Health Data Science in the COVID-19 Era

HDR UK ‘ONE INSTITUTE’ CONFERENCE 2020

Opening plenary

• Chair:
  • Andrew Morris, Director, Health Data Research UK

• Welcome address:
  • Patrick Vallance, Government Chief Scientific Adviser and Co-Chair, Scientific Advisory Committee for Emergencies (SAGE)

This session will start at 09:30BST.
Please use the Q&A function to ask questions to speakers. You are welcome to comment using the chat function, but we cannot guarantee this will be monitored.
How UK health data research has pivoted for COVID-19

- Andrew Morris, Director, Health Data Research UK
- Caroline Cake, Chief Executive Officer, Health Data Research UK
HDR UK’s mission is to unite the UK’s health data to enable discoveries that improve people’s lives.

Our 20-year vision is for large scale data and advanced analytics to benefit every patient interaction, clinical trial, biomedical discovery and enhance public health.
To achieve this our strategy focuses on uniting, improving and using health data....
...delivering through the Gateway, Alliance and Hubs...
...and through 6 national research priority areas

Uniting and improving the UK’s health data...

...to make discoveries that improve people’s lives

IMPROVING HEALTH DATA - TOOLS & METHODS

THE HUMAN PHENOME

APPLIED ANALYTICS (AI)

USING HEALTH DATA TO DEMONSTRATE...

UNDERSTANDING THE CAUSES OF DISEASE

BETTER, FASTER, EFFICIENT CLINICAL TRIALS

IMPROVING PUBLIC HEALTH

BETTER CARE
...and the institute is continuing to evolve to deliver this strategy

<table>
<thead>
<tr>
<th>Year</th>
<th>Inception</th>
<th>Substantive Sites</th>
<th>Growth</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>• 10 funders</td>
<td>• 6 Research sites with 20 research organisations</td>
<td></td>
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</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
<td>• &gt;20 Alliance members</td>
<td>• 30 Alliance members</td>
</tr>
<tr>
<td>2019</td>
<td>• &gt;100 research organisations</td>
<td>• 8 hubs with &gt; 100 partners</td>
<td>• 78 research organisations</td>
<td>• 8 Research sites</td>
</tr>
<tr>
<td>2020</td>
<td>• 11 Sprints</td>
<td>• 11 training sites</td>
<td>• 4 Catalyst projects</td>
<td>• 78 research organisations</td>
</tr>
<tr>
<td></td>
<td>• Public Advisory Group</td>
<td></td>
<td>• 60 patients on COVID group</td>
<td>• 60 COVID patient advisors</td>
</tr>
</tbody>
</table>

- **Public Advisory Group**
- **10 training sites**
- **100 organisations**
- **11 sprints**
- **8 hubs**
- **6 research sites**
- **78 research organisations**
- **12 funders**
- **>30 Alliance members**
- **10 funders**
- **>20 Alliance members**
- **10 funders**
- **100 organisations**
- **6 research sites**
- **78 research organisations**
- **8 hubs**
We are now an institute made up of 86 organisations in 56 offices across 32 locations.

**Wellcome Trust**
- Great Ormond Street
- DRIVE Unit

**CENTRAL TEAM OFFICES**

**HDR UK**
- Cambridge
- London
- Midlands
- North
- Oxford
- Scotland
- South-West
- Wales and Northern Ireland

**HEALTH DATA RESEARCH HUBS**
- BREATHE
- DATA-CAN
- Discover-NOW
- Gut Reaction
- INSIGHT
- PIONEER
- NHS DigiTrials
- BHF Data Science Centre

**TRAINING LOCATIONS**
- Belfast
- Birmingham
- Bristol
- Cambridge
- Edinburgh
- Exeter
- Leeds
- London
- Manchester
- Oxford
With a growing community of researchers, innovators, technologists, clinicians, patients, & public across industry, NHS, academia and charities working together...
...to deliver at pace...
...and make impact at scale
Our highlights from the past year

<table>
<thead>
<tr>
<th>UNITING, IMPROVING AND USING HEALTH DATA</th>
<th>OUR GROWING COMMUNITY</th>
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</thead>
<tbody>
<tr>
<td>30 member organisations of the UK Alliance</td>
<td>32 locations</td>
</tr>
<tr>
<td>649 peer reviewed publications</td>
<td>8,300 monthly website visitors</td>
</tr>
<tr>
<td>442 datasets discoverable on the Gateway</td>
<td>5,000 followers on Twitter</td>
</tr>
</tbody>
</table>

| 5,000 searches for data on the gateway |
| 15,000 views of the Gateway |

<table>
<thead>
<tr>
<th>3,700 users searching datasets on the Gateway</th>
<th>56 influences on policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,000 contacts in our CRM</td>
<td>2,000 people on our mailing list</td>
</tr>
<tr>
<td>Over 450 institute members</td>
<td>Over 100 organisations involved in the Hubs</td>
</tr>
</tbody>
</table>
Working in Partnership to respond to COVID-19

Bill Gates

New England Journal of Medicine, April 2020
We are mobilising resources and championing the use of health data to respond to COVID-19

Our three key priority areas are:

1. Co-ordinate and connect national data science driven research efforts related to COVID-19
2. Accelerate access to UK-wide priority data relevant to COVID-19 for research
3. Leverage the best of the UK’s health data science capability to address the wider impact of the COVID-19 pandemic, supporting vulnerable groups that will be hardest hit
We are operating a prioritisation process for health data research questions for SAGE – accelerating the ‘fittest’ questions...

106 health data research questions identified
36 prioritised for support and data access
...and reporting new research insights transparently...

<table>
<thead>
<tr>
<th>Priority research questions</th>
<th>Insights from ongoing studies (links provide further details)</th>
<th>SAGE Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How do we understand population immunity &amp; improve testing reliability (immunology &amp; epidemiology REL)</td>
<td>• Pilot completed of a new, more rapid, PCR test for COVID-19 that can be used at the point of care. Shorter time from test to result allows more rapid triage and patient movement to safe and appropriate isolation wards.</td>
<td>Ensure data gathered from all swab &amp; antibody testing programmes can be securely linked and used for research. This will require unparalleled cooperation across all four nations between NHS organisations, PHE, data custodians, academic partners, and technology partners, whilst maintaining public trust.</td>
</tr>
<tr>
<td>2. Why do BAME groups have an increased risk of severe COVID-19 outcomes (NEUR)?</td>
<td>• Largest study (in over 73,000 patients) on link between ethnicity and COVID-19 in UK, found that, compared to White COVID-19 patients, those with BAME background:</td>
<td>Ensure that further research, undertaken with international partners if possible, addresses why BAME groups appear to have a higher rate of severe COVID-19 outcomes. Including understanding whether BAME groups are more likely to contract COVID-19 and/or increased risk of severe outcomes once infected. Ensure that large representative datasets (used in this study) are made fully available as soon as possible to enable further rapid review.</td>
</tr>
<tr>
<td>3. How do we best understand and protect vulnerable groups? (H, 22, 36, 39, 40 &amp; inform an effective phased lockdown release)</td>
<td>• Severe COVID-19 is strongly associated with past medical histories across all age groups, as determined by a new, more robust, risk classifier – enables more accurate ID of individuals most in need of shielding until epidemic is over.</td>
<td>Further develop, extend and utilise open “risk” symptom trackers and surveys, to better capture and model targeted public health messaging. Directly endorses the use of trusted research to enable an open approach to health research and safety.</td>
</tr>
<tr>
<td>4. RECOVER (RES)</td>
<td><strong>100 pre-print publications</strong></td>
<td></td>
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</tbody>
</table>
...making it easier to discover and request access to COVID-19 relevant datasets via the Gateway

https://healthdatagateway.org/
...ensuring the views of patients and public are heard and taken on board and we are transparent with our work

We are receiving input from the 62 members of our COVID-19 public advisory group, our Public Advisory Board and new lay members on our delivery groups.

- Prioritising COVID-19 data research questions
- Shaping our advise to SAGE
- Advising on COVID-19 research projects – e.g. the risk calculator ‘OurRisk.CoV’
- Sharing questions and concerns on accelerated data access
Increasing our knowledge of this devastating disease and how to treat it

**Examples**

- The RECOVERY trial has used data to establish there is no clinical benefit of hydroxychloroquine in hospitalised patients.

- Data from the Symptom Study App identified loss of sense of smell and taste as a recognised symptom of COVID-19, influencing UK government policy.

- Use of data has shown the impact of COVID-19 on vulnerable people with health conditions, including those with cancer and heart disease.

**OUR RESPONSE TO COVID-19**

- 62 patient and public volunteers in Covid-19 advisory groups
- 1,300 people collaborating on Covid-19 research
- 100 Covid-19 preprint publications
Scaling this up to a global response
Launching today: International COVID-19 Data Research Alliance and Workbench

International COVID-19 Data Research Alliance and Workbench

The International COVID-19 Data Research Alliance and Workbench provide a co-ordinated international platform to enable researchers to access global data to derive rapid insights about COVID-19 and speed up the development of treatments.

Our challenge

COVID-19 represents an unprecedented public health, social, medical, and economic crisis. There is an urgent need to enable access to data that can be linked with other data in a safe and secure way, for the world’s research community to answer key questions. Those answers are urgently needed to save people’s lives now and in the future.
To unite data from international clinical trials, biomedical and health research to enable discoveries that benefit all people, everywhere, by reducing the harm of the COVID-19 pandemic.

To build a trustworthy international partnership and enduring data infrastructure to support a rapid response to the current COVID-19 and future pandemics across the world.
Initial partners
“start small, think big, move fast”

FUNDERS
Bill and Melinda Gates Foundation
Chan Zuckerberg Foundation
Mastercard
Minderoo Foundation
Wellcome

ALLIANCE PARTNERS
African Academy of Sciences
BREATHE Health Data Research Hub
Generation Scotland
Genomics England
Global Alliance for Genomic Health
HDR Network Canada
Infectious Diseases Data Observatory (IDDO)

TECHNICAL EXPERTISE
Aridhia
Mastercard
Novartis Pharma
SAIL
SeRP (Secure eResearch Platform)
Thank you for listening

For further information:

www.hdruk.ac.uk  enquiries@hdruk.ac.uk  @HDR_UK
International approaches to combatting the COVID-19 pandemic – how have data and technology been harnessed?

Chairs:
- Rhos Walker, Chief Science Strategy Officer, Health Data Research UK

Panellists:
- Andreas Poensgen, Managing Partner, Turgot Venture
- Effy Vayena, Chair of Bioethics, Swiss Institute of Technology
- Teo Yik Ying, Dean of Saw Swee Hock School of Public Health, National University of Singapore

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Responding to an international pandemic

Germany’s response to COVID-19

Dr. Andreas Poensgen

Health Data Science in the COVID-19 Era: HDR UK ‘One Institute’ Conference
June, 16th 2020
The first wave and government interventions: overview

The story

19.1 - 27.2  Limited outbreak (Webasto / China)
27.2.  New Cases: Skiing / Italy

Citizen Level
4.3.  Many businesses start home office

City & Federal State level
10.3  No large events > 1000
11.3  Isolation for skiing tourist
16.3.  State of emergency

German national level
12.3  No large events > 1000
16.3  Closing of bars, restaurants, most shops
19.3  Merkel televised Speech
22.3.  Lock down: 2 persons to meet, home
2.4.  Stopping flights from Iran etc.

Source: Statista, RKI, Johns Hopkins, WHO, Handelsblatt
Insights

1. The success - not result of grand design & strategy or full readiness

2. Probably a combination
   - Outside chock: the „Italian tragedy“
   - Access to Asian experience (SK, T, S, Ch): clear what needed to be done
   - Early change of behaviour: physical distancing
   - Some federal states acting early
   - Angela Merkel & Robert Koch Institute

3. After the„Hammer“, society started to learn „dancing“, slowly, trial and error: How to...
   - interrupt transmissions opening up
   - test-trace-isolate
   - protect elderly and feeble
   - ramp up supplies & capacity
   - improve hospital treatment strategies
The power of decentral decision-making & initiative
Example: independent laboratories

> 600 % increase within a month

- Independent laboratories
- Direct relation with physicians
- Adaptive to local needs
- No government intervention

Development a surprise for political decision makers
Many similar stories: e.g. ramp up of hospital capacity, getting masks, organizing test stations, etc..
Learning: You win on the local level

- Understanding infection rates & dynamics
- Learning physical distancing and appropriate behaviour
- Testing, tracing, isolating
- Protecting nursing homes etc.
- Providing care / intensive care
- Supply & procurement

Key success factors

- Adaptation to local situation
- Targeted local task forces in charge
- Flexible availability of resources
- Fast data availability & transparency
- Operational effectiveness
- Involving all shareholders
- Communication

But support needed: central competence hubs & government:

Nat. & int. know how & best practice sharing, benchmarking, scientific insights, data infrastructure
Access to int. purchasing & procurement
Financial resources, laws & regulation, law enforcement, corrective actions if the local level fails
The role of science, data and technology: leverage focussed strategies
Principal approach to stay focussed

Key areas of activities to fight COVID 19
- Monitor infection rates & dynamics
- Measures of physical distancing/Behavioural change
- Test, trace, isolate
- Protecting elderly & feeble
- Providing care / intensive care
- Ensure supplies

Value chain per area
- Monitor & Evaluate / Benchmark
- Implement
- Operate
- Share
- R&D
- Understand
- Innovate
- Develop
- Test

Seek & use leverage
- Real time data
- Connectivity
- Access to & analytics of data pools
- Social Media & Apps & UX
- Open Source & Crowd Sourcing
- AI & decision support algorithms
- Insight / knowledge scouting & KM hubs
- Studies / Research
Thank you

Dr. Andreas Poensgen
Managing Partner Turgot Ventures AG
ap@turgot.ch
https://www.linkedin.com/in/andreas-poensgen-51903951/
COVID19
A perspective from Switzerland and the WHO

Prof. Effy Vayena

Health Ethics and Policy Lab
effy.vayena@hest.ethz.ch
@EffyVayena
Here are the top 100 countries by COVID-19 safety, according to the Deep Knowledge Group:

1. Switzerland
2. Germany
3. Israel
4. Singapore
5. Japan
6. Austria
7. China
8. Australia
9. New Zealand
10. South Korea
Exponential increase in number of new cases
Decrease in number of new cases

2020-06-04
$R_e: 0.831 \ (0.59 - 1.12)$
(Confirmed cases)

- Ban of events $> 1000$ people
- Partial border closure
- Ban of events $> 100$ people
- School closure
- Closure of all stores and markets
- Closure of museums, zoos, etc.
- Closure of hairdresser, hardware stores & garden centers
- Closure of restaurants and bars
- Ban of gatherings $> 5$ people
- Additional hygiene rules
- Testing of all symptomatic patients
Swiss National COVID-19 Science Task Force

The Swiss National COVID-19 Science Task Force is a national scientific advisory board set up specifically for the COVID-19 pandemic.

The Task Force’s mandate comes from the following federal bodies: the Federal Council Coronavirus Crisis Unit KSBC, the Federal Office of Public Health FOPH and the State Secretariat for Education, Research and Innovation SERI.

Its members comprise the presidents of the following institutions: the Swiss National Science Foundation SNSF (Professor Matthias Egger), the ETH Board (Professor Michael O. Hengartner), the Rector’s Conference swissuniversities (Professor Yves Flückiger), and the Swiss Academies of Arts and Sciences a+ (Professor Marcel Tanner).

The Task Force is chaired by Professor Matthias Egger.
Science- politics and the deus ex machina

**SWISS-MADE CONTACT TRACING COVID APP: OPERATIVE AND DATA SAFE**

**IN USE**
Around 15,000 beta users are testing the app during the current pilot phase.

**WORLDWIDE**
Switzerland is the first country in the world to use APIs from Google and Apple for its contact tracing app.

**SAFE**
The SwissCovid app lets you know if you have been closer than 2m for more than 15 minutes to someone tested positive for the coronavirus.

**TRANSPARENT**
The SwissCovid app is open source.

**INNOVATIVE**
The SwissCovid app was jointly developed by the Swiss federal institutes of technology in Lausanne and Zurich (EPFL and ETHZ) and Swiss tech company Ubique.

**TRUSTED**
70% of the population welcome the app; around 59% plan to install it. After the test phase, parliament decide if the SwissCovid app can be introduced.

**ANONYMOUS**
Data is only stored on your smartphone.

**RESPONSIBLE**
If a person gets tested positive, they can enter an activation code in the app and warn other app-users.

© FDFA, Presence Switzerland 2020 / Source: Federal Office of Public Health (FOPH), Swiss federal institutes of technology (ETHZ, EPFL)
WHO guidance

Ethical considerations to guide the use of digital proximity tracking technologies for COVID-19 contact tracing

Interim guidance
28 May 2020

Background

This interim guidance is intended to inform public health programmes and governments that are considering whether to develop or implement digital proximity tracking technologies for COVID-19 contact tracing. The document covers ethical principles, technical considerations and requirements that are consistent with these principles; and how to achieve equitable and appropriate use of such technologies.

Contact tracing is the process of identifying, assessing, and implementing actions to interrupt the transmission of infectious disease. Contact tracing can also save lives and reduce disease transmission by reducing the population's susceptibility to infection. Digital proximity tracking, however, has its limitations. This technology cannot capture all the situations in which a user may acquire COVID-19, and it cannot replace traditional person-to-person public health contact tracing, testing or outreach which is usually done over the phone or face to face. Digital proximity tracking applications can only be effective in terms of providing data to help with the COVID-19 response when they are fully integrated into an existing public health system and national pandemic response. Such a system would need to include health services personnel, testing, contact tracing, and other public health measures.
At this point

- 31,131 infections
- 1,677 deaths
- New infections on June 15 - 14

- “Extraordinary situation” to end on June 19th
- Contact tracing and testing
- App
- Cantonal responsibilities
How will the world adapt to challenges from COVID-19: a case study of Singapore’s response
SARS 2003: DEADLY VIRUS
774 deaths and 8,096 infections reported from November 2002 to July 2003

Canada
251 cases
43 deaths

China
5,327 cases
349 deaths

Hong Kong
1,755 cases
299 deaths

Taiwan
346 cases
37 deaths

Thailand
9 cases
2 deaths

Malaysia
5 cases
2 deaths

Vietnam
63 cases
5 deaths

Philippines
14 cases
2 deaths

SINGAPORE
238 cases
33 deaths

Some of the changes that have been implemented post-SARS

CANADA
- Public health reform, including the creation of a federal-level health agency
- Three national disease-related surveillance networks to monitor emerging infectious diseases

CHINA
- Robust online reporting system that allows hospitals to report suspected disease cases directly to the authorities
- Laws amended or added to allow central leaders to act swiftly to deal with outbreaks

HONG KONG
- Face masks commonly used and public toilets diligently cleaned
- Heavy investments to redesign hospital wards to minimise infection.

SINGAPORE
- New infectious disease hospital by mid-2018
- Every new school-going child gets an oral digital thermometer

TAIWAN
- Better personal hygiene encouraged, staying home when ill, courtesy bowing in place of handshakes
- Constant cleaning and sterilisation of public transport during pandemics

Source: WHO
# COVID-19 Situation Report

**Data Updated as of: 14 Jun 2020**

<table>
<thead>
<tr>
<th>Current Situation</th>
<th>Summary Table</th>
<th>Number of Cases</th>
<th>Case Status</th>
<th>Stay Home Notices (SHNs) &amp; Quarantine Orders (QOs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Total Cases</strong></td>
<td><strong>40604</strong></td>
<td><strong>10989</strong></td>
<td><strong>2</strong></td>
<td><strong>236</strong></td>
</tr>
<tr>
<td></td>
<td>▲407</td>
<td>▼374</td>
<td>▲1</td>
<td>▲9</td>
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<tr>
<td><strong>In Isolation</strong></td>
<td><strong>10751</strong></td>
<td><strong>1628</strong></td>
<td><strong>27961</strong></td>
<td><strong>26</strong></td>
</tr>
<tr>
<td></td>
<td>▼384</td>
<td>▲11</td>
<td>▲770</td>
<td></td>
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<tr>
<td><strong>Discharged (Hosp)</strong></td>
<td><strong>1628</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Completed Isolation</strong></td>
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<tr>
<td><strong>Demised</strong></td>
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</tbody>
</table>

*Situation in Singapore*
Situation in Singapore

Total

Community cases

Migrant Workers in Dormitories

Importations
Key Principle 1: Find, Trace, Test, Isolate

- 50 teams of 10, 2 shifts, 7 days
- 13,000 tests/day to 40,000 test/day in July
Key Principle 2: Evidence-guided Policies

(Reducing contact transmission in both communities and schools at different times and for durations)
Key Principle 2: Evidence-guided Policies

- Commissioned by Chief Health Scientist to Public Health Translational Unit in School of Public Health
- Weekly synthesis of latest scientific and media reports on key topics
Key Principle 3:
Clear Public Communications

Exclusive: How Singapore sends daily Whatsapp updates on coronavirus
How a GovTech unit built CovTech to coordinate Singapore's response to the COVID-19 outbreak.

COVID-19: 13 Feb Update
New cases: 8, as of 12pm
Total confirmed cases: 58
Total discharged: 15

The eight new cases are all linked to previous cases. Most still in hospital are stable or improving. 7 are in ICU.

More: Gov.sg/moh/13feb

Support package for taxi + private hire car (PHC) drivers
- Taxi and PHC drivers' livelihoods have been badly affected
- To help them, Govt + taxi and PHC Operators will launch a $77 million Support Package
More: Gov.sg/drivers-support

COVID-19 spreads easily
- Infectious as influenza
- Infectious even if symptoms mild
- Stay home even with mild flu-like symptoms

COVID-19 is NOT SARS
- World Health Organisation (WHO) found 82% of infected have mild symptoms, 15% severe and 3% critical
- COVID-19 fatality rate far lower than SARS, closer to H1N1

COVID-19 is likely to spread around the world & here. We must be prepared for this

Statement: go.gov.sg/

COVID-19: Enforcement measures:
For work pass holders with recent travel history to mainland China:
- Employers can seek approval online for worker to enter/return to Singapore
- A 14-day Stay Home Notice period will be imposed on worker upon arrival
- Action will be taken against employers/employees who don't comply

More: Gov.sg/24feb-MOM

Language / 语音 / Bahasa / ภาษา
* Do note that you may receive multiple messages based on the language choice you choose English and Chinese, you will receive the same notice.

English
华语
Bahasa Melayu
ภาษา
Border Control Measures

Border Restrictions

• **24 Mar**: Border closures to all short-term visitors*

• **9 Apr**: All returning locals **mandatory 14-days quarantine** in government-appointed hotels

• Strict digital and in-person **enforcement** meted penalties include fines, deportations and imprisonments

* Not applicable to citizens, PRs and long-term pass holders (study, work)

• “Fast lane” (air bridges) arrangements with China for **essential business travel**

• **TBC**: New Zealand, Australia, South Korea, Malaysia

Temperature Screening

• **24 Jan**: All land and sea checkpoints

• **29 Jan**: All flights into Singapore

Forfeiture of Health Insurance

• Locals who **voluntarily travel for non-essential** purpose forfeit COVID-19 coverage
COVID-19: Global Public Health

• Commonalities in Public Health strategies, but important context differences in implementation

• Contextual elements:
  ▪ **Historical** (e.g. SARS, MERS, H1N1, etc.)
  ▪ **Social and cultural** (e.g. trust, community-spirited)
  ▪ **Capacity and capability** (testing, tracing, isolation, treatment)
  ▪ **Economic** (e.g. fiscal measures to protect livelihoods)
  ▪ **Political** (i.e. long-term outlook vs. short-term impact)
Summary

- Embarking on both aggressive PCR and serology testing, and increased capability for contact tracing

- Calibrated and phased easing of lockdown measures

- Constant risk assessments and possibly sectoral closures if resurgence
Thank you!

ephyy@nus.edu.sg
Health Data Science in the COVID-19 Era

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International approaches to combatting the COVID-19 pandemic – how have data and technology been harnessed?

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Join the conversation: #HDRUKcon20
Health Data Science in the COVID-19 Era
HDR UK ‘ONE INSTITUTE’ CONFERENCE 2020

Format & programme for the day

Rhos Walker, Chief Science Strategy Officer, Health Data Research UK
Delegate pack:

Health Data Science in the COVID-19 Era
Health Data Research UK ‘One Institute’ Conference 2020

16 June 2020
Programme for the day:

<table>
<thead>
<tr>
<th>Time</th>
<th>Stream 1</th>
<th>Stream 2</th>
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<tbody>
<tr>
<td>10:45</td>
<td><strong>Breakout 1</strong>: How do we make the UK world leading for COVID-19 clinical trials?</td>
<td><strong>Breakout 2</strong>: COVID-19 Data – data definitions and new data types in a crisis</td>
</tr>
<tr>
<td>11:45</td>
<td><strong>Breakout 3</strong>: Understanding the causes of disease &amp; COVID 19 – Harnessing multi-omic cohorts &amp; the COVID-19 Genomics UK Consortium</td>
<td><strong>Breakout 4</strong>: How are Health Data Research Hubs &amp; BHF Data Science Centre supporting COVID-19 Research?</td>
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<td></td>
<td><strong>PLENARY</strong></td>
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<tr>
<td>12:45</td>
<td><strong>Rapid Fire Early Career Lightning Talks</strong></td>
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<tr>
<td>13:15</td>
<td><strong>LUNCH BREAK</strong></td>
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<tr>
<td></td>
<td><strong>Stream 1</strong></td>
<td><strong>Stream 2</strong></td>
</tr>
<tr>
<td>13:50</td>
<td><strong>Breakout 5</strong>: Better care – role of data at the frontline of the COVID-19 response</td>
<td><strong>Breakout 6</strong>: Responding to the Public Health Emergency of COVID-19</td>
</tr>
<tr>
<td>14:50</td>
<td><strong>Breakout 7</strong>: What do national and international health data researchers need in a post-COVID-19 world?</td>
<td><strong>Breakout 8</strong>: Relationship of trust: Realising patient and NHS benefits in times of COVID-19</td>
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<td></td>
<td><strong>PLENARY</strong></td>
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<tr>
<td>15:50</td>
<td><strong>Fireside chat</strong>: How will data and technology influence the future of clinical and regulatory science?</td>
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<tr>
<td>16:25</td>
<td><strong>Celebrating partnership in health data science across the UK</strong>: Prize for ‘Impact of the Year’, ‘Team of the Year’ &amp; Lightning Talks</td>
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<tr>
<td>16:35</td>
<td><strong>Closing remarks</strong></td>
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<tr>
<td>16:45</td>
<td><strong>CLOSE</strong></td>
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</tr>
</tbody>
</table>
# Delegate pack:

**Health Data Science in the COVID-19 Era**
Health Data Research UK ‘One Institute’ Conference 2020

16 June 2020

## Contents

1. INTRODUCTION – ABOUT THE CONFERENCE
2. JOINING A SESSION
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7. ABOUT HEALTH DATA RESEARCH UK & FURTHER INFORMATION
## Accessing the sessions:

**3. Links to join – at a glance**

This is your quick reference guide providing the links to join each session. For full agenda details please see section 4.

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Link to join</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:30-10:35</td>
<td>Opening plenary</td>
<td><a href="#">Click here to join opening plenary session</a></td>
</tr>
<tr>
<td></td>
<td>• Welcome</td>
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</tr>
<tr>
<td></td>
<td>• How has health data research in the UK pivoted for COVID-19?</td>
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<tr>
<td></td>
<td>• International approaches to combating the COVID-19 pandemic – how have data and technology been harnessed?</td>
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<td>• Format &amp; programme for the day</td>
<td></td>
</tr>
<tr>
<td>10:45-11:35</td>
<td>Breakout 1: How do we make the UK world leading for COVID-19 clinical trials?</td>
<td><a href="#">Click here to join breakout 1</a></td>
</tr>
<tr>
<td>10:45-11:35</td>
<td>Breakout 2: COVID-19 Data – data definitions and new data types in a crisis</td>
<td><a href="#">Click here to join breakout 2</a></td>
</tr>
<tr>
<td>11:45-12:35</td>
<td>Breakout 3: Understanding the causes of disease &amp; COVID 19 – connecting molecular science with health records</td>
<td><a href="#">Click here to join breakout 3</a></td>
</tr>
<tr>
<td>11:45-12:35</td>
<td>Breakout 4: How are Health Data Research Hubs &amp; BiF Data Science Centre supporting COVID-19 Research?</td>
<td><a href="#">Click here to join breakout 4</a></td>
</tr>
<tr>
<td>12:45-13:15</td>
<td>Plenary session: Rapid fire early career lightning talks</td>
<td><a href="#">Click here to join lightning talk session</a></td>
</tr>
<tr>
<td>13:50-14:40</td>
<td>Breakout 5: Better care – role of data at the frontline of the COVID-19 response</td>
<td><a href="#">Click here to join breakout 5</a></td>
</tr>
<tr>
<td>13:50-14:40</td>
<td>Breakout 6: Responding to the public health emergency of COVID-19</td>
<td><a href="#">Click here to join breakout 6</a></td>
</tr>
<tr>
<td>14:50-15:40</td>
<td>Breakout 7: What do national and international health data researchers need in a post-COVID-19 world?</td>
<td><a href="#">Click here to join breakout 7</a></td>
</tr>
<tr>
<td>14:50-15:40</td>
<td>Breakout 8: Relationship of trust – realising patient and NHS benefits in times of COVID-19</td>
<td><a href="#">Click here to join breakout 8</a></td>
</tr>
<tr>
<td>15:50-16:45</td>
<td>Closing plenary</td>
<td><a href="#">Click here to join closing plenary session</a></td>
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<tr>
<td></td>
<td>• Fireside chat: How will data and technology influence the future of clinical and regulatory science?</td>
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<td>• Celebrating partnership in health data science across the UK: Prize for 'Impact of the Year', 'Team of the Year' and Lightning Talks</td>
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<td></td>
<td>• Closing remarks and next steps</td>
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</tbody>
</table>
Additional support:

- If you have any problems accessing any sessions, please email events@hdruk.ac.uk and the team will be able to help.

- Sessions will be recorded and where possible we will share the recordings and slides on our website after the conference.

- We aim for the event will be as interactive as possible.

- Please submit questions via the Q+A function. More details on how to submit questions are included in your Delegate pack.

- Please tweet their thoughts and contributions using #HDRUKcon20.

- Enjoy the day!
Break

The next session will start at 10:45BST.