PARADIGM BIOPHARMACEUTICALS LIMITED

ASX RELEASE

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NEW FINANCIAL YEAR UPDATE

Paradigm Biopharmaceuticals Ltd (ASX: PAR) is pleased to provide the highlights of its business activities and development programs for financial year 19/20 and provide an update on milestones for the remainder of CY2020.

Clinical Development and Regulatory Milestones

Osteoarthritis (OA)

- ✓ Paradigm presented breakthrough new data from its Phase 2b Clinical Trial demonstrating that injectable Pentosan Polysulfate Sulfate (iPPS/Zilosul®) reduces cartilage degradation. Exploratory endpoints from the Phase 2B trial discovered that treatment with Zilosul demonstrated significant reduction in the levels of two key biomarkers (COMP and ADAMTS-5) which are associated with cartilage degradation in knee osteoarthritis.
- ✓ The company announced the publication of its data on the Mechanism of Action (MOA) of PPS in pain reduction in the international peer-reviewed scientific journal, PLoS One entitled "Human osteocyte expression of Nerve Growth Factor: the effect of Pentosan Polysulphate Sodium (PPS) and implications for pain associated with knee osteoarthritis".
- ✓ The first IND (Investigational New Drug) was opened by Paradigm and cleared by the FDA for the treatment of 10 patients under an Expanded Access Program (EAP). Paradigm reported all patients have completed the treatment cycle under this program. All patients have now competed their follow-up screenings and the database of results has now been locked with results expected to be released within the next few weeks.
- ✓ The primary and secondary endpoints for Paradigm's proposed Phase 3 trial will be (i) reduced WOMAC pain from baseline and (ii) improved Patient Global Impression of Change (PGIC).
- ✓ The Agency stated a requirement for Paradigm to complete two adequate and well-controlled Phase 3 clinical trials for registration of PPs for the treatment of OA pain. Paradigm plans to conduct two randomized controlled Phase 3 clinical trials consisting of, 750 patients in 1st Phase 3 trial and 400 patients in 2nd Phase 3 trial (confirmatory study).
- ✓ Paradigm met with the Therapeutic Goods Administration (TGA) to discuss the process for applying for provisional approval for the use of Zilosul to treat OA. The company was given valuable feedback for the provisional approval assessment and will continue to progress with the application as the phase 3 clinical programs begin.
- ✓ New data on a cohort of 34 SAS patients was presented using the primary and secondary end points Paradigm will use in its Phase 3 clinical trials. This data showed the chronic pain response as measured by the WOMAC pain score demonstrated a mean reduction of 44.9%. In addition, 85.7% (30 out of 34)

of SAS patients had reported Patient global impression of Change (PGIC) of moderately to definite and considerable improvement in their OA condition with iPPS (Zilosul®) treatment.

Mucopolysaccharidosis (MPS)

- ✓ Paradigm has made a submission to the ethics board for a Phase 2a clinical program to evaluate iPPS in MPS-I subjects with residual symptoms following Enzyme Replacement Therapy or Bone Marrow Transplantation treatment.
- ✓ Paradigm presented its MPS VI poster on patient focused outcomes at the MPS World Symposium on 13th February in Orlando, Florida.
- ✓ The USA FDA and EMA (Europe) agreed to a joint parallel advice meeting for Paradigm's proposed MPS VI clinical program. The joint submission to the Agencies, detailed the proposed trial design for a pivotal/registrational trial in MPS-VI. The company is expecting the minutes from both the FDA and EMA during the current quarter (Q3 CY2020).
- ✓ The company was advised by the FDA that Paradigm's orphan designation request for MPS-I has been granted, joining the previously granted designation for MPS-VI.

Business Activities

- ✓ FDA minutes recognised the complexity of the Bene pharmaChem PPS molecule, being the only FDA approved PPS, and suggest a generic PPS could only be approved by the US FDA if the material was proven to be identical in molecular structure and purity to the Bene PPS. Paradigm holds an exclusivity agreement, extending currently until 2035, with Bene pharma for exclusive use of the Bene PPS in all indications Paradigm has registered patents over. Paradigm and Bene Pharma continue to work closely on their existing clinical programs in providing relevant information required by regulators such as the FDA, EMA and TGA.
- ✓ In March 26,923,077 shares were issued and placed with Domestic and International Institutions to raise $35m. The proceeds from the placement will be applied to costs of the second Phase 3 osteoarthritis (OA) clinical trial. The company is now fully funded to complete its current clinical programs in OA and MPS through to registration.
- ✓ Further strengthening of the paradigm team with significant additions to the senior management team including:
    - Dr Donna Skerrett – Chief Medical Officer
    - Dr Jeannie Joughin – Chief Operations Officer
    - Dr Michael Imperiale – Chief Safety Officer
    - Mitch Marrow and Simon White – Investor Relations
- ✓ Paradigm had a presence at several conferences through FY20 including:
    - 38th JP Morgan Healthcare conference in San Francisco
    - NWR Virtual Small Cap Conference
    - Goldman Sachs Small and Mid-Cap Healthcare Day.
- ✓ Addition to the ASX 300 index.

Outlook

- The Expanded Access Program database has been locked for data cleaning and preparation of patient results for the Paradigm team. Paradigm expects to release the results from the EAP in early August. The results will also be accompanied by a video detailing the patients under the EAP and their previous struggles with OA caused by joint issues during their professional NFL careers. It will also highlight outcomes and results of the patients after completion of the Zilosul ® treatment program.
- The company continues to prepare information that was requested by the TGA for the next stage of submission for the Provisional Approval determination. The company will further update the market on the progress of this process in Q4 CY 2020.
    - Additional new data on 67 patients treated under the SAS program. Paradigm expects to report on 35 patients in Q3 with the remaining patient data available in early Q4 CY2020. The data will be presented in a similar manner as the April 6th announcement of 34 patients using the same endpoints and product identified for Paradigm's Phase 3 trials. This will take the total number of SAS patients reported on with the proposed Phase 3 endpoints to over 100 patients.
- Paradigm remains focused on its IND submission to the FDA for the remainder of CY20. The Paradigm team and its consultants continue to compile the necessary information and data for the IND submission toward the end of Q4.
- Paradigm expects to receive notification from the Ethics Committee on its MPS -1 clinical program during the current quarter.
- Feedback from the Joint Parallel Scientific Advice meeting with the FDA (US) and EMA (Europe) is expected this quarter which will give Paradigm important information on the views of both agencies in regard to end points and overall trial design for Paradigm's proposed pivotal/registrational trial in MPS-VI.
- The company is currently in the process of finalising a Commercial Research Agreement with an Australian University. The research program will investigate the safety and efficacy of iPPS in a viral induced respiratory disease model. Paradigm will provide additional detail to the market once this has been completed.
- Paradigm staff and the principal investigators have completed writing the Phase 2b osteoarthritis clinical trial and the Phase 2A Viral Arthritis clinical trial manuscripts. The Manuscripts will now be sent to the chosen Journal Editor for peer-review and publication. Paradigm expects both Peer reviewed publications to be released Q4 CY 2020.
- The company expects to have a presence at several domestic and international Virtual Conferences during FY21 to continue to promote Paradigm to new investors as we progress through our clinical development programs.

Addressable Market: Osteoarthritis (OA) is the most common joint disorder in the United States. Symptomatic knee OA occurs in 10% men and 13% in women aged 60 years or older. The number of people affected with symptomatic OA is likely to increase due to the aging of the population and the obesity epidemic. ABOUT 54.4 MILLION ADULTS IN THE U.S. HAVE DOCTOR-DIAGNOSED ARTHRITIS[1]. (Barbour – MMWR [66] 2017). There are over 100 million OA sufferers in the USA, Europe and Japan[2].

About injectable PPS (Zilosul®): Injectable PPS is not currently registered in Australia, but it is registered in four of the seven major global pharmaceutical markets. In those European markets, injectable PPS is registered as an antithrombotic agent. In Australia, injectable PPS for human use is not currently available for sale. Injectable PPS for human use is only available by inclusion into a Paradigm Sponsored clinical trial or via a treating physician applying for its use in patients via the TGA's SAS - Category B.

Zilosul® is a registered Trademark of Paradigm Biopharmaceuticals Ltd (ASX: PAR).

Authorised for release by Paul Rennie, CEO & Interim Executive Chairman.

FOR FURTHER INFORMATION PLEASE CONTACT:

Simon White
Director of Investor Relations
Tel: +61 (0) 404 216 467

Paradigm Biopharmaceuticals Ltd
ABN: 94 169 346 963
Level 15, 500 Collins St, Melbourne, VIC, 3000, AUSTRALIA
Email : investorrelations@paradigmbiopharma.com
Web: http://paradigmbiopharma.com/