DNDi
Best Science for the Most Neglected

DISEASE FACTSHEET

PANDEMIC PREPAREDNESS AND RESPONSE

Advancing innovation and equity for the next pandemic

Recent outbreaks of Ebola Bundibugyo virus and hantavirus are stark proof that the world remains dangerously ill-prepared to face the rising threat of emerging and re-emerging infectious diseases. Viral diseases of pandemic and epidemic concern – including flaviviruses (such as dengue and Zika), togaviruses (such as chikungunya), and coronaviruses – remain chronically underprioritized, with few or no therapies available for these and other priority viral pathogens highlighted by the World Health Organization (WHO).

New treatments that can readily enter clinical trials are needed. Robust global rules and policies that guard against profiteering, protectionism, and inequitable access to health tools must also be established.

FACTS

» 23

viral pathogens of pandemic potential prioritized by WHO

» Only 3

have fully licensed treatments

It can take

» 10 to 15

years to discover and develop a new drug – far too long to start after outbreaks begin

» THE PUSH FOR PROGRESS

Since our founding, DNDi has been committed to ensuring medical innovation serves the most neglected. Building on our contribution to the COVID Moonshot drug discovery initiative – a global grassroots movement of scientists we joined at the height of the pandemic – our collaborative antiviral discovery efforts have expanded the pipeline of candidate compounds and created one of the most substantial open antiviral discovery resources of its kind. Our policy advocacy team has worked to bring DNDi's proven model for linking innovation and equity into global policy discussions, strengthening the case for fairer rules on innovation and access.

OUR GOAL IS NOW to advance the development of promising broad-spectrum antiviral compounds so they can rapidly enter clinical trials in the next pandemic, while working to embed equitable access, open science, and public-interest conditions into the rules, partnerships, and financing structures that will shape future outbreak responses.

HARNESSING AI FOR OUTBREAK READINESS

Together with partners in the AI-driven Structure-enabled Antiviral Platform (ASAP), DNDi is working to progress the development of broad-spectrum small molecules targeting coronaviruses, flaviviruses, and enteroviruses up to clinical readiness, with results openly shared. By 2025, the project had generated and released over 80,000 data points, 125 validated protocols, and over 1,250 crystal structures to public repositories – underscoring both the scale of the scientific effort and DNDi and ASAP partners' commitment to open science.

Emerging from the AViDD-ASAP project and our work with the COVID Moonshot initiative, the compound ASAP-0017445 was selected as a pre-clinical candidate in September 2025. Showing confirmed efficacy against both SARS-CoV-2 and MERS-CoV in *in vivo* testing, the compound is the first coronavirus antiviral candidate developed through crowdsourcing using an open-science approach, and the first to use artificial intelligence to support early-stage advancement. When the molecule's structure was made public in May 2025, DNDi filed a novel minimally defensive, maximally permissive patent on the compound, strategically designed to prevent predatory patenting and preserve the possibility of non-exclusive manufacturing and broad global access.

From the outset, our antiviral has been designed to directly become a generic, so it can save as many lives as possible.

ANNETTE VON DELFT, Head of Anti-Infectives at the Centre for Medicines Discovery (CMD), University of Oxford, in the laser crystallography laboratory at Diamond Light Source, Oxford, UK. Diamond and CMD partner with DNDi in the COVID Moonshot initiative and ASAP Drug Discovery Consortium.

Photo credit: Stuart March-DNDi

PURSUING A PROMISING ANTIVIRAL PIPELINE FOR THE NEXT PANDEMIC

Nucleoside analogues have shown remarkable success in antiviral drug development, with current treatments including molnupiravir (COVID-19) and sofosbuvir (hepatitis C). **DNDi and the German Center for Infection Research (DZIF) completed assessment of a collection of 145 nucleoside analogues to determine their broad-spectrum activity across viruses of pandemic potential**, including chikungunya, dengue, Zika, Ebola, Marburg, Nipah, Lassa, MERS, SARS-CoV-2, influenza, and Crimean-Congo viruses, narrowing the field to six compounds. Results will be made available by DZIF through a public database hosted by the Scripps Research Institute.

Our teams continued to work with the Translational Health Science and Technology Institute (THSTI) of India to further optimize the TMEM16F series, a class of salicylamide-based derivatives that continue to show encouraging broad-spectrum antiviral activity against dengue, influenza, SARS-CoV-2, and Zika viruses.

In partnership with Eisai Co., Ltd., Japan, and Institut Pasteur Korea (IPK), we have also completed screening of a 20,000-compound Eisai proprietary collection against both dengue and Zika viruses, with three distinct chemical series selected for further optimization.

SPEAKING OUT FOR INCLUSIVE AND EQUITABLE R&D

Alongside our R&D programmes, our teams have also continued work advocating for solutions to public policy shortcomings that leave the world unprepared for future pandemics and epidemic outbreaks – and place neglected communities at greatest risk.

In May 2025, we welcomed the adoption of the WHO Pandemic Agreement following years of work with Médecins Sans Frontières and other civil society allies to ensure the Agreement includes binding commitments to securing global readiness and equity in future health emergencies. While Member States continue to finalize the Agreement's annex on pathogen access and benefit-sharing, Article 9.5 already offers a powerful tool for change.

For the first time, an international health agreement obliges governments to attach conditions to ensure equitable access to new medical tools developed with public support. No country needs to wait for the Agreement's full ratification to implement Article 9.5 in its national policy.

We have carried this call in our engagement with Member States ahead of the 2026 UN High-Level Meeting on Pandemic Prevention, Preparedness, and Response – urging decision-makers to demonstrate strong political will to operationalize the Pandemic Agreement. We have also continued to draw from our experience to call on governments to recognize biomedical R&D as an essential building block of preparedness – including by supporting and financing a Therapeutics Development Coalition to accelerate antiviral discovery and development of Phase II trial-ready candidates for priority pathogens of pandemic potential.

Learn more: dndi.org/pandemic-preparedness