

The Netherlands' response to COVID-19 included measures at both regional and national levels. The Netherlands had pandemic preparedness tools in place prior to COVID-19. The Netherlands has a comprehensive pandemic response plan, which was a key plank in the country's preparedness toolkit. Coordinated by RIVM, it describes in detail the general actions to take in the case of an infectious disease crisis, including which measures should be taken in which phase of the crisis, and who is responsible for determining the crisis phase.

(from State of Health in the EU · The Netherlands · Country Health Profile 2021

https://health.ec.europa.eu/system/files/2021-12/2021_chp_nl_english.pdf)

Research & Innovation for Pandemic Preparedness Policies and Strategies

Country has a dedicated strategy for R&I for PP

Yes (various actors)

Ministry of Health information (in Dutch)

a. Letter from the minister of Health to the parliament 14 April 2022.

<https://www.rijksoverheid.nl/documenten/kamerstukken/2022/04/14/kamerbrief-over-beleidsagenda-pandemische-paraatheid>

b. Letter from the minister of Health to the parliament 4 November 2022. <https://open.overheid.nl/repository/ronl-5dc159a4869495958c60a5f72229de0522fccda9/1/pdf/kamerbrief-over-beleidsprogramma-pandemische-paraatheid.pdf>.

News about this letter: <https://www.rijksoverheid.nl/actueel/nieuws/2022/11/04/versterking-pandemische-paraatheid-opkoers>

c. News about investment from the Netherlands in CEPI and FIF-PPR:

<https://www.rijksoverheid.nl/actueel/nieuws/2022/10/27/nederland-investeert-in-internationale-pandemische-paraatheid>

d. National actionplan strengthening zoonoses policy:

<https://www.rijksoverheid.nl/documenten/rapporten/2022/07/06/nationaal-actieplan-versterken-zoonosenbeleid>

e. Report of expertgroup zoonoses with recommendations to reduce risks on future zoonotic outbreaks:

<https://www.rijksoverheid.nl/documenten/rapporten/2021/06/01/rapport-expertgroep-zoonosen> (includes research recommendations)

f. Societal Impact Team:

The Societal Impact Team (MIT) advises the cabinet on the societal consequences of pandemics and how to deal with them, such as the COVID-19 pandemic and coronavirus measures

newsitem: <https://www.rijksoverheid.nl/actueel/nieuws/2022/08/19/maatschappelijk-impact-team-van-start> and information page: (see actors) including work programme: pdf (<https://www.rijksoverheid.nl/ministeries/ministerie-van-sociale-zaken-en-werkgelegenheid/documenten/jaarplannen/2023/01/09/werkprogramma-mit-2022-2024>)

2. Ministry of Health information (in English)

Ministry of Health Global Health Strategy, including some info on pandemic preparedness, in English.

<https://www.government.nl/ministries/ministry-of-health-welfare-and-sport/documents/publications/2022/10/21/dutch-global-health-strategy-2023-2030>

3. ZonMw, the Netherlands Health Research Organisation: (in Dutch)

a. Overview of what ZonMw does on pandemic preparedness: <https://publicaties.zonmw.nl/pandemische-paraatheid-themapagina/>

b. Knowledge programme on pandemic preparedness: <https://www.zonmw.nl/nl/onderzoek-resultaten/gezondheidsbescherming/programmas/programma-detail/kennisprogramma-pandemische-paraatheid/>

c. BEhavioural and social sciences and pandemic PREPAREDness: the BePrepared Consortium

4. RIVM, the Dutch National Institute for Public Health and the Environment:

a. Behavioural science for pandemic preparedness <https://www.rivm.nl/en/behavioural-science/pandemic-preparedness>

b. Focal Point Behavioural Science WHO Behavioural and Cultural Insights (BCI) Unit

c. New crisis response organisation at RIVM boosts pandemic preparedness. News item: [Launch of crisis response organisation LFI boosts pandemic preparedness](https://www.rivm.nl/en/who-collaborating-centre-for-infodemiology-and-public-health-unit-launches-new-crisis-response-organisation-lfi-boosts-pandemic-preparedness)

d. Research on infectious disease preparedness and IHR M&E <https://www.rivm.nl/en/who-collaborating-centre-for-infodemiology-and-public-health-unit-launches-new-crisis-response-organisation-lfi-boosts-pandemic-preparedness>

preparedness-and-ihr-m-e

c. Outbreak Management Team (OMT) <https://www.rivm.nl/coronavirus-covid-19/omt>

5. Large University initiatives and collaborations:

- a. Pandemic and Disaster Preparedness Centre (PDPC, collaboration of 2 universities, in collaboration with WHO, VEO and Netherlands Centre for One Health): PDPC publishes pandemic research agenda <https://convergence.nl/pdpc-publishes-pandemic-research-agenda/>
- b. ERRAZE: research and investment framework of Wageningen University: ERRAZE@WUR: being prepared for new pandemics <https://www.wur.nl/en/Research-Results/Research-programmes/Cross-WUR-programmes/ERRAZE-at-WUR.htm>
- c. TNO, The Dutch Organization for Applied Scientific Research, is an independent research organisation. In collaboration with the Dutch Ministry of health, universities and knowledge institutes, TNO's working on a research programme called: *Pandemic Preparedness and Ventilation Research Program: P3Venti* (<https://www.tno.nl/nl/duurzaam/veilige-duurzame-leefomgeving/bouwinnovatie/bouwen-veilig-efficient-zorggebouw/ventilatie-aerogene-transmissie-virussen/>)
- d. Netherlands Centre for One Health (NCOH) brings together academic research institutes in the Netherlands that are active in One Health research together with other leading parties to forge an open innovation network with the capacity to take joint responsibility for finding answers to global One Health challenges (<https://ncoh.nl/>)

Country has an open science portal with information on publicly financed scientific research? Yes <https://www.zonmw.nl/en/>

R&I portal <https://www.nwo.nl/projecten>

Country has R&I webpage on COVID-19; Monkey pox; Other WHO viral risks; Antimicrobial resistance (AMR); Chemical, Biological, Radiological and Nuclear (CBRN) threats

Website open science/ open data initiative with respect to pandemic threats, such as COVID-19 open Name URL

Overview of AMR surveillance studies <https://www.rivm.nl/regionale-infectieziektebestrijding/regionale-arts-consulenten-rac/rac-projecten>

Mpox infections <https://www.rivm.nl/en/mpox>

COVID-19 <https://www.rivm.nl/en/coronavirus-covid-19>

Programma COVID-19 <https://projecten.zonmw.nl/nl/project/programma-covid-19>
<https://www.nwo.nl/en/researchprogrammes/open-science-:text=Open%20Science%20NWO%20is%20o>

Overview of research on Arboviruses <https://www.rivm.nl/en/arboviruses/research-projects-arboviruses>

Overview of research on COVID-19 by RIVM <https://www.rivm.nl/en/coronavirus-covid-19/research>

ZonMw open science policy <https://www.zonmw.nl/nl/over-zonmw/open-science/>

WHO collaborating Centre for preparedness and response for laboratory high threat pathogens and biorisk <https://www.rivm.nl/en/biosafety-and-biosecurity/WHOCC-laboratory-preparedness-and-response>

CBRN preparedness & response <https://www.rivm.nl/en/global-health-security/cbrn-preparedness-response>

Country has coordinating structures to link public health needs and research needs? ZonMW <https://www.zonmw.nl/en/> & RIVM www.rivm.nl/en Outbreak Management Teams <https://www.rivm.nl/coronavirus-covid-19/omt> and Expert Meetings (Deskundigenberaden) https://www.rivm.nl/sites/default/files/2020-05/Folder%20landelijke%20adviesering%20bij%20infectieziektenreigingen%20en%20-crises_0.pdf

R&I Infrastructures

Country has the following research infrastructure for infectious diseases and outbreaks available, or under construction		BSL 3; Clinical trial units; High level isolation units; Reference centres of excellence; Emergency intervention units; Open genome deposits for viruses; Other			
Name Infrastructure	Type Infrastructure	URL	Max Capacity	Available for	Open to
all university medical centres	clinical trial units and high level isolation units	https://www.nfu.nl/		Academia	Yes
Corona dashboard	other	https://coronashboard.rijksoverheid.nl/		Government	
COVID-19 open data	other	https://data.rivm.nl/meta/srv/dut/catalog.search-/metadata/4678ae0b-2580-4cdb-a50b-d229575269ae		RIVM	Yes
Environmental Assessment Unit	Emergency Intervention unit	https://www.rivm.nl/en/eau https://www.erasmusmc.nl/en/research/departments/viroscience		RIVM	
Erasmus MC, department of Viroscience	Academic Medical Centre				Yes
EVAg	Open genome deposit for viruses	https://www.european-virus-archive.com/			
Infectious Diseases Surveillance Information System Antibiotic Resistance	other	https://www.rivm.nl/isis-ar		RIVM	
Influenza data	other	https://www.rivm.nl/griepgriepprikkfeiten-en-cijfers		RIVM	
Pionter Corona research	other	https://www.rivm.nl/en/pionter-corona-study/results		RIVM	
Reference Laboratories	Reference centres of excellence	https://www.rivm.nl/infectieziektebestrijding/diagnostiek/netwerk-referentielaboratoria		RIVM/academia	Yes
RIVM	BSL3 and reference centre	www.rivm.nl		Other	Yes
RIVM/CIB	National Institute for Public Health and the Environment, Centre for Infectious Disease Control	https://www.rivm.nl/en	550 fte	RIVM	
SARS-CoV-2 variants	other	https://www.rivm.nl/en/coronavirus-covid-19/virus/variants		RIVM	
SeqNeth	other	https://seqneth.nl/		RIVM / academia	
Type-Ned	other	https://www.rivm.nl/type-ned		RIVM	Yes
Virological weekly reports	other	https://www.rivm.nl/virologische-weekstaten		RIVM	

Wastewater surveillance for COVID-19 and other pathogens	other	https://www.rivm.nl/en/sewage-research/covid-19	RIVM	
WHO Collaborating Centres	Reference centres of excellence	https://www.rivm.nl/en/who-collaborating-centres	RIVM	
WUR	centre of excellence	https://www.wur.nl/nl/Onderzoeken-Resultaten/Onderzoekprogrammas/Cross-WUR-	Academia	Yes
Country supporting the participation to the following ESFRI initiatives relevant for infectious diseases		BBMRI; EATRIS; ECRIN; ERINHA; MIRRI		

Website network of clinical trials (e.g. to facilitate the access to clinical trials) the country is involved in

<https://www.remapcap.org/>

<https://www.ecraid.eu/>

<https://vaccelerate.eu/>

<https://www.recover-europe.eu/>

Budget mobilisation mechanisms and funding sources

Basic Research

url www.nwo.nl & <https://www.rivm.nl/en>

funding for basic research accessible for industry?

source of funding Public (research) agencies

Applied Research

url www.nwo.nl

www.zonmw.nl e.g. <https://www.zonmw.nl/en/program/infectious-disease-control-3-2019-2023>
<https://www.rivm.nl/en>

funding for applied research accessible for industry?

source of funding Public (research) agencies

Translational Research

url www.nwo.nl

www.zonmw.nl
www.rivm.nl

funding accessible for industry?

source of funding Public (research) agencies

Clinical Research (in general)

url www.nwo.nl

www.zonmw.nl
www.rivm.nl

funding accessible for industry?

source of funding Public (research) agencies

Clinical Research (in pandemic phase)

url www.nwo.nl
www.zonmw.nl
www.rivm.nl

accessible for industry?

source of funding Public (research) agencies

Innovation Projects

url www.nwo.nl
www.zonmw.nl
www.rvo.nl
<https://www.rivm.nl/en/about-rivm/strategic-programme-rivm>

- RVO (Rijksdienst voor Ondernemend Nederland): A governmental service providing information, advice and financing in the field of sustainable, agricultural, innovative and international entrepreneurship.
- The National Growth Fund (NGF) is a 20 billion euro's investment of the Dutch government in projects (between 2021 and 2025) that ensure long-term economic growth. Projects funded by the NGF are, for example, **Health-RI** (The Health-RI project is working on a health data infrastructure for bundling, sharing and reusing Dutch knowledge in the field of health: <https://www.health-ri.nl/>) and **Pharma-NL** (an initiative to accelerate the transfer of therapies from lab to patient <https://www.pharma-nl.com/>)
- The Dutch Life Sciences & Health (LSH or 'Health~Holland'). Under the guidance of LSH/Health~Holland public and private partners combine their investments and activities nationally to gain economic and societal impact for Health & Care, one of the four challenges of the Dutch government's Mission-driven Innovation Policy (<https://www.health-holland.com/>)

Flexible funding during emergencies possible

R&I actors, authorities and activated processes that are activated in case of a health threat

R&I actors, authorities and

ministries involved in case of an outbreak; mobilisation processes of research forces; (existing) national or regional structures that advise governments on R&I during emergencies; administrative procedures to diminish the administrative burden for researchers and funding administrations; assessment of research outputs produced during a crisis; incentives ensuring qualitative scientific dissemination during a crisis; international scientific collaboration in case of an outbreak

Name	Description	url
Netherlands Centre for One Health (NCOH)	Netherlands Centre for One Health (NCOH) brings together academic research institutes in the Netherlands that are active in One Health research together with other leading parties to forge an open innovation network with the capacity to take joint responsibility for finding answers to global One Health challenges	https://ncoh.nl/
Deskundigenberaad (Expert Meeting)	Even if there are no acute threats, there may be a need for advice from experts, for example in emerging resistant pathogens. The request for advice can come from the Clb, other experts or from the ministries as a result of misunderstood or unclear signals. An expert meeting (DB) gives space to state the state of science on a specific topic and analyze and generate research questions.	https://www.rivm.nl/sites/default/files/2020-05/Folder%20landelijke%20adviesering%20bij%20infektieziekten%20en%20crises_0.pdf
Dutch Life Sciences & Health (LSH or 'Health~Holland')	The Dutch Life Sciences & Health (LSH or 'Health~Holland'). Under the guidance of LSH/Health~Holland public and private partners combine their investments and activities nationally to gain economic and societal impact for Health & Care, one of the four challenges of the Dutch government's Mission-driven Innovation Policy	https://www.health-holland.com/

Maatschappelijk Impact Team

The Societal Impact Team (MIT) advises the cabinet on the societal consequences of pandemics and how to deal with them, such as the corona pandemic and corona measures. The MIT provides solicited and unsolicited advice to the cabinet.

<https://www.rijksoverheid.nl/ministeries/ministerie-van-sociale-zaken-en-werkgelegenheid/organisatie/commissies/mit>

Ministry of Health

<https://www.government.nl/ministries/ministry-of-health-welfare-and-sport>

Ministry of Justice and Safety

<https://www.government.nl/ministries/ministry-of-justice-and-security>

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<https://www.rivm.nl/coronavirus-covid-19/omt>

Outbreak Management Team

In the event of a major outbreak of an infectious disease or an international threat, the RIVM may convene an Outbreak Management Team (OMT) which advises the Prime Minister and the Cabinet on necessary measures, and consists of medical specialists, virologists, medical microbiologists and representatives of the national reference laboratory.

RIVM - incl Expert Meeting (Deskundigenberaad)

RIVM, the Dutch National Institute for Public Health and the Environment, works towards a healthy population living in a sustainable, safe and healthy environment. RIVM pursues those goals based on independent scientific research. Working with our commissioning clients, we identify the research that is needed and conduct studies accordingly. We provide advice to the government, to professionals and to members of the public, and share our knowledge.

<http://www.rivm.nl/en>

RVO - Rijksdienst voor Ondernemend Nederland

A governmental service providing information, advice and financing in the field of sustainable, agricultural, innovative and international entrepreneurship

<https://www.rvo.nl/>

Signaleringsoverleg

National structure to advise government during emergencies Every Thursday, infectious disease signals from the Netherlands and abroad are discussed during the Signaling Consultation at RIVM. Signals can be, for example, outbreaks, new or unexpected infectious diseases or trends. The signals are used to take control measures where necessary to prevent further spread, or to advise on further research on the signals

<https://www.rivm.nl/surveillance-van-infectieziekten/signaling-infectieziekten>

TNO

TNO, The Dutch Organization for Applied Scientific Research, is an independent research organisation. In collaboration with the Dutch Ministry of health, universities and knowledge institutes, TNO's working on a research programme called: Pandemic Preparedness and Ventilation Research Program: P3Ventil

<https://www.tno.nl/en/>

ZonMw

ZonMw stimulates health research and care innovation throughout the entire knowledge chain from fundamental research to implementation.

www.zonmw.nl



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