## A new sustainable and effective Infectious Disease Modeling Network in Germany – introducing MONID

Alexander Kuhlmann<sup>1</sup>, Jan-Ole Berndt<sup>2</sup>, Veronika Bierbaum<sup>3</sup>, André C. Valdez<sup>4</sup>, Tim Conrad<sup>5</sup>, Jan Hasenaur<sup>6</sup>, André Karch<sup>7</sup>, Mirjam Kretschmar<sup>8</sup>, Martin Kühn<sup>9</sup>, Neele Leithäuser<sup>10</sup>, Kai Nagel<sup>11</sup>, Viola Priesemann<sup>12</sup>, Markus Scholz<sup>13</sup>, Rafael Mikolajczyk<sup>14</sup>, Berit Lange<sup>15</sup>

<sup>1</sup>Martin-Luther-University, Halle-Wittenburg, Germany; <sup>2</sup>University Trier, Germany; <sup>3</sup>Uniklinikum Dresden, Germany; <sup>4</sup>University of Lübeck, Germany; <sup>5</sup>Zuse Institute Berlin, Germany; <sup>6</sup>University Bonn, Germany; <sup>7</sup>University Münster, Germany; <sup>8</sup>University Medical Center Utrecht, Germany <sup>9</sup>German Aerospace Center; <sup>10</sup>Fraunhofer Institute for Industrial Mathematics, Germany; <sup>11</sup>Climate Change Center Berlin Brandenburg, Germany; <sup>12</sup>Max Planck Institute, Göttingen, Germany; <sup>13</sup>University Leipzig, Germany; <sup>14</sup>Martin-Luther-Universität Halle-Wittenberg; <sup>15</sup>Helmholtz Centre for Infection Research, Braunschweig, Germany

Contact: berit.lange@helmholtz-hzi.de



MONID is now a central mechanism for pandemic resilience in Germany. It is essential to improve national infectious diseases modelling to an international level. Relevant next steps include expansion of model types and applications, international linkages, and diversification of both models

### Why did we establish MONID?

During the COVID-19 pandemic, a lack of capacity and harmonisation of infectious disease dynamics modelling was evident in Germany. While several modeling groups made important advances in epidemiological modelling of the pandemic and its consequences, communication to decision makers was fragmented not harmonised sufficiently.

#### MONID: A new network for modeling severe infectious diseases

This is why a new Modeling Network for Severe Infectious Diseases (MONID, www.monid.net) was established with funding from the Ministry for Education and Research (BMBF).

This network consists of:

- seven large research consortia developing innovative modeling approaches to improve the assessment of the dynamics and burden of infectious diseases, primarily respiratory tract infections
- A coordinating office for capacity building, training and the sustainable establishment of a network structure

The central aim of MONID is to advance the scientific expertise, and to establish an expert network as a central point of contact for the public as well as decision makers for all topics requiring dynamic modeling approaches and communication of results.

# Joint scenario modeling of the modeling network in winter 2022/23 the further course of the SARS-CoV-2 pandemic in winter 2022/23

**Annual Meeting 2024** 

#### What have we done so far?

During the first two years, MONID has organised

- two national modeling conferences with more than 150 participants in Germany
- held two summer schools
- provided harmonised scenario-based modeling to predict the burden of respiratory infections every autumn

The network bridges relevant national (RKI) and European public health (ECDC), infectious disease research and university medical infrastructures. Research from the consortia has been relevant in:

- building adaptive models able to quickly simulate (re)emerging pathogens
- scenario and prediction modeling platforms (e.g. www.respinowhub.de)
- integration of surveillance, population-based and environmental data collection methods



www.monid.net







