A global non-profit initiative against HIV drug resistance

PRESS RELEASE

The most accurate models to date for predicting response to HIV therapy are released for clinical use
New models preformed with 90% accuracy in independent testing

London, UK; 18th December, 2019: Four new sets of models for predicting response to HIV therapy have been launched today by the RDI, including one that achieved 90% accuracy in independent testing. The models all use the genetic code of the virus, as we all as a range of other data, to make their predictions. They have been added to the arsenal of different models now available free of charge to healthcare professionals via the online HIV Treatment Response Prediction System (HIV-TRePS).

"It is very gratifying after almost two decades of research to have achieved the milestone of 90% accuracy," commented Brendan Larder, Scientific Chair of the RDI. *"This will give physicians even more confidence in using HIV-TRePS to individualize their patient's treatment "*

Of the four new sets of models being launched today, two predict whether the amount of virus in the patient's bloodstream will be reduced to undetectable levels following the introduction of a new combination of drugs. It is one of these sets that achieved 90% accuracy, the other achieved 89%. The other two sets of models predict the absolute change in the level of virus over time. The models were developed using 'machine learning', applied to data from tens of thousands of HIV patients being treated in clinics around the world.

Currently, in many countries changes to HIV treatment are not generally individualized but made according to set treatment protocols. This can lead to sub-optimal treatments being introduced that enable the development of drug resistance. Resistance is on the increase in some countries, which poses a threat not only to the individual but to entire populations through the increased risk of onward transmission of drug-resistant virus.

Healthcare workers are able to enter their patients' data into HIV-TRePS through a user-friendly app and obtain accurate predictions of response for several different combinations of drugs, enabling them to select the optimum combination for the individual. This individualized approach has the

potential to maximise the suppression of the virus, improving patients' outcomes and reducing the chances of resistance developing.

HIV-TRePS, is freely available online at www.hivrdi.org/treps.

The RDI's participation in this project is through a subcontract with Leidos Biomedical Research, the prime contractor for the Frederick National Laboratory for Cancer Research, sponsored by the National Cancer Institute.

The RDI is an independent, not-for-profit international research collaboration set-up in 2002 with the mission to improve the clinical management of HIV infection through the application of bioinformatics to HIV drug resistance and treatment outcome data. Over the 17 years since its inception, the RDI has worked with many of the leading clinicians and scientists in the world to develop the world's largest database of HIV drug resistance and treatment outcome data, containing information from approximately 300,000 patients in more than 30 countries.

HIV-TRePS is an experimental system intended for research use only. The predictions of the system are not intended to replace professional medical care and attention by a qualified medical practitioner and consequently the RDI does not accept any responsibility for the selection of drugs, the patient's response to treatment or differences between the predictions and patients' responses.

- ends -

For further information contact:

Andrew Revell (Executive Director, RDI) on +44 207 226 7314, +44 7967 126498 (mobile) or andrewrevell@hivrdi.org or visit : www.hivrdi.org.