

From December 2 to 11, 2024, a technical advisory mission of the World Health Organization Regional Office for Europe (WHO/Europe) took place in Turkmenistan. The mission led by Dr. Andrey Komissarov and Artem Fadeev, WHO/Europe consultants on influenza virus sequencing focused on enhancing the laboratory capacity for influenza virus sequencing in Turkmenistan.

The main objective of the technical advisory mission was to conduct a training course for laboratory specialists of the Virology Reference Laboratory of the Center for Public Health and Nutrition – the National Influenza Center (NIC) of Turkmenistan on next-generation sequencing using the Oxford Nanopore Technology (ONT) platform of influenza viruses.

Over the course of the training course the participants had an opportunity to gain deeper insights into the processes of submitting sequences for alignment in GISAID and using analytical databases for sequence analysis. They also learned to manage bioinformatics, which is collecting consensus sequence data from read source sequences and quality assessment of the resulting sequencing data, including data transfer from MinION Mk1C, running QC, alignment subtraction for reference, visualization, statistics, and consensus sequence generation.

In addition to this, the mission provided technical advisory support and recommendations to the NIC on strengthening laboratory surveillance in the field of respiratory virus sequencing. Dr. Komissarov and Mr. Fadeev provided valuable recommendations on enhancing sequencing and bioinformatics infrastructure to ensure long-term sustainability and effectiveness in viral surveillance.

The mission was provided through the Pandemic Influenza Preparedness (PIP) framework Partnership Contribution Implementation Plan, component Laboratory & Surveillance and has marked an important milestone in improving the country's public health infrastructure and preparedness for emerging respiratory viruses. The WHO will continue to collaborate with Turkmenistan in building capacity and ensuring that the tools and knowledge gained through this mission will help strengthen global health security.