

## SESSION 4: RESEARCH PREPAREDNESS FOR HEALTH EMERGENCIES

What Should NPHIs do now to be  
Prepared to Rapidly Generate Knowledge  
when the next Emergency Occurs?

Moderated by Dr. Tyra Grove Krause, Executive Vice-  
President and Head of the Division of Epidemiological  
Infectious Disease Preparedness, Statens Serum Institut  
(SSI), Denmark



Dr. Tyra Grove Krause,  
Executive Vice-President and  
Head of the Division of  
Epidemiological Infectious  
Disease Preparedness, Statens  
Serum Institut (SSI), Denmark

# INTRODUCTORY SPEECH



Dr. Bjørn G. Iversen. Senior Medical Officer, Norwegian Institute of Public Health (FHI), Norway

# HOW THE EU IS BUILDING RESEARCH PREPAREDNESS TO BE BETTER PREPARED FOR THE NEXT PANDEMIC



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## Agenda

- Experiences from the Covid-19 pandemic
- Directorate-Generals
  - Sante, RTD, HERA
- Some main research initiatives
  - Be Ready
  - CoMeCT
  - EU Pandemic Preparedness Partnership





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## We were not prepared

We lacked

- Coordinated and interoperable plans
- Awareness in politics and society
- Healthcare systems ability to detect, prevent, manage and respond
- Medical countermeasures (drugs, tests, vaccines, equipment (PPE))
- **Research**
  - **Fragmented infrastructure**
  - **Surge capacity plans**



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## Executive Agencies

- ERCEA
- REA

## Funding programmes

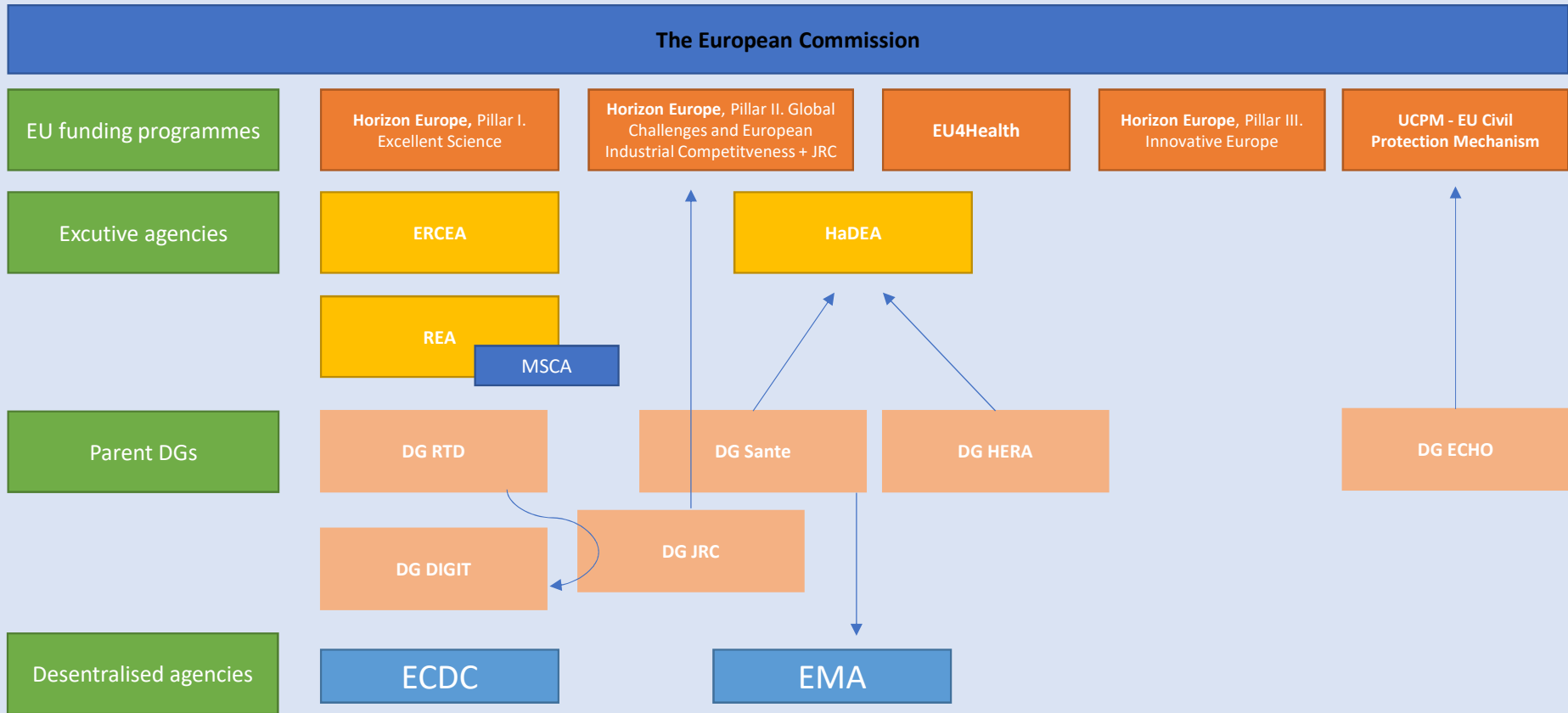
- Horizon Europe



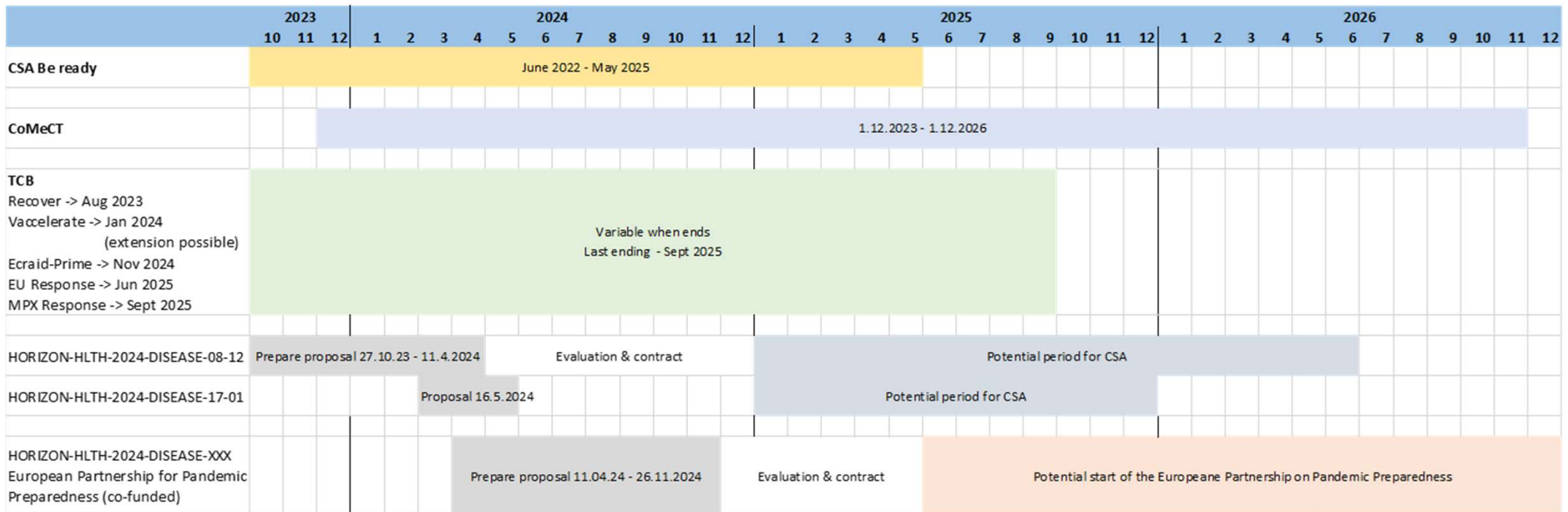
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## Organ-o-gram



# Timeline for various projects







Building a European strategic REsearch and innovation AREA in Direct synergY with other eu-international initiatives for Pandemic Preparedness (BE READY)

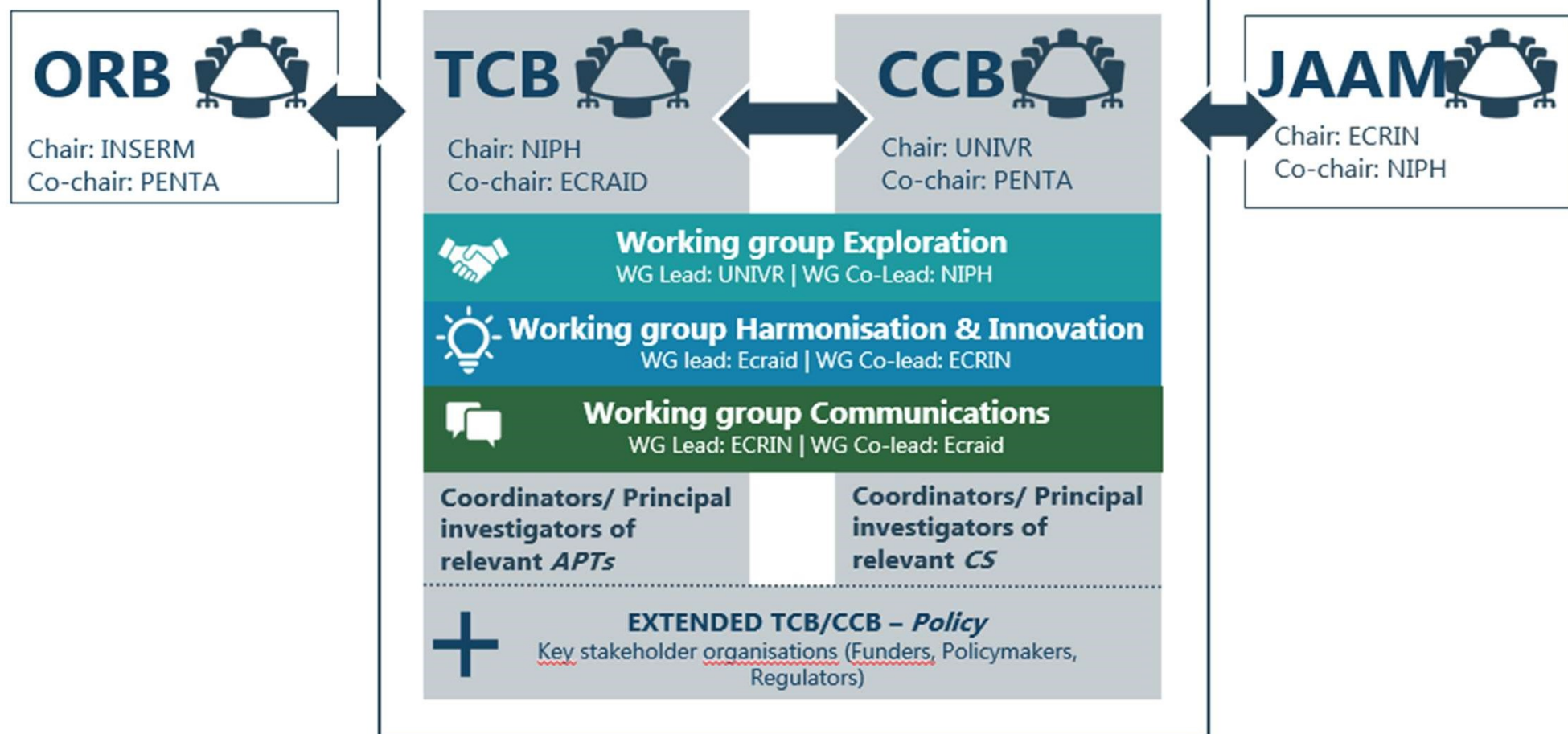
- TOPIC: ["HORIZON-HLTH-2021-DISEASE-04-06: Building a European partnership for pandemic preparedness"](#)
- Budget: 2 Million Euros
- Instrument: Coordination and Support Action (CSA)
- 25 Partners from 13 European countries and 2 Associated countries (Norway, UK)
- General coordination by ANRS | Maladies infectieuses émergentes

The SRIA main articulation is:

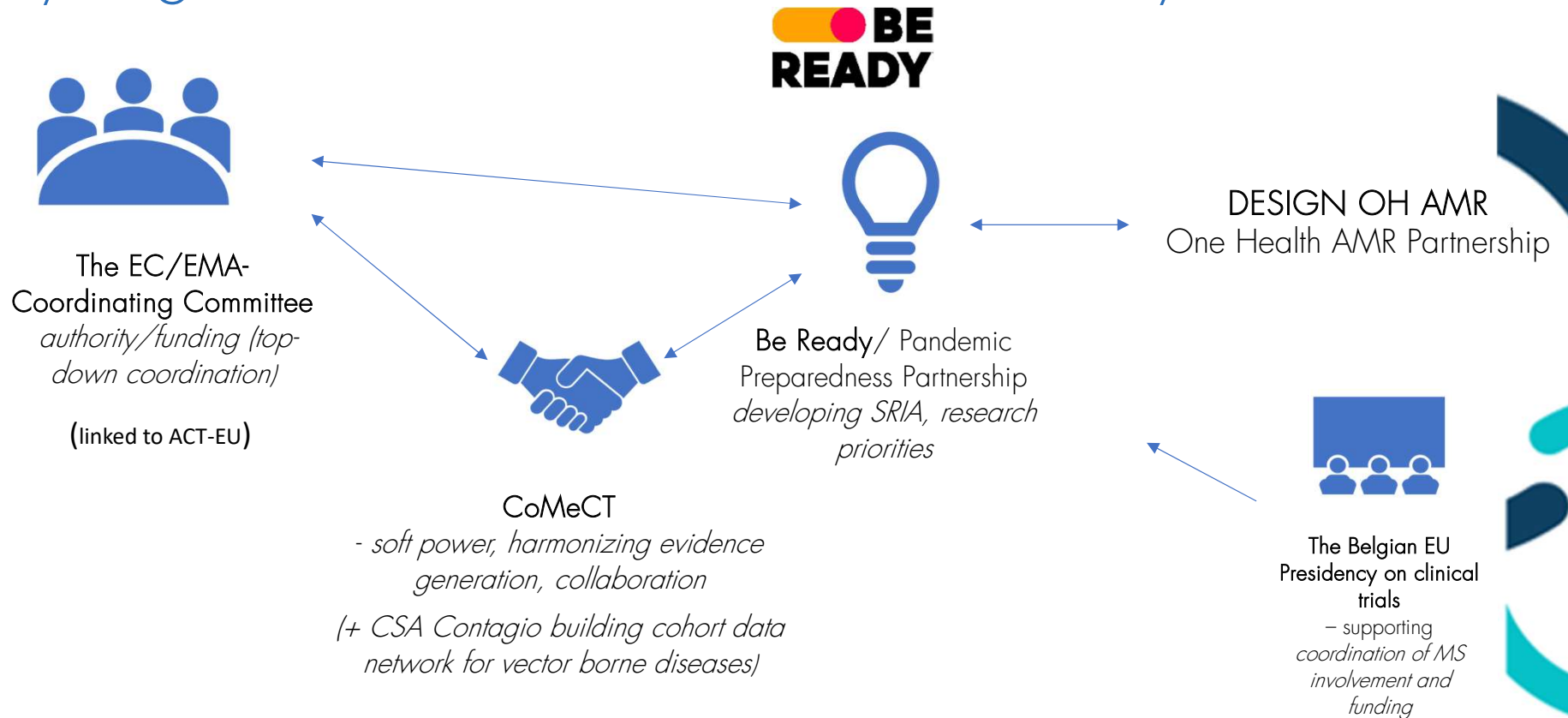
- The main articulation is around:
  - Prepare and understand
  - Prevent and anticipate
  - Respond and control
- 2 time frames:
  - Basic science and applied research in between epidemics: prepare a response to future crises, and to analyse the determining factors of the development and spread of emerging events.
  - Response during the acute crisis phase;
- Research Areas: cover all the research domains already identified as crucial for a good response to pandemic/epidemic crises. They will include detection, diagnosis, prophylaxis, therapeutic, public health and societal domains
- First priority: Clinical research

# CoMeCT- Coordination Mechanism for Cohorts and Trials

- HORIZON-HLTH-2023-DISEASE-03-05: Pandemic preparedness and response: Sustaining established coordination mechanisms for European adaptive platform trials and/or for cohorts
- The purpose of CoMeCT is to enhance Europe's clinical research preparedness and response capacity to infectious disease outbreaks with epidemic potential through sustained strategic and scientific coordination of adaptive platform trials and cohort studies.
  - Promote timely deliverance of strong clinical evidence in support of patient- and population level interventions in epidemic/pandemic settings
  - Be ready to pivot to (re-)emerging infectious disease outbreak clinical research response efforts when needed, thereby being strategic assets for European clinical research preparedness and response
  - May provide valuable support for strained health systems in search of harmonized and pragmatic approaches to optimal patient care and public health measures.



# Synergistic initiatives - at EU level and beyond\*



\* list of initiatives not exhaustive

GloPID-R



**WHO clinical trials resolution**  
 WHO expert group + UK led friends group  
[Public consultation on WHO guidance for best practices for clinical trials](#)

**NIH**

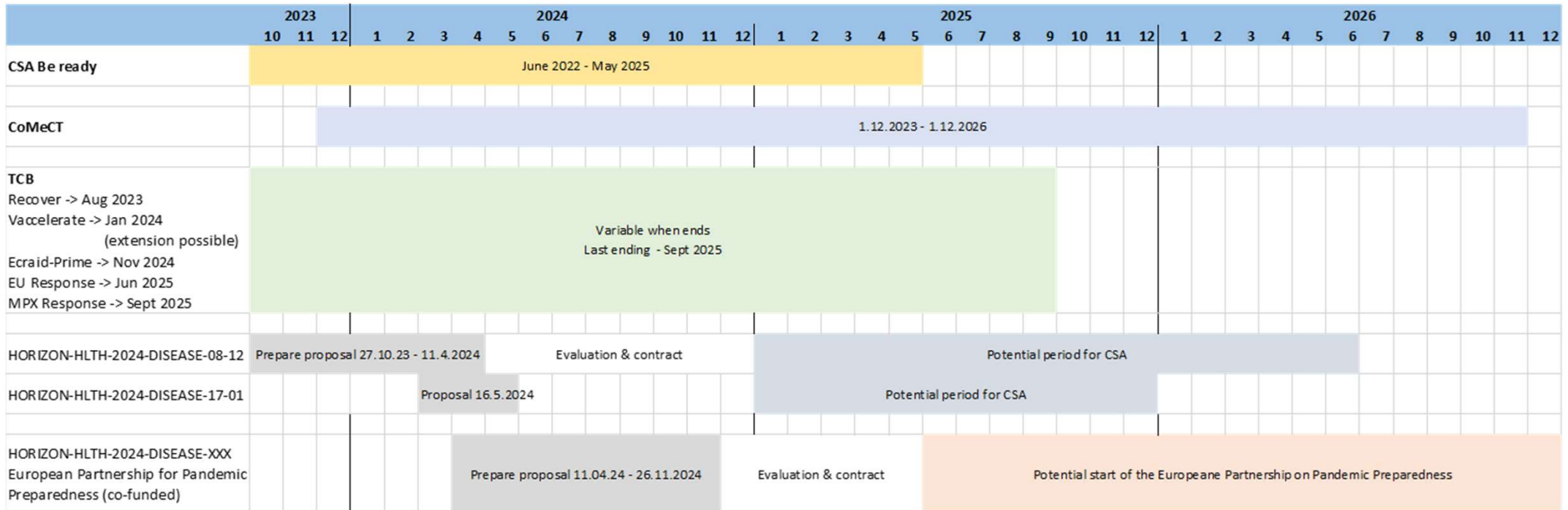
Global Clinical Research Systems for Health Security

CoMeCT



Funded by the European Union under project GA n°101136531

# Timeline for various projects



## HORIZON-HLTH-2024-DISEASE-08-12

- “Be Ready Plus”
- Call 27.11.2023 – 11.04.2024

## HORIZON-HLTH-2024-DISEASE-17-01

- Revised version of “Be Ready Plus”

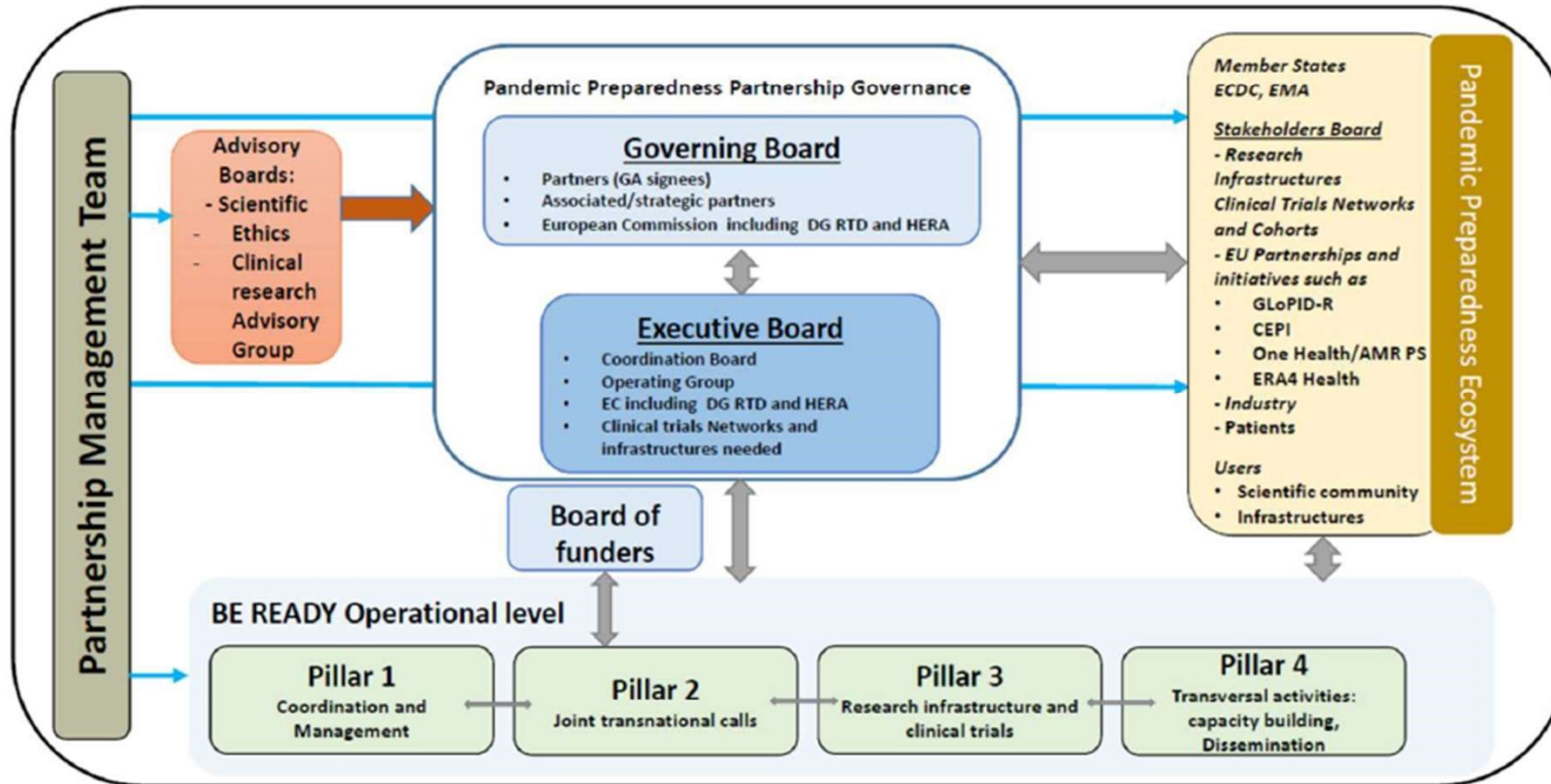
## HORIZON-HLTH-2024-DISEASE-XX-XX

- **European Partnership for Pandemic Preparedness**
- “Ever-warm clinical trial networks for pandemic preparedness”
- EU budget: 100-300 million € + Co-funded by MS ??
- Buzz words: Collaboration, coordination, networks, breaking silos etc.

# BE READY WP2 - PANDEMIC PREPAREDNESS PARTNERSHIP PROPOSAL

- Type of Partnership (*tbc by the Health Programme Committee of Horizon Europe*) :  
**Co-funded partnership**
- Targeted budget: 200 – 300 M Euros
- **In kind and in cash** contributions of Member States.  
Depending on EU Member States financial commitments
- Duration: 7-10 years
- Beginning: expected mid 2025





Proposition september 2023



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**BE  
READY**

Europe  
Partnership  
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Dr. Jean-Claude Desenclos,  
Scientific Advisor, Santé publique  
France (SpF), France, and Senior  
Executive Board Advisor for  
IANPHI

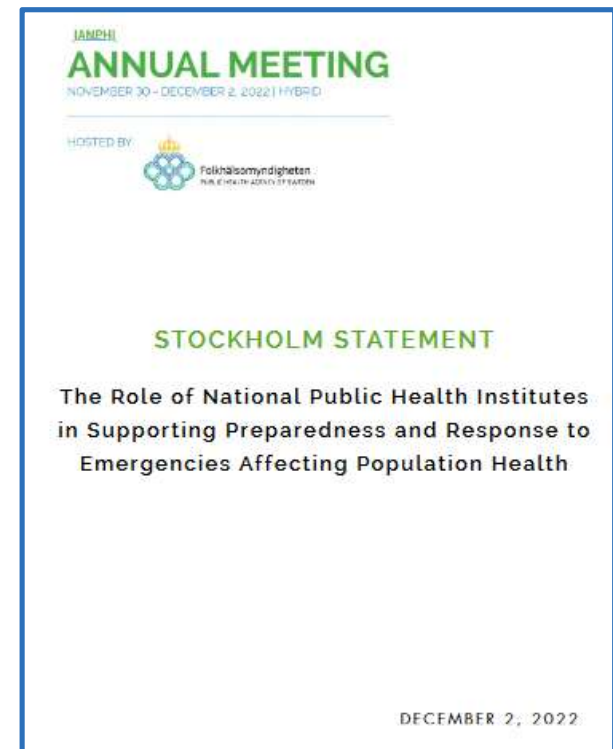
# BUILDING BRIDGES TO RESILIENCE: IDENTIFYING INTERNATIONAL GOOD-PRACTICE PRINCIPLES IN APPLYING HEALTH PROMOTION TO EMERGENCY PREPAREDNESS AND RESPONSE

An IANPHI Project funded by  
the International Health  
Grant Programme of Canada  
(Grant number: 2324-HQ-000241)

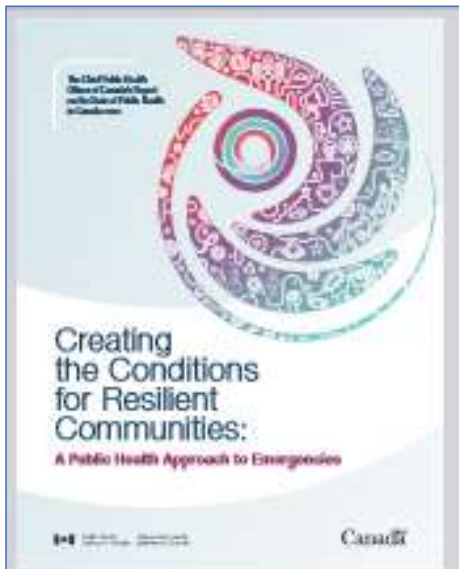
# The IANPHI Stockholm Statement, December 2022

“National Public Health Institutes bring critical support at country level in the response to crises affecting health”

“National Public Health Institutes prioritize health equity and commit, through an appropriate investment in prevention and health promotion, towards healthier, and resilient populations”.



## Context – Public Health Agency of Canada (PHAC) initiative



- Publication of Canada's Chief Public Health Officer report "Creating the Conditions for Resilient Communities: A Public Health Approach to Emergencies", December 2023
- Highlights the importance of determinants of health, their impacts and outcomes
- Provides opportunities to move forward, including specifically "Applying Health Promotion Actions to the Emergency Management Continuum"
- PHAC suggested IANPHI to submit a project for funding to the Canada International Health Grants Program (IHGP)

## Project objectives and outcome:

### Project objectives

- Collect review and analyze practice-based evidence in applying health promotion within EPR, particularly for COVID-19
- Identify good-practice principles taking into account the diversity of context and levels of their implementation
- Promote actively the principles of good practices identified
- Advocate for good practices to promote health promotion within EPR

### Project outcome

- Increase IANPHI and NPHI members capacity to advocate collectively for health promotion interventions within its membership and in its strategy



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### Scoping review:

- Articles/reports on health promotion applied/implemented during emergency responses
- Full breadth of the emergency management continuum : prevention, mitigation, preparedness, community involvement, response, recovery...
- Will help frame and refine the search, collection, and analysis of case studies

### Four activities:

#### Survey, interviews and face-to-face meetings:

- Identify about 15 case studies among ANPHI members and partners in all 4 IANPHI regions
- Challenges, levers and successes to implement health promotion within EPR
- Identify specific practices: : building workforce, interaction between EPR and health promotion, strengthening community action and equity of response toward vulnerable communities...

## Four activities:

Analysis of findings and identification of principles for good practice:

- Framework proposed by Eileen Ng and Pierpaolo de Colombani to identify best practices
- Good practice defined as *"an intervention that has shown evidence of effectiveness in a particular setting and is likely to be replicable to other situations"*.
- 8 criteria: *relevance, community participation, stakeholder collaboration, ethical soundness, replicability, effectiveness, efficiency and sustainability*

Publications, communications & Dissemination:

- Best practices to promote through IANPHI network, WHO...
- Case studies, report, educational material, scientific articles





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## Coordination, governance and human resources:

### Implementation:

- Activity 1: WHO Collaborating Centre for Health Promotion Research (HPRC)
- Activity 2 & 3: a Scientific Coordinator and a Project Assistant for interviews
- NPHI(s) that will receive funding for the 2 positions

### Governance:

- Steering Committee (SC) to **advise** on the protocol & work plan
- Transparent process for the **selection of NPHIs** to carry out activities 2 & 3
- Chaired by an Executive Board (EB) advisor
- Reflect the **whole IANPHI membership**, include an additional EB advisor, members from the four regional networks & **experts from external organizations**
- Meet **at least quarterly** to monitor the implementation of the project

### Partners:

- WHO's Health Systems Resilience (HSR) and Essential Public Health Function (EPHF) and Health Promotion Directorates
- Regional CDCs: [CARPHA](#), [Africa CDC](#), [ECDC](#), [Gulf CDC](#)
- WHO Collaborative Centers, [EuroHealthNet](#)

### Administrative support & coordination:

A IANPHI Secretariat staff member to provide administrative coordination support to the SC and relevant actors in charge of the project



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## Thank you for your attention!

<p>5:35 – 6:30 pm</p>	<p><b>PHAC SESSION: BUILDING BRIDGES TO RESILIENCE – IDENTIFYING INTERNATIONAL GOOD-PRACTICE PRINCIPLES IN APPLYING HEALTH PROMOTION TO EMERGENCY PREPAREDNESS AND RESPONSE</b></p> <p><i>During this session, the PHAC 2 project will be further discussed and IANPHI Members will be given the floor to share their ideas and contributions.</i></p> <p>The session will be moderated by Dr. Jean-Claude Desenclos, Scientific Advisor, Santé publique France (SpF), France, and Senior Executive Board Advisor for IANPHI</p>
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Dr. George Leahy, Deputy  
Director Europe,  
&  
Dr. Carolina Arevalo, Deputy  
Director of Research, Evidence  
and Knowledge, UK Health  
Security Agency (UKHSA),  
United Kingdom England

# HOW THE UK WAS PREPARED TO CONDUCT REAL-TIME RESEARCH DURING THE PANDEMIC

# INTRODUCTION

# The big questions

## What are the research gaps?

Who identifies them?

Who needs to know?

How are they shared?

What needs to be known NOW?

What are the long-term questions?

How do we manage changing landscape,  
evolution of unknowns?

What evidence do we need?

How do we find and synthesise evidence at pace?

What is the best way to address them?

- Research
- Evaluation
- Surveillance

## Who should do the research and how?

Who has capacity, capability, infrastructure,  
expertise?

Where are the experts?

How can we collaborate?

What partnerships are in place?

What does the public need/want?

How to fund studies?

What data do experts need to do research?

What is in place now that can be stood  
up/pivoted?

How can data access and approvals be  
streamlined?

# Pre-existing capacity and capability



Research partnerships and academic networks

National Institute for Health and Care Research  
Health Protection Research Units



Research capacity and infrastructure

Public Sector Research Establishments



Surveillance

Public Health England



Sleeping studies and protocols

Department of Health and Social Care



Research funding mechanisms

UK Government Research Funders

# Pivoting to COVID

examples



Research partnerships and academic networks

National Institute for Health and Care Research  
Health Protection Research Units



Responsive Mode Research



Research capacity and infrastructure

Easter Six



Surveillance

CORSAIR Study



Sleeping studies and protocols

Rapid response funding calls (NIHR/UKRI)



Research funding mechanisms



Partnerships between UKHSA (prev. PHE) and academia undertaking high quality research that aims to protect the public's health and minimise the health impact of emergencies.



Undertake research on predefined themes such as antimicrobial resistance, air pollution, radiation and chemical hazards, behavioural science, data and modelling, and infectious diseases.



Responsive research remit to support emerging UKHSA needs including from incidents.

During 2020, HPRUs undertook 48 COVID projects, leading to 56 papers and 2 letters to journals.

**COVID-19 household contact and transmission study:** ATACCC Study Investigators, Singanayagam, A, Hakki, S, Dunning, J, Madon, KJ, Crone, MA, Koycheva, A, Derqui-Fernandez, N, Barnett, JL, Whitfield, MG, Varro, R, Charlett, A, Kundu, R, Fenn, J, Cutajar, J, Quinn, V, Conibear, E, Barclay, W, Freemont, PS, Taylor, GP, Ahmad, S, Zambon, M, Ferguson, NM, Lalvani, A, Badhan, A, Dustan, S, Tejpal, C, Ketkar, AV, Narean, JS, Hammett, S, McDermott, E, Pillay, T, Houston, H, Luca, C, Samuel, J, Bremang, S, Evetts, S, Poh, J, Anderson, C, Jackson, D, Miah, S, Ellis, J & Lackenby, A 2022, **'Community transmission and viral load kinetics of the SARS-CoV-2 delta (B.1.617.2) variant in vaccinated and unvaccinated individuals in the UK: a prospective, longitudinal, cohort study'**, *The Lancet Infectious Diseases*, vol. 22, no. 2, pp. 183-195. [https://doi.org/10.1016/S1473-3099\(21\)00648-4](https://doi.org/10.1016/S1473-3099(21)00648-4)



# Easter Six Study

Outbreak Investigation using serology to monitor COVID-19 in care home residents and staff



Six London care homes with COVID-19 outbreaks were investigated during the Easter weekend (EASTER6) and found high rates of infection with SARS-CoV-2 were found in residents and staff members. Many did not have any symptoms at the time. The investigation was continued through the measurement of antibodies against SARS-CoV-2 in residents and staff at the six care homes around one month after initial investigation

## RESPOND

Ladhani, S, Chow, JY, Janarthanan, R, Fok, J, Crawley-Boevey, E, Vusirikala, A, Fernandez, E, Perez, MS, Tang, S, Dun-Campbell, K, Evans, EW, Bell, A, Patel, B, Amin-Chowdhury, Z, Alano, F, Paranthaman, K, Ma, T, Saavedra-Campos, M, Myers, R, Ellis, J, Lackenby, A, Gopal, R, Patel, M, Brown, C, Chand-Kumar, M, Brown, K, Ramsay, M, Hopkins, S, Shetty, N & Zambon, M 2020, 'Investigation of SARS-CoV-2 outbreaks in six care homes in London, April 2020', *EClinicalMedicine*, vol. 26, 100533. <https://doi.org/10.1016/j.eclinm.2020.100533>

## INFORM



The screenshot shows search results on the PHE website. The top result is 'Investigation of SARS-CoV-2 outbreaks in 6 care homes in London (April 2020), 9 July 2020'. The second result is 'Enhanced outbreak investigations, London care homes (April 2020), 9 July 2020'. A third result is partially visible: 'Easter 6 care home investigations: part 2 - serology, 9 July 2020'.

[PHE: Easter 6 care home investigations: part 2 - serology, 9 July 2020 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/phe-easter-6-care-home-investigations-part-2-serology-9-july-2020)





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# CORSAIR Study

COVID-19 Rapid Survey of Adherence to Interventions and Responses



UK Health Security Agency

Stood up in 2020 to run for 2 years through the pandemic

- Based on 2012 sleeping study NIHR award to develop a set of questions to be used in the event of a future pandemic
- Focus on public attitudes, behaviours and impact of policies
- Recommendations provided to decision makers, policy makers and scientific advisory groups
- Collaboration between King's College London, University College London and Public Health England

## PREPARE

Rubin GJ, Bakhshi S, Amlôt R, Fear N, Potts HWW, Michie S. The design of a survey questionnaire to measure perceptions and behaviour during an influenza pandemic: the Flu Telephone Survey Template (FluTEST). Southampton (UK): NIHR Journals Library; 2014 Nov. PMID: 25642523.

## RESPOND

Simpson, CR; Thomas, BD; Challen K; De Angelis, D; Fragaszy, E; Goodacre, S; Hayward, A; Lim, WS; Rubin, GJ; Semple, MG; Knight, M; 2020, 'The UK hibernated pandemic influenza research portfolio: triggered for COVID-19, May 2020', *The Lancet Infectious Diseases*, vol. 20, Issue 7, P7670769-100533. [https://doi.org/10.1016/S1473-3099\(20\)30398-4](https://doi.org/10.1016/S1473-3099(20)30398-4)

Simpson CR, Beever D, Challen K, De Angelis D, Fragaszy E, Goodacre S, Hayward A, Lim WS, Rubin GJ, Semple MG, Knight M; NIHR hibernated influenza studies collaborative group. The UK's pandemic influenza research portfolio: a model for future research on emerging infections. *Lancet Infect Dis*. 2019 Aug; 19(8):e295-e300. doi: 10.1016/S1473-3099(18)30786-2. Epub 2019 Apr 18. PMID: 31006605.

## INFORM

The COVID-19 Rapid Survey of Adherence to Interventions and Responses (CORSAIR) study: Final report. (Shared with DHSC, 22 June 2022)

- + 5 data reports
- + 16 pre prints
- + 17 peer-reviewed publications

NIHR

<https://www.nihr.ac.uk/about/researchresearch/the-corsair-study>





## UK Research Institutes and National Institute for Health and Care Research (NIHR)

- Medical Research Council and NIHR rapid response funding calls
- Urgent Public Health Research – prioritisation process for Clinical Research Network and NHS resources
- ISARIC Clinical Characterisation protocol
- National Core Studies
- Clinical trials for vaccine studies

## UK Collaborative in Development Research Epidemics Funders group

- Coordination of funders
- Research tracker
- Living Mapping Review

Public Health England – UKHSA contributing through informing funders of emerging research priorities and undertaking research studies



Home > COVID-19

Guidance

### SIREN study

Providing vital research into COVID-19 immunity and vaccine effectiveness nationally.

From: [UK Health Security Agency](#)

Published 20 June 2022

Last updated 5 April 2024 — [See all updates](#)

The SARS-CoV-2 immunity and reinfection evaluation (SIREN) study is a unique, large-scale partnership with NHS healthcare workers providing an agile response to an evolving pandemic. It is one of the [national core studies](#) established in response to COVID-19 and a National Institute for Health Research (NIHR) urgent priority study, and continues to provide vital research into immunity and vaccine effectiveness.



<https://www.nihr.ac.uk>

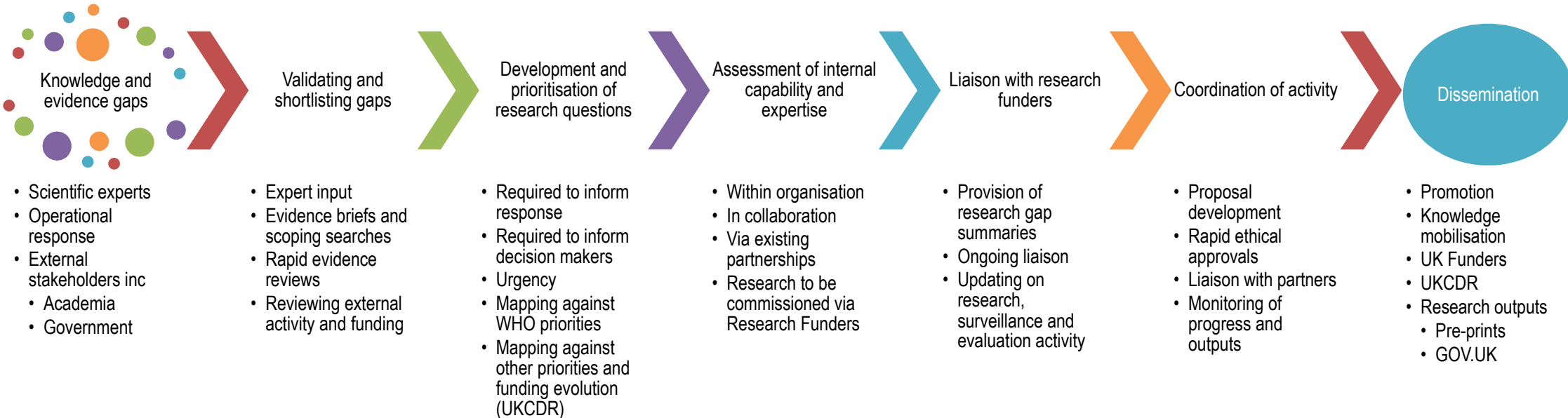


<https://ukcdr.org.uk/celebrating-covid-circle/>



The Research and Science cell was responsible for identifying and addressing major gaps in evidence to inform the COVID-19 response and coordination of the scientific activity of PHE/UKHSA

- Set up in February 2020 as part of the organisational incident response
- Membership across PHE/UKHSA experts, UK Devolved Administrators, Public
- Triaging research collaboration requests and assessment of requests of PHE data





# Looking to the future



Identification of priority research questions for pandemic preparedness

Informing research investment (HPRUs, sleeping studies, protocols)

Embedding research and evaluation into operational emergency response

Implementation of research prioritisation framework

Increasing evidence synthesis capacity

Increase evaluation capacity and embedding evaluation in research

International contribution

# Looking to the future



Publishing UKHSA Science Strategy

Contribution to 100 Days Mission

Priority Pathogens List

Contribution to DHSC-led pandemic preparedness funders framework

Establishing Vaccines Development and Evaluation Centre and Diagnostics Accelerator

Agreed ethical review process of research studies involving UKHSA access to previously collected data (Health Research Authority)



# CLOSING REMARKS



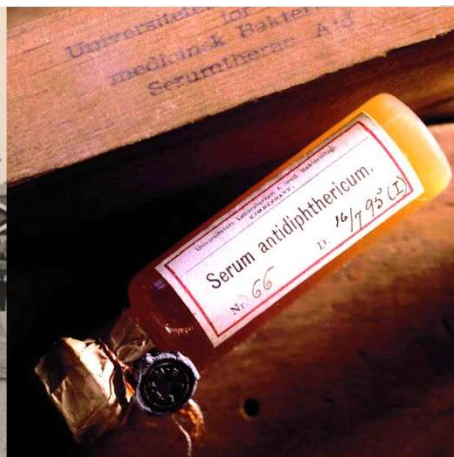
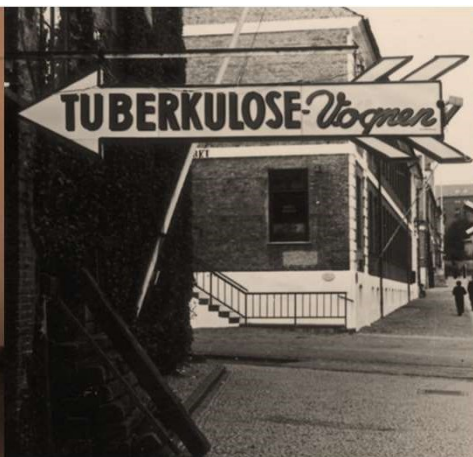
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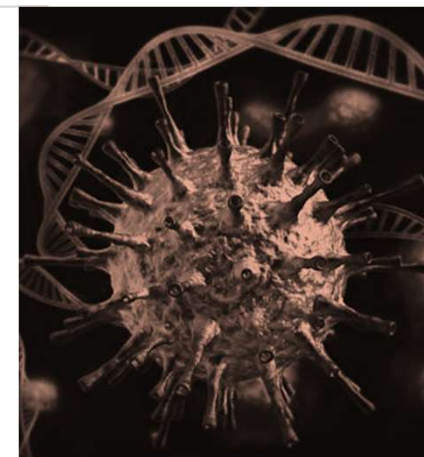
Dr. Tyra Grove Krause,  
Executive Vice-President and  
Head of the Division of  
Epidemiological Infectious  
Diseases Preparedness, Statens  
Serum Institut (SSI), Denmark

# RESEARCH AS A CENTRAL PILLAR IN INFECTIOUS DISEASE PREPAREDNESS: THE EXPERIENCE OF SSI

- Prevention and control of infectious diseases
  - Surveillance
  - Reference laboratory
  - Vaccine development
  - Vaccine supply
  - Scientific advice
  - Last 20 years build up a digital infrastructure for surveillance & research



DANMARKS  
NATIONALE  
**BIOBANK**





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## Vision

STATENS  
SERUM  
INSTITUT



Statens Serum Institut  
– An internationally  
leading research and  
preparedness  
organisation that  
strengthenens the health  
of humans and animals

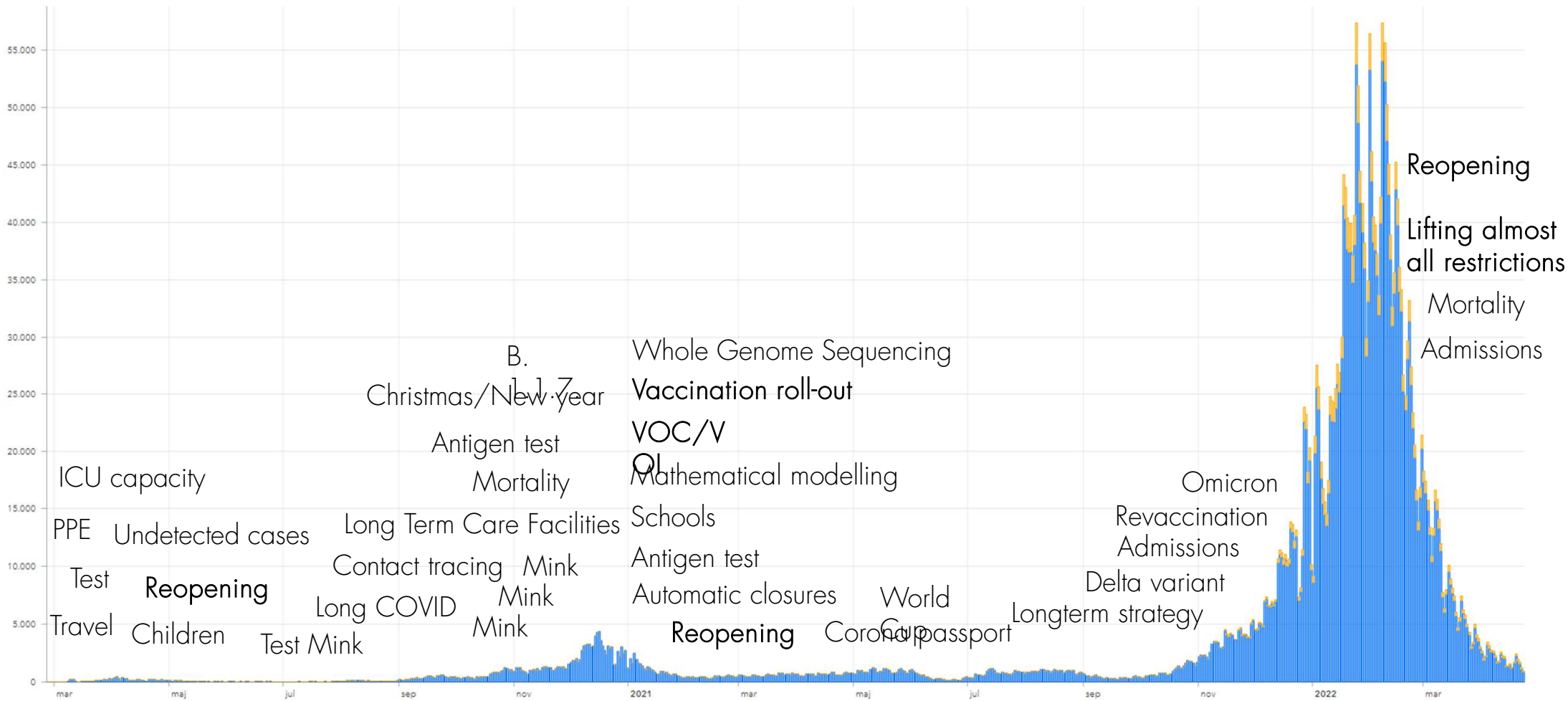


## Five strategic action areas

- Far-sighted and future-proof preparedness
- One Health
- Research and evidence as a foundation
- A strong data infrastructure
- Useful, open and transparent

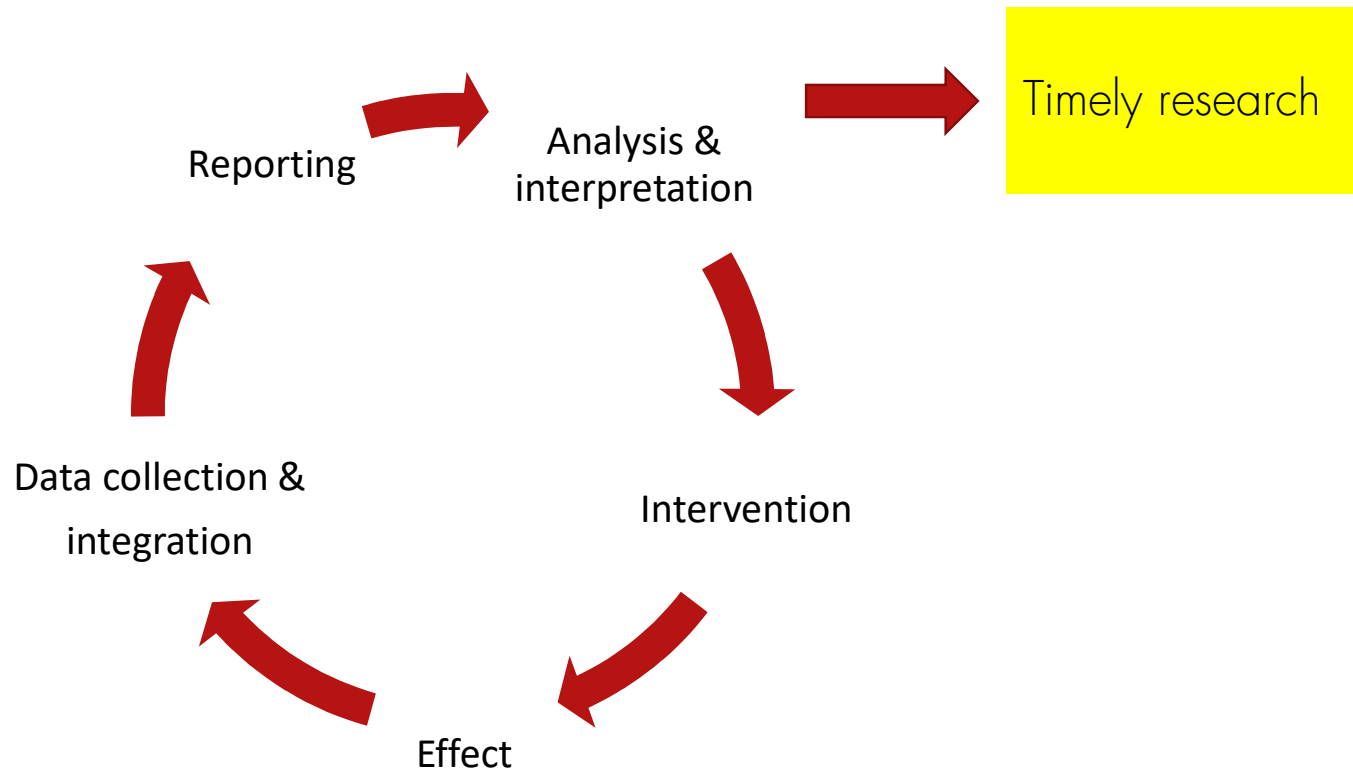


# A long journey with many knowledge gaps



# Public health surveillance

Ongoing systematic collection, analysis, interpretation and dissemination of health data used for public health prevention and practice

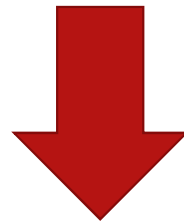


# Research based infectious disease preparedness

Surveillance



Research



Timely risk assessment and response



# Strong digital data infrastructure



## Microbiology Database

- PCR
- antigen test

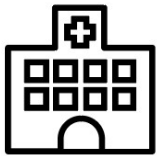


## WGS

- Mutations
- Variants

## National Patient Register

- Hospital admission
- ICU procedure codes
- Underlying illness



## Vaccination register

- Date of vaccination
- Vaccineproduct

## Patients with COVID-19



## Nursing homes

- Residents
- Staff



## Occupation/workplace

- Healthcare workers
- Others

## Civil Registration System

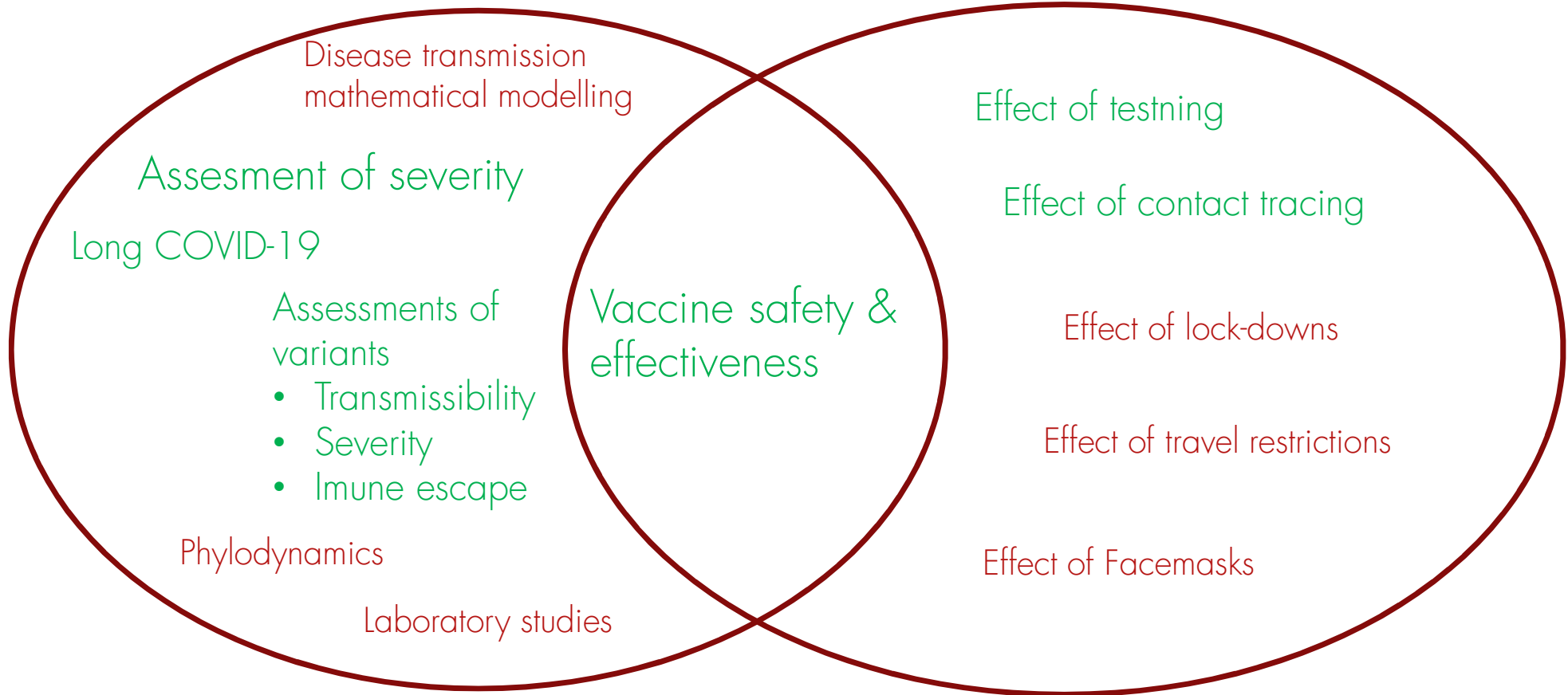
- Age, sex
- Place of living
- Date of death
- Ethnicity
- Family relations



# Public health research domains

## Risk assessment

## Risk management



# National collaborations with academia



Whole genomic sequencing capacity



Seroprevalence studies



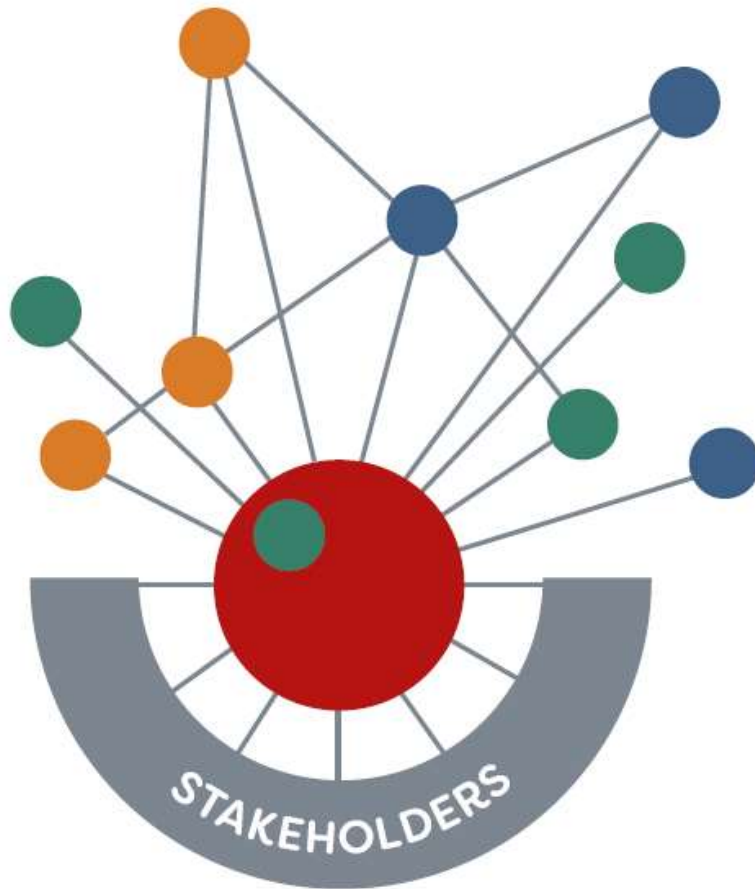
Evaluate testing efforts and contact tracing schemes



Phylogenetics / transmission patterns

# Research collaboration with academia

Peace  
time



Crises



## Join forces in international research networks

- Nordic vaccine network supported by EMA

JAMA Cardiology | **Original Investigation**

### SARS-CoV-2 Vaccination and Myocarditis in a Nordic Cohort Study of 23 Million Residents

Øystein Karlstad, MScPharm, PhD; Petteri Hovi, MD, PhD; Anders Husby, MD, PhD; Tommi Härkänen, PhD; Randi Marie Selmer, MSc, PhD; Nicklas Pihlström, MSc; Jørgen Vinsløv Hansen, MSc, PhD; Hanna Nohynek, MD, PhD; Nina Gunnes, MSc, PhD; Anders Sundström, BA, PhD; Jan Wohlfahrt, MSc, DMSC; Tuomo A. Nieminen, MSocSc; Maria Grünewald, MSc, PhD; Hanne Løvdal Gulseth, MD, PhD; Anders Hviid, MSc, DMSC; Rickard Ljung, MD, PhD, MPH



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STATENS  
SERUM  
INSTITUT



# Join forces in international research networks



- Funded by EC and governed by HERA
- Sharing pathogens
- Complementing expertise

## DURABLE

Delivering a Unified  
Research Alliance of  
Biomedical and public  
health Laboratories  
against Epidemics

## Conclusion

- We need to fill out research competence gaps
- SSI works to strengthen research activities
  - Within our organisation
  - With academia nationally
  - International research networks
- Intervention studies !!!





Moderated by Elene Godziashvili, Head of CPD Division, National Center for Disease Control and Public Health, Georgia

# DISCUSSION: INCLUDING AN INTERVENTION ON RESEARCH COMPETENCE IN THE WORKFORCE STRATEGY