University of Zurich[UZH]
Institute of Biomedical Ethics
and History of Medicine

Swiss TPH
Swiss Tropical and Public Health Institute
Schweizerisches Tropen- und Public Health-Institut

PubliCo is supported by:

World Health Organization

Collegium Helveticum

FNSNF
Fonds national suisse
Schweizerischer Nationalfonds
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Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Education, Research and Innovation SERI

Index

Welcome	**Welcome of the Collegium Helveticum, jointly supported by the University of Zurich, ETH Zurich and Zurich University of the Arts.**	**Christian Ritter (Collegium Helveticum)**
Introduction	From infodemics and their impact on societies (in different fields) to strategies for solutions	Beat Glogger (scitec-media)
The need	The infodemic in the context of the COVID-19 crisis, how it impacts people and societies; the need for better ways to inform people and to understand their needs	Tim Nguyen (WHO, health emergencies programme)
The idea	Core idea of PubliCo: quantitative and qualitative tools to listen to people and to provide personalized information	Nikola Biller-Andorno (IBME) / Sonja Merten (SwissTPH)
The strategy	The long way from “it would be nice to have” to “that’s how we’re gonna do it”	Giovanni Spitale (IBME)
The structure	Design process, how to translate ideas into things. Focus on privacy and lean code, easy to deploy even in low tech settings	Giulio Michelon (Belka)
Citizen science	What is citizen science, why it is important to involve citizens as active actors in science, how this was important in PubliCo’s development (ProjectBuilder)	Rosy Mondardini (Citizen Science Centre Zurich)
WHO White paper	Sharing techniques and experiences to infom others.	Kristen Jafflin (SwissTPH)
Future	PubliCo is more than a COVID-19 response tool. Its modularity allows to develop and store different preset modular surveys to be deployed when needed – eg earthquake, flood, biological risk and so on. Also, we will do our best to deploy and test it also in other context than Switzerland, including EU countries but also LMIC. We easily imagine 5-10 years of research in this sense.	Nikola Biller-Andorno (IBME) / Sonja Merten (SwissTPH)
Demo	Demonstration of how the tool works	Samuel Giacomelli (Belka)
Open discussion		

Publi Co

together through the crisis

What happens during a public health crisis?

Public:
- What is this? Why is it happening?
- Lots of information become available at the same time. Is it all good?
- Who do I trust?
- How can I filter out non relevant or information?
- ...

Policy makers:
- Choices need to be made. Sometimes hard choices.
- What do people think? How do they behave?
- Are they willing to accept this or that measure?
- Which specific subset of the population is facing the hardest time?
- How do we prioritize interventions?
- ...

There is no “one size fits all” approach

1. Introduction

Beat Glogger (scitec-media)

2. The need

Tim Nguyen (WHO, health emergencies programme)

The infodemic in the context of the COVID-19 crisis, how it impacts people and societies; the need for better ways to inform people and to understand their needs

Tim Nguyen
World Health Organization

World Health Organization | EPI•WiN | infodemic MANAGEMENT

An infodemic is accompanying the pandemic

- **An infodemic is an overabundance of information** – good or bad – that makes it difficult for people to make decisions for their health
- **Misinformation**[1], **disinformation**[2] and **fake news can cause real harm** to health, public trust, social cohesion and emergency response

[1] inaccurate information
[2] false or inaccurate information intended to mislead

We're not just fighting an epidemic; we're fighting an infodemic. Fake news spreads faster and more easily than this virus, and is just as dangerous.

Tedros Adhanom Ghebreyesus
Director-General, World Health Organization

The COVID-19 infodemic can harm health

- The infodemic can lead to confusion, risk-taking and harmful behaviours
- In some countries, misinformation has generated mistrust in governments, public health authorities and science

Methanol poisoning in Iran

Approximately:

- **700 people have died**
- **5,011 have been hospitalized and**
- **90 have developed blindness or eyesight damage**

after drinking methanol as a "cure" for coronavirus

Photo credits:
https://www.aljazeera.com/news/2020/04/iran-700-dead-drinking-alcohol-cure-coronavirus-200427163529629.html; https://www.sciencemag.org/news/2020/05/unproven-herbal-remedy-against-covid-19-could-fuel-drug-resistant-malaria-scientists; https://www.cnn.com/us/live-news/us-coronavirus-update-04-24-20/h_d3b4da7f4ba4054207abe4cf783b10f4

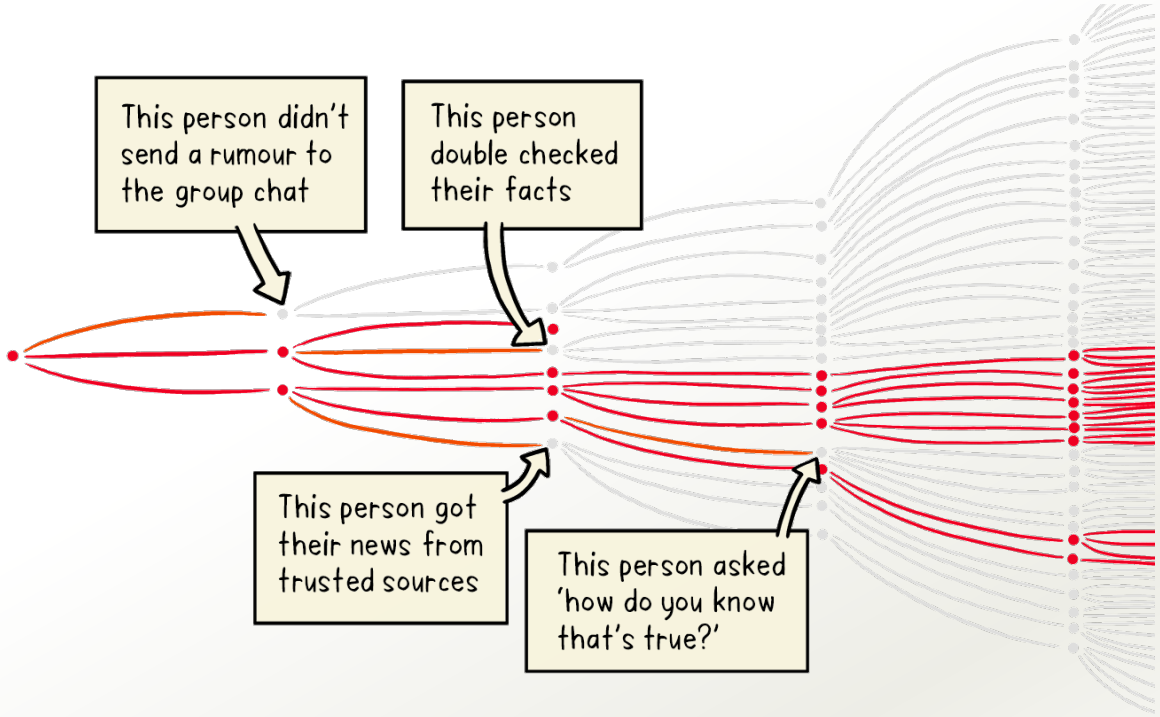
Technology has changed the way information is produced, distributed and consumed

vs.

- Infodemics thrive in the virtual space
- Managing the infodemic has become more challenging with rapid spread of mis- and dis-information through social media
- Managing the infodemic is critical to managing the pandemic

World Health Organization | EPI•WiN | infodemic MANAGEMENT

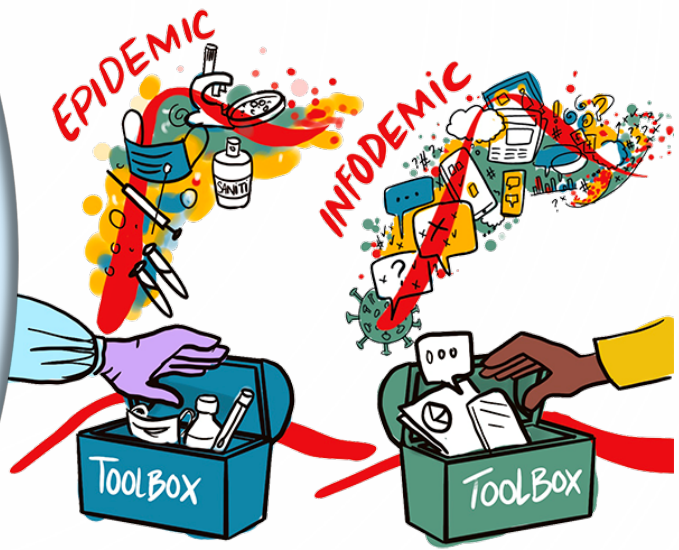
How people receive, process and act on information varies



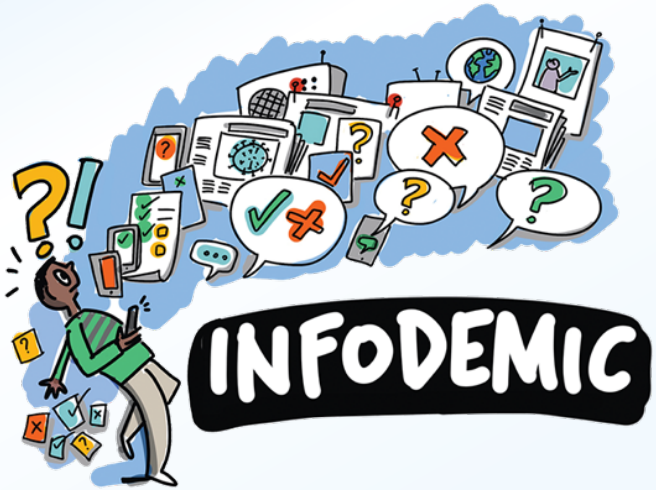
Understanding how information originates, evolves and spreads on different platforms and channels is key to managing the infodemic

The right information at the right time, in the right format

- While it is not possible to completely eliminate, **it *is* possible to manage the infodemic**
- Infodemic management aims to ensure people have **access to factual information in a timely manner that is easily understood**; so they may rapidly adopt behaviours to protect health and the health of others during an epidemic
- Infodemic management must :
  - Be backed up by science
  - Rely on evidence-based interventions
  - Make use of best practices, including sharing experiences and continuous learning



Infodemic management interventions aim to influence health behaviour during epidemics



Infodemic interventions

1. LISTEN TO CONCERNS
2. TRANSLATE SCIENCE & COMMUNICATE RISK
3. PROMOTE RESILIENCE TO MISINFORMATION
4. ENGAGE & EMPOWER COMMUNITIES

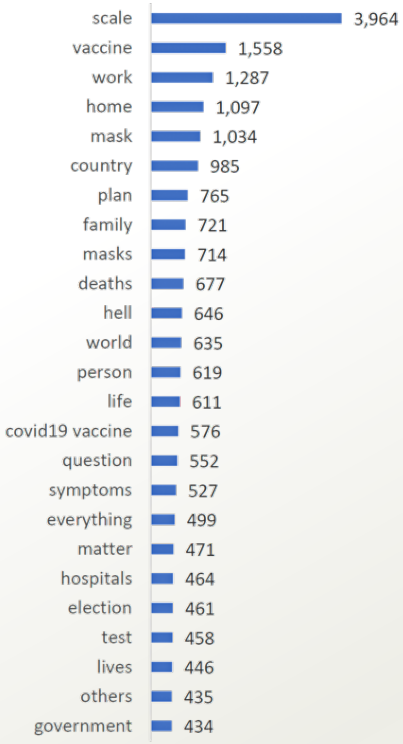
Quantifying information through social listening

WHO uses a digital listening approach which analyses and quantifies information associated with COVID-19. For example, top keywords and topics are tracked in order to identify trends and help manage the infodemic.

Questions on COVID-19

(12 – 18 Nov 2020)

Top key words
(excluding 'COVID-19', 'coronavirus' and 'virus')



Top rising topics

(12 – 18 Nov 2020)

Based on % change of conversation volume from the previous week

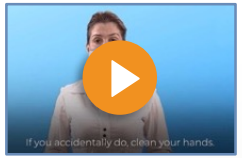
Translating science into protective measures

WHO video guidance on COVID-19

MASKS

Medical and fabric masks: who wears what when?

How to wear a fabric mask safely



How to wear a fabric mask

How to wear a medical mask

TRANSMISSION

How to break the chains of transmission

NEW!

Three factors help you make safer choices during COVID-19

PROTECTING OURSELVES

How to protect yourself against COVID-19

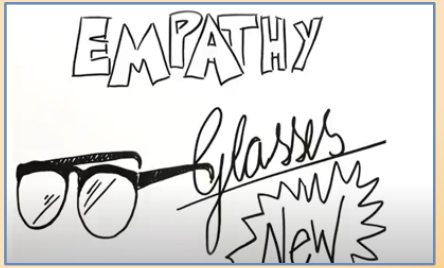
Seven steps to prevent the spread of the virus

Being resistant to misinformation requires an understanding of how information flows, but also understanding of cognition and behaviour

WHO works with communities to protect health during epidemics

- WHO EPI-WIN has established representative groups from key communities (faith-based, youth, employers and workers) who communicate regularly with WHO and give input on projects and initiatives. Examples:
  - **Co-development** of practical guidance on COVID-19 education, preparedness and response to support faith-based organizations and faith communities
  - **Collaborating** with young people to design creative, engaging and relevant communication around 'reducing transmission of COVID-19'
  - **Facilitating** a virtual dialogue series together with leaders and representatives from the World of Work
- Since the beginning of the pandemic, WHO EPI-WIN has hosted **80 COVID-19 related webinars** with **participants from 149 countries**

Examples of youth entries for 'Reducing transmission' Design Lab



Working together to support public health

- Launched in June 2020, the Collective Service is a partnership between the *International Federation of Red Cross and Red Crescent Societies (**IFRC**)*, the *United Nations Children's Fund (**UNICEF**)* and the *World Health Organization (**WHO**)*. The Collective Service leverages active support from the Global Outbreak Alert and Response Network (**GOARN**) and key stakeholders from the public health and humanitarian sectors.

- The **Collective Service** works on **risk communication and community engagement (RCCE)** to ensure consistent, systematic and predictable support to partners involved in public health, humanitarian and development responses to the pandemic

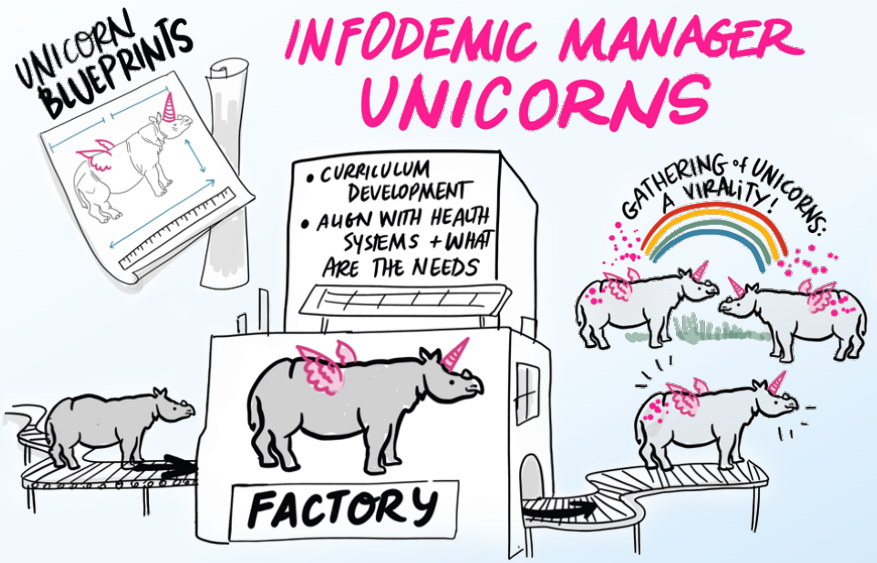
Infodemiology: the science behind infodemic management

Infodemic management is an evolving area of research and practice

- **How do overwhelming amounts of information** affect behaviour in emergencies and what interventions are effective in addressing it
- **How does online behaviour** affect offline action
- **How does misinformation** affect cognition and influence seeking health services
- **Role of policy interventions** to successfully address and mitigate health misinformation
- **How misinformation** affects unnetworked or closed networks and vulnerable populations

First global WHO infodemic manager training completed on 26 November 2020

- **278 participants from 75 countries**
- Various *lectures by infodemic management specialists* on topics such as:
  - *Tools for analysis of the infodemic*
  - *Public health and epidemiology in context of infodemic response*
  - Risk communication and community engagement



Resources on infodemic management

WHO RESOURCES

- **Infodemic management**
  WHO infodemic management work and activities
  https://www.who.int/teams/risk-communication/infodemic-management

- **EPI-WIN updates**
  An archive of COVID-19 related weekly updates
  https://www.who.int/teams/risk-communication/epi-win-updates

- **3rd Virtual Global WHO Infodemic Management Conference**
  Whole-of-society challenges and solutions to respond to infodemics
  https://www.who.int/teams/risk-communication/infodemic-management/3rd-virtual-global-who-infodemic-management-conference

OTHER RESOURCES

- **Sending SMS messages for the general public for COVID-19 response**
  WHO, ITU and UNICEF are collaborating to facilitate sending short messages SMS to inform the general public about COVID-19
  https://www.itu.int/en/ITU-D/ICT-Applications/Pages/COVID-19-public-SMS.aspx

- **When old technology meets new: How UN Global Pulse is using radio and AI to leave no voice behind**
  UN Global Pulse can offer speech to text (radio) listening
  https://www.unglobalpulse.org/2019/04/when-old-technology-meets-new-how-un-global-pulse-is-using-radio-and-ai-to-leave-no-voice-behind/

- **UNESCO series on journalism education**
  UNESCO medio/journalist training
  https://en.unesco.org/unesco-series-on-journalism-education

UPCOMING EVENT

LIVE WEBINAR

3rd virtual global WHO Infodemic Management conference

Whole-of-society challenges & solutions to respond to infodemics

11 December 2020

8:00 EST / **14:00** CET / **20:00** ICT

#societyVSinfodemic

MORE INFO

REGISTER

World Health Organization | EPI•WiN | infodemic MANAGEMENT

www.who.int/epi-win

3. The idea

Nikola Biller-Andorno (IBME) / Sonja Merten (SwissTPH)

3. The idea

- Over the course of the current pandemic, citizens have been exposed to a range of prevention, containment and control measures, communicated by a diverse spectrum of media outlets.

- Information from different sources has an impact on citizens understanding, emotional responses, moral judgements, and behavioral dispositions.

- Not all communication content is equally reliable, and citizens vary in the information sources they can or choose to access.

3. The idea

- Providing high-quality information while actively dismantling myths is a key concern for national and global health authorities.

- At the same time: need to obtain an excellent grasp of public perception in order to allow for continuous adaptations and improvement of communication strategies as well as prevention, containment and control measures.

- Failure to communicate can result in irritation, loss of trust, and suboptimal adherence to public health policies.

3. The idea

- PubliCo is a new tool to provide bi-directional interaction between citizens and policy-makers for risk and crisis communication
- PubliCo relies on both quantitative and qualitative data to provide a precise, timely and rich analysis of complex phenomena
- PubliCo is open and transparent by design, strict data protection
- PubliCo is participatory: Development, deployment and validation cycles are carried forward by an interdisciplinary research team, an expert committee and citizen scientists

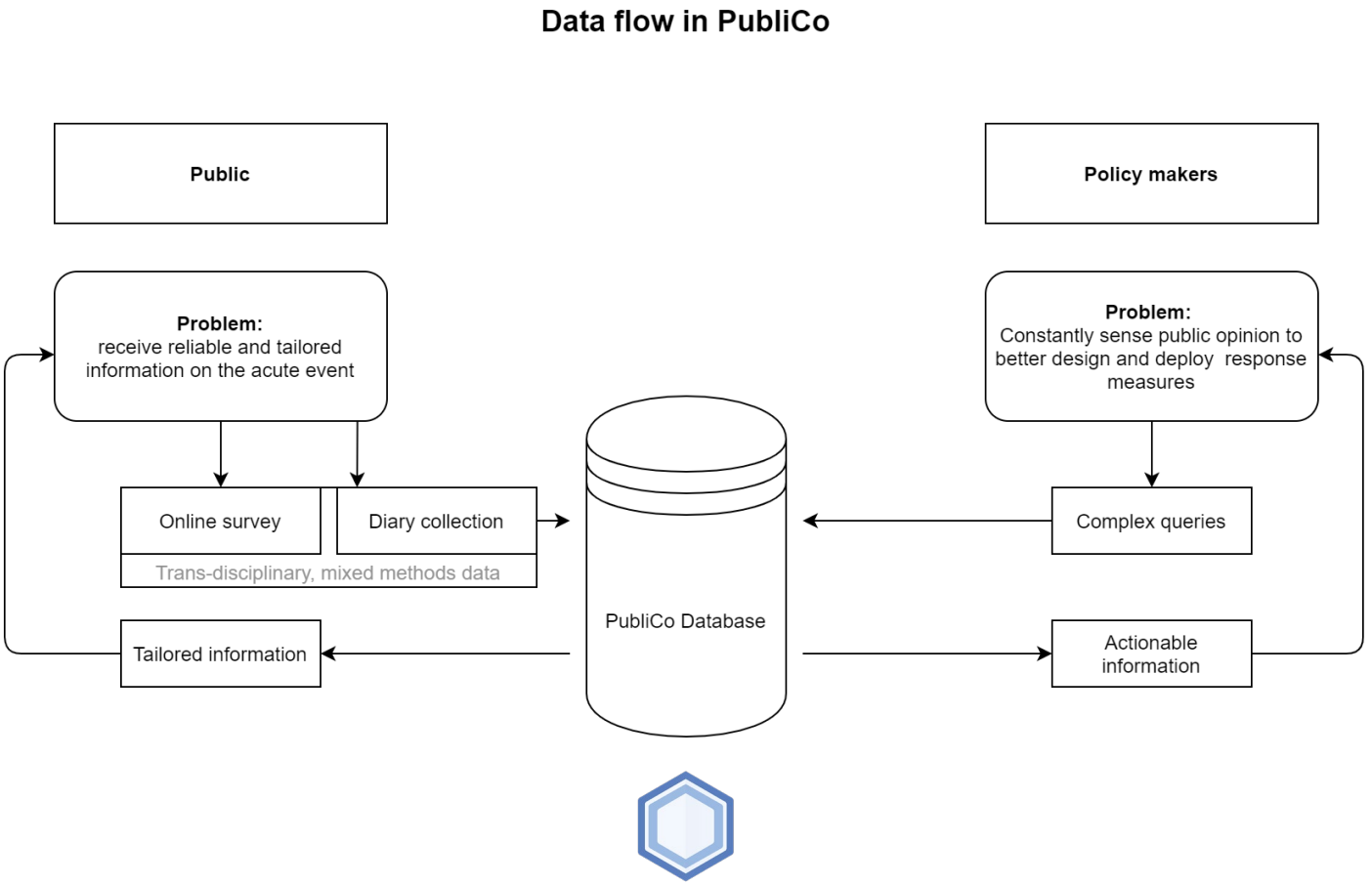
3. The idea

- PubliCo is flexible and allows the inclusion of qualitative data
- PubliCo offers a space to write a diary on everyday experiences during a crisis (anonymous)
- PubliCo diary narratives can add a perspective of people's concerns in real life
- Diary entries may highlight additional concerns, which can then trigger new analyses in PubliCo

4. Strategy

Giovanni Spitale (IBME)

4. Strategy


Data flow in PubliCo
Public
Policy makers
Problem:
receive reliable and tailored information on the acute event
Problem:
Constantly sense public opinion to better design and deploy response measures
Online survey
Diary collection
Trans-disciplinary, mixed methods data
Complex queries
PubliCo Database
Tailored information
Actionable information

4. Strategy

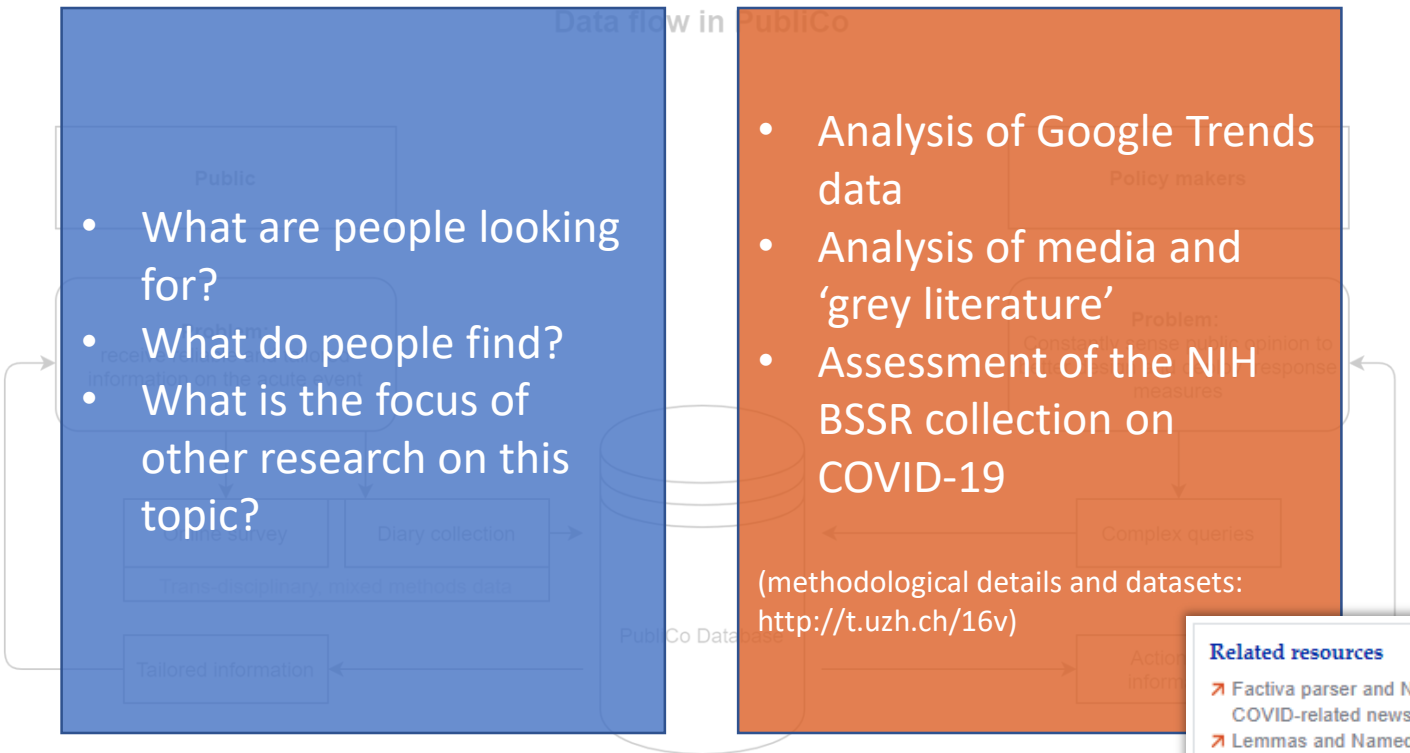
- What are people looking for?
- What do people find?
- What is the focus of other research on this topic?

4. Strategy

- What are people looking for?
- What do people find?
- What is the focus of other research on this topic?

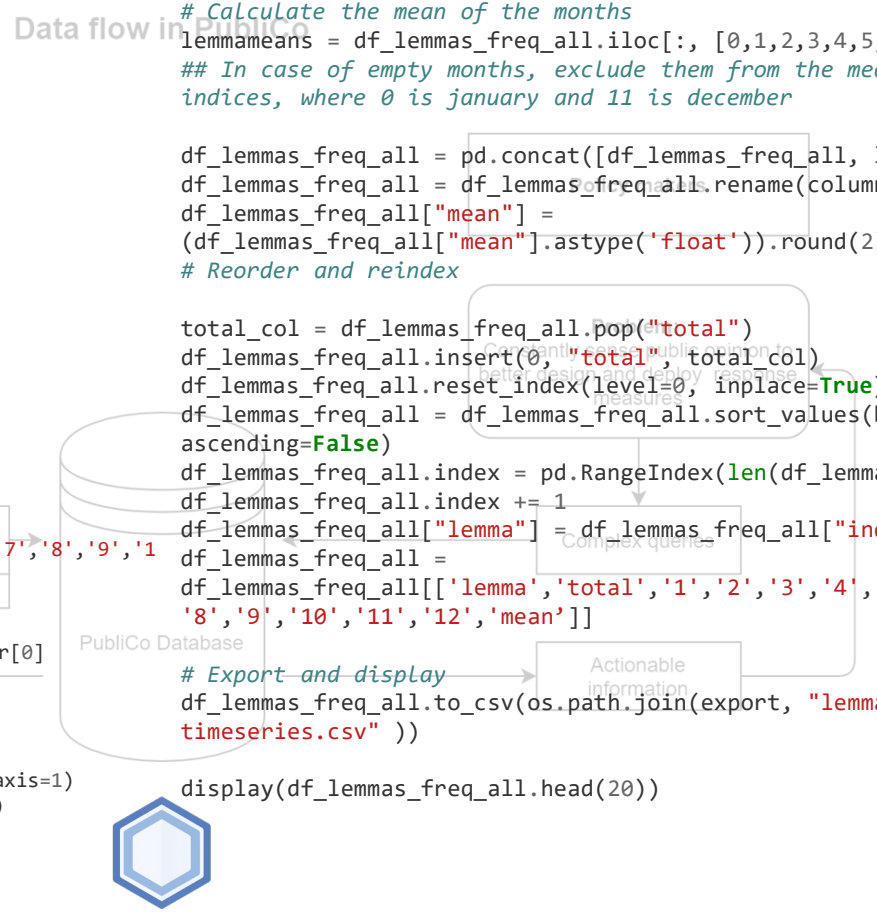
- Analysis of Google Trends data
- Analysis of media and ‘grey literature’
- Assessment of the NIH BSSR collection on COVID-19

(methodological details and datasets: http://t.uzh.ch/16v)



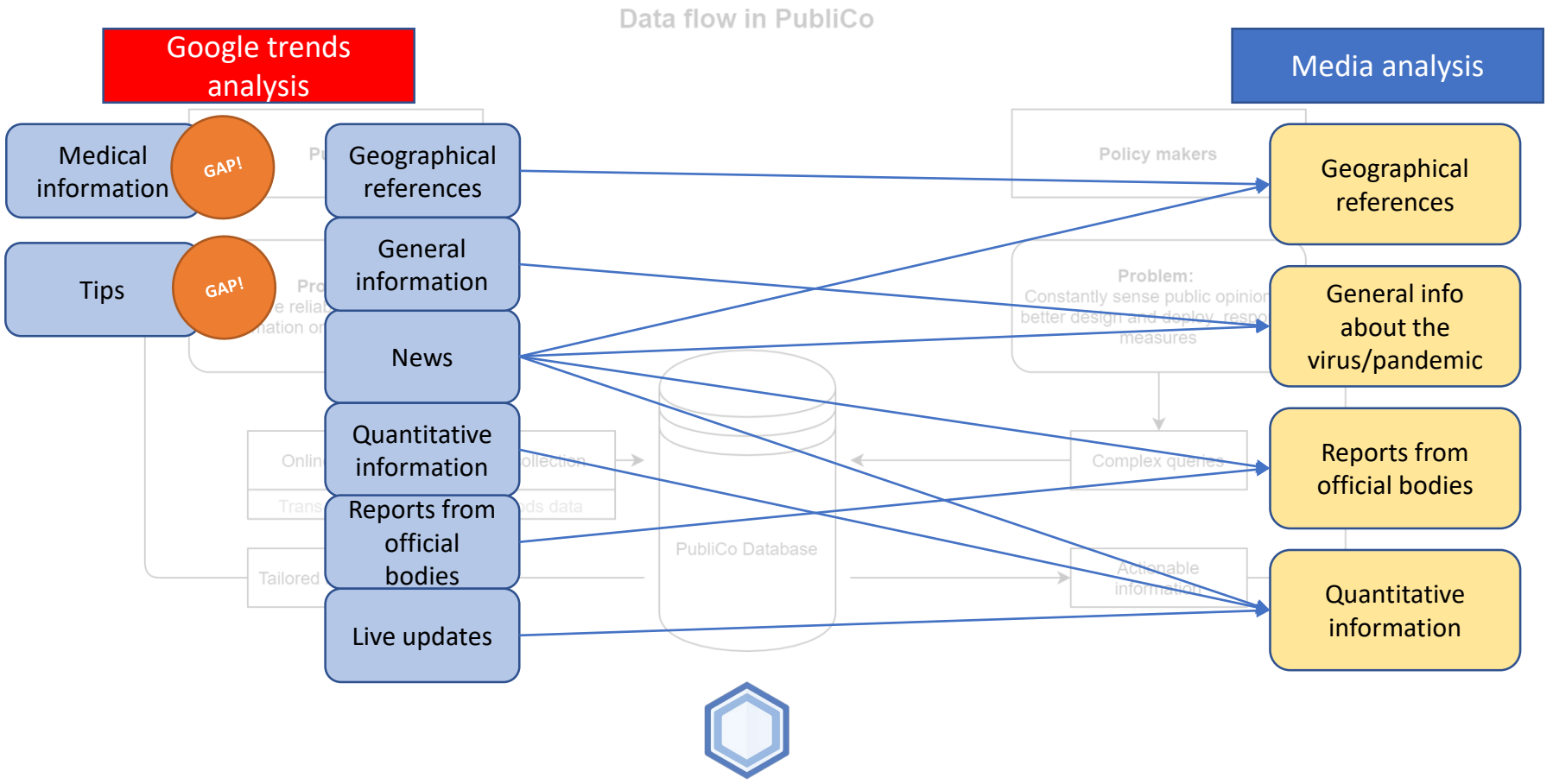
4. Strategy

```
# List of all lemma dataframes
df_lemmas_freq_all = [df_lemmas_freq_january,
                df_lemmas_freq_february,
                df_lemmas_freq_march,
                df_lemmas_freq_april,
                df_lemmas_freq_may,
                df_lemmas_freq_june,
                df_lemmas_freq_july,
                df_lemmas_freq_august,
                df_lemmas_freq_september,
                df_lemmas_freq_october,
                df_lemmas_freq_november,
                df_lemmas_freq_december]

# Loop for index and series
L = []
for x in df_lemmas_freq_all:
                x = x.set_index('Lemma’)
                L.append(pd.Series(x.values.tolist(), index=x.index))

# All together
df_lemmas_freq_all = pd.concat(L, axis=1, keys=('1','2','3','4','5','6','7','8','9','1
0','11','12'))
df_lemmas_freq_all = df_lemmas_freq_all.fillna('0')
for month in df_lemmas_freq_all:
                df_lemmas_freq_all[month] = df_lemmas_freq_all[month].str[0]

df_lemmas_freq_all = df_lemmas_freq_all.astype('int’)

# Calculate the total
lemmasums = df_lemmas_freq_all.iloc[:, [0,1,2,3,4,5,6,7,8,9,10,11]].sum(axis=1)
df_lemmas_freq_all = pd.concat([df_lemmas_freq_all, lemmasums], axis = 1)
df_lemmas_freq_all = df_lemmas_freq_all.rename(columns={0: "total"})
```

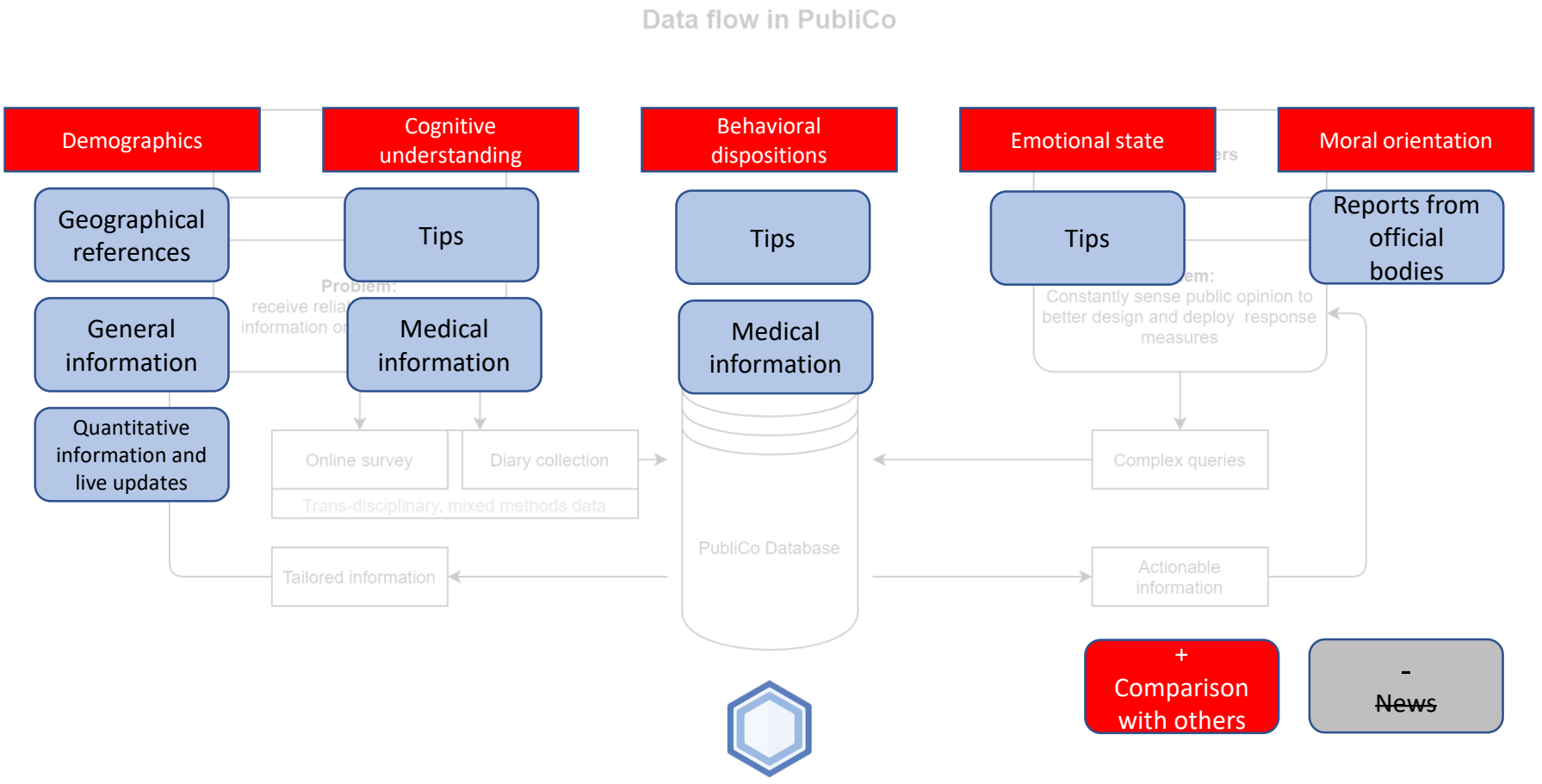



```
# Calculate the mean of the months
lemmameans = df_lemmas_freq_all.iloc[:, [0,1,2,3,4,5,6]].mean(axis=1)
## In case of empty months, exclude them from the mean here! Numbers are
indices, where 0 is january and 11 is december

df_lemmas_freq_all = pd.concat([df_lemmas_freq_all, lemmameans], axis = 1)
df_lemmas_freq_all = df_lemmas_freq_all.rename(columns={0: "mean"})
df_lemmas_freq_all["mean"] =
(df_lemmas_freq_all["mean"].astype('float')).round(2)
# Reorder and reindex

total_col = df_lemmas_freq_all.pop("total")
df_lemmas_freq_all.insert(0, "total", total_col)
df_lemmas_freq_all.reset_index(level=0, inplace=True)
df_lemmas_freq_all = df_lemmas_freq_all.sort_values(by=['total'],
ascending=False)
df_lemmas_freq_all.index = pd.RangeIndex(len(df_lemmas_freq_all.index))
df_lemmas_freq_all.index += 1
df_lemmas_freq_all["lemma"] = df_lemmas_freq_all["index"]
df_lemmas_freq_all =
df_lemmas_freq_all[['lemma','total','1','2','3','4','5','6','7',
'8','9','10','11','12','mean’]]

# Export and display
df_lemmas_freq_all.to_csv(os.path.join(export, "lemmas\lemmas-frequency-
timeseries.csv" ))

display(df_lemmas_freq_all.head(20))
```

4. Strategy


Data flow in PubliCo
Google trends analysis
Media analysis
Medical information
GAP!
Tips
GAP!
Geographical references
General information
News
Quantitative information
Reports from official bodies
Live updates
PubliCo Database
Policy makers
Problem:
Constantly sense public opinion
better design and deploy
measures
Complex queries
Actionable information
Geographical references
General info about the virus/pandemic
Reports from official bodies
Quantitative information

4. Strategy


Data flow in PubliCo
Demographics
Cognitive understanding
Behavioral dispositions
Emotional state
Moral orientation
Geographical references
Tips
Tips
Tips
Reports from official bodies
General information
Medical information
Medical information
Constantly sense public opinion to better design and deploy response measures
Quantitative information and live updates
Online survey
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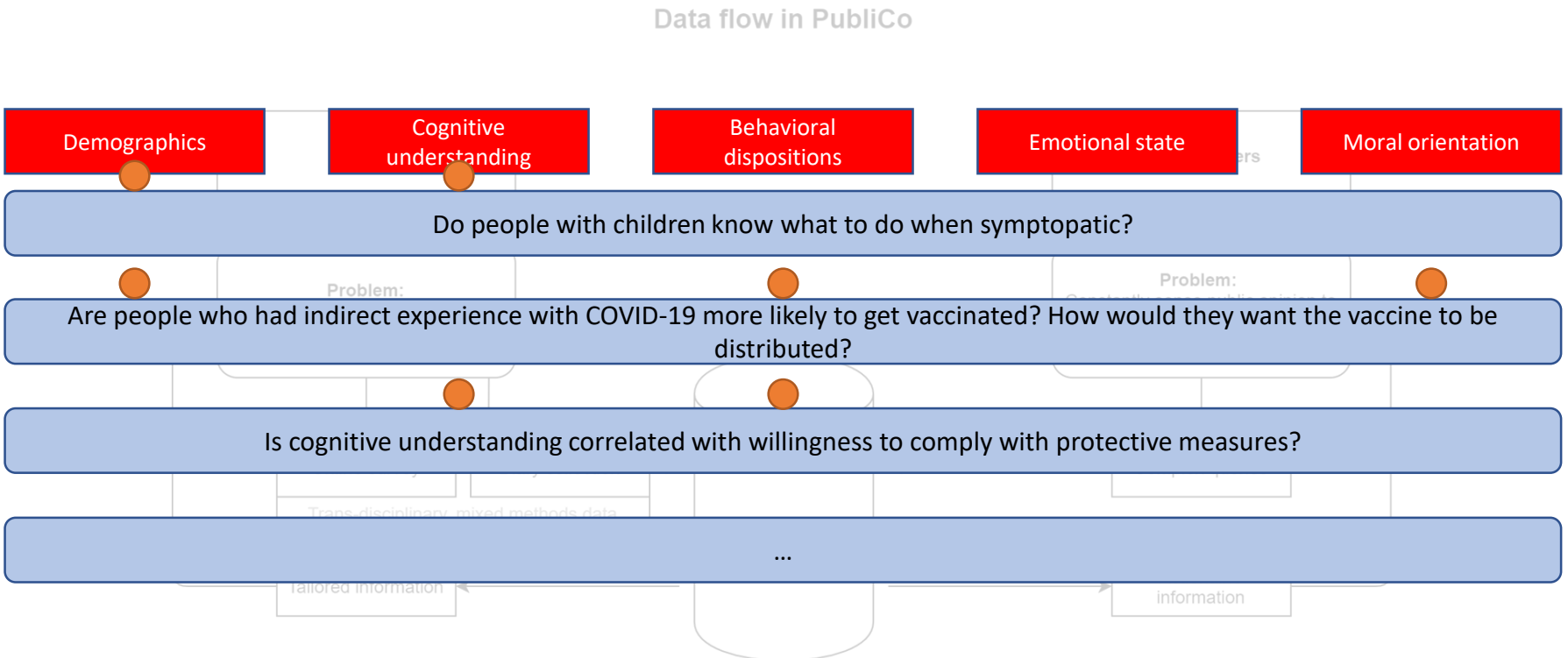
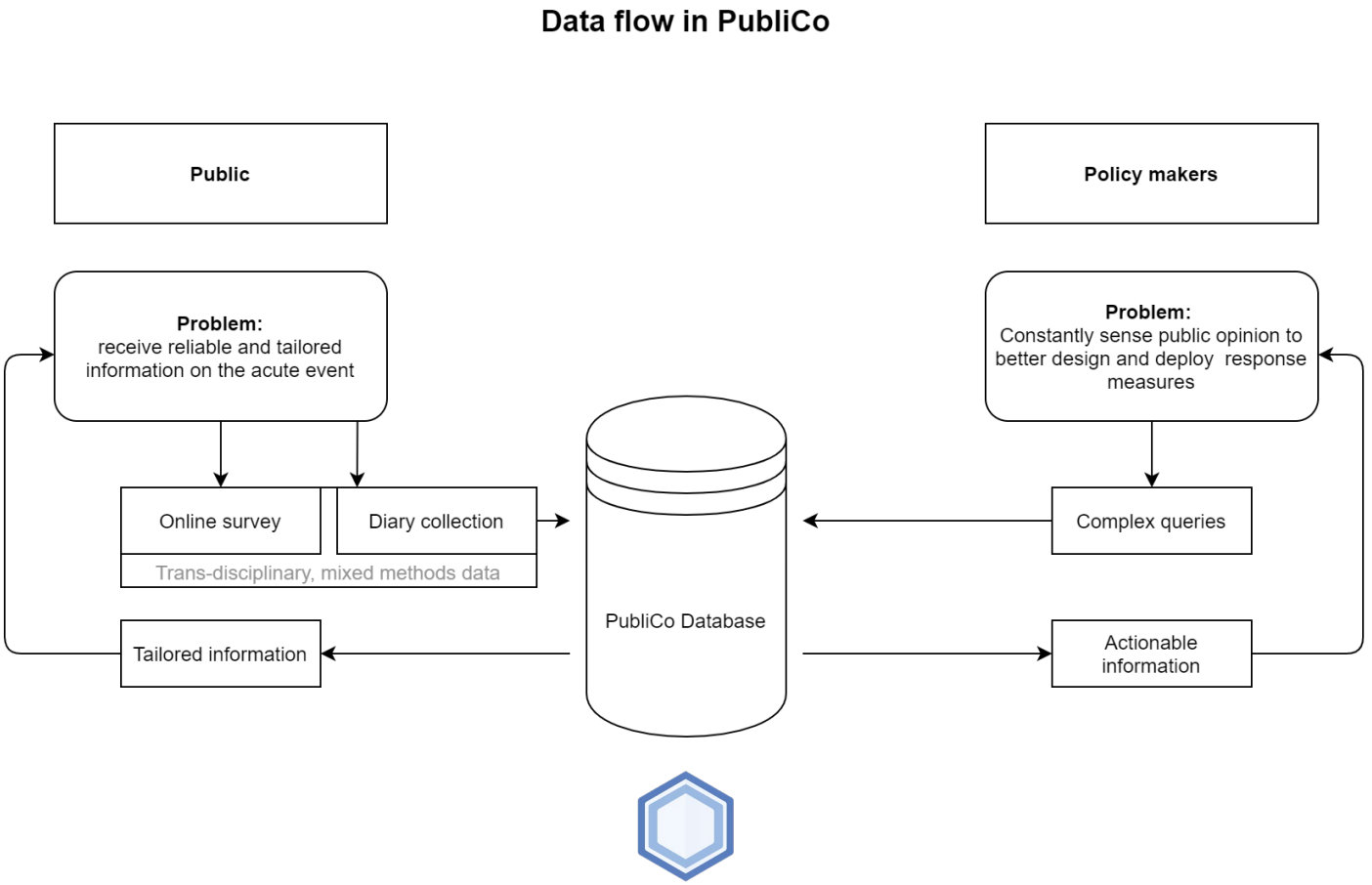
Complex queries
Trans-disciplinary, mixed methods data
PubliCo Database
Tailored information
Actionable information
+
Comparison with others
-
~~News~~

4. Strategy


Data flow in PubliCo
Demographics
Cognitive understanding
Behavioral dispositions
Emotional state
Moral orientation
Do people with children know what to do when symptopatic?
Are people who had indirect experience with COVID-19 more likely to get vaccinated? How would they want the vaccine to be distributed?
Is cognitive understanding correlated with willingness to comply with protective measures?
...

4. Strategy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5. Structure

Giulio Michelon (Belka)

BELKA

Giulio Michelon

CEO, Belka

We've helped top companies launching their digital products.

FURLA · THRON · Red Bull · CARLO GAVAZZI · MuSe · R:M AssicurazioneSalute · UEFA · Fatture in Cloud.it · Lagardère Travel Retail · lastminute.com · University of Zurich[UZH]

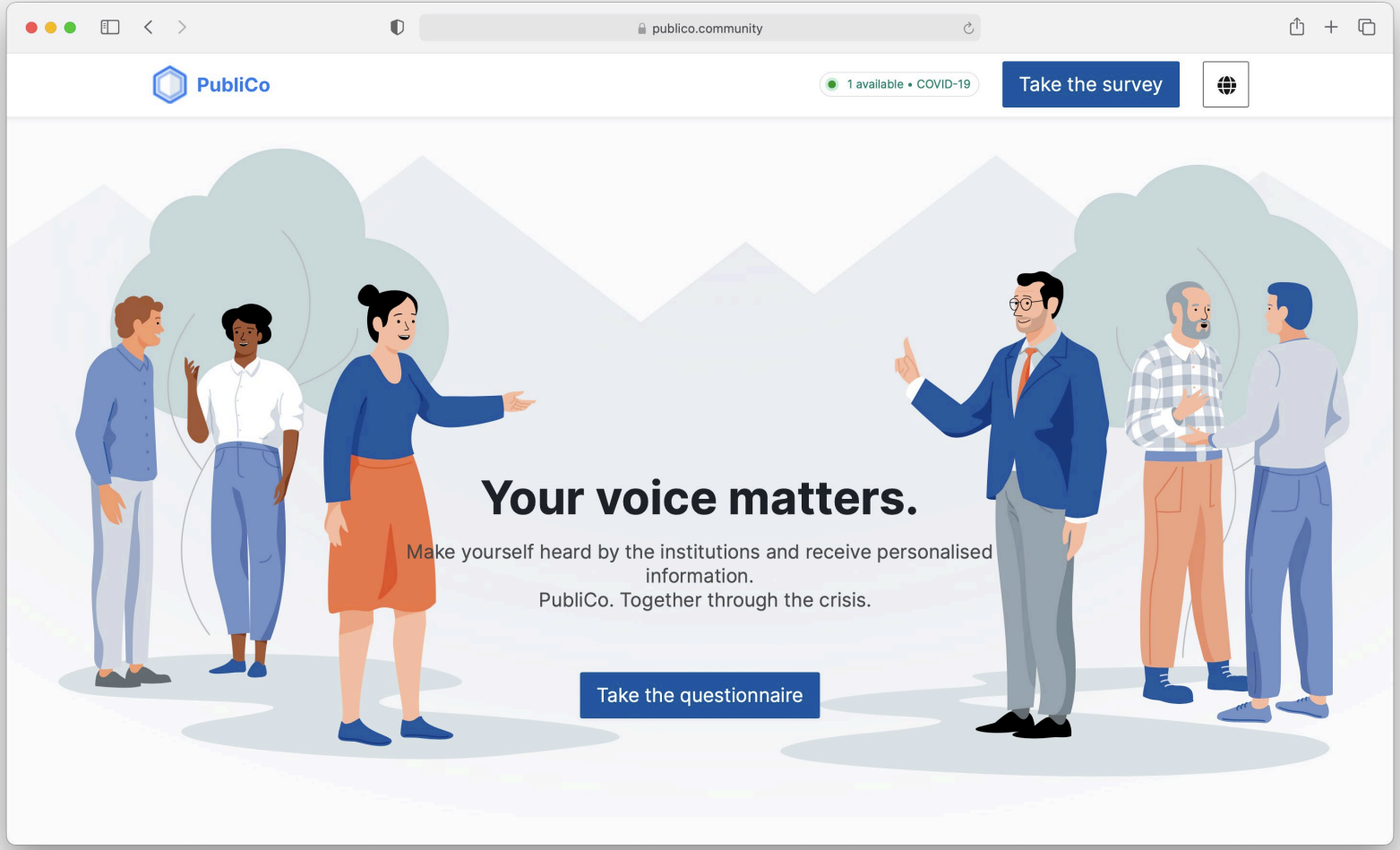
Design process, how to translate ideas into things. Focus on privacy and on lean code, easy to deploy even in low tech settings

Design process, how to translate ideas into things.
Focus on privacy and on lean code, easy to deploy
even in low tech settings

Design process, how to translate ideas into things.
Focus on privacy and on lean code, easy to deploy even in low tech settings

Giulio you need to help me! I'm the only nerd in the team 😢

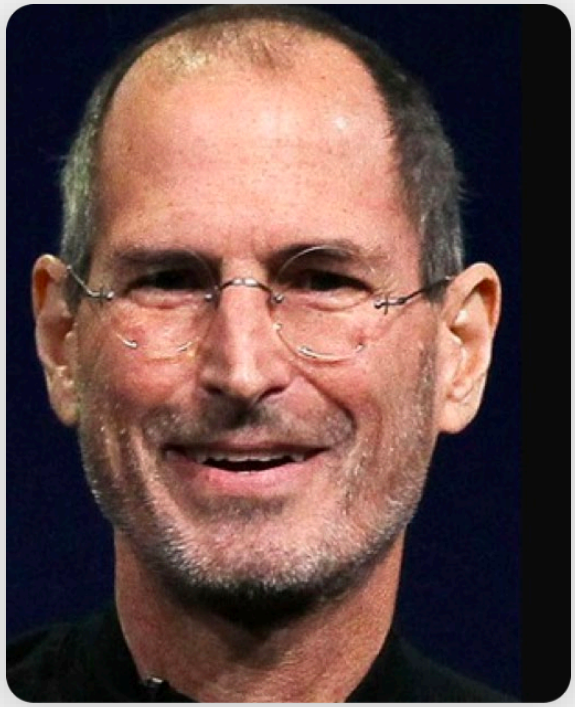
Giovanni Spitale
Phd student, PubliCo coordinator



www.publico.community

Belka's process

Belka's process



If you define the problem correctly, you almost have the solution.

— Steve Jobs

Measure twice, cut once.

— My carpenter

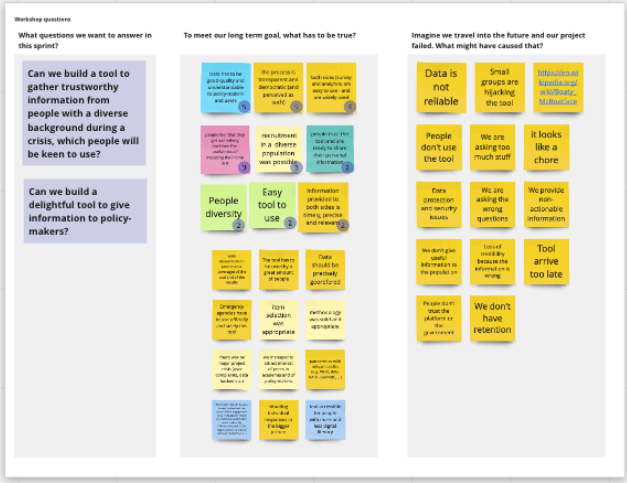
miro.com

miro | PubliCo - Kickoff

Share

LTG

Workshop questions



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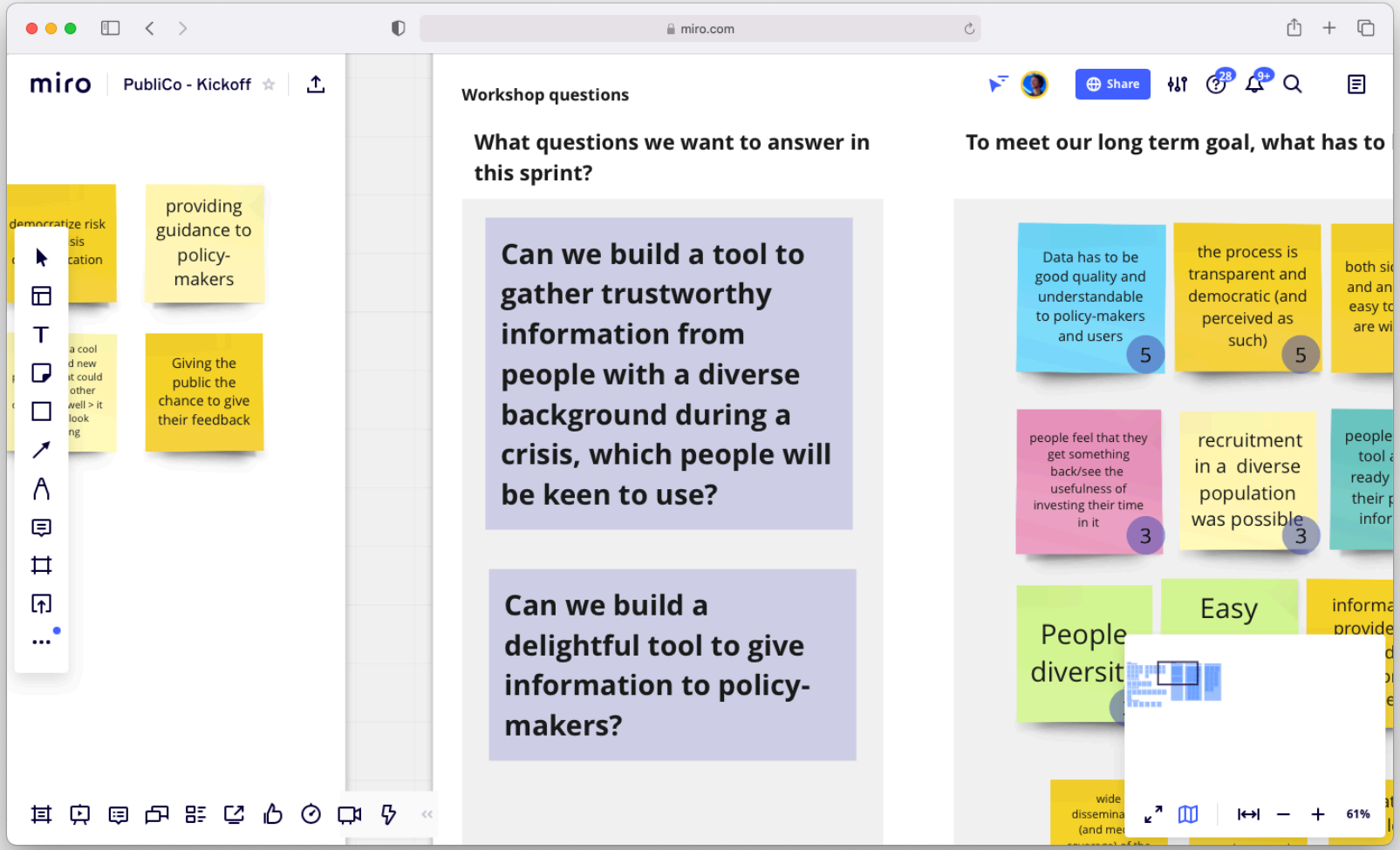
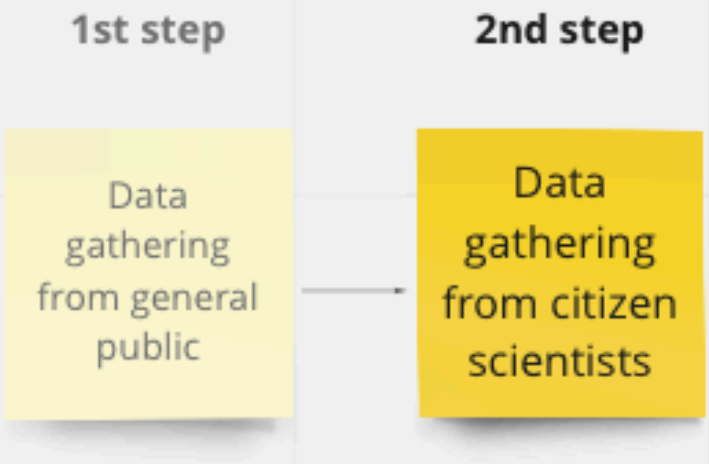

miro.com
miro
PubliCo - Kickoff
providing guidance to policy-makers
Giving the public the chance to give their feedback
Workshop questions
Share
What questions we want to answer in this sprint?
Can we build a tool to gather trustworthy information from people with a diverse background during a crisis, which people will be keen to use?
Can we build a delightful tool to give information to policy-makers?
To meet our long term goal, what has to
Data has to be good quality and understandable to policy-makers and users
5
the process is transparent and democratic (and perceived as such)
5
people feel that they get something back/see the usefulness of investing their time in it
3
recruitment in a diverse population was possible
3
Easy
61%

What are KPIs?

Key Performance Indicator — or “put a number on it”

1st step

Data gathering from general public


1st step
2nd step
Data gathering from general public
Data gathering from citizen scientists

1st step
2nd step
3rd step
Data gathering from general public
Data gathering from citizen scientists
Better survey managing experience

MVP (Nov, 30th)
1st step
2nd step
3rd step
Data gathering from general public
Data gathering from citizen scientists
Better survey managing experience

#1 TARGET

GATHER THE DATA

We act as the tools to empower your work

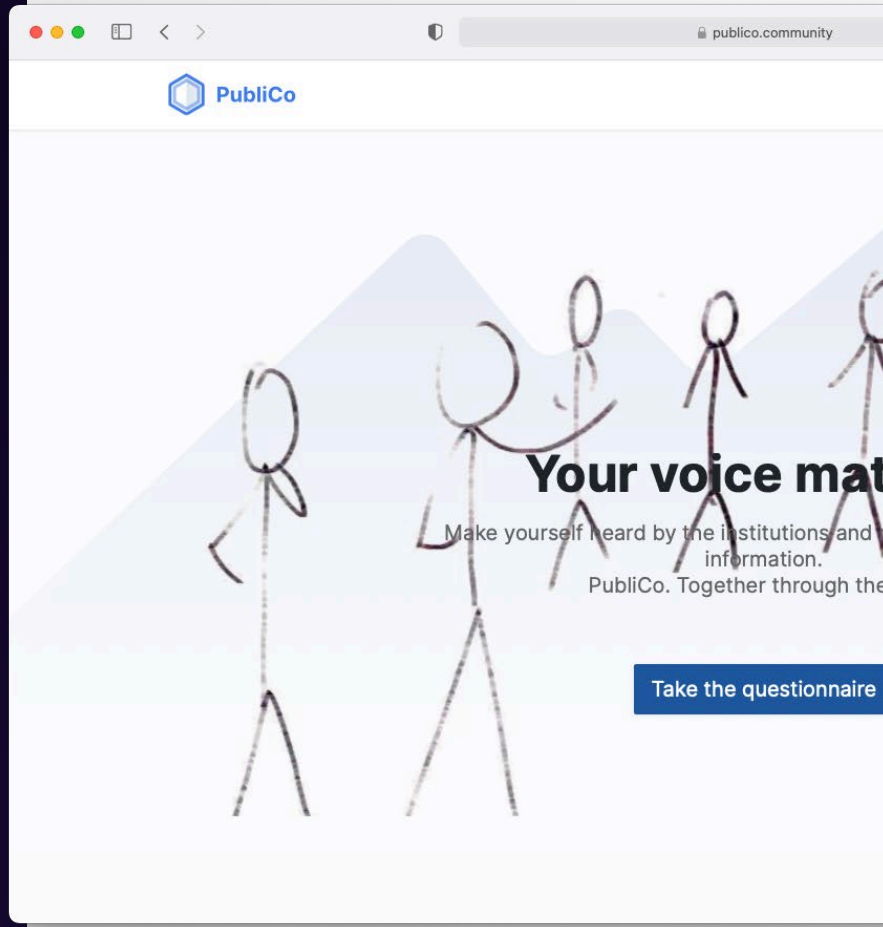
You don’t buy an hammer. You want to drive nails.

We extend your team

No big reveals — we work side by side

Ongoing validation

Development starts at project kickoff to quickly align on a technology strategy and forward-looking architecture.



Privacy by design*

**not just a motto*

Designers&Developers cooperation

Lean code, leaner team

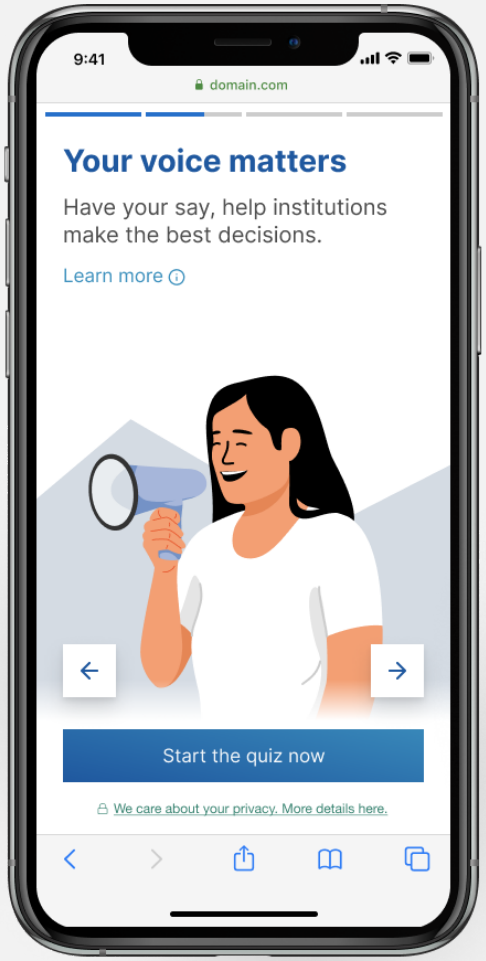
Low tech settings

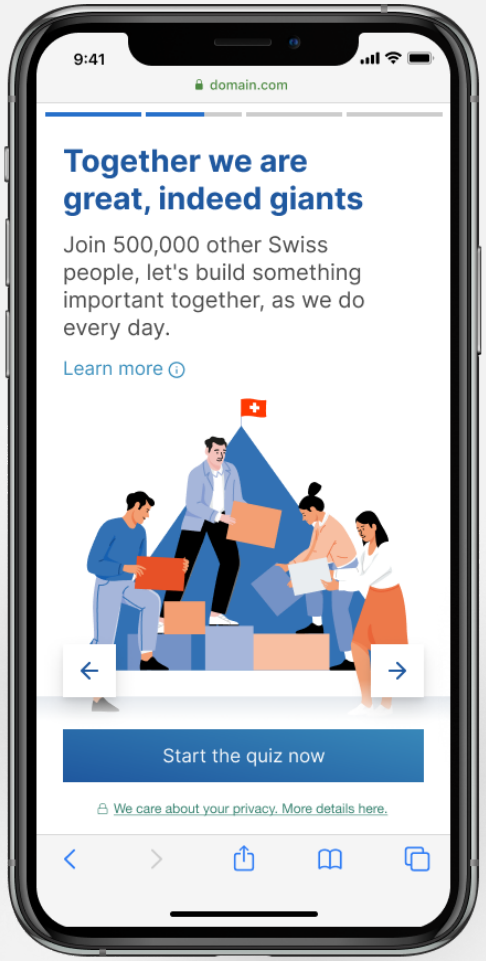
Code takes care of itself

I got what I wanted. Belka managed to translate quickly our idea into something real. All the process has been transparent and with a lean methodology — no slow communication, yes Slack and weekly meetings.

I always felt included and up to date.

“ Giovanni Spitale
Phd student, PubliCo coordinator


9:41
domain.com
Your voice matters
Have your say, help institutions make the best decisions.
Learn more
Start the quiz now
We care about your privacy. More details here.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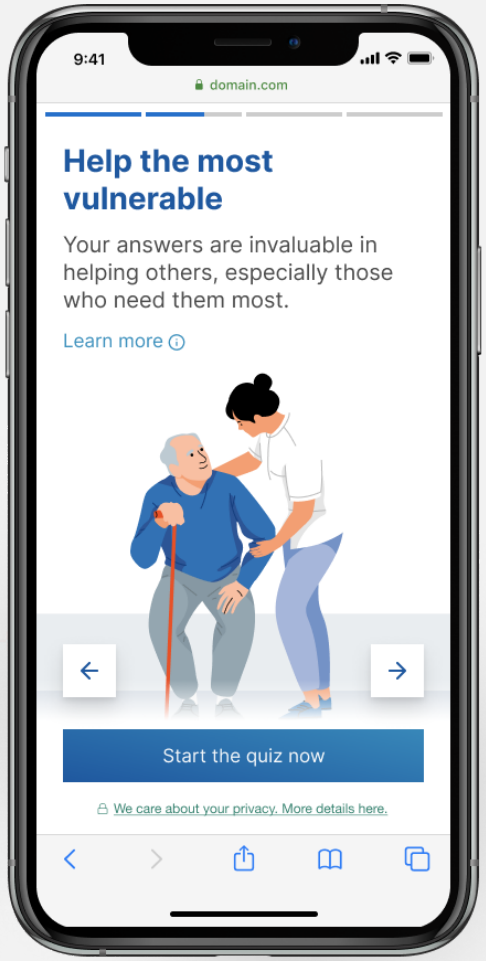
domain.com
Together we are great, indeed giants
Join 500,000 other Swiss people, let's build something important together, as we do every day.
Learn more
Start the quiz now
We care about your privacy. More details here.


9:41
domain.com
Help the most vulnerable
Your answers are invaluable in helping others, especially those who need them most.
Learn more
Start the quiz now
We care about your privacy. More details here.

BELKA

www.belkadigital.com

giulio@belkadigital.com

6. Citizen Science

Rosy Mondardini (Citizen Science Centre Zurich)

CITIZEN SCIENCE CENTER ZURICH

A joint initiative by

Universität Zürich[UZH] | ETH zürich

Citizen Science Center Zurich

CITIZEN SCIENCE

Rosy Mondardini
Managing Director
Citizen Science Center Zurich

CITIZEN SCIENCE

Scientific work undertaken by members of the general public, **often** in collaboration with or under the direction of professional scientists and scientific institutions.
(Oxford English Dictionary)

A broad range of activities where people produce scientific knowledge outside of traditional scientific institutions.
(Strasser and Haklay 2018)

… (many more…)

… in common:

public participation

voluntary contributions

(science-based) knowledge production

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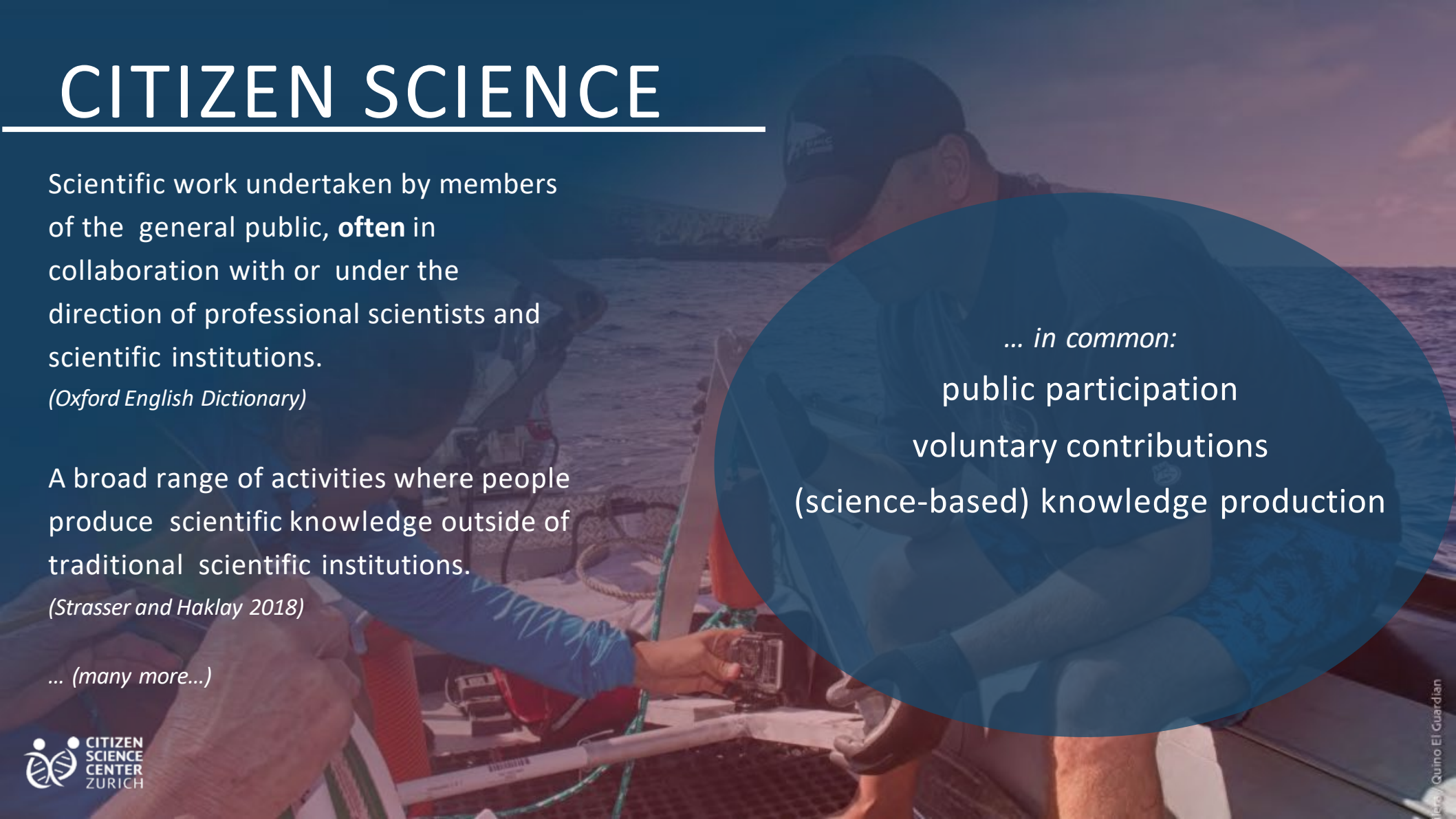

How much are the two communities (professional researchers and citizens) working together?

CONTRIBUTORY

Designed by scientists and for which citizens primarily contribute data.

COLLABORATIVE

Designed by scientists and for which citizens help project design, contribute and analyze data, disseminate findings

CO-CREATED

Designed by scientists and citizens and for which citizens are actively involved in most/all aspects of the research process

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What are participants contributing to the project ? What is their role?

DATA COLLECTION PROJECTS

Active or passive data collection

(images, descriptions, answers, samples, personal digital data, etc.)

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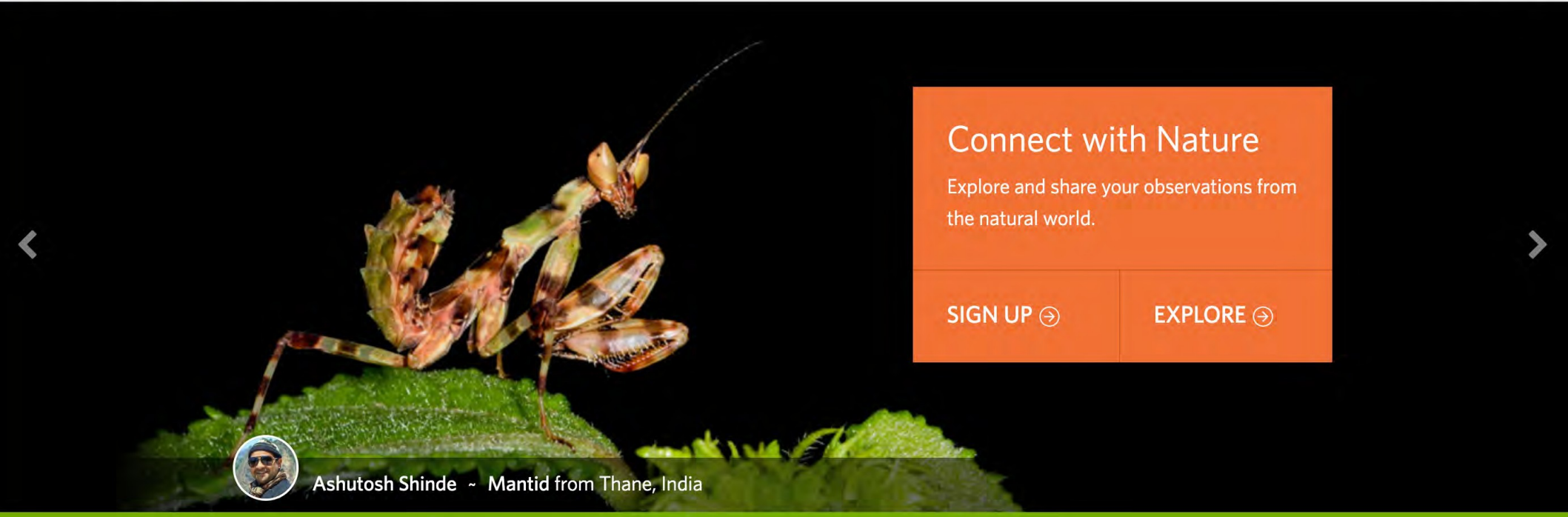


Connect with Nature

Explore and share your observations from the natural world.

SIGN UP EXPLORE

CALIFORNIA ACADEMY OF SCIENCES NATIONAL GEOGRAPHIC

iNaturalist is a joint initiative of the California Academy of Sciences and the National Geographic Society.

293,699
Species Observed

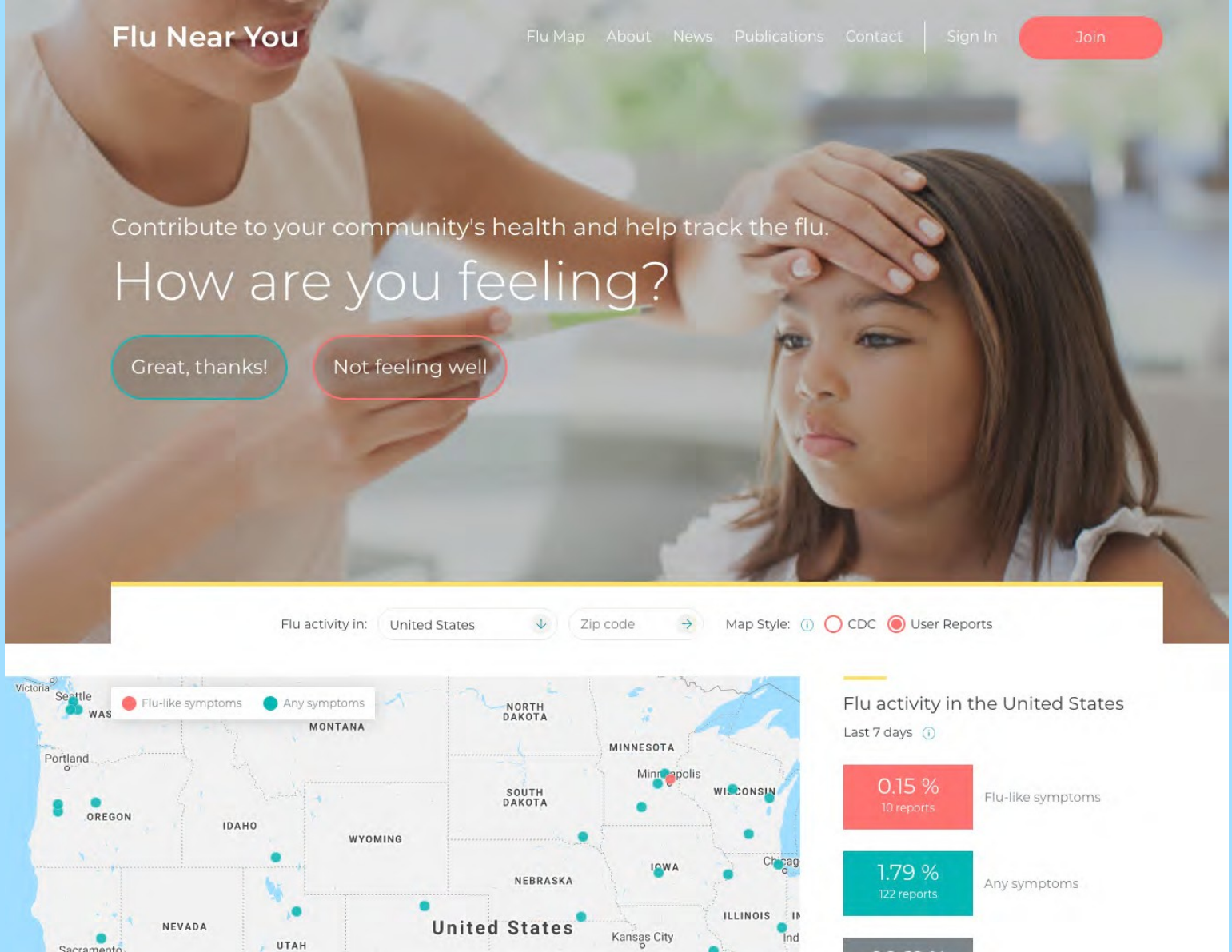
SIGN UP LEARN

48,232,527
Observations to Date

SIGN UP EXPLORE

3,074,281
People Signed Up

SIGN UP MEET


Flu Near You
Flu Map
About
News
Publications
Contact
Sign In
Join
Contribute to your community's health and help track the flu.
How are you feeling?
Great, thanks!
Not feeling well
Flu activity in:
United States
Zip code
Map Style:
CDC
User Reports
Flu-like symptoms
Any symptoms
Victoria
Seattle
Portland
OREGON
IDAHO
MONTANA
WYOMING
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
MINNESOTA
IOWA
ILLINOIS
NEVADA
UTAH
United States
Kansas City
Flu activity in the United States
Last 7 days
0.15 %
10 reports
Flu-like symptoms
1.79 %
122 reports
Any symptoms

What are participants contributing to the project ? What is their role?

DATA COLLECTION PROJECTS

Active or passive data collection

(images, descriptions, answers, samples, personal digital data, etc.)

DATA ANALYSIS PROJECTS

Tasks unsuitable or extremely difficult for computers – on web

(image analysis, pattern recognition, text transcription, mapping)

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Which Animal do You See?

PubliCo

Soft data for better risk a
communication: we need
to make it fair, democrati
transparent.

CONTRIBUTE

soft data for smart RCC

Info | Statistics | Tasks | S

What & Why

During the ongoing COVID-19 pandemic, official briefings, expert o
comments, and communication in general have become not only a
information, but also an incubator of misunderstandings. Not all in
equally reliable.

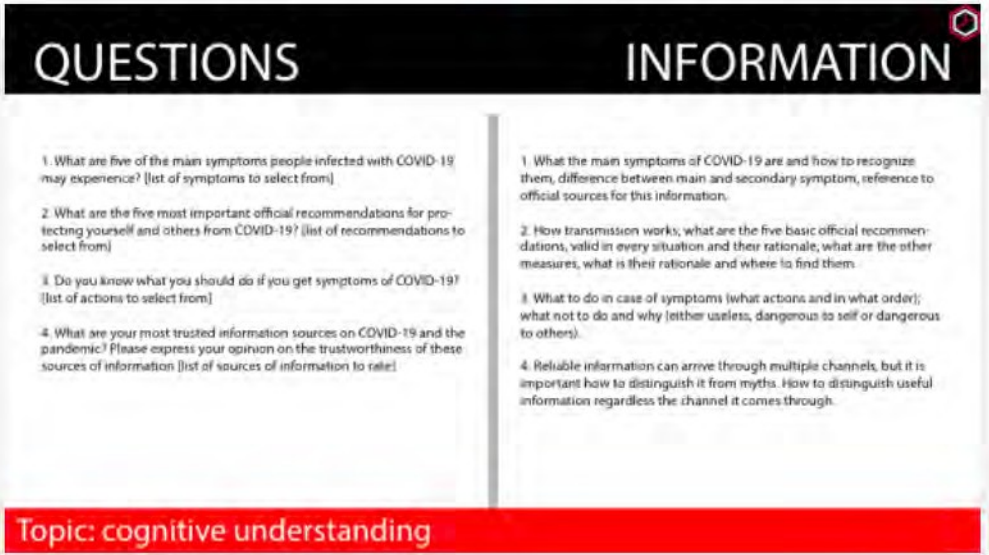
Providing high quality information and dismantling myths are impo
activities. However, they must be combined with a good understand
public opinion in order to allow better communication and more ef
safety measures.

We are developing a tool to tackle the infodemic: on the one hand, we will

Go back to the project

Please evaluate our questions and the information we'll provide in return.

« ‹ 1 › »



Are the questions appropriate?

This field is mandatory

Is the information provided relevant?

Go back to the project

Is this a photo (rather than a cartoon, graph, meme, etc.)?

YES | NO | NOT SURE

Does it look like it has been taken recently (in the last three months)?

YES | NO | CANNOT TELL

Are there people in this image?

YES | NO | NOT SURE

Are the people wearing masks?

YES | SOME OF THEM | NO | CANNOT TELL

How many people are there in the image?

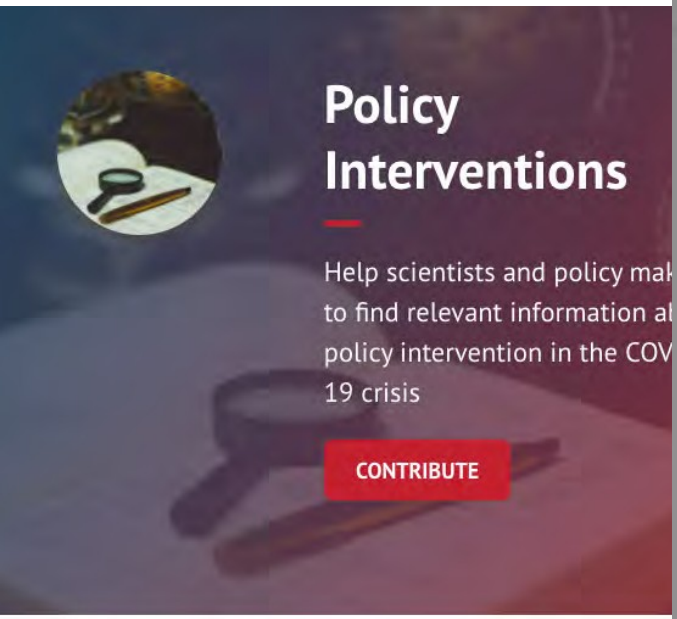
1 | 2 | 3 | 4 | 5 OR MORE

Tweet

Hoy 13 hace exactamente dos meses que se detect\xc3\xb3 el PRIMER caso de COVID-19 en Guatemala en donde toda la gente corri\xc3\xb3 a los supermercados a dejarlos VAC\xc3\x8dOS y a encerrarse en las casas hoy con casi 1200 casos positivos todos en la calle como si nada pasara que incoherencia. https://t.co/Xtm2S6vt3R

Country/ Territory: United States

https://t.co/Xtm2S6vt3R



Policy Interventions

Help scientists and policy mak
to find relevant information ab
policy intervention in the COV
19 crisis

CONTRIBUTE

Info Statistics Tasks Settin

What & Why

Scientists have to answer very quickly to question from policy makers ab
the validity of some of the policies that are in places, or the future polic
they want to put in place.

To be able to do that scientists have to go through a very important amo
of scientific literature, and find the relevant information, analyse it and f
back to policy makers.

AI can help in finding the relevant articles, but the result is not yet accu

Go back

Is this
policy

YES

I DON'

SUBMI

You are

3020

You have
from 11

« ‹ 1 2 3 4 ... › »

arXiv:2003.02985v1 [q-bio.PE] 6 Mar 2020

· ARTICLES · doi:

Modeling the Control of COVID-19: Impact of Policy Interventions and Meteorological Factors

JIA Jiwei[1, 2], DING Jian[1], LIU Siyu[3,*], LIAO Guidong[1],
LI Jingzhi[4], DUAN Ben[5], WANG Guoqing[6] & ZHANG Ran[1, 2]

[1]*School of Mathematics, Jilin University, Changchun 130012, China;*
[2]*Interdisciplinary Center of Jilin Province for Applied Mathematics, Changchun 130012, China;*
[3]*School of Public Health, Jilin University, Changchun 130021, China;*
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[6]*School of Basic Medical Science, Jilin University, Changchun 130021, China.*
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Received ; accepted

Abstract

In this paper, we propose a dynamical model to describe the transmission of COVID-19, which is spreading in China and many other countries. To avoid a larger outbreak in the worldwide, Chinese government carried out a series of strong strategies to prevent the situation from deteriorating. Home quarantine is the most important one to prevent the spread of COVID-19. In order to estimate the effect of population quarantine, we divide the population into seven categories for simulation. Based on a Least-Squares procedure and officially

BENEFITS

for **Scientists**

- **Resource efficiency** of research activities (larger datasets gathered across a wider geographical area and over a longer period of time at lower cost)
- Opportunity to **widen dissemination** and **impact** of their work
- **New perspectives** on topics (including new discoveries!)

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BENEFITS

for **Citizens**

- Personal satisfaction from **contributing to science** and to the wider public good
- Personal development and opportunity to gain new **knowledge and skills**
- Opportunity to establish **connections** with similarly minded people
- Personal enjoyment (**fun!**) from participating in enriching activities

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CITIZEN SCIENCE CENTER ZURICH

Enabling **RESEARCHERS** and **CITIZENS** to create and conduct **RESEARCH COLLABORATIONS** that produce **SOUND SCIENCE** while **SUPPORTING THE UN SDGs**

A joint initiative by

University of Zurich[UZH] | ETH zürich

CITIZEN SCIENCE CENTER ZURICH

WHAT WE PROVIDE

Platform

Web
Mobile
Single sign-on
Database
API

Community

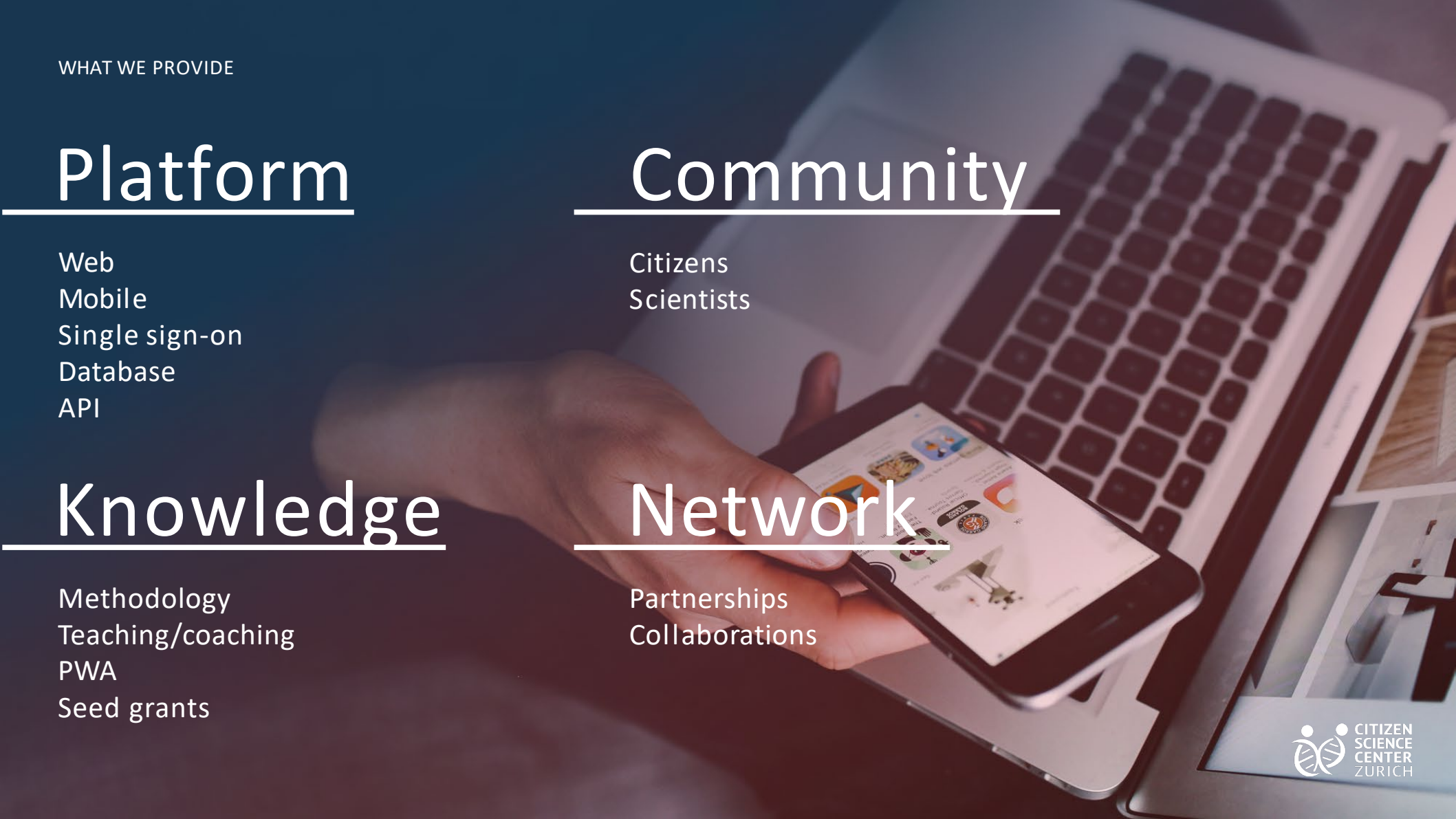
Citizens
Scientists

Knowledge

Methodology
Teaching/coaching
PWA
Seed grants

Network

Partnerships
Collaborations



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CS Project Builder

Web-based tool allowing researchers, students, and all members of the public to create and run **data-analysis CS Projects** with a simple step-by-step process

Contributors perform **complex data classification task** (ie. classify, describe or localize) **images, text, tweets, PDF files, sounds** and **video clips**

Facilitate the **co-creation** of Citizen Science projects by starting with the implementation of simple pilots

A joint initiative by

University of Zurich[UZH] | ETH zürich

CITIZEN SCIENCE CENTER ZURICH

CITIZEN SCIENCE CENTER ZURICH

Thank you!

citizenscience.ch

info@citizenscience.ch
@CitSciZurich

7. WHO White paper

Kristen Jafflin (SwissTPH)

5. WHO White paper

Developing and sharing our experience and recommendations:

- Getting feedback
- Examining preliminary results
- Refining and revising the PubliCo platform
- Reporting on the process and recommendations in a WHO White Paper

5. WHO White paper

Feedback from:

- International advisory board with diverse array of experts
  - Expertise in bioethics, public health, risk and crisis communication, medicine, social sciences
  - Experts with experience in a wide range of different settings
- Citizen scientists

5. WHO White paper

Preliminary results

- From diaries
- From online web survey
- From Google trends and media analyses

5. WHO White paper

Refining and revising PubliCo platform based on:

- Feedback from experts
- Feedback from citizen scientists
- Preliminary results

5. WHO White paper

White paper will include:

- Overview of PubliCo concept
- Summary of platform development so far
- Description of testing and validation process
- Recommendations for others who wish to develop platforms like PubliCo

8. Future

Nikola Biller-Andorno (IBME) / Sonja Merten (SwissTPH)

8. Future

Develop a framework/standards for good risk and crisis communication

- Targeted information vs. creating «information bubbles»
- Any role for censorship (e.g. anonymized diary entries presenting conspiracy theories)?
- Information vs. nudging/implicit blaming & shaming

8. Future

Potential future modules:

- Risk perception (infection, mortality etc.)
- Allocation issues: who should get access to vaccine, ICU, other goods (nationally, possibly also exploring national interest vs. global solidarity)
- Trade-offs freedom vs. safety
- Media consumption (e.g. movies on pandemics, computer games) and cognitive/emotional/behavioral responses

8. Future

Going global? The transferability of the PubliCo approach to other settings

- Technological preconditions (mobile phones, electricity)
- Cultural: public trust that citizens' voices are taken seriously
- Political: Potential abuse in non-democratic societies (surveillance, identification of citizens with «deviant» opinions)

8. Future

Adding a local perspective also in low-income contexts

- High relevance of obtaining views from all pockets of the population in order to develop or adapt public healt measures
- PubliCo is inclusive – can engage persons from poorer strata and vulnerable population groups who may otherwise be excluded of a public dialogue
- Adaptation of the qualitative diary component to include voices from e.g. community health workers to provide a community perspective

9. Demo

Samuel Giacomelli (Belka)

10. Discussion

THANKS TO OUR ADVISORS

Dr.	Andreas	Reis	WHO, Co-Lead of the Global Health Ethics Team
Dr.	Martin	Feuz	ZHAW School of Management and Law, Institut für Innovation und Entrepreneurship; interaction design expert and Experience Director at PwC Digital
	Beat	Glogger	scitec-media
Dr.	Mattia	Bertin	IUAV University Venice, Planning & Climate Change Lab
Prof. Dr.	Renate	Schubert	Chair of economics, Head of Office of Equal Opportunities ETH Zurich
Prof. Dr.	Alexandra	Trkola	University of Zurich, Institute of Medical Virology
Prof. Dr.	Urs	Greber	University of Zurich, Department of Molecular Life Sciences
Prof. Dr.	Matthias	Allemand	University of Zurich, Department of Psychology
Prof. Dr.	Roger	Kouyos	University Hospital Zurich, Department of Infectious Diseases and Hospital Epidemiology
Prof. Dr.	Andreas	Gutzeit	Hirslanden, Institut für Radiologie und Nuklearmedizin Klinik St. Anna
Dr.	Ambra	d'Imperio	HUG Geneve
Dr.	Peter	Moser	statistics office of the Canton of Zurich

THANKS FOR YOUR TIME!

www.publico.community

t.uzh.ch/16v