First Quarter Report

March 31, 2022

MANAGEMENT DISCUSSION & ANALYSIS

March 31, 2022

May 4, 2022

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This discussion and analysis should be read in conjunction with the unaudited condensed interim consolidated financial statements of Oncolytics Biotech® Inc. as at and for the three months ended March 31, 2022 and 2021, and should also be read in conjunction with the audited consolidated financial statements and Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") contained in our annual report for the year ended December 31, 2021. The financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB"). Unless otherwise indicated, all references to "$" and "dollars" in this discussion and analysis mean Canadian dollars.

FORWARD-LOOKING STATEMENTS

The following discussion contains forward-looking statements, within the meaning of Section 21E of the United States *Securities Exchange Act of 1934, as amended* and forward-looking information under applicable Canadian securities laws (such forward-looking statements and forward-looking information are collectively referred to herein as "forward-looking statements"). Forward-looking statements, including: our belief as to the potential and mode of action of pelareorep, an intravenously delivered immuno-oncolytic virus, as a cancer therapeutic; our expectation that we will incur substantial losses and will not generate significant revenues until and unless pelareorep becomes commercially viable; our business strategy, goals, focus and objectives for the development of pelareorep, including our immediate primary focus on advancing our program in hormone receptor-positive / human epidermal growth factor 2-negative metastatic breast cancer to a phase 3 licensure-enabling study, and our plans to explore other registration program opportunities; the impact of the COVID-19 pandemic on our research and development activities, business operations and financial condition, our plans to continue to monitor COVID-19 and its impact on our industry and business and to collaborate with our investigators, partners, and vendors to minimize its effect and to ensure the safety of patients and employees, minimize the effect of supply chain challenges, and maintain the advancement of our clinical programs; our expectation that the measures we are taking in response to COVID-19 will allow us to adequately respond to any COVID-19-related challenges that may arise; our belief as to the opportunities for the potential expansion of our clinical program along with business development and partnering to address a broad range of cancers in combination with a variety of partner therapies; our plan to proactively manage all aspects of the development of our clinical trial program, our translational science program, our manufacturing process and pelareorep supply, and our intellectual property; our plans respecting regulatory approval for pelareorep; our planned clinical development program, including the timing thereof; our expectations regarding the anticipated benefits and value to us of additional clinical data; our belief that completion of the Adlai Nortye bridging clinical trial will allow for future clinical development in China; our current clinical development approach; our exploration of additional registration program opportunities; our expectations as to the purpose, design, outcomes and benefits of our current or pending clinical trials involving pelareorep; our expectations regarding enrollment under our various clinical trials; our expectations respecting the delivery of additional clinical data and the timing thereof; our anticipated milestones and catalysts; our planned 2022 development activity for pelareorep; our 2022 manufacturing program; our anticipated 2022 cash requirements to fund our operations; our anticipated 2022 expenses relating to clinical trials, manufacturing and related process development, intellectual property, translational science, personnel-related, share-based compensation and other and operating expenses; our plans respecting the maintenance of adequate cash reserves to support our planned activities; our anticipated cash usage in 2022 and the factors that will affect our 2022 cash usage; our plans for funding our capital expenditure requirements; our approach to credit rate, interest rate, foreign exchange and liquidity risk mitigation; the effectiveness of our internal control systems; and other statements that are not historical facts or which are related to anticipated developments in our business and technologies. In any forward-looking statement in which we express an expectation or belief as to future results, such expectations or beliefs are expressed in good faith and are believed to have a reasonable basis, but there can be no assurance that the statement or expectation or belief will be achieved. Forward-looking statements, involve known and unknown risks and uncertainties, which could cause our actual results to differ materially from those in the forward- looking statements. We may be impacted by business interruptions resulting from COVID-19 coronavirus, including operating, manufacturing supply chain, clinical trial and project development delays and disruptions, labor shortages, travel and shipping disruption and shutdowns (including as a result of government regulation and prevention measures). It is unknown whether and how the Company may be affected if the COVID-19 pandemic persists for an extended period of time. We may incur expenses or delays relating to such events outside of our control, which could have a material adverse impact on our business, operating results and financial condition.

Such risks and uncertainties include, among others, the need for and availability of funds and resources to pursue research and development projects, the efficacy of pelareorep as a cancer treatment, the success and timely completion of clinical studies and trials, our ability to successfully commercialize pelareorep, uncertainties related to the research, development and

manufacturing of pelareorep, uncertainties related to competition, changes in technology, the regulatory process and general changes to the economic environment.

With respect to the forward-looking statements made within this MD&A, we have made numerous assumptions regarding among other things: our ability to recruit and retain talented employees, our continued ability to obtain financing to fund our clinical development plan, our ability to receive regulatory approval to commence enrollment in the clinical studies which are part of our clinical development plan, our ability to maintain our supply of pelareorep and future expense levels being within our current expectations.

Investors should consult our quarterly and annual filings with the Canadian and U.S. securities commissions for additional information on risks and uncertainties relating to the forward-looking statements. Forward-looking statements are based on assumptions, projections, estimates, and expectations of management at the time such forward-looking statements are made, and such assumptions, projections, estimates and/or expectations could change or prove to be incorrect or inaccurate. Investors are cautioned against placing undue reliance on forward-looking statements. We do not undertake any obligation to update these forward-looking statements except as required by applicable law.

First Quarter 2022 Pelareorep Development Update

Oncolytics Biotech Inc. is a Development Stage Company

Since our inception in April of 1998, Oncolytics Biotech Inc. has been a development-stage company focusing our research and development efforts on pelareorep, an intravenously delivered immunotherapeutic agent with the potential to treat a variety of cancers. We have not been profitable since our inception and expect to continue to incur substantial losses as we continue research and development efforts. We do not expect to generate significant revenues until, and unless, pelareorep becomes commercially viable.

Our goal each year is to advance pelareorep through the various steps and stages of development required for potential pharmaceutical products. In order to achieve this goal, we proactively manage all aspects of the development of our clinical trial program, our translational science program, our manufacturing process and pelareorep supply, and our intellectual property.

Potential Impact of COVID-19

During the first three months of 2022, the ongoing coronavirus infectious disease 2019 (COVID-19) pandemic has touched elements of our business operations. COVID-19, including its variants, have created challenges affecting our clinical trial activities, including patient enrollment and site activation, along with our manufacturing supply chain. Some of the challenges have included, among other things, patients choosing to delay treatments, clinical sites suspending study activity temporarily, vendor and collaborator staff shortages, and raw material and components delays. While these challenges have largely impacted the timing of certain activities, we believe the impact on our overall business, to date, has not been significant. As well, we believe our financial condition, liquidity, and longer-term strategic development remain on track. However, COVID-19 has caused and may continue to cause significant fluctuations in stock markets, global economic activity, and healthcare systems. The scale and duration of these developments remain uncertain and could affect our ability to finance and execute our operations.

The extent to which COVID-19 might prolong and/or cause significant disruptions to our business and materially impact our results of operations and our ongoing and planned clinical studies will depend on future developments. These future developments are highly uncertain and cannot be predicted, such as the duration and severity of outbreaks, including future potential waves or cycles, travel restrictions and social distancing, business closures or business disruptions, and the effectiveness of actions taken to contain and treat the disease and to address its impact, including on financial markets. A lack of coordinated responses on risk mitigation and vaccination deployment with respect to the COVID-19 pandemic could result in significant increases to the duration and severity of the pandemic and could have a corresponding negative impact on our business.

We will continue to monitor COVID-19 and its impact on our industry and business. We are collaborating with our investigators, partners, and vendors to minimize its effect and to ensure the safety of patients and employees, minimize the effect of supply chain challenges, and maintain the advancement of our clinical programs. We expect these measures will allow us to adequately respond to any COVID-19-related challenges that may arise. Moving forward, we plan to remain in contact with relevant stakeholders and keep the market apprised of any new information that may materially impact clinical timelines.

Clinical Trial Program

The ultimate objective of our clinical development program is to obtain regulatory approval for pelareorep and is based on the compelling efficacy data from previous studies in breast cancer, pancreatic cancer, colorectal cancer, myeloma, and other malignancies. Our primary focus continues to be on advancing our program in hormone receptor-positive / human epidermal growth factor 2-negative (HR+/HER2-) metastatic breast cancer (mBC) to a phase 3 licensure-enabling study. In addition, we are looking to explore other registration program opportunities through the GOBLET platform study.

Our current clinical development approach centers on pelareorep's ability to stimulate immune-mediated tumor killing, particularly in combination with immune checkpoint inhibitors and other immune-based therapies. We believe this approach has the most promise for generating clinically impactful data and offers the most expeditious path to approval. As our clinical development program advances, we anticipate that pelareorep's ability to enhance innate and adaptive immune responses when combined with different classes of immunotherapies will play an increasing role. This greatly increases the opportunities for expansion of our clinical program along with business development and partnering to address a broad range of cancers in combination with a variety of partner therapies.

First Quarter 2022 Developments

Clinical studies aiding our breast cancer program

Co-development Agreement with Pfizer Inc. and Merck KGaA, Darmstadt, Germany: BRACELET-1 study
In 2019, we entered into a co-development agreement with Merck KGaA, Darmstadt, Germany and Pfizer Inc. to co-develop pelareorep in combination with paclitaxel and avelumab (Bavencio®), a human anti-PD-L1 antibody, for the treatment of HR+/ HER2- mBC. This phase 2 clinical trial is jointly funded by Oncolytics and Pfizer. The study, known as BRACELET-1, is a randomised open-label study planned to enroll 48 patients into three cohorts: paclitaxel alone, paclitaxel in combination with pelareorep, and paclitaxel in combination with both pelareorep and avelumab. PrECOG LLC, a leading cancer research network, is managing the BRACELET-1 study. We dosed the first patient in 2020.

The study is examining the expression of immune-related biomarkers to identify changes in T cell population between pretreatment and on-therapy biopsies and seeks to confirm our previously identified biomarker. It is designed to assess efficacy in terms of overall response rate at week 16 per RECIST 1.1. The safety of the combination is also being evaluated. The results of this study may provide an opportunity to add an arm to our proposed registration study that includes a checkpoint inhibitor in addition to the chemotherapy-pelareorep combination. Furthermore, the results of the BRACELET-1 study may provide important confirmatory data in the same patient population as our IND.213 study, for which we presented a statistically significant near doubling of overall survival with pelareorep treatment in HR+/HER2- breast cancer patients at the 2017 American Association for Cancer Research (AACR) Annual Meeting. These endpoints, including the biomarker data, are expected to further de-risk our contemplated registration study, permitting for a smaller study with a higher likelihood of clinical success.

In the first quarter of 2022, we continued patient enrollment and treatment activities.

Licensing Agreement with Adlai Nortye Biopharma Co., Ltd: bridging clinical trial
Under our regional licensing agreement (the "Licensing Agreement") with with our partner, Adlai Nortye Biopharma Co., Ltd. ("Adlai"), Adlai will have exclusive development and commercialization rights to pelareorep in certain Asian regions and we are entitled to certain milestone payments. The bridging clinical trial is evaluating the safety, tolerability, and preliminary efficacy of pelareorep-paclitaxel combination therapy in Chinese patients with advanced or metastatic breast cancer. Completion of the study allows for future clinical development in China.

In the first quarter of 2022, Adlai advanced to the third and final dose escalation cohort of the bridging clinical trial. The trial's first two cohorts completed their dose escalation evaluation periods and indicated pelareorep in combination with paclitaxel was well-tolerated with no new safety signals observed to date. The dosing regimens for the second and third cohorts are equivalent to those administered in the IND.213 study and the BRACELET-1 study, respectively.

Additional checkpoint inhibitor combinations

Triple-negative breast cancer study combining pelareorep and retifanlimab: IRENE study
In the first quarter of 2022, we continued patient enrollment activities in our investigator-sponsored trial (IST) managed by Rutgers Cancer Institute of New Jersey. This single-arm, open-label, phase 2 trial, known as IRENE, is investigating the use of pelareorep in combination with Incyte Corporation's anti-PD-1 checkpoint inhibitor, retifanlimab, in patients with metastatic triple-negative breast cancer (TNBC). This study plans to enroll 25 patients.

The IRENE study represents an expansion of our lead breast cancer program into a new disease subtype (TNBC). In addition to investigating the safety and efficacy of pelareorep-anti-PD-1 combination treatment in TNBC patients, the study is also evaluating changes in PD-L1 expression and correlations between treatment outcomes and peripheral T cell clonality, a previously identified biomarker of pelareorep response that may enable the success of future pivotal studies by facilitating the patient selection process.

Collaboration with Roche and AIO-Studien-gGmbH: GOBLET platform study
In 2021, we received approval for our GOBLET study from the German federal agency. This phase 1/2 trial, announced in 2020, is a collaboration with Roche and AIO-Studien-gGmbH, a leading academic cooperative medical oncology group based in Germany. The study is investigating the use of pelareorep, in combination with Roche's anti-PD-L1 checkpoint inhibitor atezolizumab (Tecentriq®), in patients with metastatic pancreatic, metastatic colorectal and advanced anal cancers. The study is expected to be conducted at up to 25 centers in Germany. The co-primary endpoints of the study are safety and overall response rate at week 16. Key secondary and exploratory endpoints include additional efficacy assessments and evaluation of potential blood-based biomarkers (T cell clonality and CEACAM6). Approximately 55 patients are planned for enrollment across four separate cohorts: pelareorep in combination with atezolizumab, gemcitabine, and nab-paclitaxel in 1st-line metastatic pancreatic cancer patients, pelareorep in combination with atezolizumab in 1st-line metastatic colorectal cancer patients that are diagnosed as MSI-high (microsatellite instability), pelareorep in combination with atezolizumab and TAS-102 in 3rd-line metastatic colorectal cancer patients, and pelareorep in combination with atezolizumab in 2nd-line advanced and unresectable anal cancer patients.

In the first quarter of 2022, we completed enrollment of the three-patient safety run-in requirements for cohort 1 (first-line metastatic pancreatic) and cohort 3 (third-line metastatic colorectal cancer). The two safety run-ins were successfully completed following an evaluation by the study's Data Safety Monitoring Board (DSMB), which noted no safety concerns and recommended that the study proceed to full enrollment. In addition, the Paul Ehrlich Institute (PEI; Germany's medical regulatory body) cleared the pancreatic cancer cohort for full enrollment. We also continued with patient screening as well as study start-up activities, including selecting and readying clinical trial sites.

CAR T Preclinical Activities

In 2021, we published results at the CAR-TCR Summit Europe 2021, in collaboration with investigators at the Mayo Clinic, showing that loading chimeric antigen receptor (CAR) T cells with pelareorep vastly improved their persistence and efficacy in a murine solid tumor model in contrast to preclinical studies using intratumoral infection with the VSV oncolytic virus that weakened CAR T cells. In the first quarter of 2022, we continued with activities to develop and evaluate pelareorep and CAR T cell combination therapy.

Other Preclinical Activities

In March 2022, we published preclinical and patient data on pelareorep in the peer-reviewed journal *Immunology*. The paper, entitled "Oncolytic virus treatment differentially affects the CD56^{dim} and CD56^{bright} NK cell subsets *in vivo* and regulates a spectrum of human NK cell activity", described *in vitro* studies evaluating pelareorep's effects on Natural Killer (NK) cells as well as analysis of blood samples from patients with colorectal liver metastases taken prior to and after treatment with pelareorep. Results showed pelareorep treatment led to the activation of NK cells, which are known to directly kill cancer cells while stimulating adaptive anti-tumor immunity. The beneficial effects of pelareorep were observed both in patient and *in vitro* samples and were mediated by type 1 interferon (IFN-1) signaling, a key pathway involved in immunoregulation and tumor cell recognition.

Post Q1 2022 Developments

Relapsed/refractory multiple myeloma study combining pelareorep and bortezomib

In April 2022, we featured data from a completed phase 1b trial evaluating the combination of pelareorep and the proteasome inhibitor bortezomib in relapsed/refractory multiple myeloma patients at the AACR Annual Meeting 2022. Results from the trial showed that the combination was well-tolerated and led to prolonged progression-free survival (PFS) of over three years in a subset of patients. These data also demonstrated a clinical response correlating with changes in T cell clonality and post-treatment increases in innate and adaptive immune cells within the tumor microenvironment (TME). Additionally, biomarker analyses showed anti-cancer immune cells clustering more closely around cancer cells containing pelareorep compared to those that did not. Collectively, these results indicate that the sustained clinical benefits observed were driven by pelareorep's recruitment of anti-cancer immune cells into the TME.

Glioblastoma multiforme study combining pelareorep and GM-CSF: ReoGlio study

In April 2022, we published long-term survival data from ReoGlio, an investigator-sponsored phase 1b trial evaluating the combination of pelareorep and granulocyte-macrophage colony-stimulating factor (GM-CSF) alongside standard chemoradiotherapy and adjuvant temozolomide for the treatment of glioblastoma multiforme (GBM) at the AACR Annual Meeting 2022. The results showed a substantial and durable efficacy signal in newly diagnosed GBM patients and demonstrated the safety and tolerability of the studied treatment combination in this indication. Key data and conclusions included:

- Evaluable patients treated with pelareorep at dose level-2 ($3x10^{10}$ $TCID_{50}$) had a median overall survival (mOS) of 16.1 months and a 24-month survival rate of 50% (n=6).
- Evaluable patients treated with pelareorep at dose level-1 ($1x10^{10}$ $TCID_{50}$) had a mOS of 12.6 months and a 24-month survival rate of 16.7% (n=6).
- Across both dose levels, mOS was 13.1 months and the 24-month survival rate was 33% (n=12)
- One patient treated at dose level-2 remains alive at 42 months.
- The studied treatment combination was deemed safe and well-tolerated at both dose levels by a Safety Review Committee that included two independent physicians.

Preclinical data combining pelareorep with CAR T cell therapy

In April 2022, we published preclinical data demonstrating the synergistic anti-cancer activity of pelareorep combined with CAR T cell therapy in solid tumors in *Science Translational Medicine* in collaboration with researchers at several institutions, including the Mayo Clinic and Duke University. The paper, entitled "Oncolytic virus-mediated expansion of dual-specific CAR T cells improves efficacy against solid tumors in mice", evaluated the persistence and efficacy of pelareorep-loaded CAR T cells ("CAR/Pela therapy") in multiple murine solid tumor models. The effects of combining CAR/Pela therapy with a subsequent intravenous dose of pelareorep ("pelareorep boost") were also investigated. Key data and conclusions from the paper included:

- The persistence and anti-cancer activity of CAR T cells improved drastically when loaded with pelareorep. Compared to either treatment alone, treatment with CAR/Pela therapy led to statistically significant survival benefits in murine skin and brain cancer models.
- CAR/Pela therapy followed by a pelareorep boost led to enhanced efficacy in murine skin and brain cancer models and tumor cures in >80% of treated mice in each model.
- Loading CAR T cells with pelareorep led to improved cancer cell targeting and prevented antigen escape *in vivo* by generating CAR T cells with dual specificity that target their designed antigen and the native T cell receptor antigen. These results indicate that CAR/Pela therapy may provide longer-lasting therapeutic benefits compared to treatment with CAR T cells alone.

GOBLET platform study safety run-ins update

In April 2022, we received clearance from PEI for full enrollment of the third-line colorectal cancer cohort. As the trial's anal cancer and first-line metastatic colorectal cancer cohorts do not include safety run-ins, all of the trial’s four cohorts are now cleared for full enrollment.

Biomarker data from collaboration with SOLTI: AWARE-1 study

In May 2022, we presented new clinical biomarker analyses from AWARE-1's first two cohorts at the European Society for Medical Oncology (ESMO) Breast Cancer Meeting, which demonstrated pelareorep's immunotherapeutic effects, synergy with checkpoint inhibition, and potential to improve the outlook for patients with HR+/HER2- breast cancer. Patients in AWARE-1's first two cohorts were treated with pelareorep and the aromatase inhibitor letrozole without (cohort 1), or with (cohort 2), the PD-L1 checkpoint inhibitor atezolizumab approximately 21 days prior to the surgical resection of their tumors. Key data and conclusions included:

- Gene expression analyses showed 100% of evaluable patients had a Risk of Recurrence Score (ROR-S) classified as "low" at surgery vs. 55% with a "low" ROR-S at baseline
- Treatment with pelareorep with (cohort 2) or without (cohort1) atezolizumab led to the conversion of tumors from the more aggressive luminal B to the luminal A subtype, which is associated with improved clinical outcomes
    - 100% of evaluable cohort 2 tumors were luminal A at surgery (21 days post-treatment) vs. 70% at baseline (pre-treatment)
    - 70% of evaluable cohort 1 patients had luminal A tumors at surgery vs. 40% at baseline
- Pooled analysis of tumors from cohorts 1 and 2 shows a statistically significant 4-fold post-treatment increase in the average expression of caspase 3, which is a marker of apoptotic cell death
- Pooled analysis across cohorts 1 and 2 shows statistically significant increases in markers of T cell activation and no significant changes in markers of T cell exhaustion from baseline to surgery

Manufacturing and Process Development

During the first quarter of 2022, we continued distribution and storage activities with the product supply and completed a product fill. As well, we continued our activities to maintain clinical and commercial production capabilities to manufacture pelareorep. Ongoing bulk manufacturing and expanded filling capabilities are both part of the process validation master plan. Process validation is required to ensure that the resulting product meets required specifications and quality standards and will form part of our submission to regulators, including the FDA, for product approval.

Intellectual Property

At the end of the first quarter of 2022, we had been issued over 242 patents including 24 US and 11 Canadian patents, as well as issuances in other jurisdictions. We have an extensive patent portfolio covering the oncolytic reovirus that we use in our clinical trial program, including a composition of matter patent that expires in 2028. Our patent portfolio also includes methods for treating proliferative disorders using modified adenovirus, HSV, parapoxvirus and vaccinia virus.

Financing Activity

U.S. "at-the-market" equity distribution

During the three months ended March 31, 2022, we sold 2,431,300 common shares for gross proceeds of US$4,174,022 at an average price of US$1.72. We received, net of commissions of US$125,221, proceeds of US$4,048,801. In total, we incurred share issue costs (including commissions) of $176,410.

Financial Impact

We estimated at the beginning of the first quarter of 2022 that our cash requirements to fund our operations for the year will be between $28 - $30 million. Our actual cash usage for the three months ended March 31, 2022 was $6,252,125 for operating activities, $35,521 for the acquisition of property and equipment and $88,836 for the payment of office leases. Our net loss for the period was $6,778,521.

Cash Resources

We ended the first quarter of 2022 with cash and cash equivalents totaling $39,483,022 (see *"Liquidity and Capital Resources")*.

Pelareorep Development for the Remainder of 2022

Our planned 2022 development activity for pelareorep focuses on our clinical development plan along with our manufacturing and intellectual property programs. Our primary 2022 clinical objectives will focus on BRACELET-1 and GOBLET enrollment, and the assessment of our clinical data to help form the nature of our registration strategy, our path to approval and other possible clinical development opportunities. While we are making every effort to maintain the timing of our future milestones, the full impact of the COVID-19 pandemic on these milestones is not known. Patient safety is our foremost concern and we will provide updates as they become known.

Our 2022 manufacturing program includes assessing a process development plan investigating application of single-use equipment to our drug substance production process. We also expect to fill products and perform the associated analytical testing, carry out process development activities as well as labeling, packaging and shipping of pelareorep to our various clinical sites for ongoing and upcoming activities. These activities are consistent with our process validation master plan. Finally, our intellectual property program includes filings for additional patents along with monitoring activities required to protect our patent portfolio.

We currently estimate the cash requirements to fund our operations for 2022 will be approximately $28 - $33 million but will depend on our ultimate clinical program. (see *"Liquidity and Capital Resources"*).

Results of Operations

(for the three months ended March 31, 2022 and 2021)

Net loss for the three months ended March 31, 2022 was $6,778,521 compared to $6,434,745 for the three months ended March 31, 2021.

Research and Development Expenses ("R&D")

	2022	2021
Clinical trial expenses	**$ 1,093,294**	$ 765,632
Manufacturing and related process development expenses	**703,275**	377,949
Intellectual property expenses	**205,414**	277,426
Translational science expenses	**109,387**	51,202
Personnel-related, share-based compensation and other expenses	**1,596,626**	1,286,805
Research and development expenses	**$ 3,707,996**	$ 2,759,014

Clinical Trial Program

	2022	2021
Clinical trial expenses	**$ 1,093,294**	$ 765,632

Our clinical trial expenses were $1,093,294 for the three months ended March 31, 2022 compared to $765,632 for the three months ended March 31, 2021. During the three months ended March 31, 2022, costs related to our breast cancer program included our portion (net of Pfizer's contribution) of BRACELET-1 patient enrollment and treatment activities. We also incurred AWARE-1 direct patient and data analysis expenses. During the three months ended March 31, 2021, costs related to our breast cancer program included our portion (net of Pfizer's contribution) of BRACELET-1 patient enrollment and treatment activities as well as AWARE-1 patient sample analysis expenses.

During the three months ended March 31, 2022, we also incurred GOBLET trial start-up, patient enrollment and treatment costs. During the three months ended March 31, 2021, we also incurred GOBLET trial initiation costs, costs related to our ongoing ISTs, and data management consulting costs.

We still expect our clinical trial expenses to increase in 2022 compared to 2021. During 2022, we will focus on BRACELET-1 and GOBLET enrollment, and the assessment of our clinical data to help form the nature of our registration strategy, our path to approval and possible other clinical development opportunities.

Manufacturing & Related Process Development ("M&P")

	2022	2021
Product manufacturing expenses	**$ 516,930**	$ 324,928
Process development expenses	**186,345**	53,021
Manufacturing and related process development expenses	**$ 703,275**	$ 377,949

Our M&P expenses for the three months ended March 31, 2022 were $703,275 compared to $377,949 for the three months ended March 31, 2021. During the three months ended March 31, 2022, our product manufacturing costs primarily related to

shipping and storage costs of our bulk and vialed product, completion of a product fill and various routine testings. During the three months ended March 31, 2021, our product manufacturing costs primarily related to shipping and storage costs of our bulk and vialed product as well as drug product release testing related to a product fill completed at the end of 2020.

Our process development expenses for the three months ended March 31, 2022 were $186,345 compared to $53,021 for the three months ended March 31, 2021. During the three months ended March 31, 2022, our process development activities focused on analytical development. During the three months ended March 31, 2021, our process development activities focused on stability studies and analytical development.

We still expect our M&P expenses to increase in 2022 compared to 2021. In 2022, we intend to assess a process development plan investigating application of single-use equipment to our drug substance production process. We also expect to fill products and perform the associated analytical testing, carry out process development activities, as well as labeling, packaging and shipping of pelareorep to our various clinical sites for ongoing and upcoming activities. These activities are consistent with our process validation master plan.

Intellectual Property Expenses

	2022	2021
Intellectual property expenses	**$ 205,414**	$ 277,426

Our intellectual property expenses for the three months ended March 31, 2022 were $205,414 compared to $277,426 for the three months ended March 31, 2021. The change in intellectual property expenditures mainly reflected the lapsing of non-core patents in certain jurisdictions and the timing of filing costs associated with our patent base. At March 31, 2022, we had been issued over 242 patents including 24 U.S. and 11 Canadian patents, as well as issuances in other jurisdictions.

We still expect our intellectual property expenses to remain consistent in 2022 compared to 2021.

Translational Science

	2022	2021
Translational science expenses	**$ 109,387**	$ 51,202

Our translational science expenses for the three months ended March 31, 2022 were $109,387 compared to $51,202 for the three months ended March 31, 2021. During the three months ended March 31, 2022 and 2021, our translational science expenses included studies investigating the interaction of the immune system and pelareorep, including bispecific antibodies and CAR T therapy in 2022.

We still expect that our translational science expenses in 2022 will increase compared to 2021. We expect to complete our ongoing activities carried over from 2021 and will continue to be selective in the types of new programs we enter into in 2022.

Personnel-Related, Share-Based Compensation and Other Expenses

	2022	2021
R&D personnel-related expenses	**$ 1,226,343**	$ 918,180
Share-based compensation	**359,316**	361,603
Other R&D expenses	**10,967**	7,022
Personnel-related, share-based compensation and other expenses	**$ 1,596,626**	$ 1,286,805

Our personnel-related, share-based compensation and other expenses for the three months ended March 31, 2022 were $1,596,626 compared to $1,286,805 for the three months ended March 31, 2021. The change in R&D personnel-related expenses for the three months ended March 31, 2022 compared to the three months ended March 31, 2021 was primarily due to an increase in headcount as we expand our U.S. office and higher recruitment-related costs.

Our non-cash share-based compensation and other R&D expenses for the three months ended March 31, 2022 remained consistent with the three months ended March 31, 2021.

We still expect our personnel-related, share-based compensation and other expenses in 2022 to increase compared to 2021.

Operating Expenses

	2022	2021
Public company related expenses	**$ 1,564,130**	$ 2,087,151
Office expenses	**660,731**	651,532
Share-based compensation	**279,665**	296,473
Depreciation - property and equipment	**23,952**	20,550
Depreciation - right-of-use assets	**73,612**	86,184
Operating expenses	**$ 2,602,090**	$ 3,141,890

Our operating expenses for the three months ended March 31, 2022 were $2,602,090 compared to $3,141,890 for the three months ended March 31, 2021. Public company related expenses include costs associated with investor relations, business development and financial advisory activities, legal and accounting fees, corporate insurance, director fees and transfer agent and other fees relating to our Canadian and U.S. stock listings. During the three months ended March 31, 2022, our public company related expenses were $1,564,130 compared to $2,087,151 for the three months ended March 31, 2021. The change was primarily due to lower investor relations activities.

Office expenses include compensation costs (excluding share-based compensation), rent related to short-term leases and other office related costs. During the three months ended March 31, 2022, our office expenses of $660,731 remained consistent with $651,532 for the three months ended March 31, 2021.

During the three months ended March 31, 2022, our non-cash share-based compensation of $279,665 remained consistent with $296,473 for the three months ended March 31, 2021.

We still expect our operating expenses in 2022 to increase compared to 2021.

Foreign Exchange Loss

	2022	2021
Foreign exchange loss	**$ 474,120**	$ 390,554

Our foreign exchange loss for the three months ended March 31, 2022 was $474,120 compared to $390,554 for the three months ended March 31, 2021. The foreign exchange loss in the three months ended March 31, 2022 and 2021 was primarily due to unrealized translation loss on U.S. dollar denominated cash balances.

Commitments

As at March 31, 2022, we were committed to payments totaling approximately $18,763,403 for activities mainly related to our clinical trial, manufacturing and translational science programs which are expected to occur over the next three years.

Leases
Our portfolio of leases consists of office spaces with initial lease terms generally between 3 to 6 years. We currently do not have leases with residual value guarantees or leases not yet commenced to which we are committed. We have variable lease payments related to office space lease operating costs that are not material. Lease liabilities have been measured by discounting future lease payments using our incremental borrowing rate as rates implicit in the leases were not readily determinable.

Our total undiscounted lease liability as at March 31, 2022 is as follows:

	March 31, 2022
Less than one year	$ 374,673
One to five years	337,943
More than five years	—
Total undiscounted lease liability	$ 712,616

Summary of Quarterly Results

(in thousands, except per share data)

	2022		2021				2020	
	March	Dec.	Sept.	June	March	Dec.	Sept.	June
Revenue	—	—	—	—	—	—	—	—
Net loss[(1)(2)]	(6,779)	(7,751)	(4,872)	(7,246)	(6,435)	(9,329)	(6,749)	(6,827)
Basic and diluted loss per common share[(1)(2)]	$ (0.12)	$ (0.14)	$ (0.09)	$ (0.13)	$ (0.13)	$ (0.21)	$ (0.16)	$ (0.17)
Total assets[(3)]	44,446	45,880	52,593	56,309	54,180	34,346	31,242	34,604
Total cash and cash equivalents[(3)]	39,483	41,262	48,087	50,799	50,362	31,220	26,711	29,911
Total long-term debt	—	—	—	—	—	—	—	—
Cash dividends declared[(4)]	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

(1) Included in consolidated net loss and loss per common share are non-cash change in fair value of warrant derivative (loss) gain of $(13,019), $49,522, $52,216, $80,159, $(164,780), $(213,168), $60,264, and $(507,150), respectively.

(2) Included in net loss and loss per common share are quarterly share-based compensation of $638,981, $1,128,663, $1,006,920, $1,032,242, $658,076, $1,704,453, $201,076, and $260,640, respectively.

(3) We issued 2,457,899 common shares for net cash proceeds of $5.1 million in 2022 (2021 - 8,876,809 common shares for net cash proceeds of $33.4 million).

(4) We have not declared or paid any dividends since incorporation.

Liquidity and Capital Resources

2022 Financing Activities

U.S. "at-the-market" equity distribution

During the three months ended March 31, 2022, we sold 2,431,300 common shares for gross proceeds of US$4,174,022 at an average price of US$1.72. We received, net of commissions of US$125,221, proceeds of US$4,048,801. In total, we incurred share issue costs (including commissions) of $176,410.

2021 Financing Activities

U.S. "at-the-market" equity distribution agreement

During the three months ended March 31, 2021, we sold 6,313,219 common shares for gross proceeds of US$20,440,251 at an average price of US$3.24. We received, net of commissions of US$613,208, proceeds of US$19,827,043. In total, we incurred share issue costs (including commissions) of $974,247.

Warrant exercise

During the three months ended March 31, 2021, 201,722 warrants in connection with our August 2019 underwritten public offering were exercised for gross proceeds of US$181,550.

Liquidity

As at March 31, 2022 and December 31, 2021, we had cash and cash equivalents and working capital ratios as follows:

	March 31, 2022	December 31, 2021
Cash and cash equivalents	**$ 39,483,022**	$ 41,262,044
Working capital ratio	**17.96**	16.69

We define working capital ratio as current assets divided by current liabilities, as presented on our condensed interim consolidated statement of financial position. The change in our cash and cash equivalent reflects the cash usage from our operating activities of $6.3 million along with the cash provided by our U.S. ATM financing activities of $5.1 million for the three months ended March 31, 2022. We do not have any debt other than accounts payable and accrued liabilities and lease liabilities. We also have commitments and potential contingent obligations relating to the completion of our research and development of pelareorep.

We desire to maintain adequate cash reserves to support our planned activities which include our clinical trial program, product manufacturing, administrative costs, and our intellectual property expansion and protection. To do so, we estimate our future cash requirements by preparing a budget and a multi-year plan annually for review and approval by our Board. The budget establishes the approved activities for the upcoming year and estimates the costs associated with these activities. The multi-year plan estimates future activity along with the potential cash requirements and is based on our assessment of our current clinical trial progress along with the expected results from the coming year's activity. Budget to actual variances are prepared and reviewed by management and are presented quarterly to the Board.

As we are a development-stage biopharmaceutical company, we have not been profitable since our inception and expect to continue to incur substantial losses as we continue research and development efforts. We do not expect to generate significant revenues until, and unless, pelareorep becomes commercially viable. To date, we have funded our operations mainly through the issue of additional capital via public and private offerings and through the exercise of warrants and stock options. For the three months ended March 31, 2022, we were able to raise funds through our U.S. ATM.

We have no assurances that we will be able to raise additional funds through the sale of our common shares, consequently, we will continue to evaluate all types of financing arrangements. On June 12, 2020, we renewed our short form base shelf prospectus (the "Base Shelf") that qualifies for distribution of up to $150 million of common shares, subscription receipts, warrants, or units (the "Securities") in either Canada, the U.S. or both. Under a Base Shelf, we may sell Securities to or through underwriters, dealers, placement agents, or other intermediaries, and also may sell Securities directly to purchasers or through agents, subject to obtaining any applicable exemption from registration requirements. The distribution of Securities may be effected from time to time in one or more transactions at a fixed price or prices, which may be subject to change, at market prices prevailing at the time of sale, or at prices related to such prevailing market prices to be negotiated with purchasers and as set forth in an accompanying Prospectus Supplement.

Renewing our Base Shelf provides us with additional flexibility when managing our cash resources as, under certain circumstances, it shortens the time period required to close a financing and is expected to increase the number of potential investors that may be prepared to invest in our company. Funds received as a result of using our Base Shelf would be used in line with our Board approved budget and multi-year plan. Our renewed Base Shelf will be effective until July 12, 2022.

Our Base Shelf allowed us to enter into our ATM equity offering sales agreement in March 2021 (see Note 5 of our condensed interim consolidated financial statements). We will use this equity arrangement to assist us in achieving our capital objective. This arrangement provides us with the opportunity to raise capital and better manage our cash resources.

We anticipate that the expected cash usage from our operations in 2022 will be approximately $28 - $33 million. We continue to manage our research and development plan with the objective of ensuring optimal use of our existing resources as we expect to fund our expenditure requirements and commitments with existing working capital. Additional activities continue to be subject to adequate resources, and we believe we will have sufficient cash resources and access to additional cash resources through our equity arrangement to fund our presently planned operations into 2023. Factors that will affect our anticipated cash usage in 2022, and for which additional funding might be required include, but are not limited to, expansion of our clinical trial program, the timing of patient enrollment in our approved clinical trials, the actual costs incurred to support each clinical trial, the number of treatments each patient will receive, the timing of R&D activity with our clinical trial research collaborations, the number, timing and costs of manufacturing runs required to conclude the validation process and supply product to our clinical trial program, and the level of collaborative activity undertaken.

We are not subject to externally imposed capital requirements and there have been no changes in how we define or manage our capital in 2022.

Financial Instruments and Other Instruments

Our financial instruments consist of cash and cash equivalents, other receivables, accounts payable and accrued liabilities, and warrant derivative. As at March 31, 2022, the carrying amount of our cash and cash equivalents, other receivables, and accounts payable and accrued liabilities approximated their fair value. The warrant derivative is a recurring Level 2 fair value measurement as these warrants have not been listed on an exchange and therefore do not trade on an active market. As at March 31, 2022, the fair value of our warrant derivative was $68,231 (December 31, 2021 - $56,017). We use the Black-Scholes valuation model to estimate fair value. The expected volatility is based on the Company's common share historical volatility less an estimated market participant risk adjustment. The risk-free interest rate is based on U.S. Department of Treasury benchmark treasury yield rates with an approximate equivalent remaining term in effect at the time of valuation and the expected life represents the estimated length of time the warrants are expected to remain outstanding.

Credit risk
Credit risk is the risk of financial loss if a counterparty to a financial instrument fails to meet its contractual obligations. We are exposed to credit risk on our cash and cash equivalents in the event of non-performance by counterparties, but we do not anticipate such non-performance. Our maximum exposure to credit risk at the end of the period is the carrying value of our cash and cash equivalents and other receivables.

We mitigate our exposure to credit risk by maintaining our primary operating and investment bank accounts with Schedule I banks in Canada. For our foreign domiciled bank accounts, we use referrals or recommendations from our Canadian banks to open foreign bank accounts and these accounts are used solely for the purpose of settling accounts payable or payroll.

Interest rate risk
Interest rate risk is the risk that future cash flows of a financial instrument will fluctuate because of changes in market interest rates. We are exposed to interest rate risk through our cash and cash equivalents. We mitigate this risk through our investment policy that only allows investment of excess cash resources in investment grade vehicles while matching maturities with our operational requirements.

Fluctuations in market rates of interest do not have a significant impact on our results of operations due to the short term to maturity of the investments held.

Foreign exchange risk
Foreign exchange risk arises from changes in foreign exchange rates that may affect the fair value or future cash flows of our financial assets or liabilities. We are primarily exposed to the risk of changes in the Canadian dollar relative to the U.S. dollar as a portion of our financial assets and liabilities are denominated in such currency. The impact of a $0.01 increase in the value of the U.S. dollar against the Canadian dollar would have decreased our net comprehensive loss in 2022 by approximately $329,000.

We mitigate our foreign exchange risk by maintaining sufficient foreign currencies, through the purchase of foreign currencies or receiving foreign currencies from financing activities, to settle our foreign accounts payable.

Significant balances in foreign currencies at March 31, 2022 are as follows:

	US dollars
Cash and cash equivalents	$ 29,077,813
Accounts payable and accrued liabilities	(1,045,472)
	$ 28,032,341

Liquidity risk
Liquidity risk is the risk that we will encounter difficulty in meeting obligations associated with financial liabilities. We manage liquidity risk through the management of our capital structure as outlined in Note 9 of our condensed interim consolidated financial statements. Accounts payable and accrued liabilities are all due within the current operating period.

Other MD&A Requirements

We have 57,634,432 common shares outstanding at May 4, 2022. If all of our options, restricted share units and performance share units (5,118,388), common share purchase warrants with a $9.025 exercise price (1,730,894) and common share purchase warrants with a US$0.90 exercise price (64,035), were exercised or were to vest, we would have 64,547,749 common shares outstanding.

Our 2021 annual report on Form 20-F is available on www.sedar.com.

Disclosure Controls and Procedures

Disclosure controls and procedures ("DC&P") are designed to provide reasonable assurance that information required to be disclosed by the Company in its reports filed or submitted by it under securities legislation is recorded, processed, summarized and reported within the time periods specified in the securities legislation and include controls and procedures designed to ensure that information required to be disclosed by the Company in its reports filed or submitted under securities legislation is accumulated and communicated to the Company's management, including its certifying officers, as appropriate to allow

timely decisions regarding required disclosure. There were no changes in our DC&P during the interim period ended March 31, 2022 that materially affected, or are reasonably likely to materially affect, our DC&P.

Internal Controls over Financial Reporting

The Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO") are responsible for designing internal controls over financial reporting ("ICFR") or causing them to be designed under their supervision in order to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. The CEO and CFO have designed, or caused to be designed under their supervision, ICFR to provide reasonable assurance that: (i) material information relating to the Company is made known to the Company's CEO and CFO by others; and (ii) information required to be disclosed by the Company in its reports filed or submitted by it under securities legislation is recorded, processed, summarized and reported within the time period specified in securities legislation. The Committee of Sponsoring Organizations of the Treadway Commission ("COSO") 2013 framework provides the basis for management's design of internal controls over financial reporting. There were no changes in our ICFR during the interim period ended March 31, 2022 that materially affected or are reasonably likely to materially affect, our ICFR.

Management, including the CEO and CFO, does not expect that our internal controls and procedures over financial reporting will prevent all error and all fraud. A control system can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving our stated goals under all potential future conditions. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Condensed Interim Consolidated Financial Statements
(unaudited)

Oncolytics Biotech® Inc.
March 31, 2022 and 2021

ONCOLYTICS BIOTECH INC.
CONDENSED INTERIM CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
(unaudited)
(in Canadian dollars, except share amounts)

As at	March 31, 2022	December 31, 2021
Assets		
Current assets		
Cash and cash equivalents (note 4)	**$ 39,483,022**	$ 41,262,044
Other receivables (note 8)	**102,217**	866,055
Prepaid expenses	**3,950,332**	2,775,800
Total current assets	**43,535,571**	44,903,899
Property and equipment	**403,153**	392,041
Right-of-use assets	**507,556**	584,251
Total assets	**$ 44,446,280**	$ 45,880,191
Liabilities And Shareholders' Equity		
Current Liabilities		
Accounts payable and accrued liabilities	**$ 2,048,476**	$ 1,987,870
Other liabilities (note 8)	**—**	352,279
Lease liabilities (note 8)	**307,480**	293,672
Warrant derivative (note 5, 10)	**68,231**	56,017
Total current liabilities	**2,424,187**	2,689,838
Contract liability	**6,730,287**	6,730,287
Lease liabilities (note 8)	**276,640**	361,081
Total liabilities	**9,431,114**	9,781,206
Commitments and contingencies (note 8)		
Shareholders' equity		
Share capital (note 5) Authorized: unlimited Issued: March 31, 2022 – 57,501,688 December 31, 2021 – 55,043,789	**396,504,249**	391,348,183
Warrants (note 5)	**3,617,570**	3,617,570
Contributed surplus (note 6)	**34,746,749**	34,161,103
Accumulated other comprehensive income	**340,728**	387,738
Accumulated deficit	**(400,194,130)**	(393,415,609)
Total shareholders' equity	**35,015,166**	36,098,985
Total liabilities and shareholder's equity	**$ 44,446,280**	$ 45,880,191

See accompanying notes

ONCOLYTICS BIOTECH INC.
CONDENSED INTERIM CONSOLIDATED STATEMENTS OF LOSS AND COMPREHENSIVE LOSS
(unaudited)
(in Canadian dollars, except share amounts)

For the three months ended March 31,	2022	2021
Expenses		
Research and development (note 6, 12, 13)	**$ 3,707,996**	$ 2,759,014
Operating (note 6, 12, 13)	**2,602,090**	3,141,890
Loss before the following	**(6,310,086)**	(5,900,904)
Change in fair value of warrant derivative (note 10)	**(13,019)**	(164,780)
Foreign exchange loss	**(474,120)**	(390,554)
Interest income, net	**18,704**	21,493
Net loss	**(6,778,521)**	(6,434,745)
Other comprehensive loss items that may be reclassified to net loss		
Translation adjustment	**(47,010)**	(40,312)
Net comprehensive loss	**$ (6,825,531)**	$ (6,475,057)
Basic and diluted loss per common share (note 7)	**$ (0.12)**	$ (0.13)
Weighted average number of shares (basic and diluted) (note 7)	**56,576,462**	49,666,585

See accompanying notes

ONCOLYTICS BIOTECH INC.
CONDENSED INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(unaudited)
(in Canadian dollars)

	Share Capital	Warrants	Contributed Surplus	Accumulated Other Comprehensive Income	Accumulated Deficit	Total
As at December 31, 2020	$ 356,824,172	$ 3,617,570	$ 31,022,356	$ 400,225	$ (367,111,330)	$ 24,752,993
Net loss and other comprehensive loss	—	—	—	(40,312)	(6,434,745)	(6,475,057)
Issued pursuant to stock option plan (note 5, 6)	302,908	—	(113,558)	—	—	189,350
Issued pursuant to incentive share award plan (note 5, 6)	292,039	—	(292,039)	—	—	—
Issued pursuant to "At the Market" Agreement (note 5)	25,831,909	—	—	—	—	25,831,909
Issued pursuant to warrant derivative exercised (note 5)	686,616	—	—	—	—	686,616
Share-based compensation (note 6)	—	—	658,076	—	—	658,076
Share issue costs (note 5)	(974,247)	—	—	—	—	(974,247)
As at March 31, 2021	$ 382,963,397	$ 3,617,570	$ 31,274,835	$ 359,913	$ (373,546,075)	$ 44,669,640
As at December 31, 2021	$ 391,348,183	$ 3,617,570	$ 34,161,103	$ 387,738	$ (393,415,609)	$ 36,098,985
Net loss and other comprehensive income	—	—	—	(47,010)	(6,778,521)	(6,825,531)
Issued pursuant to stock option plan (note 5, 6)	19,570	—	(7,487)	—	—	12,083
Issued pursuant to incentive share award plan (note 5, 6)	45,848	—	(45,848)	—	—	—
Issued pursuant to "At the Market" Agreement (note 5)	5,267,058	—	—	—	—	5,267,058
Share-based compensation (note 6)	—	—	638,981	—	—	638,981
Share issue costs (note 5)	(176,410)	—	—	—	—	(176,410)
As at March 31, 2022	**$ 396,504,249**	**$ 3,617,570**	**$ 34,746,749**	**$ 340,728**	**$ (400,194,130)**	**$ 35,015,166**

See accompanying notes

ONCOLYTICS BIOTECH INC.
CONDENSED INTERIM CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited)
(in Canadian dollars)

For the three months ended March 31,	2022	2021
Operating Activities		
Net loss for the period	**$ (6,778,521)**	$ (6,434,745)
Depreciation - property and equipment (note 12)	**23,952**	20,550
Depreciation - right-of-use-assets (note 12)	**73,612**	86,184
Share-based compensation (note 6, 12, 13)	**638,981**	658,076
Interest expense on lease liabilities	**23,774**	13,809
Unrealized foreign exchange loss	**409,863**	519,368
Change in fair value of warrant derivative (note 10)	**13,019**	164,780
Net change in non-cash working capital (note 11)	**(656,805)**	(596,479)
Cash used in operating activities	**(6,252,125)**	(5,568,457)
Investing Activities		
Acquisition of property and equipment	**(35,521)**	—
Cash used in investing activities	**(35,521)**	—
Financing Activities		
Proceeds from exercise of stock options (note 6)	**12,083**	189,350
Proceeds from exercise of warrant derivative (note 5)	**—**	230,946
Proceeds from "At the Market" equity distribution agreement (note 5)	**5,090,648**	24,857,662
Payment of lease liabilities	**(88,836)**	(111,673)
Cash provided by financing activities	**5,013,895**	25,166,285
(Decrease) increase in cash	**(1,273,751)**	19,597,828
Cash and cash equivalents, beginning of period	**41,262,044**	31,219,574
Impact of foreign exchange on cash and cash equivalents	**(505,271)**	(455,240)
Cash and cash equivalents, end of period	**$ 39,483,022**	$ 50,362,162

See accompanying notes

Note 1: Incorporation and Nature of Operations

Oncolytics Biotech Inc. was incorporated on April 2, 1998 under the Business Corporations Act (Alberta) as 779738 Alberta Ltd. On April 8, 1998, we changed our name to Oncolytics Biotech Inc.

Our condensed interim consolidated financial statements for the period ended March 31, 2022, were authorized for issue in accordance with a resolution of the Board of Directors (the "Board") on May 4, 2022. We are a limited company incorporated and domiciled in Canada. Our shares are publicly traded on the Nasdaq Capital Market and the Toronto Stock Exchange. Our principal place of business is located at 804, 322 11th Avenue SW, Calgary, Alberta, Canada.

We are a development-stage biopharmaceutical company that focuses on the discovery and development of immunotherapeutic products for the treatment of cancers that have not been successfully treated with conventional therapeutics. Our lead product, pelareorep, is an intravenously delivered immunotherapeutic agent that may be a novel treatment for certain types of cancer and may be an alternative to or used in combination with existing cytotoxic or cytostatic therapies. Our clinical development program for pelareorep centers on key immunotherapy combinations. Specifically, immunotherapy combinations in which pelareorep has the potential to provoke specific innate and adaptive immune responses when combined with checkpoint blockade therapy, chemotherapy and/or targeted therapies.

The full extent to which the coronavirus infectious disease 2019 ("COVID-19") pandemic may directly or indirectly impact our business, results of operations and financial condition, including our ability to finance our operations, expenses, clinical trials, and research and development costs, will depend on future developments that are evolving and highly uncertain, such as the duration and severity of outbreaks, including potential future waves or cycles, and the effectiveness of actions taken to contain and treat COVID-19. We considered the potential impact of COVID-19 when making certain estimates and judgments relating to the preparation of these consolidated financial statements. While there was no material impact to our condensed interim consolidated financial statements as of and for the period ended March 31, 2022, our future assessment of the magnitude and duration of COVID-19, as well as other factors, could result in a material impact to our consolidated financial statements in future reporting periods.

Note 2: Basis of Financial Statement Presentation

Our condensed interim consolidated financial statements include our financial statements and the financial statements of our subsidiaries as at March 31, 2022 and are presented in Canadian dollars, our functional currency.

Our accounts are prepared in accordance with International Financial Reporting Standards ("IFRS"), as issued by the International Accounting Standards Board ("IASB"). The accounts are prepared on the historical cost basis, except for certain assets and liabilities which are measured at fair value as explained in the notes to these financial statements.

These condensed interim consolidated financial statements have been prepared in compliance with International Accounting Standard 34 *Interim Financial Reporting.* The notes presented in these condensed interim consolidated financial statements include only significant events and transactions occurring since our last fiscal year end and are not fully inclusive of all matters required to be disclosed in our annual audited consolidated financial statements. Accordingly, these condensed interim consolidated financial statements should be read in conjunction with our most recent annual audited consolidated financial statements, for the year ended December 31, 2021. We have consistently applied the same accounting policies for all periods presented in these condensed interim consolidated financial statements as those used in our audited consolidated financial statements for the year ended December 31, 2021.

Note 3: Significant Accounting Policies

Accounting Standards and Interpretations Issued but Not Yet Effective

IAS 1 *Presentation of Financial Statements*
In February 2021, the IASB issued amendments to IAS 1 *Presentation of Financial Statements* and IFRS Practice Statement 2 *Making Materiality Judgements* in which it provides guidance and example to help entities apply materiality judgements to accounting policy disclosures. The amendments apply to annual reporting periods beginning on or after January 1, 2023, with earlier application permitted. The adoption of this standard is not expected to have a material impact on our consolidated financial statements.

IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors*
In February 2021, the IASB issued amendments to IAS 8, in which it introduces a new definition of 'accounting estimates'. The amendments clarify the distinction between changes in accounting estimates and changes in accounting policies and the correction of errors. Also, the amendments clarify how entities use measurement techniques and inputs to develop accounting estimates. The amendments apply to annual reporting periods beginning on or after January 1, 2023, with earlier application permitted. The adoption of this standard is not expected to have a material impact on our consolidated financial statements.

IAS 12 *Income Taxes*
In May 2021, the IASB issued amendments to IAS 12, which narrows the scope of the initial recognition exception under IAS 12, so that it no longer applies to transactions that give rise to equal taxable and deductible temporary differences. The amendments apply to annual reporting periods beginning on or after January 1, 2023, with earlier application permitted. The amendments apply prospectively to transactions that occur on or after the beginning of the earliest comparative period presented. We are assessing the impact of adopting this standard on our consolidated financial statements.

Note 4: Cash Equivalents

Cash equivalents consist of interest bearing deposits with our bank totaling $34,402,959 (December 31, 2021 – $39,901,509). The current annual interest rate earned on these deposits is 0.46% (December 31, 2021 – 0.45%).

(in Canadian dollars, except share amounts)

Note 5: Share Capital

Authorized:
Unlimited number of no par value common shares

	Shares	
	Number	**Amount**
As at December 31, 2020	46,166,980	$ 356,824,172
Issued pursuant to stock option plan	123,159	381,771
Issued pursuant to incentive share award plan	150,899	543,833
Issued pursuant to "At the Market" (ATM) equity distribution agreement[(a)(c)]	8,401,029	34,168,071
Issued pursuant to warrant derivative exercised[(b)]	201,722	686,616
Share issue costs	—	(1,256,280)
As at December 31, 2021	55,043,789	$ 391,348,183
Issued pursuant to stock option plan	8,333	19,570
Issued pursuant to incentive share award plan	18,266	45,848
Issued pursuant to "At the Market" (ATM) equity distribution agreement[(c)]	2,431,300	5,267,058
Share issue costs	—	(176,410)
As at March 31, 2022	**57,501,688**	**$ 396,504,249**

(a) On June 15, 2020, we entered into an ATM equity distribution agreement with Canaccord Genuity Inc. The ATM allowed us to issue common shares, at prevailing market prices, with an aggregate offering value of up to US$40,000,000 over a 25-month period through the facilities of the Nasdaq Capital Market in the United States. This sales agreement was terminated on March 4, 2021, and no shares were issued during the three months ended March 31, 2022. During the three months ended March 31, 2021, we sold 5,685,097 common shares for gross proceeds of US$18,503,188 at an average price of US$3.25. We received, net of commissions of US$555,096, proceeds of US$17,948,092. In total, we incurred share issue costs (including commissions) of $707,421.

(b) On August 16, 2019, pursuant to an underwritten public offering, 4,619,773 units were sold at a purchase price of US$0.81 per unit. Each unit included one common share with a fair value of US$0.54 and one common share purchase warrant with a fair value of US$0.27. These warrants were classified as a financial liability. Each common share purchase warrant entitled the holder to purchase one common share at an exercise price of US$0.90 until August 16, 2024. No warrants were exercised during the three months ended March 31, 2022. During the three months ended March 31, 2021, our share capital included fair value of $455,670 in addition to gross proceeds of US$181,550 for the 201,722 warrants that were exercised.

(c) On March 5, 2021, we entered into an ATM equity distribution agreement with Canaccord Genuity Inc. The ATM allows us to issue common shares, at prevailing market prices, with an aggregate offering value of up to US$80,000,000 over a 16-month period through the facilities of the Nasdaq Capital Market in the United States. During the three months ended March 31, 2022, we sold 2,431,300 (March 31, 2021 - 628,122) common shares for gross proceeds of US$4,174,022 (March 31, 2021 - US$1,937,063) at an average price of US$1.72 (March 31, 2021 - US$3.08). We received, net of commissions of US$125,221 (March 31, 2021 - US$58,112), proceeds of US$4,048,801 (March 31, 2021 - US$1,878,951). In total, we incurred share issue costs (including commissions) of $176,410 (March 31, 2021 - $266,826).

Equity Warrants

On June 1, 2017, pursuant to an underwritten public offering, 16,445,000 units were sold for gross proceeds of $11,511,500. Each unit included one common share and one common share purchase warrant. Following the 2018 share consolidation, 9.5 common share purchase warrants entitled the holder to purchase one common share in the capital of the Company until June 1, 2022, at an exercise price of approximately $9.025. These warrants were classified as equity.

(in Canadian dollars, except share amounts)

The following table summarizes our outstanding equity warrants:

	Number[(1)]	Amount
As at December 31, 2021	16,443,500	$ 3,617,570
As at March 31, 2022	**16,443,500**	**$ 3,617,570**

(1) Exercisable into 1,730,894 common shares.

Note 6: Share-Based Compensation

Stock Option Plan

We have issued stock options to acquire common stock through our stock option plan of which the following are outstanding at March 31:

	2022		2021	
	Stock Options	Weighted Average Exercise Price $	Stock Options	Weighted Average Exercise Price $
Outstanding, beginning of the period	**5,334,420**	**3.53**	3,764,055	4.08
Granted	**50,000**	**1.70**	1,087,500	3.40
Forfeited	**(27,699)**	**3.57**	—	—
Expired	**(247,559)**	**7.41**	—	—
Exercised	**(8,333)**	**1.45**	(88,492)	2.14
Outstanding, end of the period	**5,100,829**	**3.33**	4,763,063	3.96
Exercisable, end of the period	**3,359,589**	**3.52**	2,156,834	5.03

The following table summarizes information about the stock options outstanding and exercisable at March 31, 2022:

Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life (years)	Weighted Average Exercise Price $	Number Exercisable	Weighted Average Exercise Price $
$0.54 - $1.79	759,998	1.96	1.41	709,998	1.39
$1.80 - $3.01	1,011,942	3.62	2.36	516,542	2.46
$3.02 - $3.90	2,974,049	3.11	3.29	1,778,209	3.28
$3.91 - $7.41	226,222	3.16	4.63	226,222	4.63
$7.42 - $40.00	128,618	1.30	20.80	128,618	20.80
	5,100,829	3.00	3.33	3,359,589	3.52

Option grants vest either immediately or annually over periods ranging from one to three years.

We use the Black-Scholes valuation model to estimate fair value. We use historical data to estimate the expected dividend yield and expected volatility of our stock in determining the fair value of the stock options. The risk-free interest rate is based on the Government of Canada benchmark bond yield rates in effect at the time of grant and the expected life of the options represents the estimated length of time the options are expected to remain outstanding.

(in Canadian dollars, except share amounts)

The estimated fair value of stock options granted during the period was determined using the following weighted average assumptions:

	2022	2021
Risk-free interest rate	**1.17%**	0.49%
Expected hold period to exercise	**3.0 years**	3.0 years
Expected share price volatility	**115.43%**	110.78%
Expected dividend yield	**Nil**	Nil
Weighted average fair value of options	**$1.17**	$2.26

Incentive Share Award Plan

Restricted Share Units ("RSUs")

We have granted RSUs to non-employee directors through our incentive share award plan. Grants of RSUs to non-employee directors vest either immediately, on the third anniversary date from the grant date or when the director ceases to be a member of the board. We have also granted RSUs to certain officers and employees of the Company. Grants of RSUs to certain officers and employees of the Company vest over a three-year period. The following RSUs are outstanding at March 31:

	2022	2021
Outstanding, beginning of the period	**40,560**	134,618
Released	**(18,266)**	(16,956)
Outstanding, end of the period	**22,294**	117,662

We have reserved 5,750,169 common shares for issuance relating to our outstanding equity compensation plans. Our share-based compensation was $638,981 for the three months ended March 31, 2022 (March 31, 2021 - $658,076).

Note 7: Loss Per Common Share

Loss per common share is calculated using net loss for the period and the weighted average number of common shares outstanding for the three months ended March 31, 2022 of 56,576,462 (March 31, 2021 - 49,666,585). The effect of any potential exercise of our stock options and warrants outstanding during the period has been excluded from the calculation of diluted loss per common share, as it would be anti-dilutive.

Note 8: Commitments

We are committed to payments totaling $18,763,403 for activities mainly related to our clinical trial, manufacturing and translational science programs which are expected to occur over the next three years.

Our commitments include the committed payments related to our co-development agreement with Merck KGaA, Darmstadt, Germany, and Pfizer Inc ("Pfizer"), known as BRACELET-1, as this phase 2 clinical trial is jointly funded by Oncolytics and Pfizer. As at March 31, 2022, we recorded US$1,847 ($2,308) (December 31, 2021 - US$616,855 ($782,049)) in other receivables related to BRACELET-1 cost from Pfizer per the terms of the collaboration agreement and nil (December 31, 2021 - US$277,866 ($352,279)) in other liabilities representing future trial costs to be incurred.

Under a clinical trial agreement entered into with the Alberta Cancer Board (“ACB”), we have agreed to repay the amount funded under the agreement together with a royalty, to a combined maximum amount of $400,000 plus an overhead repayment of $100,000, upon sales of a specified product. We agreed to repay the ACB in annual installments in an amount equal to the lesser of: (a) 5% of gross sales of a specified product; or (b) $100,000 per annum once sales of a specified product commence.

(in Canadian dollars, except share amounts)

Leases

Our portfolio of leases consists of office spaces with initial lease terms generally between 3 to 6 years. We currently do not have leases with residual value guarantees or leases not yet commenced to which we are committed. We have variable lease payments related to office space lease operating costs that are not material. Lease liabilities have been measured by discounting future lease payments using our incremental borrowing rate as rates implicit in the leases were not readily determinable.

Our total undiscounted lease liability as at March 31, 2022 is as follows:

	March 31, 2022
Less than one year	$ 374,673
One to five years	337,943
More than five years	—
Total undiscounted lease liability	$ 712,616

Note 9: Capital Disclosures

Our objective when managing capital is to maintain a strong statement of financial position. We achieve our objective by obtaining adequate cash resources to support planned activities which include the clinical trial program, product manufacturing, administrative costs, and intellectual property expansion and protection. We include shareholders' equity and cash and cash equivalents in the definition of capital.

	March 31, 2022	December 31, 2021
Cash and cash equivalents	**$ 39,483,022**	$ 41,262,044
Shareholders' equity	**$ 35,015,166**	$ 36,098,985

We do not have any debt other than accounts payable and accrued liabilities and lease liabilities. We also have commitments and potential contingent obligations relating to the completion of our research and development of pelareorep.

In managing our capital, we estimate our future cash requirements by preparing a budget and a multi-year plan annually for review and approval by our Board. The budget establishes the approved activities for the upcoming year and estimates the costs associated with these activities. The multi-year plan estimates future activity along with the potential cash requirements and is based on our assessment of our current clinical trial progress along with the expected results from the coming year's activity. Budget to actual variances are prepared and reviewed by management and are presented quarterly to the Board.

Historically, funding for our plan is primarily managed through the issuance of additional common shares and common share purchase warrants that upon exercise are converted to common shares. Management regularly monitors the capital markets attempting to balance the timing of issuing additional equity with our progress through our clinical trial program, general market conditions, and the availability of capital. There are no assurances that funds will be made available to us when required.

On June 12, 2020, we renewed our short form base shelf prospectus (the "Base Shelf") that qualifies for distribution of up to $150,000,000 of common shares, subscription receipts, warrants, or units (the "Securities") in either Canada, the U.S. or both. Under a Base Shelf, we may sell Securities to or through underwriters, dealers, placement agents, or other intermediaries, and also may sell Securities directly to purchasers or through agents, subject to obtaining any applicable exemption from registration requirements. The distribution of Securities may be effected from time to time in one or more transactions at a fixed price or prices, which may be subject to change, at market prices prevailing at the time of sale, or at prices related to such prevailing market prices to be negotiated with purchasers and as set forth in an accompanying Prospectus Supplement.

Renewing our Base Shelf provides us with additional flexibility when managing our cash resources as, under certain circumstances, it shortens the time period required to close a financing and is expected to increase the number of potential

investors that may be prepared to invest in our company. Funds received as a result of using our Base Shelf would be used in line with our Board approved budget and multi-year plan. Our renewed Base Shelf will be effective until July 12, 2022.

Our Base Shelf allowed us to enter into our ATM equity distribution agreement in March 2021 (see Note 5). We use this equity arrangement to assist us in achieving our capital objective. This arrangement provides us with the opportunity to raise capital and better manage our cash resources.

We are not subject to externally imposed capital requirements and there have been no changes in how we define or manage our capital in 2022.

Note 10: Financial Instruments

Fair value of financial instruments

Our financial instruments consist of cash and cash equivalents, other receivables, accounts payable and accrued liabilities, and warrant derivative. As at March 31, 2022, the carrying amount of our cash and cash equivalents, other receivables, and accounts payable and accrued liabilities approximated their fair value. The warrant derivative is a recurring Level 2 fair value measurement as these warrants have not been listed on an exchange and therefore do not trade on an active market. As at March 31, 2022, the fair value of our warrant derivative was $68,231 (December 31, 2021 - $56,017). We use the Black-Scholes valuation model to estimate fair value. The expected volatility is based on the Company's common share historical volatility less an estimated market participant risk adjustment. The risk-free interest rate is based on U.S. Department of Treasury benchmark treasury yield rates with an approximate equivalent remaining term in effect at the time of valuation and the expected life represents the estimated length of time the warrants are expected to remain outstanding.

Financial risk management

Credit risk
Credit risk is the risk of financial loss if a counterparty to a financial instrument fails to meet its contractual obligations. We are exposed to credit risk on our cash and cash equivalents in the event of non-performance by counterparties, but we do not anticipate such non-performance. Our maximum exposure to credit risk at the end of the period is the carrying value of our cash and cash equivalents and other receivables.

We mitigate our exposure to credit risk by maintaining our primary operating and investment bank accounts with Schedule I banks in Canada. For our foreign domiciled bank accounts, we use referrals or recommendations from our Canadian banks to open foreign bank accounts and these accounts are used solely for the purpose of settling accounts payable or payroll.

Interest rate risk
Interest rate risk is the risk that future cash flows of a financial instrument will fluctuate because of changes in market interest rates. We are exposed to interest rate risk through our cash and cash equivalents. We mitigate this risk through our investment policy that only allows investment of excess cash resources in investment grade vehicles while matching maturities with our operational requirements.

Fluctuations in market rates of interest do not have a significant impact on our results of operations due to the short term to maturity of the investments held.

Foreign exchange risk
Foreign exchange risk arises from changes in foreign exchange rates that may affect the fair value or future cash flows of our financial assets or liabilities. We are primarily exposed to the risk of changes in the Canadian dollar relative to the U.S. dollar as a portion of our financial assets and liabilities are denominated in such currency. The impact of a $0.01 increase in the value of the U.S. dollar against the Canadian dollar would have decreased our net comprehensive loss in 2022 by approximately $329,000.

(in Canadian dollars, except share amounts)

We mitigate our foreign exchange risk by maintaining sufficient foreign currencies, through the purchase of foreign currencies or receiving foreign currencies from financing activities, to settle our foreign accounts payable.

Significant balances in foreign currencies at March 31, 2022 are as follows:

	US dollars
Cash and cash equivalents	$ 29,077,813
Accounts payable and accrued liabilities	(1,045,472)
	$ 28,032,341

Liquidity risk

Liquidity risk is the risk that we will encounter difficulty in meeting obligations associated with financial liabilities. We manage liquidity risk through the management of our capital structure as outlined in Note 9. Accounts payable and accrued liabilities are all due within the current operating period.

Note 11: Additional Cash Flow Disclosures

Net Change In Non-Cash Working Capital

For the three months ended March 31,	**2022**	**2021**
Change in:		
Other receivables	**$ 763,838**	$ (22,004)
Prepaid expenses	**(1,174,532)**	(454,530)
Accounts payable and accrued liabilities	**60,606**	113,623
Other liabilities	**(352,279)**	(123,985)
Non-cash impact of foreign exchange	**45,562**	(109,583)
Change in non-cash working capital related to operating activities	**$ (656,805)**	$ (596,479)

Other Cash Flow Disclosures

For the three months ended March 31,	**2022**	**2021**
Cash interest received	**$ 42,478**	$ 35,302

(in Canadian dollars, except share amounts)

Note 12: Other Expenses and Adjustments

The following details highlight certain components of the research and development and operating expenses classified by nature. The foreign exchange loss as presented separately on the face of the consolidated statement of loss and comprehensive loss is also classified as a research and development expense. Remaining research and development and operating expenses include expenses paid to third parties.

For the three months ended March 31,	**2022**	**2021**
Research and development expenses:		
Employee compensation and benefits	**$ 1,186,387**	$ 918,180
Share-based compensation	**359,316**	361,603
Operating expenses:		
Depreciation - property and equipment	**$ 23,952**	$ 20,550
Depreciation - right-of-use-assets	**73,612**	86,184
Employee compensation and benefits	**574,230**	531,587
Share-based compensation	**279,665**	296,473

Note 13: Related Party Transactions

Compensation of Key Management Personnel

Key management personnel are those persons having authority and responsibility for planning, directing and controlling our activities as a whole. We have determined that key management personnel consists of the members of the Board of Directors along with certain employees of the Company.

For the three months ended March 31,	**2022**	**2021**
Short-term employee compensation and benefits	**$ 794,134**	$ 784,631
Share-based compensation	**451,915**	459,293
	$ 1,246,049	$ 1,243,924

Shareholder Information

For public company filings please go to www.sedar.com or contact us at:

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