officer and Chief Financial Officer will certify on the design of the disclosure controls and procedures ("DC&P") and the internal controls over financial reporting ("ICFR") of the Corporation. DC&P are intended to provide reasonable assurance that material information is gathered and reported to senior management to permit timely decisions regarding public disclosure and ICFR are intended to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with Canadian generally accepted accounting principles. The control framework used by the Chief Executive Officer and Chief Financial Officer of the Corporation to design the Corporation's ICFR is the Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission.

There have been no changes in the Corporation's ICFR that occurred during the three months ended March 31, 2015 that have materially affected or are reasonably likely to materially affect the Corporation's ICFR.

## SIGNIFICANT ESTIMATES

The audited annual consolidated financial statements as at December 31, 2014 have been prepared in accordance with IFRS. Significant accounting estimates used in preparing the unaudited interim condensed consolidated financial statements include the initial fair valuation of long-term debt, the calculation of the carrying amount of long-term debt, the scientific research and experimental development ("SRED") tax credits receivable, the fair value allocation of consideration for multiple element revenue arrangements, non-cash stock-based compensation expense, amortization and depreciation of intangibles and property and equipment, allocation of proceeds between common shares and warrants, and accrued liabilities.

Management has calculated the fair value of the interest-free government loans based on the forecast of the Corporation's future revenue, discounted at an appropriate discount rate. The estimates and assumptions used in the valuation model were based on current information available to management and a degree of management's judgment. A change in management's assumptions used to forecast future revenue or a change in the discount rate could have a significant impact on the fair value of these interest-free government loans. Management has estimated the SRED receivable based on its assessment of tax credits receivable on eligible expenditures incurred during the period and its experience with claims filed with and collected from the Canada Revenue Agency. Management has analyzed the amounts receivable listing for potentially uncollectible amounts and has allowed for all balances which collection is doubtful. Management has made estimates regarding when stock options might be exercised and stock price volatility in calculating non-cash stock based compensation. The timing for exercise of options is out of the Corporation's control and will depend on a variety of factors including the market value of the Corporation's shares and the financial objectives of the stock-based instrument holders. Management has made estimates about the expected useful lives of long-lived assets, and the expected residual values of the assets. Management has determined the allocation of proceeds between common shares and warrants based on the relative values of the shares and warrants issued. Through knowledge of the Corporation's activities in the three months ended March 31, 2015, management has estimated the amount of accrued liabilities to be recorded.

#### **OUTSTANDING SECURITIES**

The number of issued and outstanding common shares of the Corporation on May 12, 2015 is 91,780,802. The number of outstanding stock options on May 12, 2015 is 6,128,050. The outstanding stock options have a weighted average exercise price of \$0.69 per share and a weighted average remaining term of 2.18 years. The number of outstanding warrants on May 12, 2015 is 5,795,646. The outstanding warrants have a weighted average exercise price of \$1.17 per share and a weighted average remaining term of 0.92 years.

## INTELLECTUAL PROPERTY RIGHTS

The Corporation strives to protect its intellectual property in established, as well as emerging, markets around the world. The Corporation's intellectual property portfolio for its vaccine platform technology includes six patent families, the first of which contains six patents issued in four jurisdictions (US, Europe, Japan and Australia), one allowed patent application in Canada, and one pending patent application in the US. The five other families collectively contain ten patents issued in five countries (Europe, Australia, China, Japan and Singapore) and 36 pending patent applications in eleven jurisdictions. US Patent 6,793,923, issued in 2004, contains claims to the Corporation's platform, covering "any antigen, any adjuvant in any liposome and any oil". An additional patent application, extending the Corporation's patent portfolio to methods for improving the efficacy of a survivin vaccine in the treatment of cancer (including using the Corporation's DepoVax<sup>TM</sup> formulation), was submitted in 2013. The platform name is protected by trademarks in the US, Canada and Europe.

## Additional granted patents include:

- European Patent 1,333,858, Patent granted February 8, 2006;
- Australian Patent 2002214861, Patent granted January 11, 2007;
- Japanese Patent 4164361, Patent granted August 1, 2008;
- United States Patent 7,824,686, Patent granted November 2, 2010;
- Australian Patent, 2006301891, Patent granted December 20, 2012;
- Chinese Patent 200680036783, Patent granted September 18, 2013;
- European Patent 1,948,225, Patent Granted December 11, 2013;
- United States Patent 8,628,937, Patent granted January 14, 2014;
- Australian Patent 2008303023, Patent granted April 24, 2014;
- Japanese Patent 5528703, Patent granted April 25, 2014;
- Australian Patent 2008307042, Patent granted May 15, 2014;
- Singaporean Patent 166901, Patent granted May 27, 2014
- Japanese Patent 5591705, Patent granted August 8, 2014;
- European Patent 2,296,696, Patent granted August 27, 2014; and
- Australian Patent 2009253780, Patent granted November 27, 2014.

Since 2008, the Corporation has filed five Patent Cooperation Treaty ("PCT") applications relating to the Corporation's technologies, some or all of which have now been filed in the US, Europe, Japan, Canada, Australia, China, India, Brazil, Israel, Hong Kong and Singapore. These PCT applications cover specific DepoVax<sup>TM</sup> compositions with broad utility for infectious diseases and cancer applications. Some of these applications have issued to patent. These patents, together with the other pending applications if allowed, extend patent protection for some or all DepoVax<sup>TM</sup>-based vaccines approximately up to the year 2028 or 2032. The latest PCT application, covering methods for improving the efficacy for a survivin vaccine in the treatment of cancer, could extend patent protection for these uses of DepoVax<sup>TM</sup>-based survivin vaccines until the year 2033.

The licensing agreement between the Corporation and Immunotope for the seven antigens included in the DPX-0907 vaccine candidate stipulates that the Corporation will assume the cost of prosecuting and maintaining the fees associated with patent applications and issued patents relating to the peptide antigens under license. These antigens are protected by two issued patents in the US and pending patent applications in the US and Europe. A European patent application was recently refused by the European Patent Office, but a divisional application is pending in Europe. The DPX-0907 vaccine candidate remains protected by granted patents and patent applications (Canada, US, Europe, Japan, Australia, China, India, Brazil, Israel, Hong Kong and Singapore) relating to the core vaccine delivery platform, as well as US patents (7,083,789 and 7,919,467) and patent applications in the US and Europe relating to the seven peptide antigens.

#### FINANCIAL INSTRUMENTS

Financial assets and liabilities are recognized when the Corporation becomes a party to the contractual provisions of the instrument. Financial assets are no longer recognized when the rights to receive cash flows from the assets have expired or have been transferred and the Corporation has transferred substantially all risks and rewards of ownership.

Financial assets and liabilities are offset and the net amount is reported in the statement of financial position when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis, or realize the asset and settle the liability simultaneously.

The Corporation recognizes financial instruments based on their classification. Depending on the financial instruments' classification, changes in subsequent measurements are recognized in net loss or other comprehensive loss.

The Corporation has implemented the following classifications:

- Cash and cash equivalents and amounts receivable are classified as loans and receivables. After their initial fair value measurement, they are measured at amortized cost using the effective interest method; and
- Accounts payable and accrued liabilities, amounts due to directors and long-term debt are classified as
  other financial liabilities. After their initial fair value measurement, they are measured at amortized cost
  using the effective interest method.

#### RISK ASSESSMENT

The Corporation's activities are subject to certain risk factors and uncertainties that generally affect development-stage biotechnology companies. Management defines risk as the evaluation of the probability that an event might happen in the future that could negatively affect the financial condition, results of operation or perspectives of the Corporation. The success of the Corporation will depend, without limitation, on its ability to:

- achieve or maintain profitability after incurring significant losses since inception and expect to incur losses for the foreseeable future;
- obtain substantial funding when needed before being forced to delay, reduce, terminate or eliminate product development programs;
- raise additional capital on reasonable terms without causing significant dilution to existing shareholders, restrict operations or require the Corporation to relinquish rights to its technologies or product candidates;
- obtain positive results of clinical trials, including clinical trials on DPX-Survivac and DPX-0907, as the Corporation depends heavily on their success;
- demonstrate safety and efficacy with its product candidates to the satisfaction of the FDA or similar regulatory authorities outside the United States, so that it does not have to incur additional costs or experience delays in completing the development and commercialization of its products;
- achieve development goals and meet set time frames, including enrollment of patients in clinical trials;
- obtain positive results of clinical trials without serious adverse or inappropriate side effects;
- obtain market acceptance of its product by physicians, patients, healthcare payors and others in the medical community for commercial success;
- establish sales and marketing capabilities or enter into agreements with third parties to sell and market its product candidates;
- discover, develop or commercialize its products before its competition does;
- commercialize any products under favourable pricing regulations, third-party reimbursement practices or healthcare reform initiatives;
- continue research and commercialization of its product candidates without relying on government funding;
- market products without product liability lawsuits;
- market the product candidate that has the greater likelihood of success and profitability;
- establish collaborations with third parties, including with third parties for the development and commercialization of its product candidates;
- satisfactorily collaborate with third parties for the conduct of its clinical trials;
- secure the raw ingredients, intermediate drug substances and specialized equipment necessary for the production of its product candidates;
- commercially manufacture its products;

- preserve its intellectual property rights and comply with its obligations under its intellectual property licenses with third parties;
- successfully protect its intellectual property against competition infringement and/or protect itself against third party allegations of the Corporation infringing on their intellectual property;
- protect its trade secrets and intellectual property without spending substantial resources or distracting key personnel from their normal responsibilities;
- obtain regulatory approval of product pipeline, including regulatory approval in international jurisdictions;
- comply with environmental, health and safety laws and regulations;
- market its product without restrictions or problems with its product after its approved;
- develop legitimate relationships with its customers and third-party payors;
- obtain market approval and commercialize its product candidates with recently enacted and future legislation;
- retain key executives and attract, retain and motivate qualified personnel;
- establish or maintain strategic collaborations with third parties; and
- manage its growth as it expands its development, regulatory, manufacturing and sales and marketing capabilities.

The risks identified above do not include all possible risks as there may be other risks of which management is currently unaware. The above risks and other general risks and uncertainties relating to the Corporation and its activities are more fully described in the Annual Information Form of the Corporation for the year ended December 31, 2014, under the heading "Risk Factors and Uncertainties".

#### OFF BALANCE SHEET ARRANGEMENTS

The Corporation was not party to any off balance sheet arrangements as of March 31, 2015.

#### ADDITIONAL INFORMATION

Additional information relating to Immunovaccine, including Immunovaccine's December 31, 2014 annual information form and other disclosure documents, are available on SEDAR at www.sedar.com.