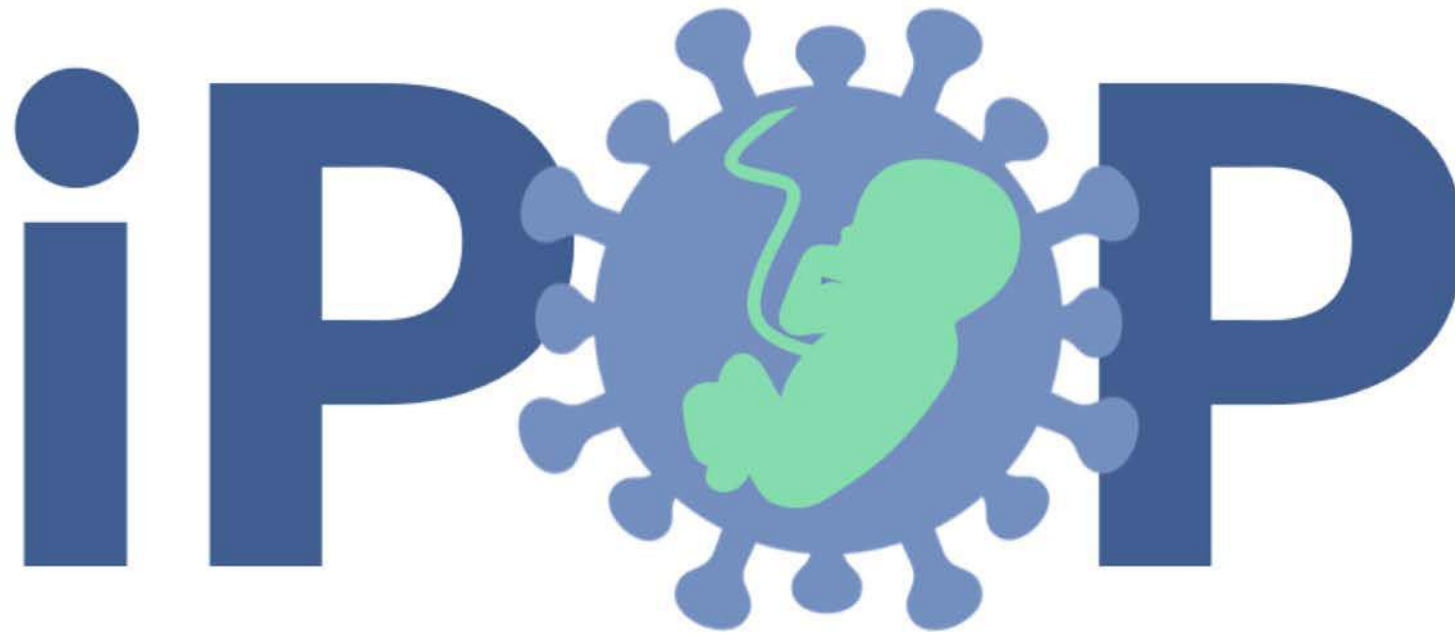


# Welcome to Breakout 2: International perinatal outcomes in the pandemic (Driver Project)

Meghan Azad, University of Manitoba  
Merilee Brockway, University of Manitoba  
Livia Nagy, Patient representative  
Neil Postlethwaite, ICODA  
Natalie Rodriguez, University of Manitoba  
Aziz Sheikh OBE, University of Edinburgh  
Sarah Stock, University of Edinburgh

Tweet: #ICODAForum  
@ICODA\_research  
[www.icoda-research.org](http://www.icoda-research.org)



International  
Perinatal  
Outcomes in the  
Pandemic  
Study

[www.iPOPstudy.com](http://www.iPOPstudy.com)

## ICODA Forum - DP2 Breakout Session

Meghan Azad, Merilee Brockway, Natalie Rodriguez, Livia Nagy



THE AGA KHAN UNIVERSITY  
CENTRE OF EXCELLENCE  
IN WOMEN AND CHILD HEALTH



UNSW  
SYDNEY



THE UNIVERSITY  
of EDINBURGH

**HDRUK**  
Health Data Research UK

# iPOP Leadership Core



**Meghan  
Azad**  
PhD

University of  
Manitoba  
(Canada)

*Developmental  
Origins of Chronic  
Disease*



**Merilee  
Brockway**  
PhD RN IBCLC

University of  
Manitoba  
(Canada)

*Gender Equity,  
Health Systems,  
Patient Engagement*



**Dave  
Burgner**  
PhD MD

**Murdoch Children's  
Research Institute  
(Australia)**

*Early Life Infection,  
Inflammation,  
Prematurity*



**Natalie  
Rodriguez**  
MBA ACC

University of  
Manitoba  
(Canada)

*Research  
Management &  
Administration*



**Sarah  
Stock**  
PhD MD

University of  
Edinburgh  
(United Kingdom)

*Maternal Fetal  
Medicine,  
Clinical Trials*



**Helga  
Zoega**  
PhD

University of New  
South Wales  
(Australia/Iceland)

*Epidemiology,  
Big Data, Electronic  
Health Data Linkage*





# HEALTHY BABIES ARE Born On Time



Each year...



More than **1 in 10** babies are born preterm (<37 weeks of pregnancy).

That's **15 million** babies worldwide.<sup>1</sup>

Preterm birth is the number one cause of mortality for children under 5 worldwide.

It can also lead to disability, adult heart disease, and diabetes.<sup>2</sup>



[www.bornontime.org](http://www.bornontime.org)

... and yet, the causes of preterm birth are largely unknown.



Canadian hospitals saw a sudden drop in premature births during the pandemic. Now researchers are trying to find out why



Staff at the NorthernStar Mothers Milk Bank which supplies breast milk to almost three dozen Canadian hospitals work with breast milk in Calgary, Alberta, August 6, 2020.

TODD KOROL/THE GLOBE AND MAIL

The NorthernStar Mothers Milk Bank supplies breast milk to almost three dozen Canadian hospitals, making the Calgary non-profit particularly attuned to changes at the country's birthing units.

## The New York Times

### *During Coronavirus Lockdowns, Some Doctors Wondered: Where Are the Premies?*



By Elizabeth Preston

July 19, 2020



This spring, as countries around the world told people to stay home to slow the spread of the coronavirus, doctors in neonatal intensive care units were noticing something strange: Premature births were falling, in some cases drastically.



**nature**<sup>10</sup>

## Stillbirth rate rises dramatically during pandemic

Researchers stress need for antenatal care, as emerging data link disrupted pregnancy services to increase in stillbirths.



Researchers are concerned that high-risk pregnancies are going undetected during the pandemic. Credit: Anthony Wallace/AFP/Getty

A slew of studies from around the world has reported a disturbing trend: since the coronavirus pandemic started, there has been a significant rise in the proportion of pregnancies ending in stillbirths, in which babies die in the womb. Researchers say that in some countries, pregnant women have received less care than they need because of lockdown restrictions and disruptions to health care. As a result, complications that can lead to stillbirths were probably missed, they say.

**THE TIMES**

CORONAVIRUS

## Coronavirus in Scotland: Expectant mothers 'should seek help if worried' as stillbirths rise



The rate of stillbirths in Scotland in July was six per 1,000 births. In July last year the figure was 3.8  
ALAMY

An increase in stillbirths across Scotland during the Covid-19 pandemic is being investigated by experts amid concern that some pregnant women have been afraid to seek medical help.



# Weekend Tweet to Global Consortium in 5 months: June - November, 2020

Friday June 12, 2020



Saturday



Let's do a literature review!

Or... we could do a study?  
Let me email a few friends...



Sunday

**From:** Meghan Azad <[Meghan.Azad@umanitoba.ca](mailto:Meghan.Azad@umanitoba.ca)>  
**Date:** Sunday, 14 June 2020 at 07:13  
**To:** David Burgner <[david.burgner@mcri.edu.au](mailto:david.burgner@mcri.edu.au)>  
**Cc:** "Meredith Brockway ([mbrockwa@ucalgary.ca](mailto:mbrockwa@ucalgary.ca))" <[mbrockwa@ucalgary.ca](mailto:mbrockwa@ucalgary.ca)>  
**Subject:** Preterm birth in lockdown



# Weekend Tweet to Global Consortium in 5 months: June - November, 2020



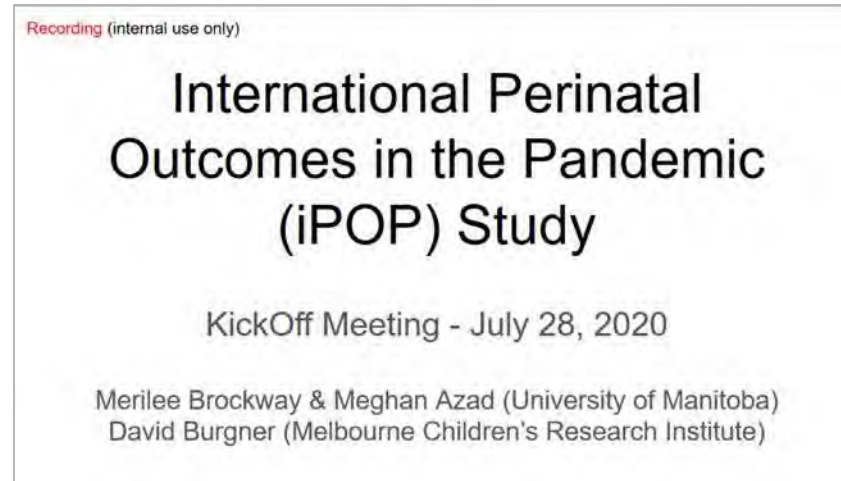
June 12, 2020

July 28  slack

Aug 20  
Protocol  
Leads



Oct 15  
Project  
Manager



July 19

**The New York Times**

*During Coronavirus Lockdowns, Some Doctors Wondered: Where Are the Premies?*

July-Oct: 5 grants, 5 abstracts



FAST — GRANTS

Grand Challenges



# Weekend Tweet to Global Consortium in 5 months: June - November, 2020



June 12, 2020



Oct 27

www.thelancet.com Published online October 27, 2020

## Enabling a healthy start for vulnerable newborns

As co-leads of the new international Perinatal Outcomes in the Pandemic (iPOP) Consortium, we are delighted that the *Lancet* Small Vulnerable Newborn Series<sup>1</sup> will focus cross-sector attention on the high burden of baby deaths (encompassing miscarriage, stillbirth, and neonatal mortality) and disability (following preterm birth and low birthweight), which remain largely intractable with current siloed approaches.

iPOP, spanning 38 countries (and welcoming new collaborators), brings expertise in perinatology, epidemiology, environmental science, intersectional feminism, and data science (supported by the International COVID-19 Data

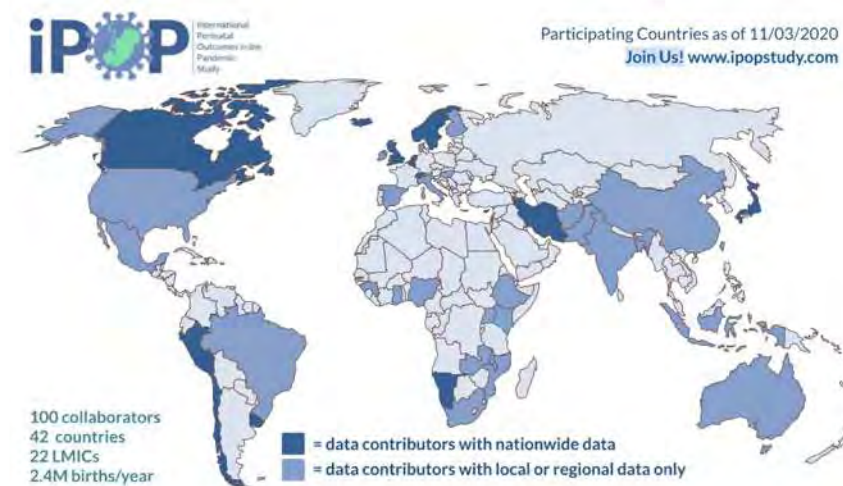
studies of perinatal outcomes as part of the *Lancet* Small Vulnerable Newborn Series,<sup>1</sup> to improve data quality, challenge these misconceptions, and support research transparency.

SJS, MB, HZ, DPB, and MBA are co-leads of iPOP. SJS reports grants from the Wellcome Trust and Health Data Research UK. HZ reports grants from AbbVie Australia, unrelated to this Correspondence. AS reports grants from Health Data Research UK. All other authors declare no competing interests.

*\*Sarah J Stock, Meredith Brockway, Helga Zoega, Jasper V Been, Aziz Sheikh, Zulfiqar A Bhutta, David P Burgner, Meghan B Azad*  
sarah.stock@ed.ac.uk

University of Edinburgh Usher Institute, Edinburgh EH16 4UX, UK (SJS, AS); Children's Hospital Research Institute of Manitoba, Departments of Pediatrics and Child Health & Community Health Sciences, University of Manitoba, Winnipeg, MB, Canada (MB, MBA); Centre for Big Data Research in Health, Faculty of

Nov 1



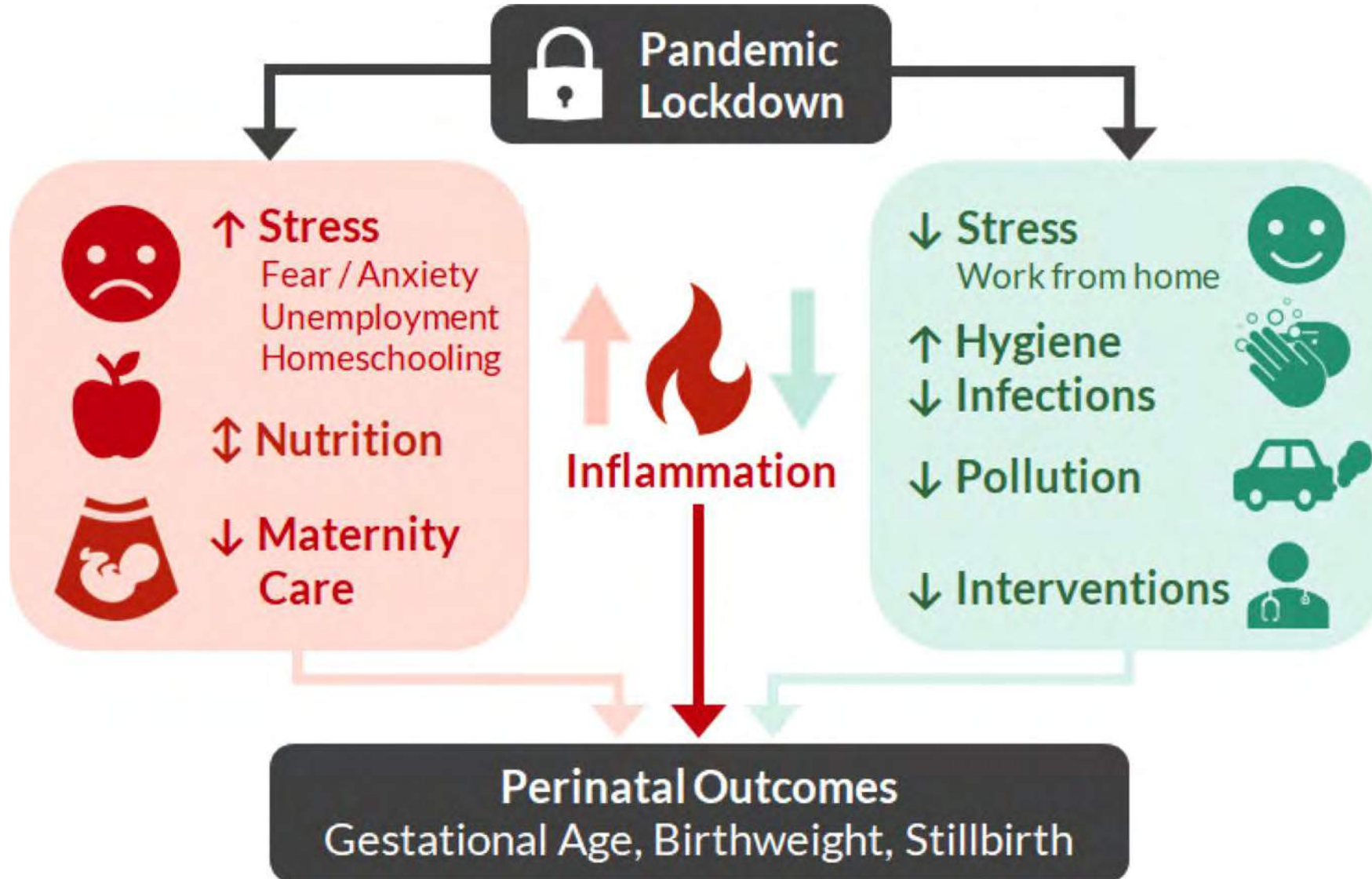
# Questions

1. Is this (really) happening everywhere?
2. What is the reason?
3. Are all pregnant women affected in the same way?

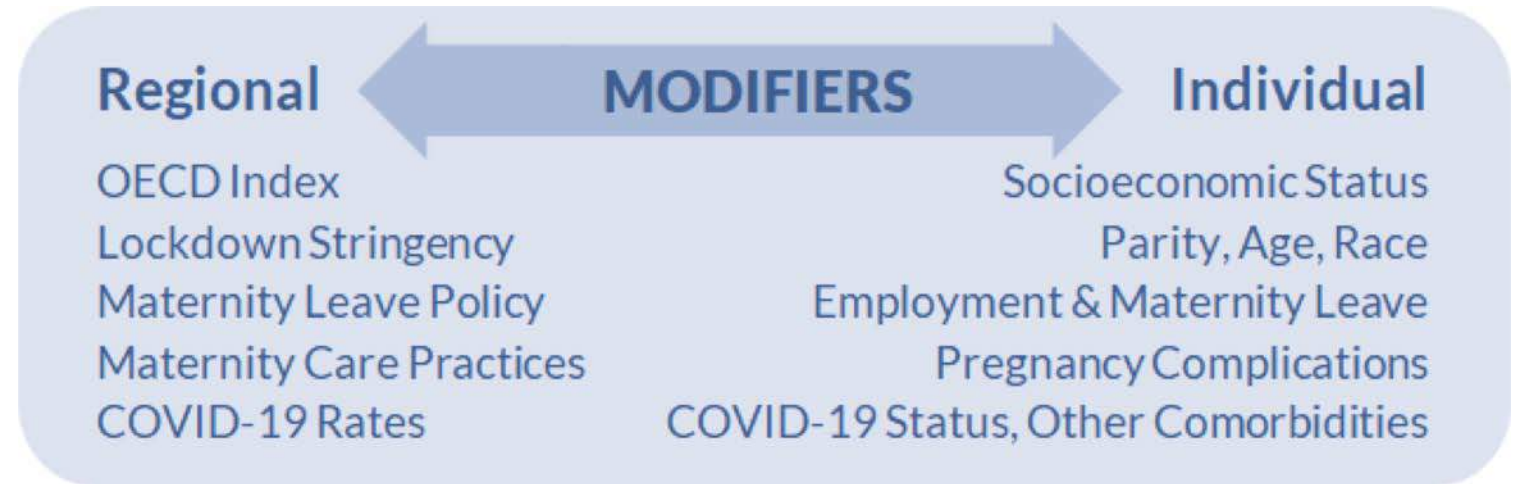
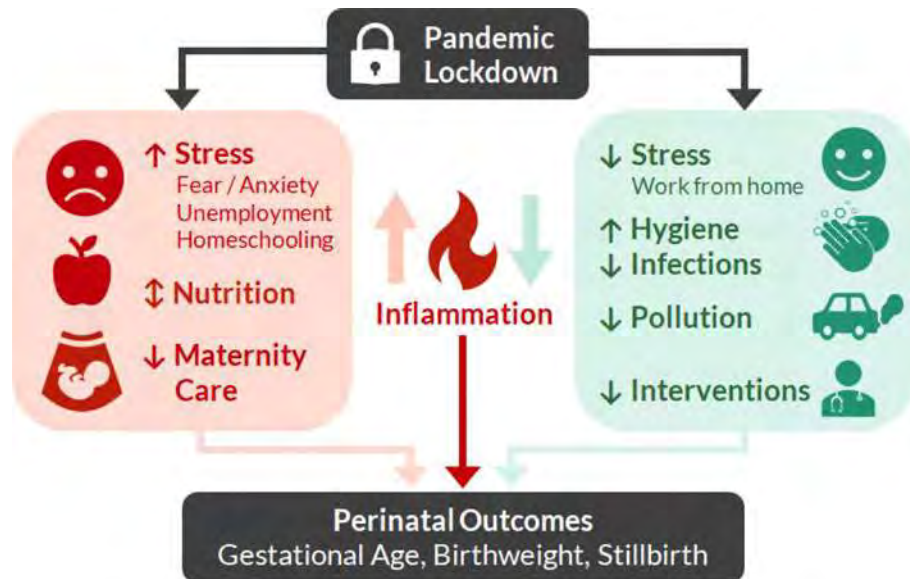




# Possible Mechanisms



# Possible Mechanisms & Modifiers





## Objective

To investigate the impact of the COVID-19 **pandemic** lockdowns/restrictions on **perinatal outcomes worldwide** and identify the underlying **mechanisms**

... and efficiently translate these discoveries to practitioners and policymakers to **maximize & accelerate IMPACT.**

→ ***Global collaboration to tackle meaningful questions that cannot be answered in single-region studies.***



# Aims



## Aim 1: Describe Trends & Regional Differences (Aggregate Birth Data)

Describe trends in preterm birth, low birth weight and stillbirth before/during pandemic lockdown.



## Aim 2: Address Context & Mechanisms (+ Public Regional Data)

Determine if these changes during lockdown are...

**Correlated** with changes in air quality or maternity care?

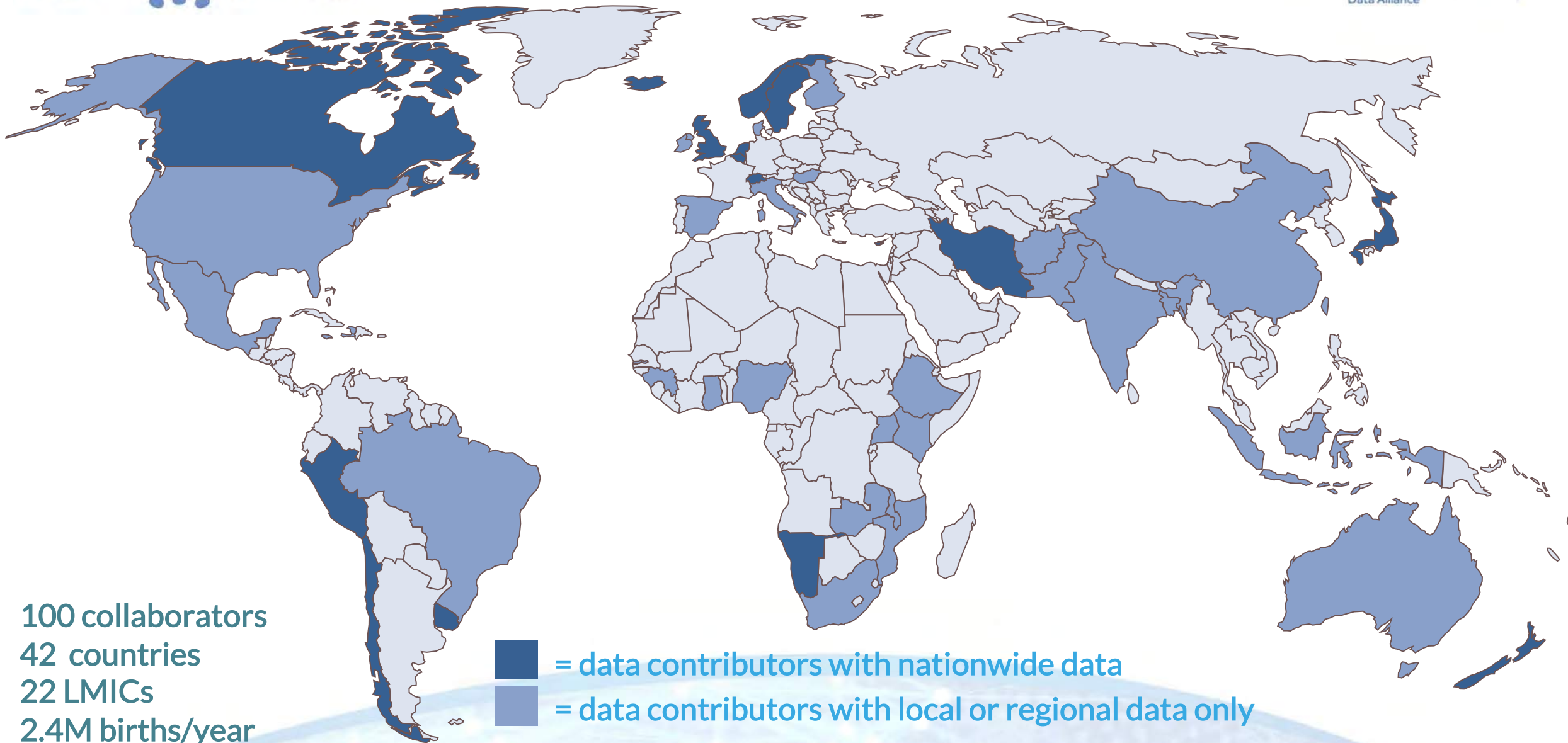
**Modified** by lockdown stringency, maternity leave policy, COVID-19 rates?



## Aim 3: Investigate Mechanisms (+ Individual-Level Data)

Assess impact of maternal comorbidities (e.g. pregnancy complications:





# Approaches

- **Multidisciplinary Team**

Maternal-fetal medicine, neonatology, epidemiology, statistics, intersectoral feminism, data science, artificial intelligence

- **Core Philosophies**

Equity, Open Science, Collaboration → Slack, GoogleDrive, Zoom

- **Strategic Partnerships**

Born On Time, International COVID-19 Data Alliance

- **Integrated Knowledge Translation**

Continuous stakeholder engagement



# Team Science

*If you want to go fast, go alone.  
If you want to go far, go together.  
-Robin Jones Gunn*



# Siloed Research

Lack of effective communication

Redundancy

Reluctance to share information

Limited expertise

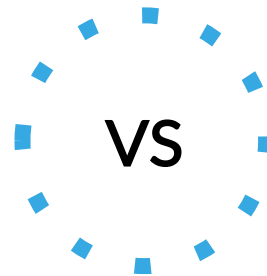
Tunnel vision

Impacts morale

Inability to pivot

=

**Lower Productivity,  
Problems and Failures**



# Team Science

Open Communication

Collaborator engagement

Unified vision & common goals

Expertise to overcome barriers

Truly Translational

Motivates

Increases capacity & productivity

=



# Key Elements of Team Science

- Guiding Principles
- Collaborator Acknowledgement & Agreement
- Opportunity to comment on documents & provide feedback before finalization
- Opt-in Authorship
- Regular Progress Updates
- Working Groups
- Championing Leadership Beyond the Core Team
- Cloud-based Platforms

# Extending Beyond the Researchers





# Patient & Knowledge User Engagement



Patients and knowledge users are experts, just like clinicians and researchers

Incorporating Patients and Knowledge Users into Research:

- Develops meaningful evidence and outcomes
- Increases uptake of evidence
- Reduces research waste

Success is based on meaningful, early, and collaborative engagement.

- Co-building research questions, study design and outcomes
- Avoiding tokenism
- Mutually beneficial



## Governance Structure

Internal Steering Committee

Working Groups (WG) & Sub-WGs

Supporting Platforms

### Leadership Core

Azad - Strategy & Communications  
Brockway - Stakeholder Engagement  
Burgner - Mechanistic Investigations  
Stock - Maternal Fetal Medicine  
Zoega - Big Data & Epidemiology  
Rodriguez - Management & Operations

### External Advisory

TBD

### Knowledge User WG (Azad/Brockway)

UN Population Fund, WHO,  
Born on Time, PHAC Healthy  
Newborn Network, Parent Groups

### Protocol WGs (Stock/Zoega)

Lockdown Exposure (Wood, Urquia)  
Perinatal Outcomes (Miller)  
Statistics (Mulholland, Been)

### Mechanism WGs (Azad/Burgner)

Air Quality (Franklin, Nyadanu)  
Maternal Stress / Leave (Brockway, ?)  
Health Systems (Brockway, Hui?)  
Infection & Inflammation (Burgner, Nassar?)  
Biosamples (Burgner, Fraser?)

### LMIC (Avery/TBD)

Africa (Temmerman/TBD), Asia (Bhutta/TBD), Latin America (TBD)

### Data & Infrastructure (A. Sheikh)

HDRUK (Morris) / International COVID-19 Data Research Alliance (Sibbald, Barnes)

Other WG  
Members  
+  
Data  
Contributors  
>65 Centres  
to date



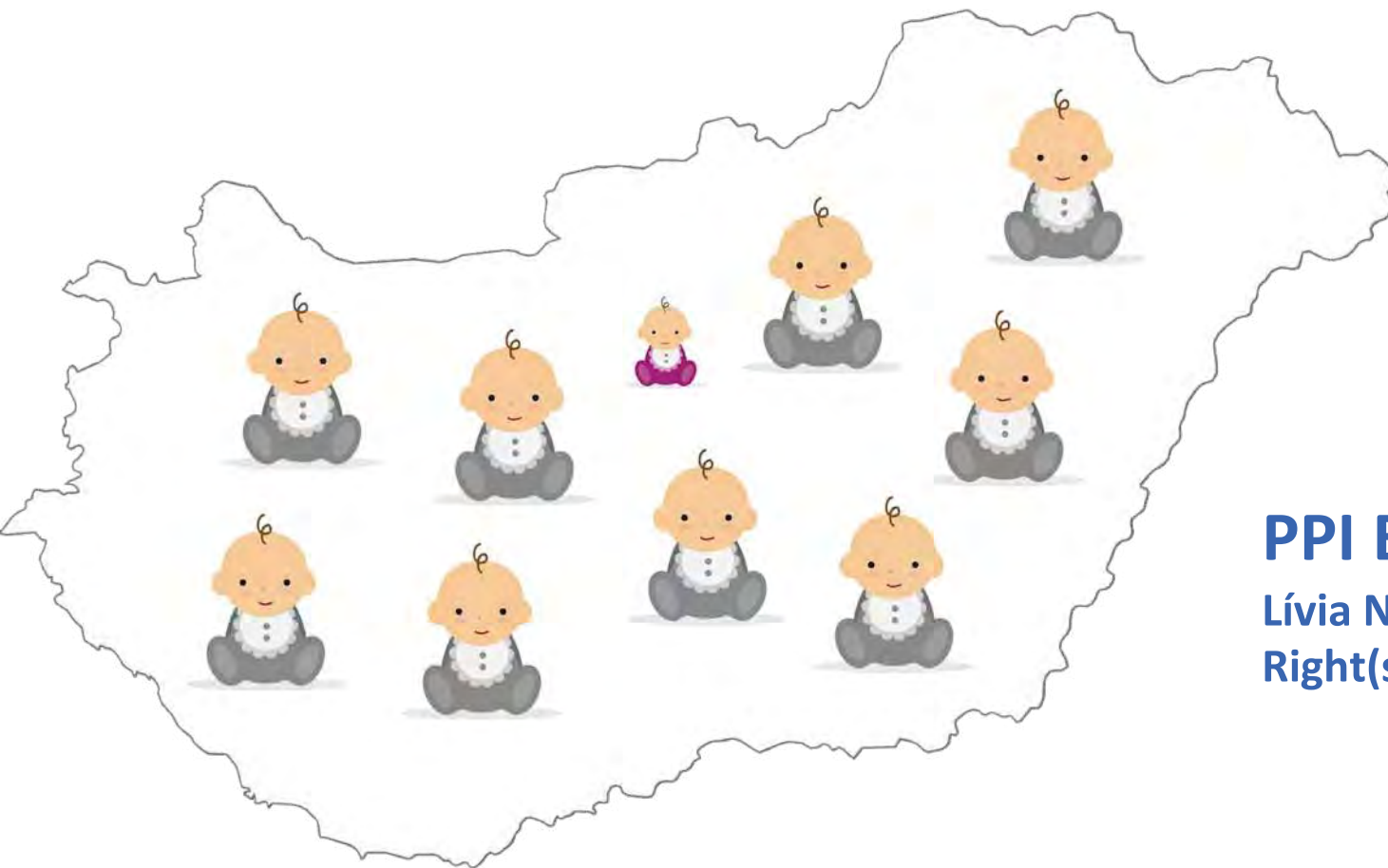
## Knowledge User / Patient Engagement Working Group (Azad/Brockway)

### Current Parent Groups :

Canadian Premature Babies Foundation,  
Melletted a helyem Egyesület (Hungarian Association for Premature Birth Care),  
Healthy Newborn Network

### Knowledge Users:

UN Population Fund, WHO, Born on Time, PHAC Healthy Newborn Network



## PPI Experience in iPOP (Driver Project)

Livia Nagy Bonnard, Hungarian patient representative  
Right(s) Beside you Association





© Kent Meireis 2014

**5 million birth in Europe  
500.000 born before 37  
weeks**

**90.000 birth in Hungary  
8500 babies arrive earlier**







**Europe: 100.000 babies starts their life at the NICU**



**Hungary: 1500 babies are under 1 kg**

Outcomes:

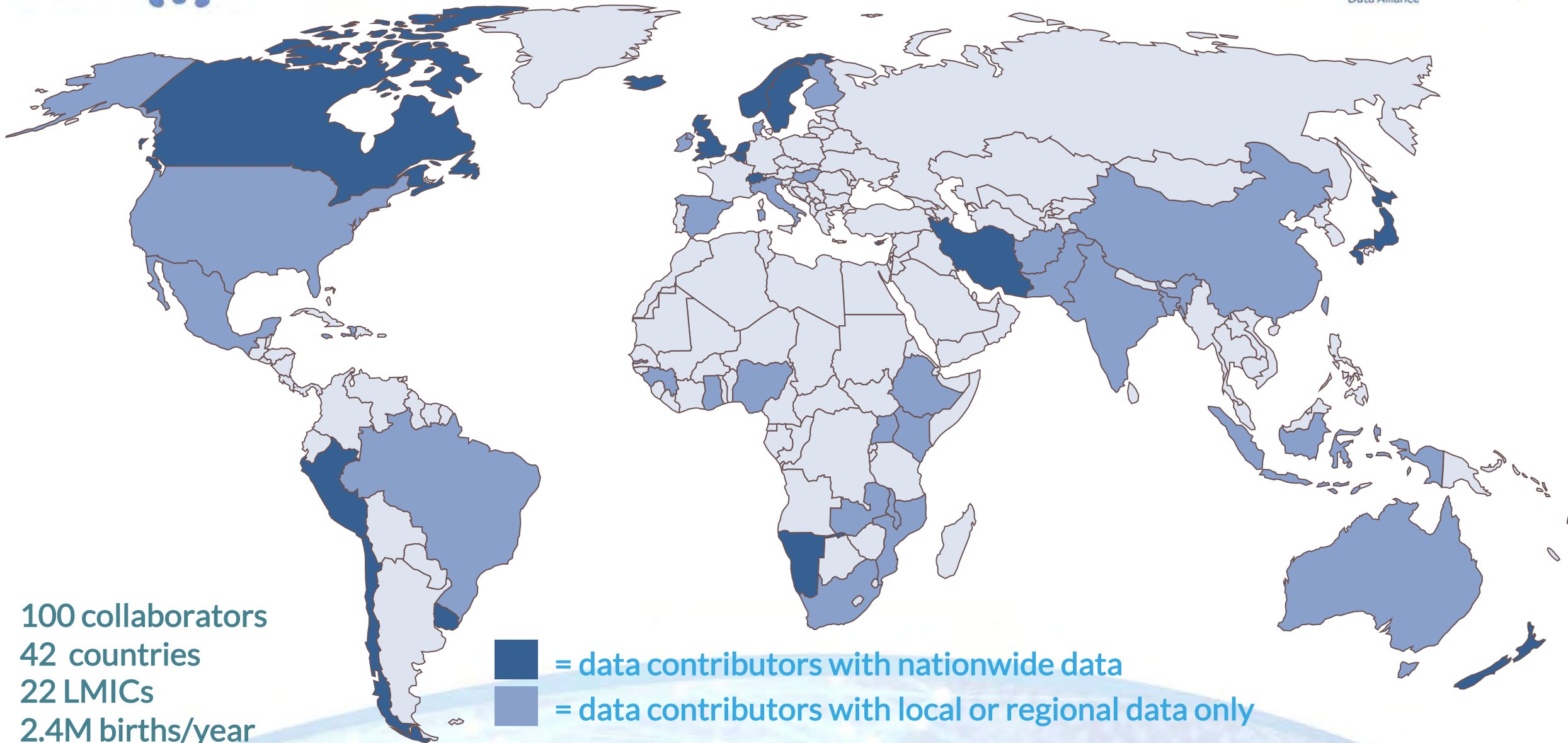
10% die first week of life

10% brain damage, serious vision-hearing problems, severe physical disabilities

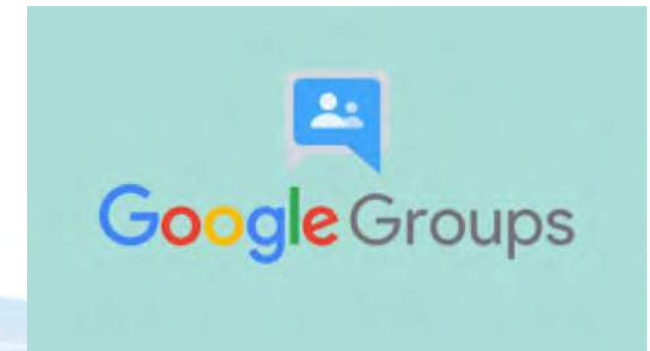
40% mild problems

40% minimal, zero outcome

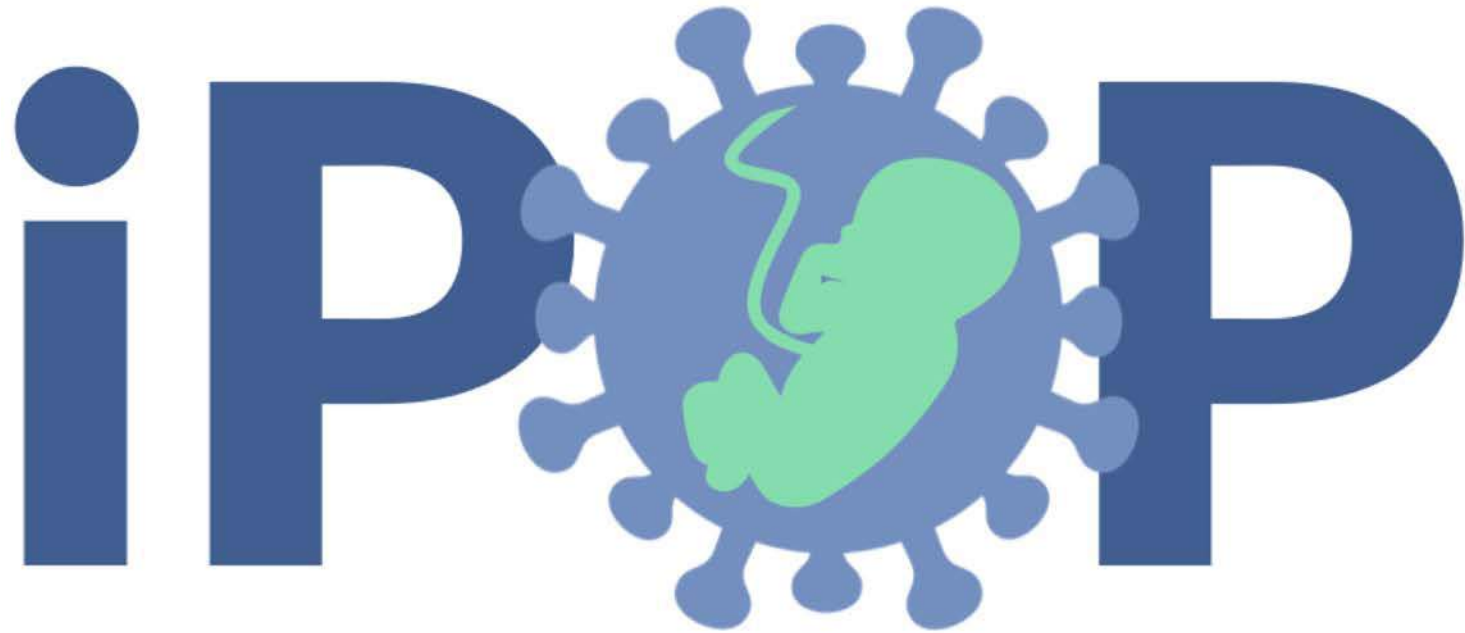




# Tools & Tips for Collaboration







International  
Perinatal  
Outcomes in the  
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Study

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