**FGAI4H-O-043**

Berlin, 31 May – 2 June 2022

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|---|---|
| **Source:** | Drugs for Neglected Diseases Initiative |
| **Title:** | Workshop: WG-CO - The clinical research perspective |
| **Purpose:** | Discussion |


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|---|---|---|
| **Contact:** | Nathalie Strub-Wourgaft<br>Director COVID-19 Response & Pandemic Preparedness<br>Drugs for Neglected Diseases Initiative | E-mail: nstrub@dndi.org |



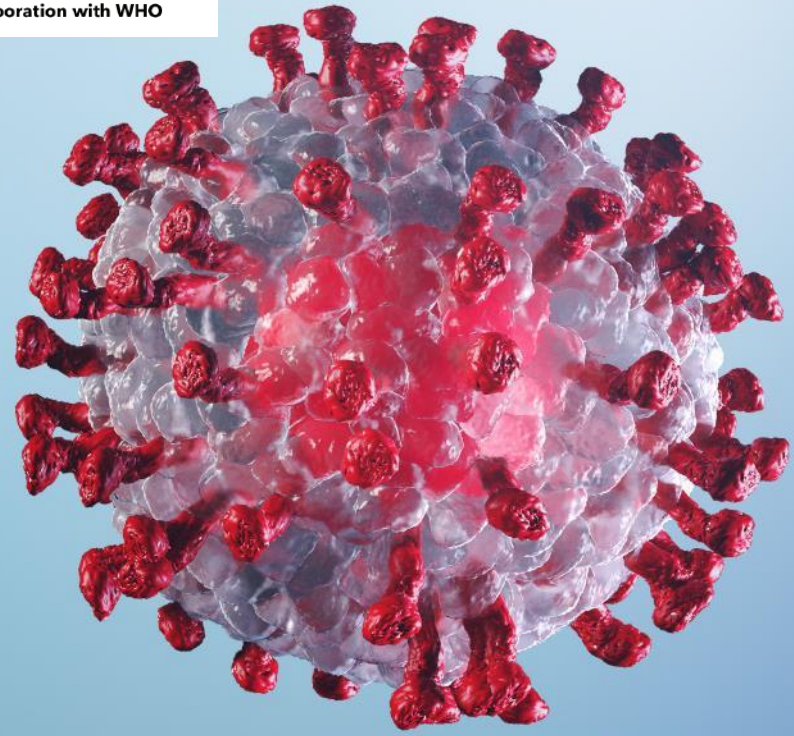
**Abstract:** This PPT contains a presentation from the WG-CO workshop on “Equitable data infrastructures to support equitable and effective pandemic intelligence”.

"Equitable data infrastructures to support equitable and effective pandemic intelligence"

Workshop organised by the Working Group: Collaborations and Outreach of the ITU-WHO Focus Group on Artificial intelligence for Health

AI for Health
An ITU Focus Group
In collaboration with WHO

# The clinical research perspective



**May 30th, 2022**

*Dr Nathalie Strub-Wourgaft*

*Director COVID-19 Response & Pandemic Preparedness*

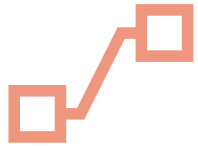
DNDi
Drugs for Neglected Diseases *initiative*

# Proposed agenda

Background


What data?

Experience



Conclusion

# Context: rapid knowledge generation is critical in epidemic/pandemic

- **"No one is safe until everyone is safe"** Dr Tedros, DG WHO

**"Speed can also be enabled by a more systematic approach to how data and samples are captured, shared and analysed. Real-time data collection, distribution and use is critical in a pandemic (as well as between pandemics as part of embedding best practice), but requires robust infrastructure and operational systems, supported by appropriate governance models"**


- Demonstration of a clinical benefit usually requires large sample size
- Scientific understanding evolves quickly: we can/should learn from our data and be able to adjust
- Transparency goes along with public trust – within the scientific and general communities
- Ethical considerations around data protection, equity and reward drive the feasibility of datasharing

# COVID: an unprecedented number of data … that could learn from each other

## STUDY-LEVEL DATA ON TRIAL REGISTRY RECORDS

**13,024**
STUDIES

**164**
COUNTRIES

## INDIVIDUAL PATIENT DATA ON COVID-19 PATIENTS

**477,712**
PATIENTS

**41**
COUNTRIES

**43,654,172**
OBSERVATIONS

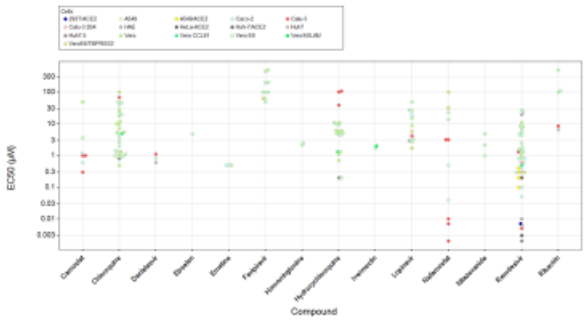
Source: Welcome | IDDO (cognitive.city)

# From preclinical to clinical: non alignment on definitions

DNDI – COVID19 RESPONSE

## SARS-CoV-2 in vitro assay variability

Variation in SARS-CoV-2 inhibition data across different assays




Drug susceptibility assays color-coded by cellular assay protocols (host cells), data extracted from: https://covdb.stanford.edu/search/?virus=SARS-CoV-2

- Cell based SARS-CoV-2 assays are able to capture various antiviral drug MoA
- Epithelial cells used for viral infection
  - Vero (monkey kidney)
  - Calu-3 and A549 (human lung)
  - Huh7 (human liver)
  - Caco-2 (human intestine)
- Notable differences between published assay protocols (cell type, MOI, read-out, incubation time)
- Significant variation in antiviral efficacy reported for individual compounds
- No consensus view on translational value of different SARS-CoV-2 in vitro assays

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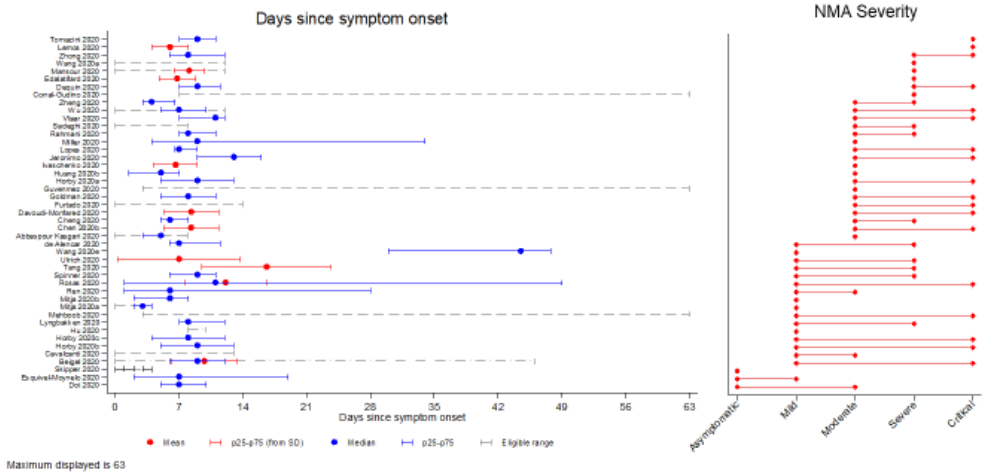
DNDi www.dndi.org

## Days since symptom onset sorted by NMA severity

IDDO




Maximum displayed is 63

Need for agreed standards, access to detailed material and access to IPD, for robust interpretation of results

# What type of “data sharing” and for what purpose

| Type of data | Usage, benefit | Current status ... |
|---|---|---|
| Sharing Study Standard Documents: clinical protocol, methodologies, SOPs, CRFs | HR & time saver – facilitates later pooling | Clinical trials registries, but **limited** https://covid19crc.org/ |
| Sharing study results | Critical to drive and adjust new research – guide policy / signal strength | For COVID: medRxiv THE PREPRINT SERVER FOR HEALTH SCIENCES |
| Access to IPD (Individual Patient Data) from clinical trials | Ability to conduct robust meta-analyses informing Guidelines | https://www.iddo.org/ for malaria and NTDs |

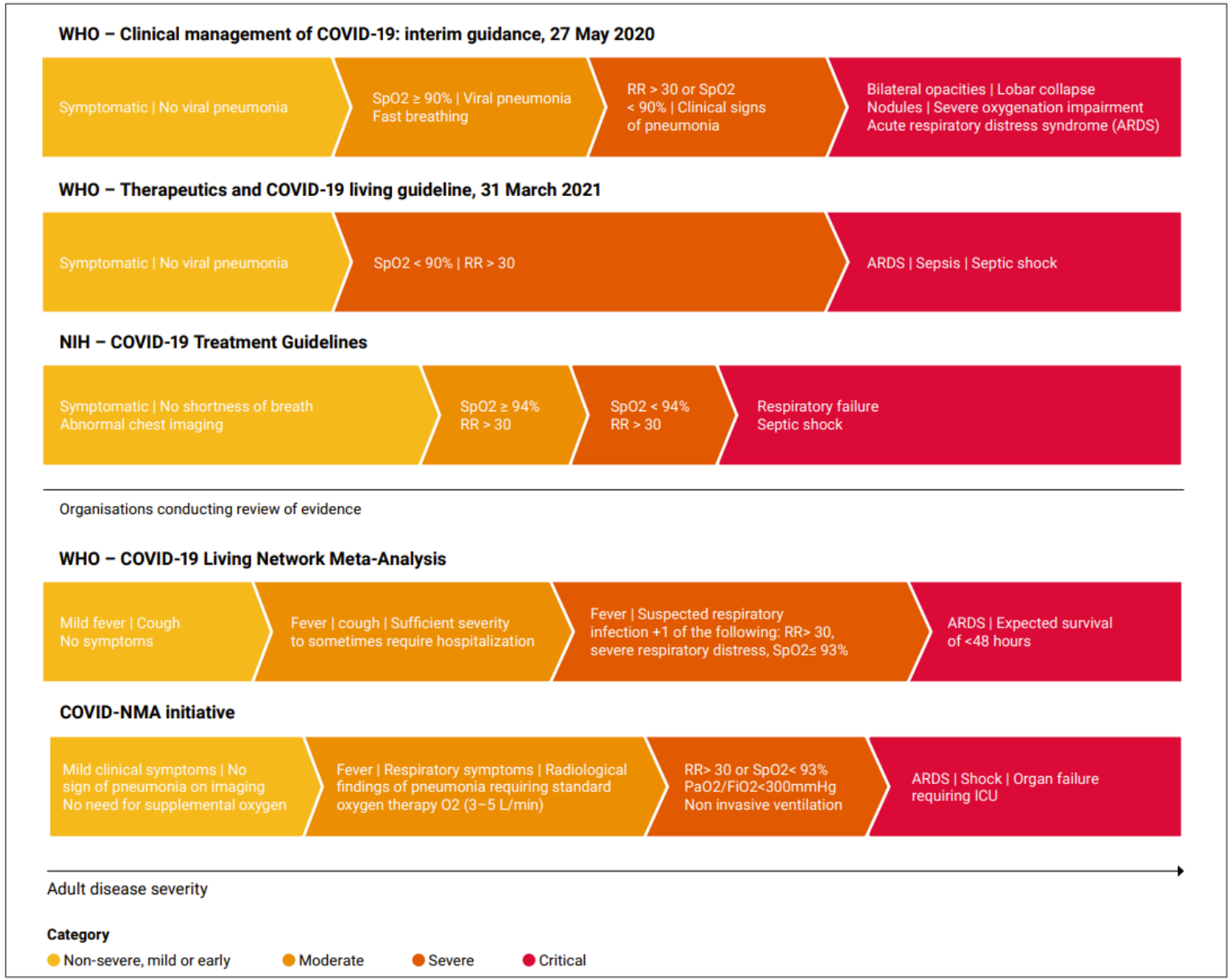
# Why do we need IPD?

For solid interpretation of results
… e.g when definition vary

Definitions matter: heterogeneity of COVID-19 disease severity criteria and incomplete reporting compromise meta-analysis

Philippe J. Guérin[1,2], Alistair R.D. McLean[1,2], Sumayyah Rashan[1,2], AbdulAzeez Lawal[1,2], James A Watson[2,3], Nathalie Strub-Wourgaft[4], Nicholas J White[2,3]





# Why do we need IPD?

To conduct secondary analyses

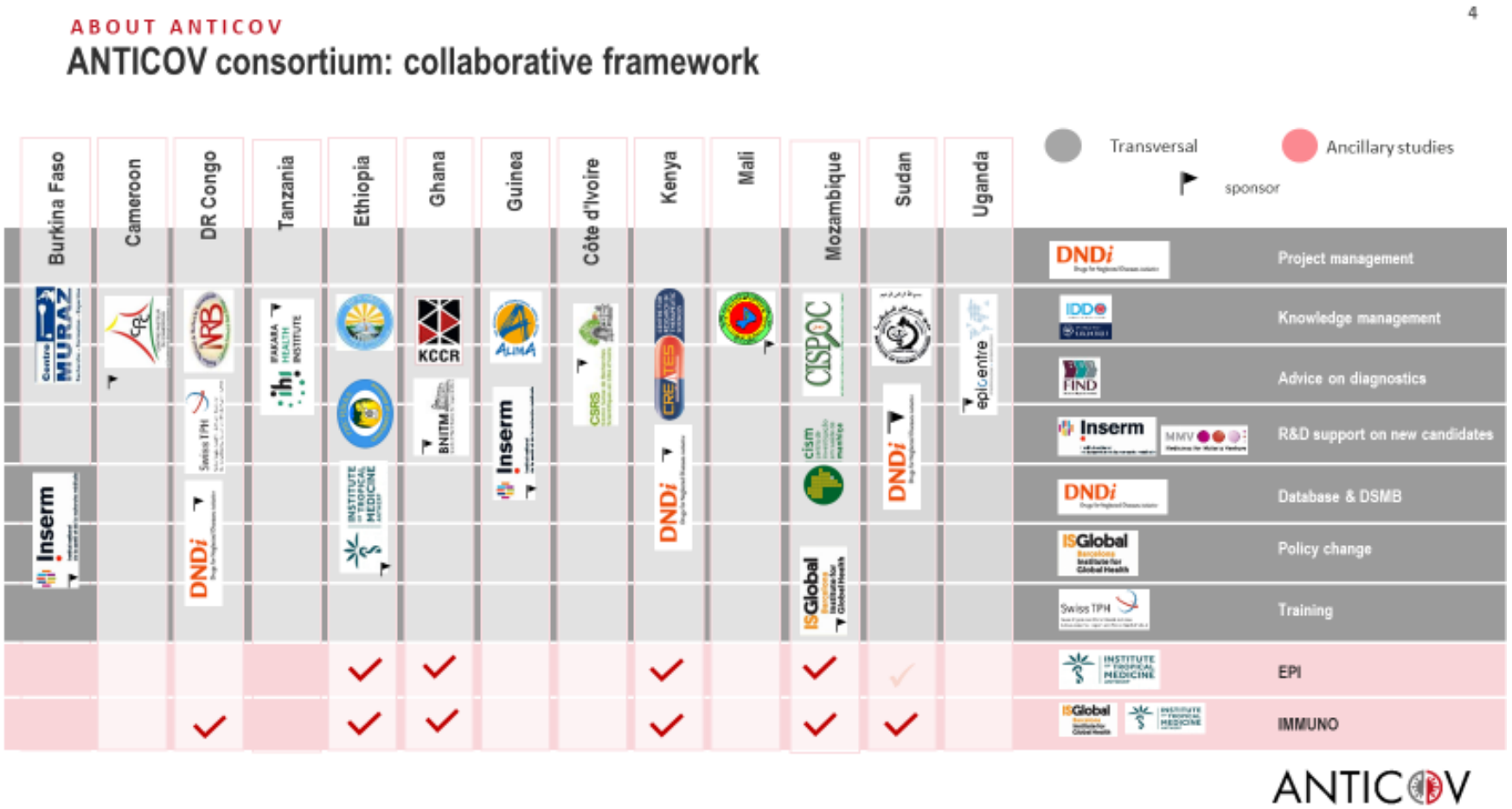
- **Power** to detect sub-groups effect
  - Age group
  - Pregnant patients
  - Patients at risk
  - .vaccinated versus non vaccinated individuals
- Identifying new and less frequent (but potentially important) **safety** signals ... requires bigger datasets

| Objective /sample size | N=300 | N=600 | N=900 | N=1200 |
|---|---|---|---|---|
| chance of detecting at least one event if the incidence rate is 1% | 95,1% | 99,76% | 99,99% | 99,99% |
| chance of detecting at least one event if the incidence rate is 0,1% | 25,93% | 45,14% | 59,36% | 68,89% |

# The example of ANTICOV

ABOUT ANTICOV

## ANTICOV consortium: collaborative framework




1 adaptive platfrom trial testing several treatment options for early COVID

26 institutions including 10 different sponsors contribute to the study

Data-sharing set-up as a principle of our governance between members but also for secondary research by other groups via IDDO

Practicalities remain complex in the context of GDPR and its interpretation across sponsors

CONCLUSION

# What is needed

1. Data protection -> **understand what can be shared**
2. Ensure legal agreements are in place **early on** ...
3. Data format needs to allow this -> **prepare / CDISC**
4. **Investigator and sponsors' ownership** : critical -> can be addressed through governance mechanism as with IDDO
5. Patients consent ... **more**?
6. Ethical re-use of data: define purpose, framework **– committing to publications**
7. Need for **independent** Infrastructure
8. Funding, funding, funding ...

# CONCLUSION AND RECOMMENDATIONS

The fight against COVID is a race against time …

Science evolves at an unprecedented speed

We need treatments to prevent and treat all stages of COVID

Many groups are producing scientific results

Several platform trials allow the dynamic inclusion of new treatment arms, based on emerging data

- **Mechanisms** to promote **open collaboration from upstream (preclinical) to downstream (clinical)** platforms **are needed.**
- **Mechanisms** to facilitate **individual data sharing** will support the interpretation of completed clinical trials and benefit Guidelines development
- Such mechanisms will further contribute to an efficient allocation of research resources for the success of the response, that needs to be collective.

# Thank you

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