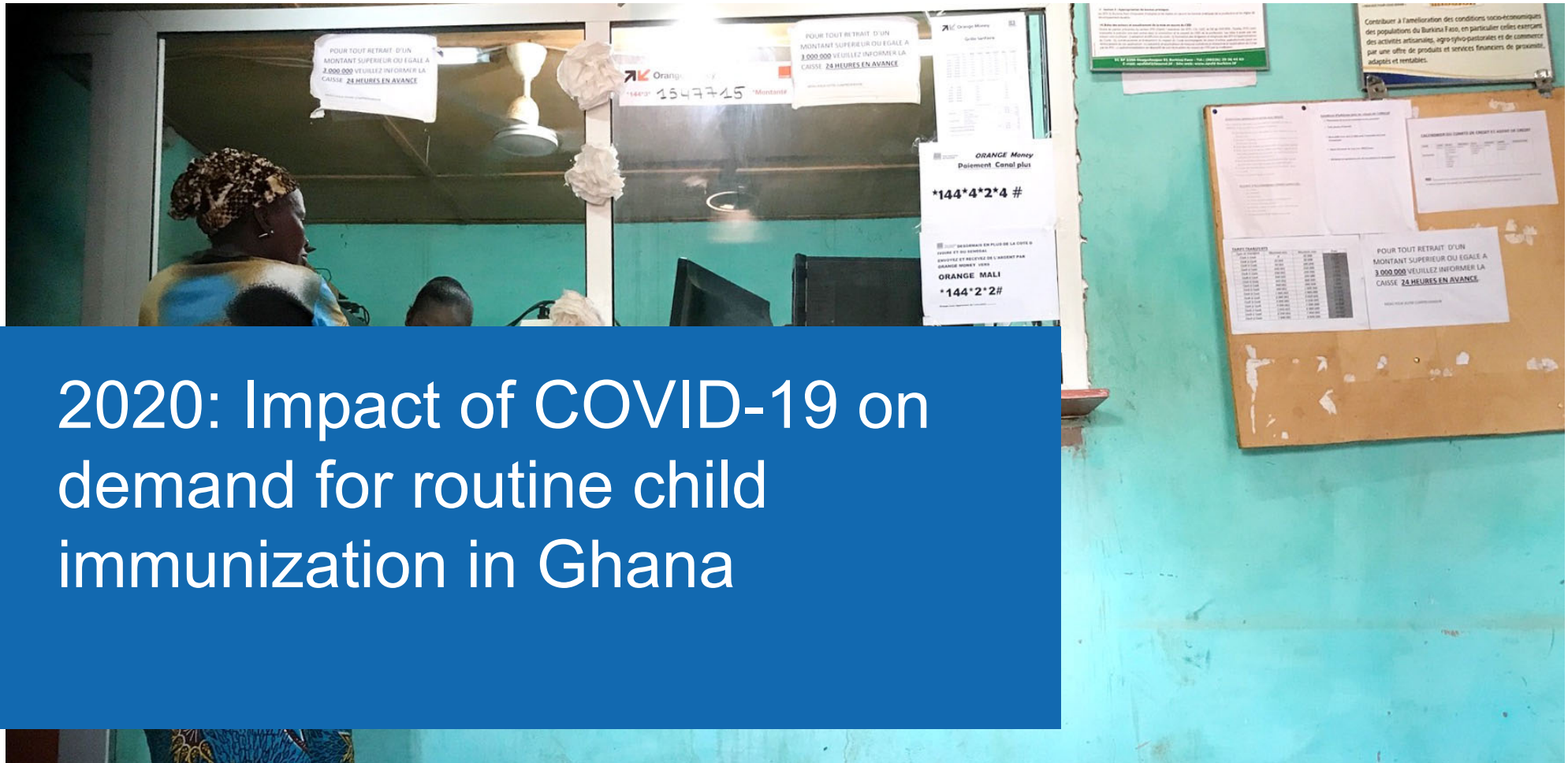


"Impact of COVID-19 on Vaccination Demand in Ghana"

Two research projects in 2020 and 2021
Durizzo K.¹, Asiedu E.², Awoonor-Williams J.K.³,
Günther I.¹

¹ETH Zurich; ²University of Ghana; ³Ghana Health Service



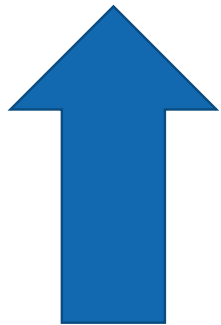
2020: Impact of COVID-19 on demand for routine child immunization in Ghana

2020 Ghana reacted fast to the COVID-19 pandemic

Coronavirus - Virus: Ghana schools closed, religious, sports activities chop ban to fight Covid-19 disease

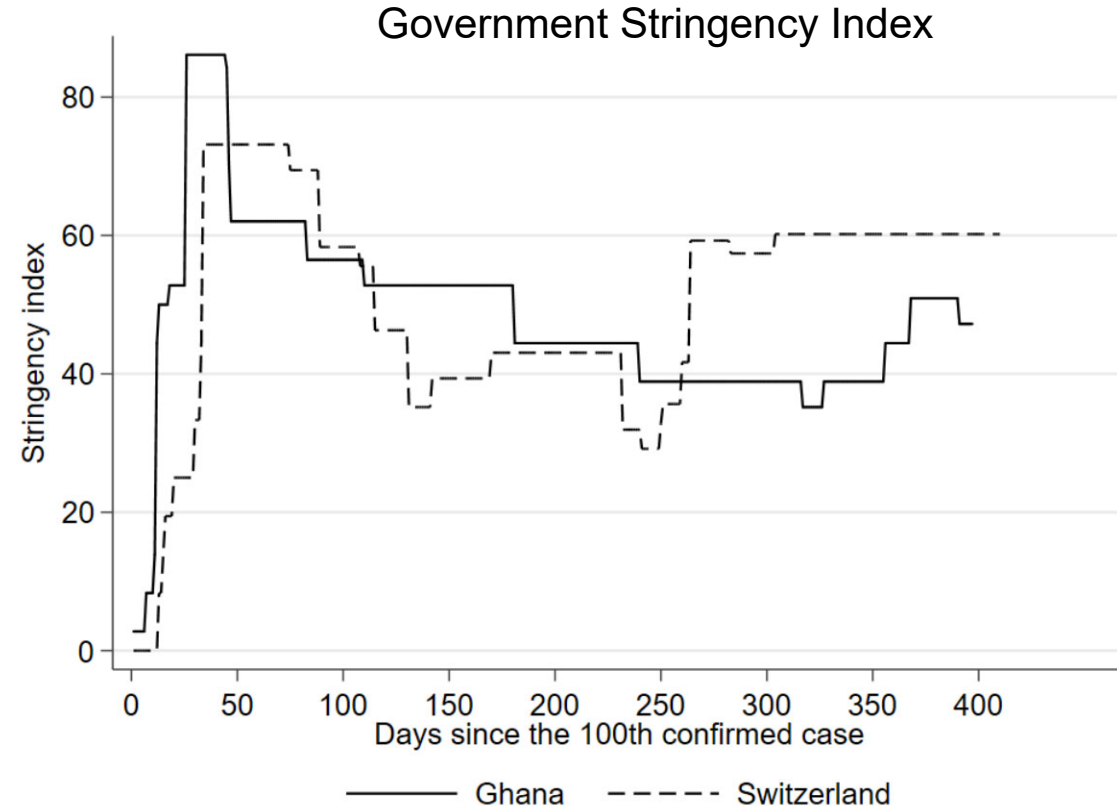
🕒 16 March 2020

f 🗨️ 🐦 ✉️ Share



100 cases

Lockdown (except essential services)
30th March – 19th April



www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker stringency index

Research Question 2020

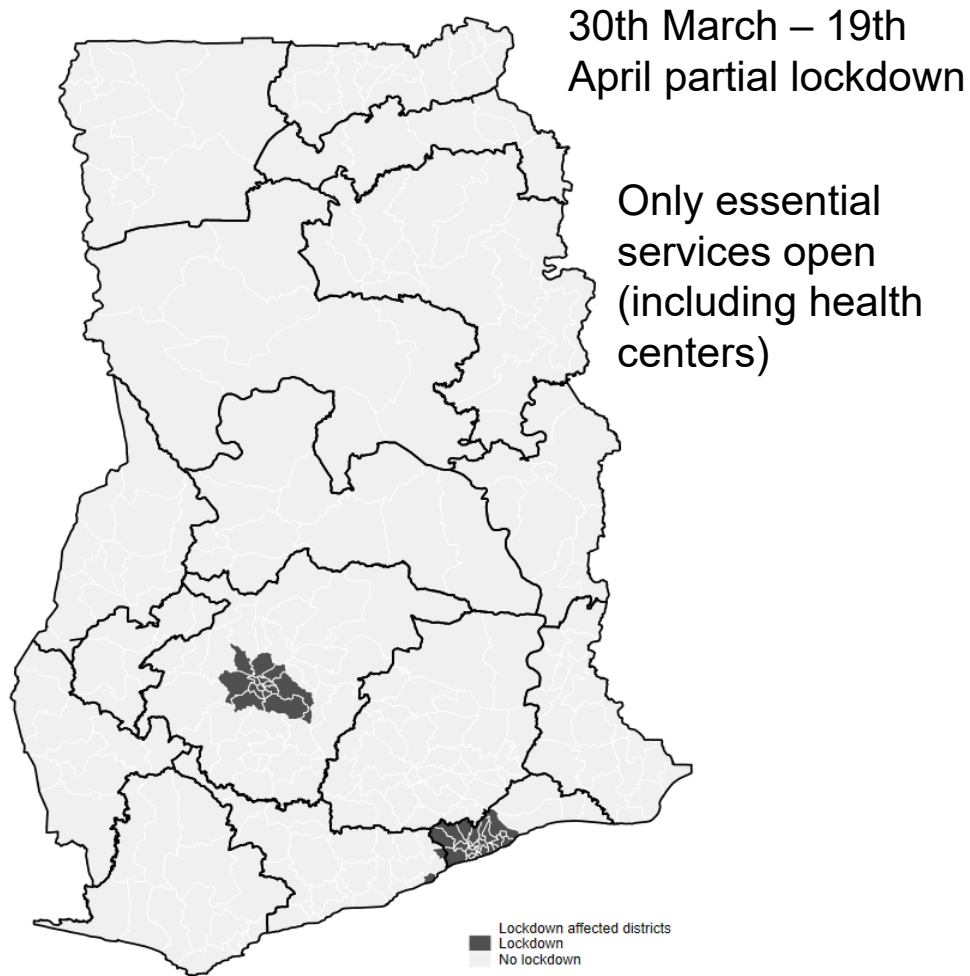
What are the effects of the COVID-19 lockdown and the pandemic! on demand for routine child immunization in Ghana?

“We cannot trade one health crisis for another”
UNICEF

Substantial disruption of child routine immunization in April 2020 in LMICs – up to 50% (e.g. Chandir et al., 2020; MacDonald et al., 2020; Nelson, 2020; Saso et al., 2020; Shimizu et al., 2020)

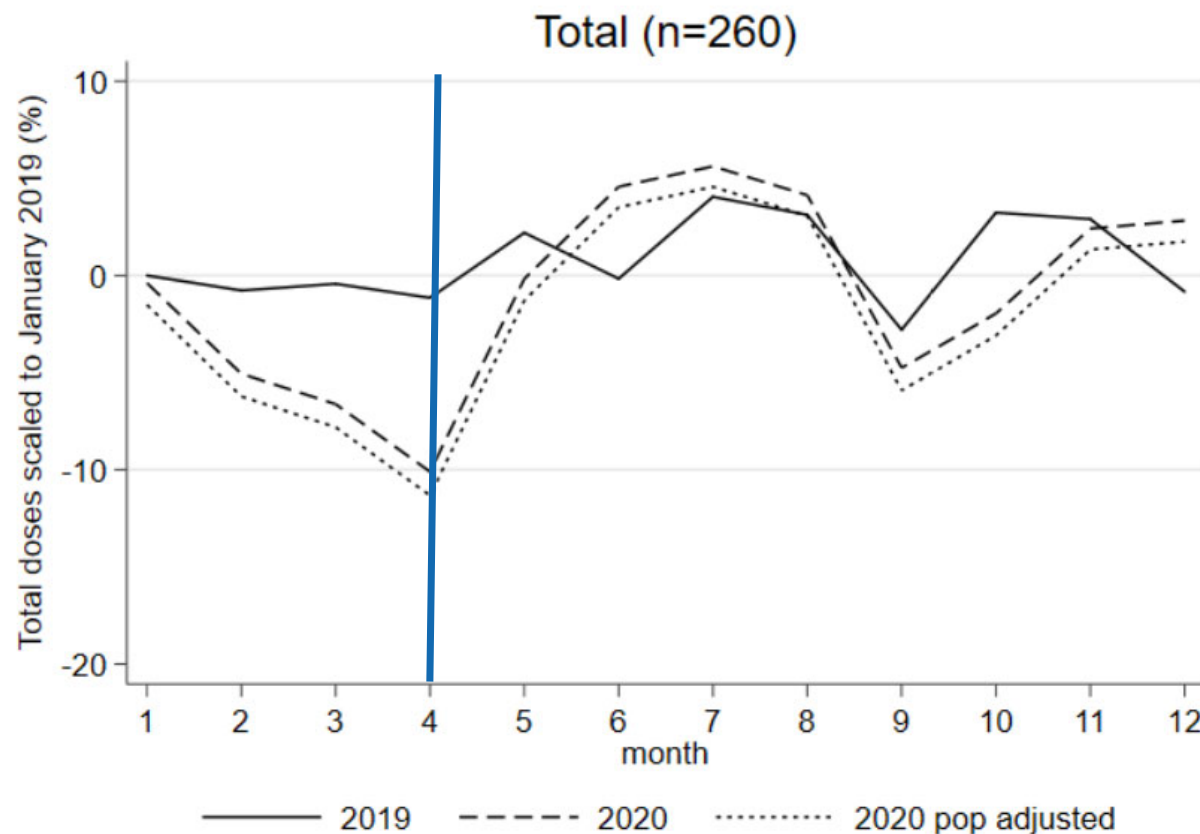
Predicted vaccine-preventable child mortality (Abbas et al., 2020; Robeton et al., 2020):
Higher child mortality due to non-vaccination than related to COVID-19 infections

Data

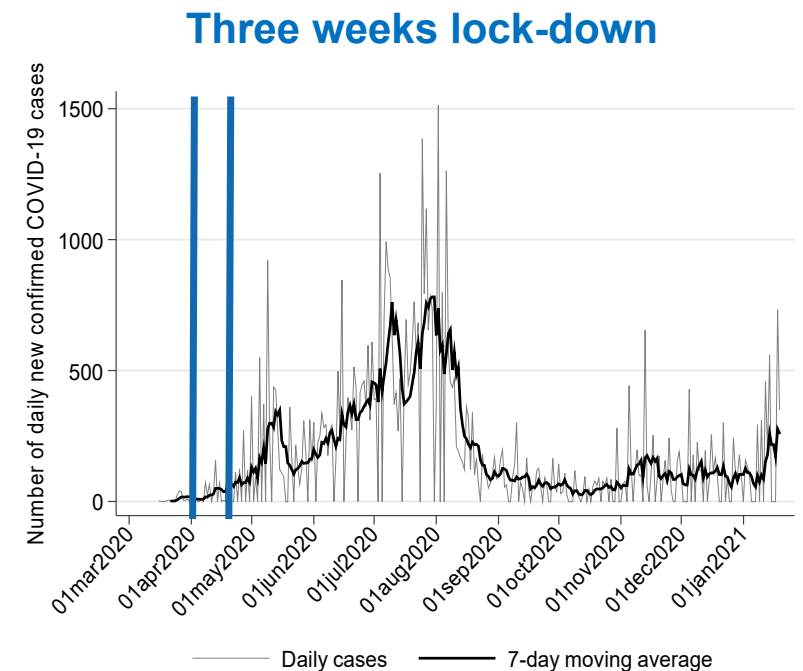


- Monthly total child vaccinations
 - 18 routine child vaccinations
 - 260 districts (all health facilities)
 - 36 months (Jan 2018-December 2020)
 - $=18 \times 36 \times 260 = 168.480$ observations
- Able to analyze lockdown (April) and yearly effect (2020)
- Able to analyze effects on “time-sensitive” vaccines (e.g. Polio 0) vs. non “time-sensitive” vaccines (e.g. yellow-fever)
- Able to analyze differences between lockdown effects and “fear effects”

Impact of lockdown on routine child immunization

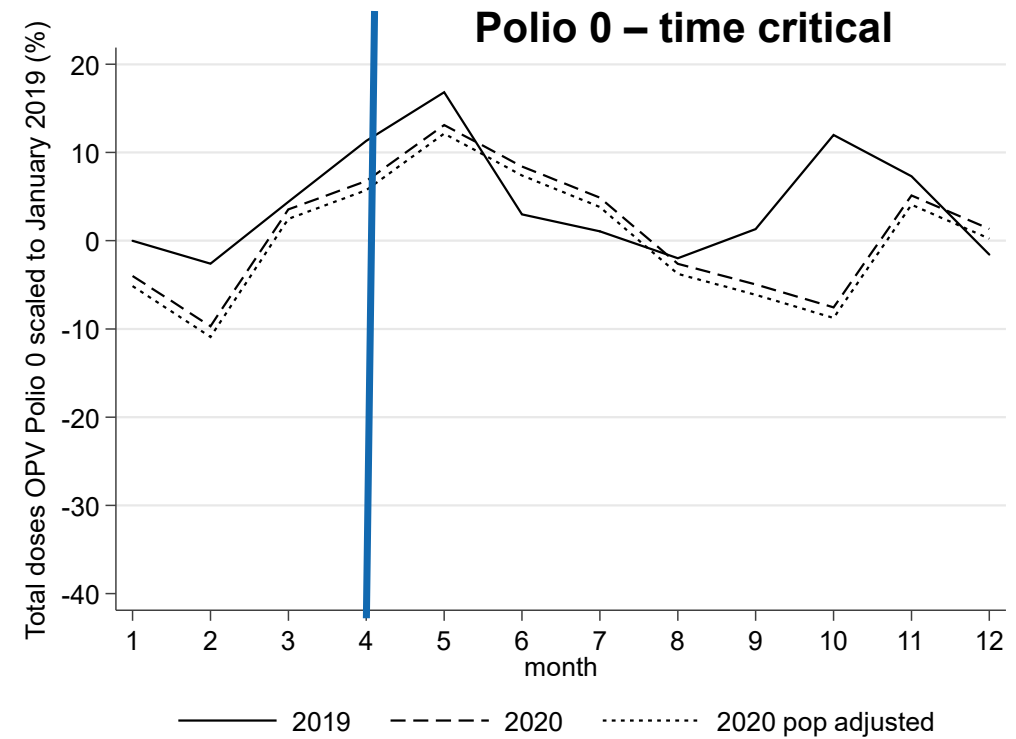
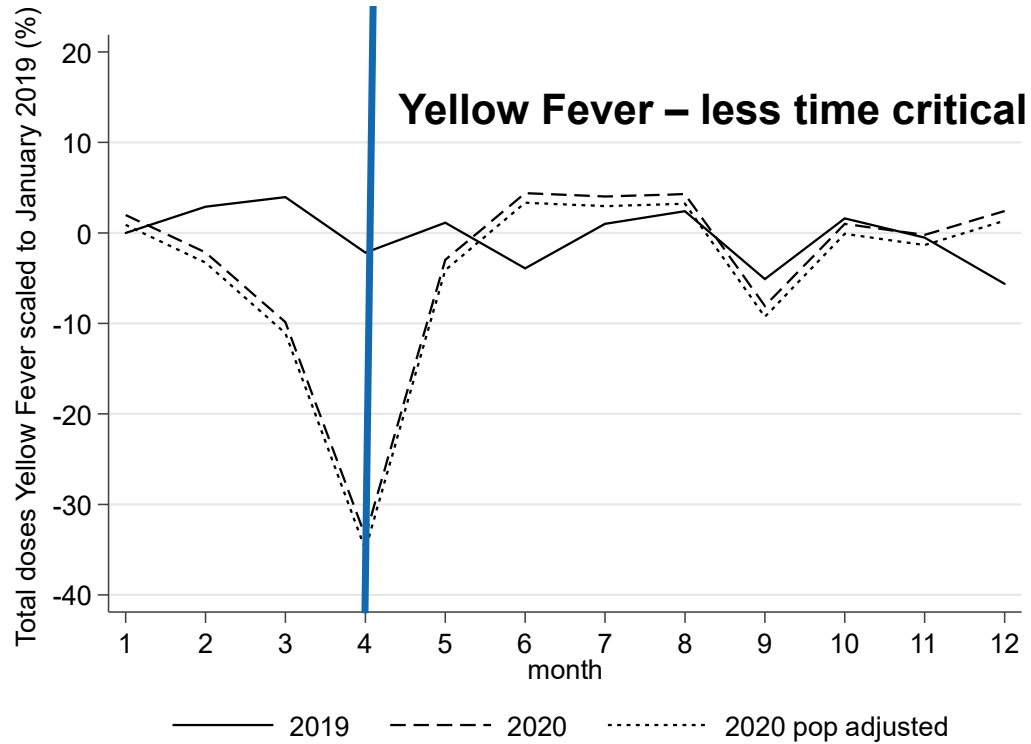


-11.3% in April and - 1.9% over the entire year

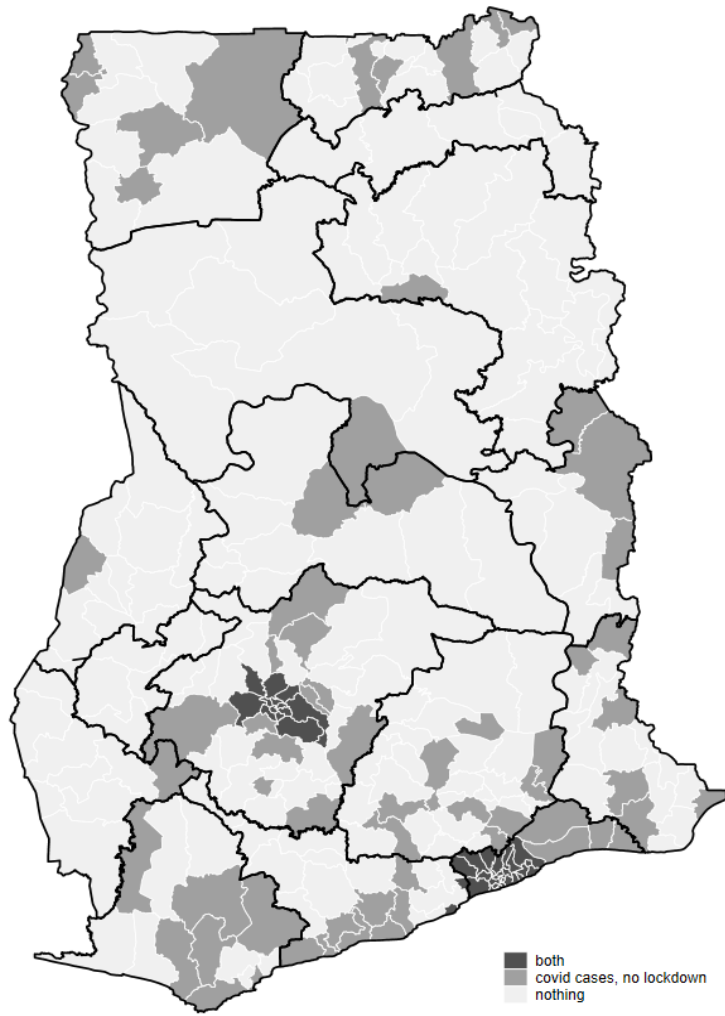


Lower drop than in other countries
Faster catch-up effect than literature has predicted

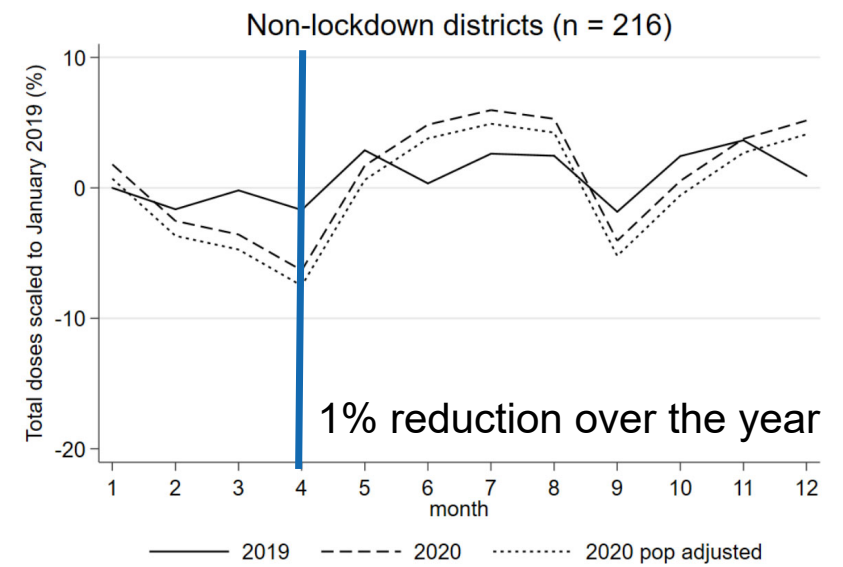
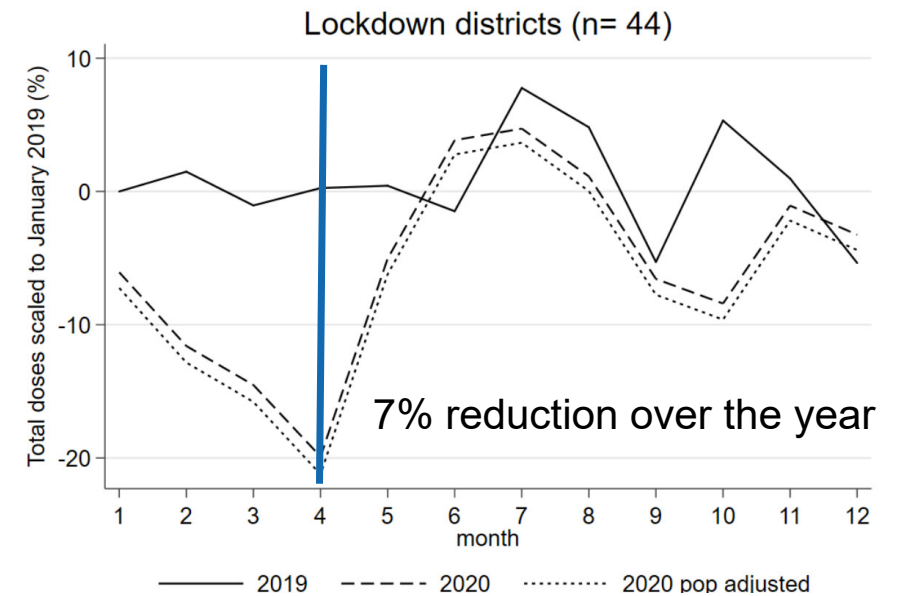
Development of various routine children immunization



Lockdown versus COVID-19 Effects

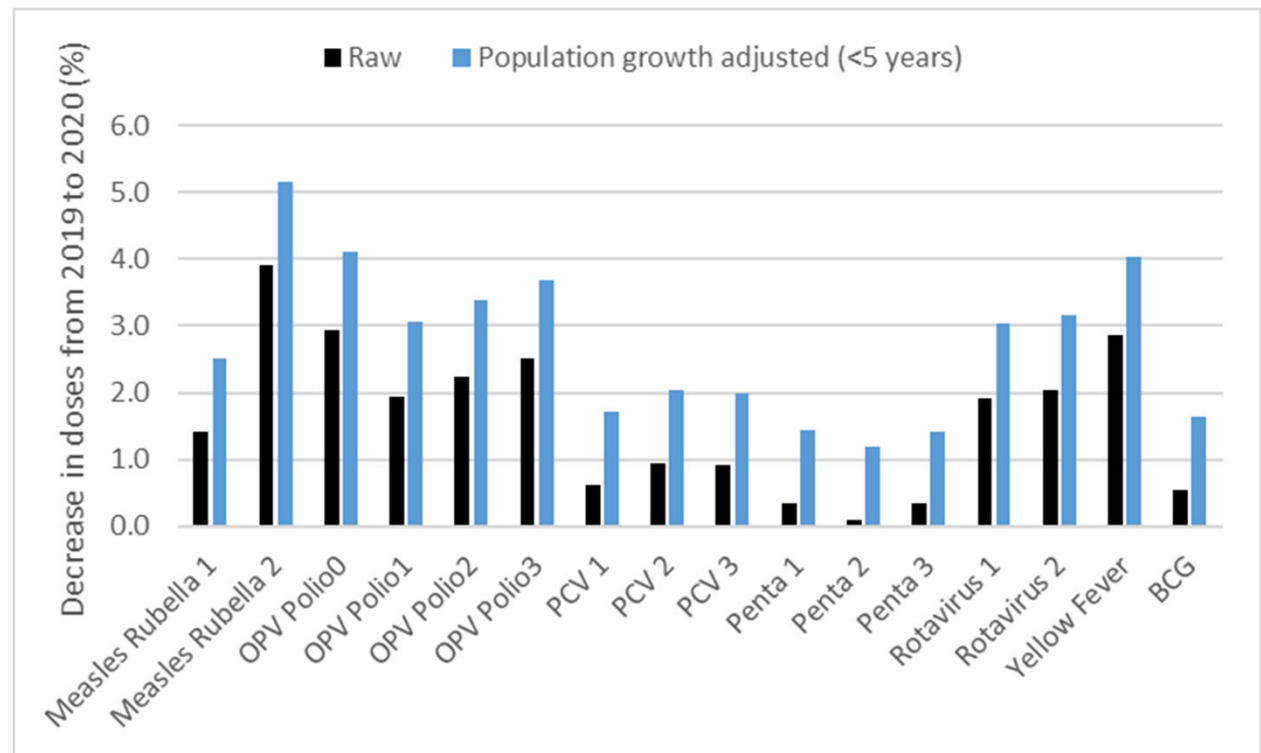
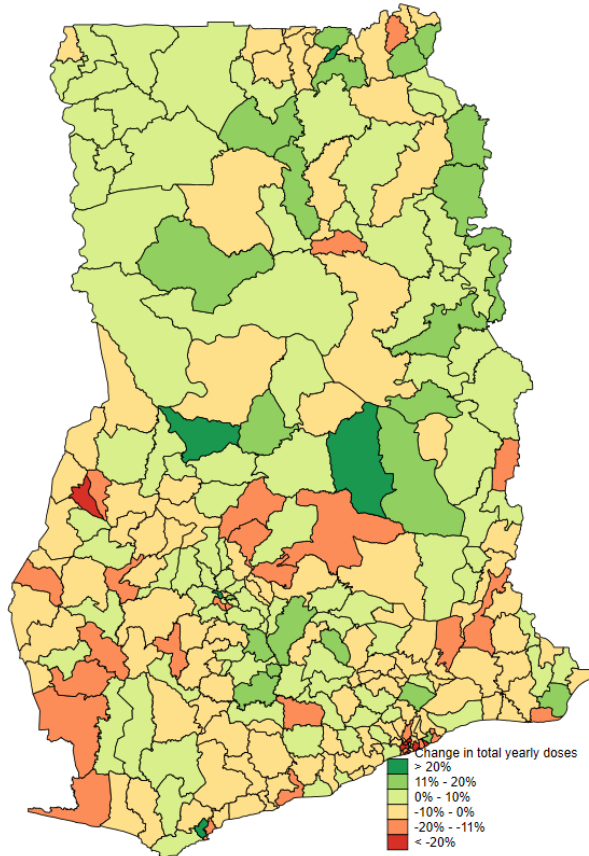


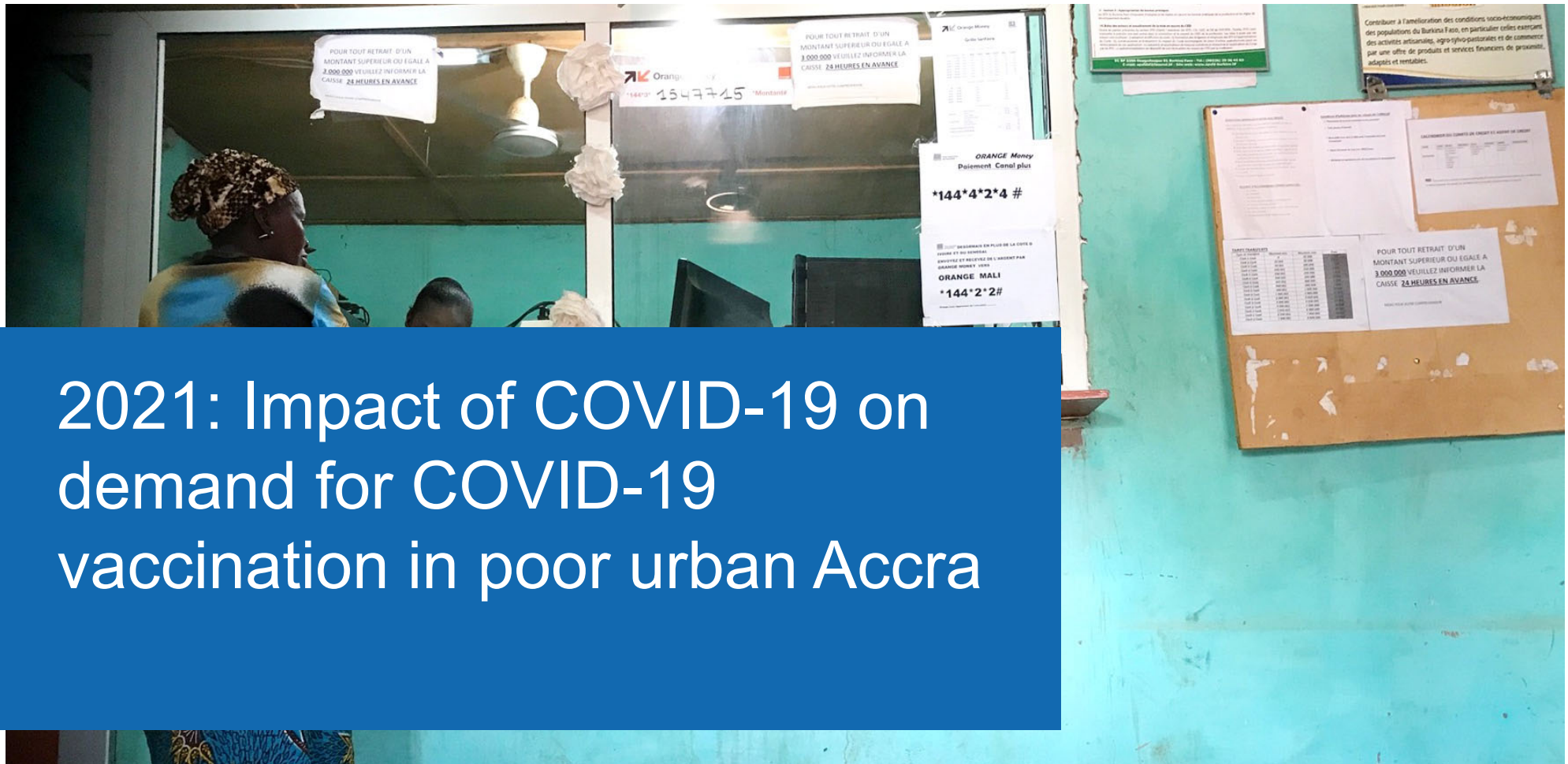
ETH zürich



Next steps in research: understanding high variance across districts and vaccinations

Total yearly doses, 2020





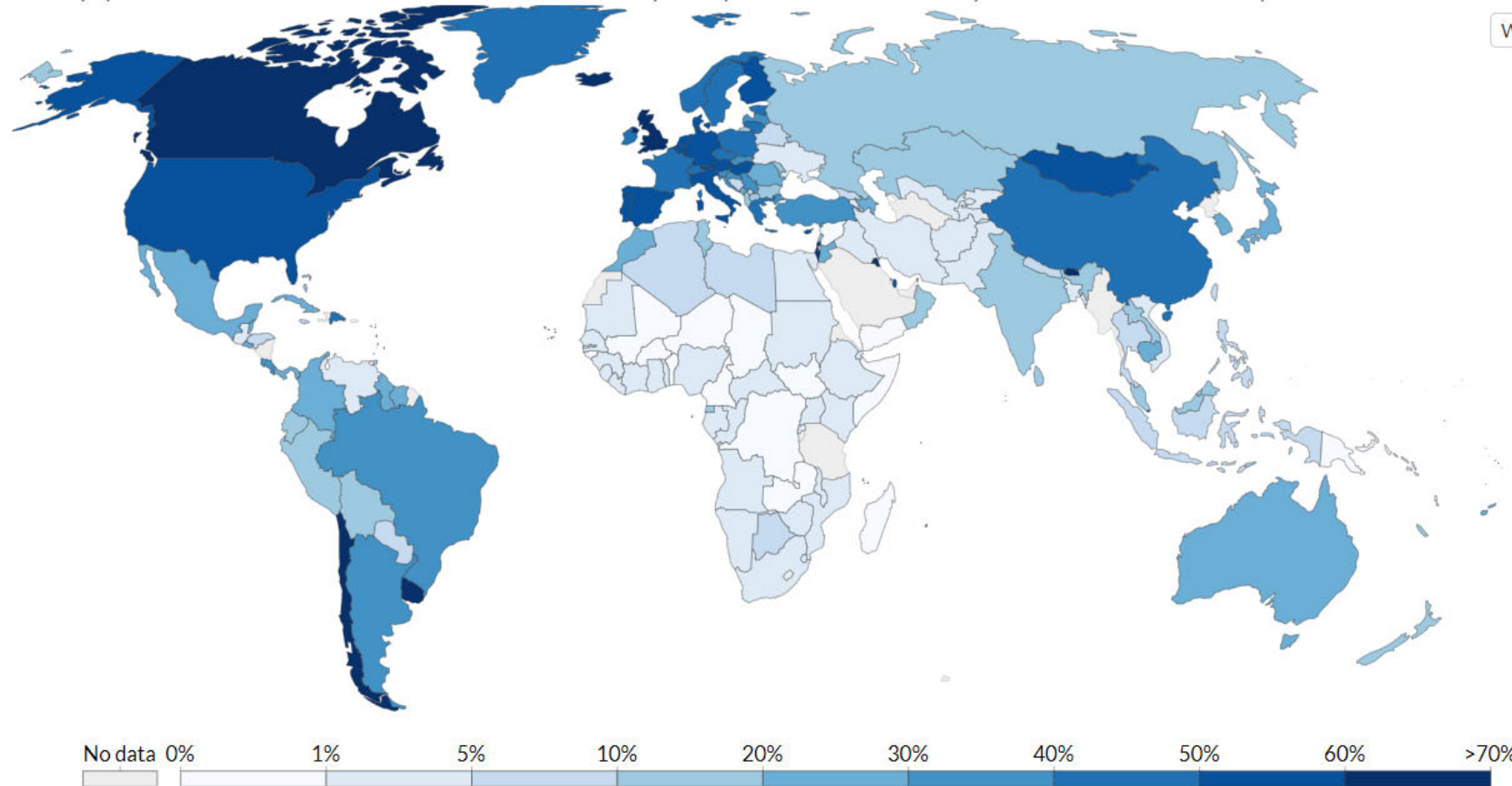
2021 Ghana one of the first to receive (limited) supply under the COVAX

Share of people who received at least one dose of COVID-19 vaccine, Jun 26, 2021

Share of the total population that received at least one vaccine dose. This may not equal the share that are fully vaccinated if the vaccine requires two doses.

Our World
in Data

World



Research Question 2021

What are the drivers and barriers of COVID-19 vaccine demand in Ghana?

Studies about COVID-19 vaccine attitudes in HICs (but also LMICs). **Large differences among countries** (Mannan & Farhana, 2020).

RCTs on COVID-19 vaccine hesitancy in HICs with persuasive messages in USA (Palm et al., 2021; Civis Analytics, 2020; Bulik et al., 2020; Jordan et al., 2020; Bokemper et al.; 2020; Vietri et al., 2021) & UK (Freeman et al., 2021) & 6 Latin-American countries (Argote et al., 2021) with monetary incentive in Germany (Sprengholz et al., 2021)

Data – managing a pandemic in poor urban neighbourhoods

1st wave

behaviour

food security

financial situation

2nd wave

(mis)information

schooling

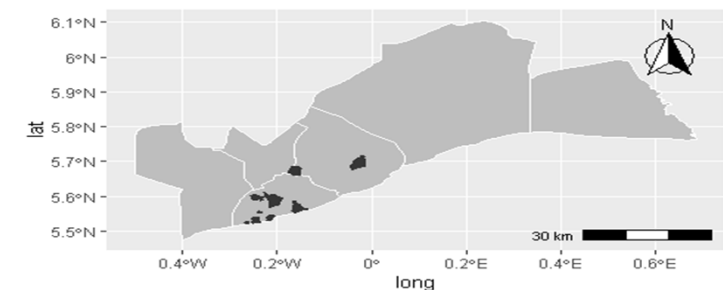
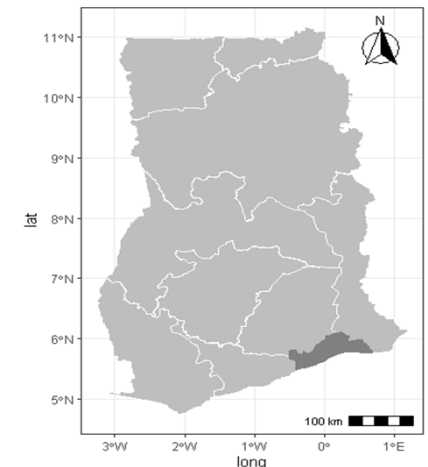
3rd/4th wave

mental health

vaccine demand

- 1000 phone surveys in 16 urban neighbourhoods in Greater Accra
- Random sampling of census data from statistical office

1. April 2020 (lockdown)
2. August 2020 (no lockdown, but social distancing restrictions, schools closed)
- 3. March 2021 (most restrictions released, first vaccinations)**
4. July 2021 (follow-up on vaccination demand and information/misinformation)

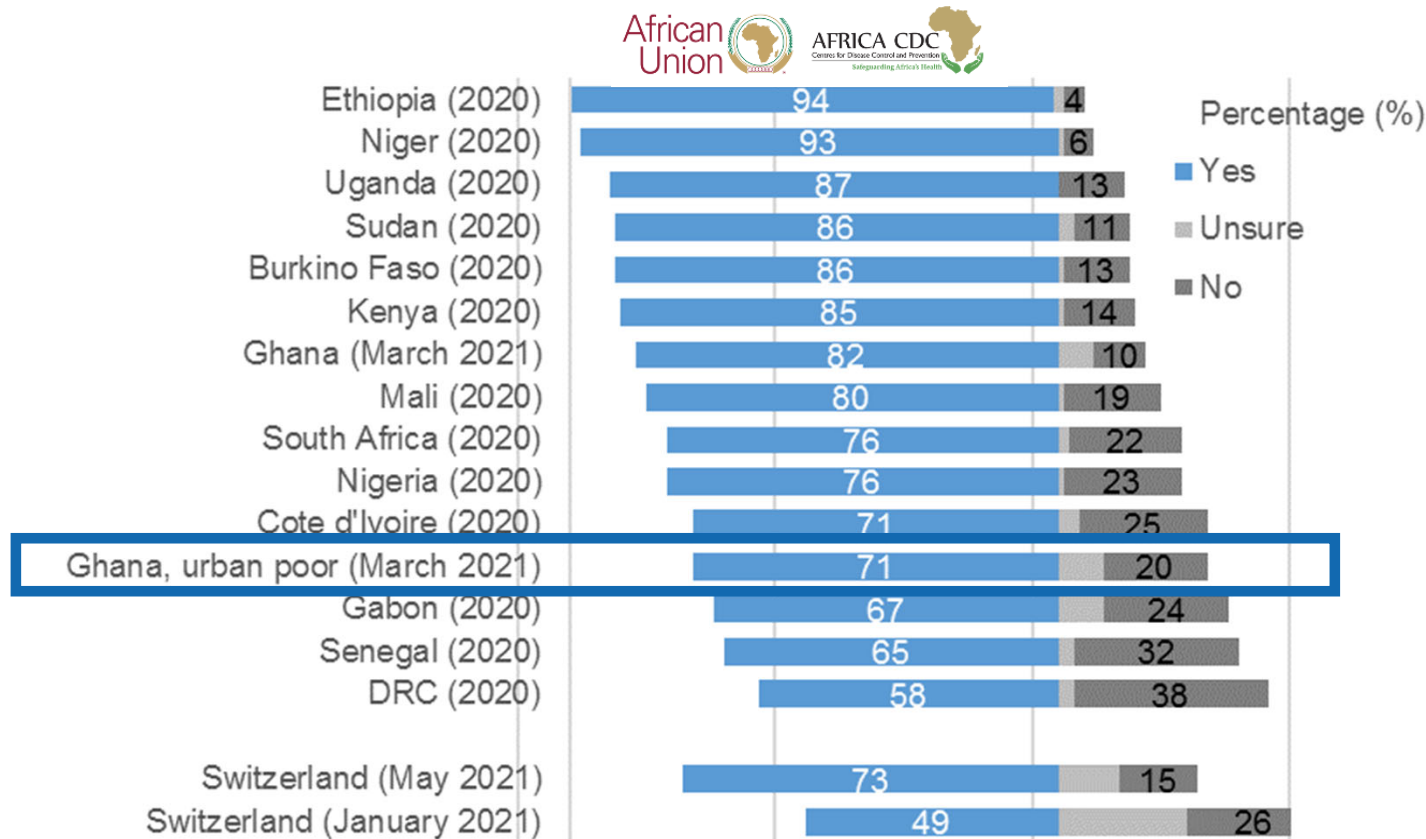


Data

Poorest 16th areas in Greater Accra according to the Ghana Statistical Office

| | |
|--------------------------------------|-----|
| Household members | 5.5 |
| Number of rooms | 2.4 |
| Shared water | 15% |
| Shared toilet | 67% |
| No education | 10% |
| Only primary education | 10% |
| Main source of income (own business) | 60% |

Demand for Covid-19 vaccine



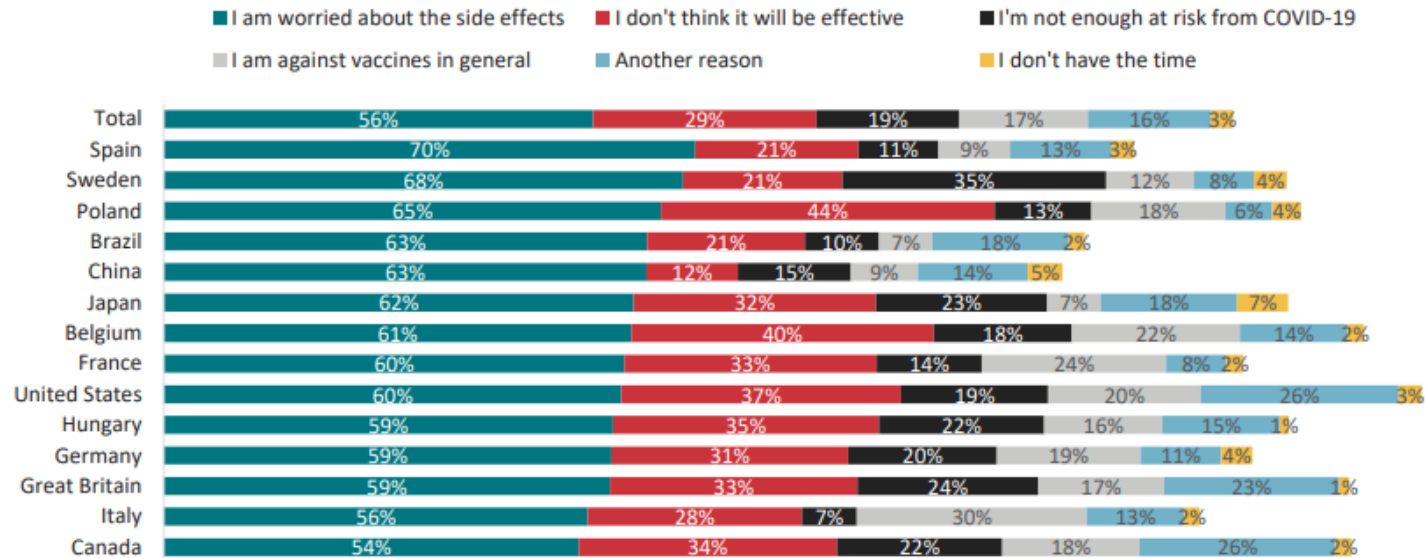
Urban poor

71% want to get vaccinated if for free

43% would get vaccinated if they had to pay for it

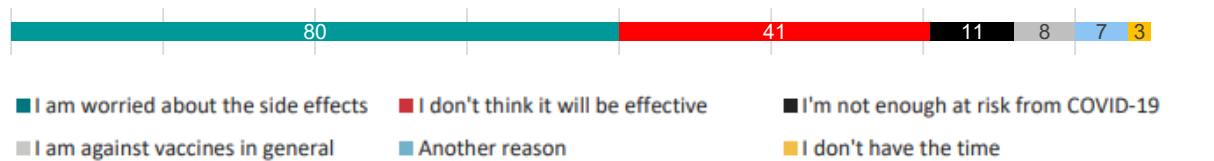
32% are in favor of mandatory vaccinations

Reasons for not taking a vaccine



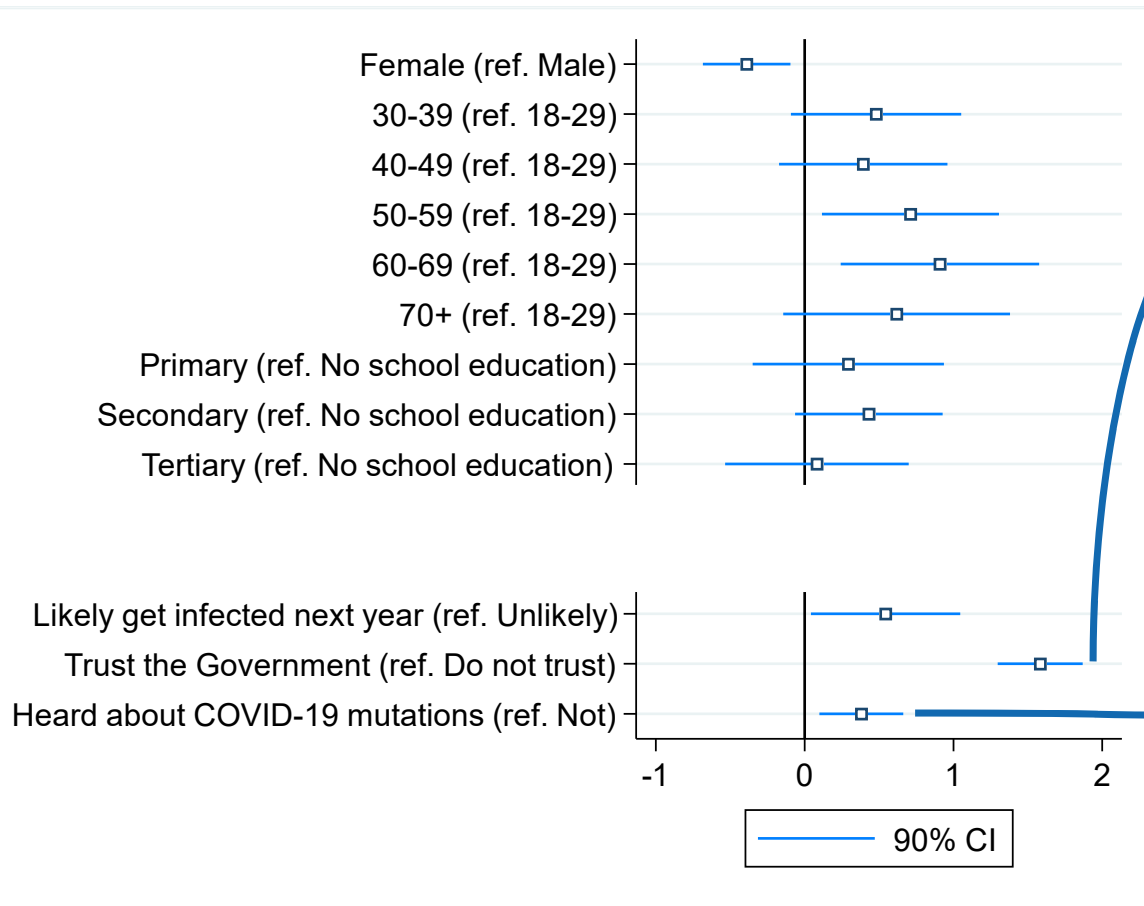
[Global Attitudes on a COVID-19 Vaccine \(ipsos.com\)](https://www.ipsos.com/global-attitudes-on-a-covid-19-vaccine)

Ghana – poor urban areas

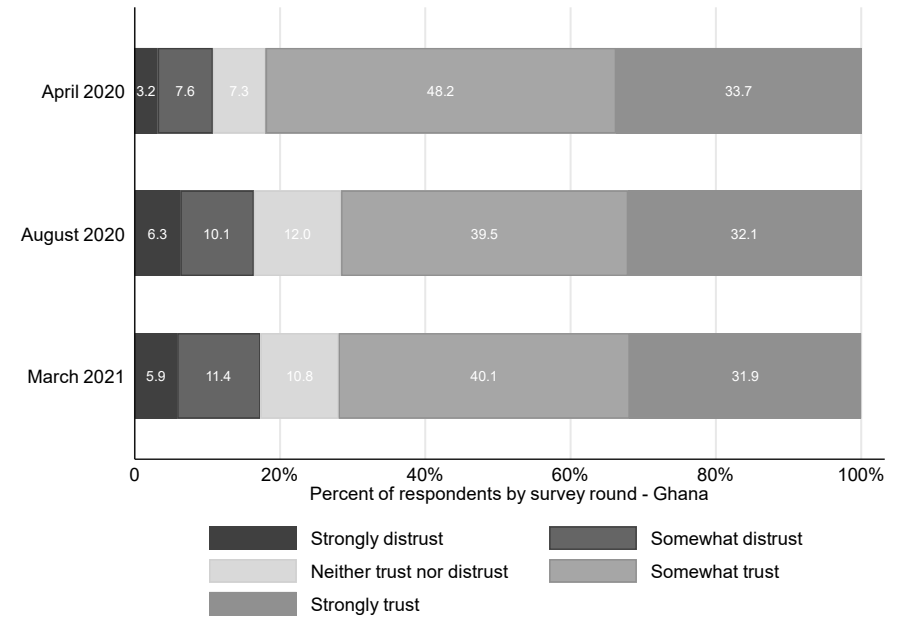


Country / context specific studies are important!

Correlates of Covid-19 vaccine demand



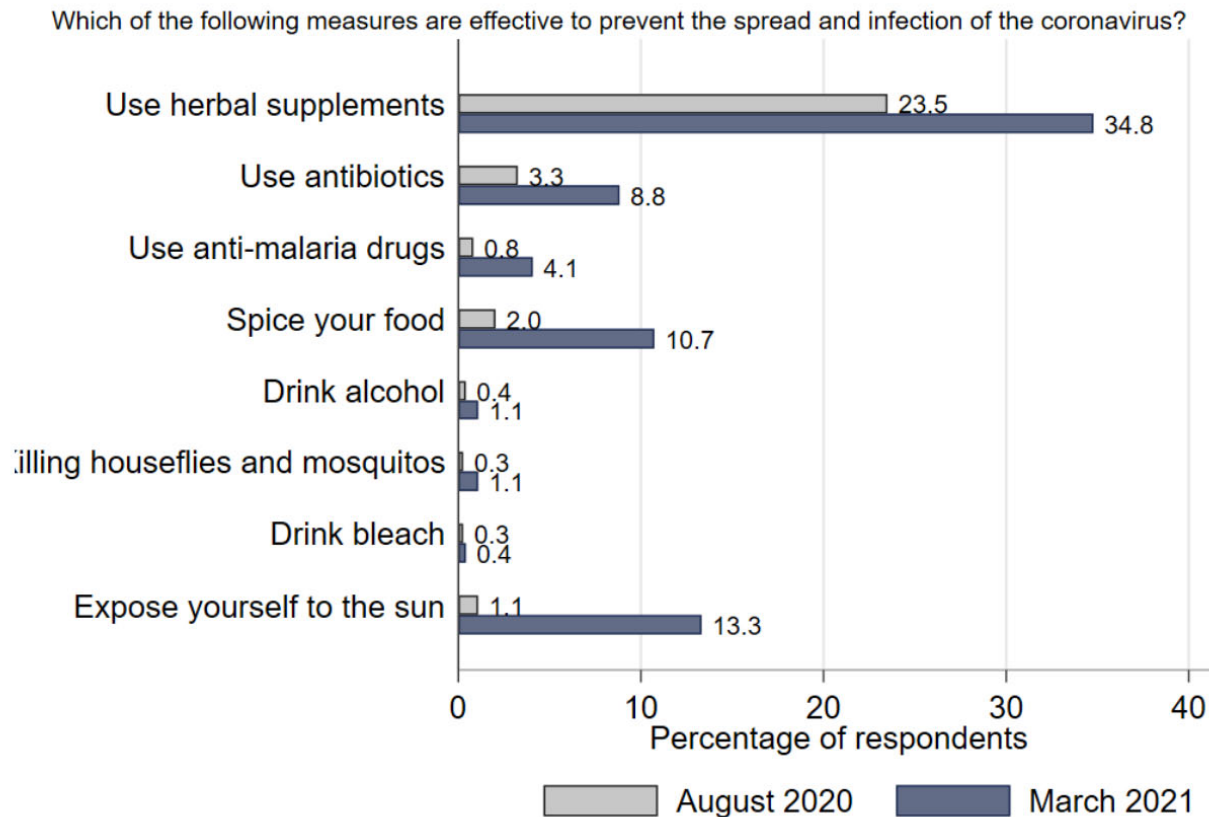
Trust in government



38% had not heard about mutations (if directly asked)

80% thought that they would get access to a vaccination in spring 2021

...but misinformation among urban poor limited but growing...
...preventive protection behaviour is decreasing...



77% inform themselves via radio and/or TV

40% family/friends

7% social media

4% newspaper

TV informed seemed to be better informed and less mis-informed (based on cross-sectional analysis)

Next steps of research

What information does increase COVID-19 vaccination demand in Ghana (n=3000)

What sources do people trust?



Thank you!

Prof. Dr. Isabel Günther
ETH Zurich

More about our research:
www.dec.ethz.ch

More about teaching/workshop/events:
www.nadel.ethz.ch

