

# SEMINAR: RESPONSES TO COVID-19 IN FIVE LATIN AMERICAN COUNTRIES



Value, Health Economics and Policy (VheP)  
The University of Newcastle



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I would like to take the time to acknowledge and pay my respects to the Pambalong clan of the Awabakal people, the Awabakal and Worimi nations and the Darkinjung and Birapai peoples, traditional custodians of the land, of Elders past, present and emerging, on which the campuses at the University of Newcastle are located. I also acknowledge the Traditional Custodians of the various lands on which you all work today and any Aboriginal and Torres Strait Islander people participating in this webinar.

# HEALTH POLICY AND TECHNOLOGY SPECIAL ISSUE

## OUR RESPONSE TO COVID-19:

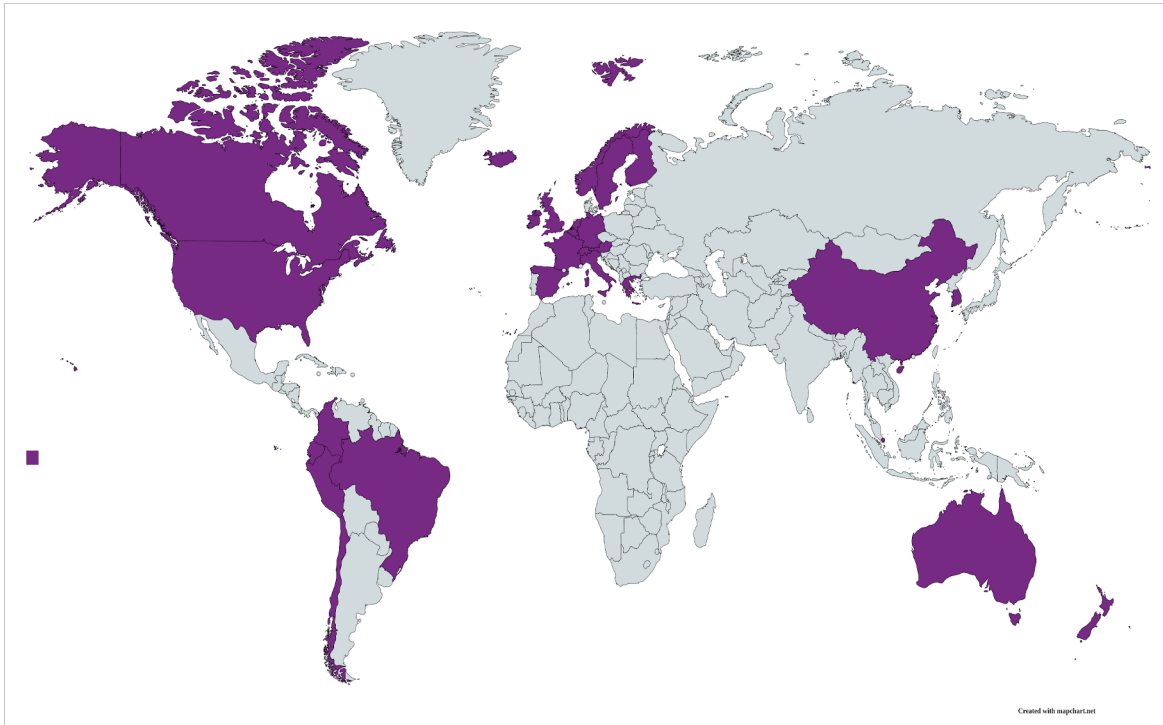
Special Issue on Covid-19 in *Elsevier's* Health Policy and Technology Journal

## THE COVID-19 PANDEMIC:

Global Health Policy and technology responses in the making



# HEALTH POLICY AND TECHNOLOGY SPECIAL ISSUE



- Examines the impact of the health policy and technology used in response to the COVID-19 pandemic.
- 28 countries are specifically covered within the special issue from the period January – early August 2020.
- Over 80 researchers representing more than 50 different institutions around the world
- Additional topic papers covering law reforms, mental health and economic value of measuring merit of virus testing technology







Contents lists available at [ScienceDirect](#)

## Health Policy and Technology

journal homepage: [www.elsevier.com/locate/hlpt](http://www.elsevier.com/locate/hlpt)



### Responses to COVID-19 in five Latin American countries

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#### Presented by:



**Professor Francesco Paolucci**  
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# AGENDA:

- Introduction
- Countries health and development profiles
- The response to the pandemic
- Concluding remarks



# INTRODUCTION

We analyse how the pre-pandemic context, the mitigation and containment measures, together with the health interventions, technologies and the economic response, have affected the COVID-19 outcomes in Brazil, Chile, Colombia, Ecuador and Peru.

The five selected countries capture different realities across Latin America in terms of population size, area, density, demographic and socio-economic characteristics, health system financing and coverage, and other development indicators.

In all five countries, we conducted extensive documentary analysis focused on federal and state/regional policies and interventions implemented in these countries since January 2020. We also analyze publicly available epidemiological data (released by the governments).



# COUNTRY HEALTH & DEVELOPMENT PROFILES

- High informality, poverty rates, and low sanitation index

**Table 1**

Socio-Economic characteristics for the five selected countries [2–11].

|                                                                | Brazil               | Chile               | Colombia | Ecuador             | Peru             |
|----------------------------------------------------------------|----------------------|---------------------|----------|---------------------|------------------|
| Population (millions)*                                         | 210,147 <sup>+</sup> | 19,458 <sup>†</sup> | 50,785   | 17,510 <sup>•</sup> | 32,495           |
| Density (pop/km <sup>2</sup> )**                               | 25                   | 25                  | 45       | 69                  | 25               |
| GDP per capita (US dollars PPP)**                              | 14,952               | 24,763              | 14,834   | 11,854              | 13,903           |
| Unemployment (%; ILO estimates)**                              | 12.1                 | 7.1                 | 9.7      | 4.0                 | 6.6 <sup>°</sup> |
| Informal employment (% of total non-agricultural employment)** | 38                   | 28                  | 57       | 66                  | 59               |
| Poverty rate**                                                 | 26.5 <sup>▶</sup>    | 8.6                 | 27.0     | 25.0                | 20.5             |
| Income share held by richest 10 %**                            | 42.5                 | 36.3                | 39.7     | 34.4                | 32.1             |
| HDI index***                                                   | 0.761                | 0.847               | 0.761    | 0.758               | 0.759            |
| Access to basic sanitation (%)****                             | 88                   | 100                 | 90       | 88                  | 74               |
| Access to drinking water (%)****                               | 98                   | 100                 | 97       | 94                  | 91               |

Source: \*(2);\*\*(3); \*\*\*(4); \*\*\*\*(10 and 11); <sup>+</sup>(5); <sup>†</sup>(6); <sup>•</sup>(7); <sup>°</sup>(8);<sup>▶</sup>(9).

Note: HDI: Human Development Index.



# COUNTRY HEALTH & DEVELOPMENT PROFILES

- Lower numbers of doctors, nurses, beds, ICU beds and ventilators

**Table 2**

The Health Care Systems of the Five Selected Countries and OECD [3,10,11,13–18].

|                                                               | Brazil                                             | Chile                                                                  | Colombia                                                            | Ecuador                                      | Peru                     | OECD  |
|---------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------|--------------------------|-------|
| Health system typology                                        | Public SUS (Sistema Único de Saúde, in Portuguese) | Mixed public (Fondo Nacional de Salud) and private (ISAPRES)           | Social Health Insurance through Entidades Promotoras de Salud - EPS | Mixed public and private                     | Mixed public and private | -     |
| Population covered by health insurance (%)                    | 100                                                | •78.8 in public and 14.4% private, 5% reported lacking or not knowing. | +96 (46% in contributory, 45% in subsidized and 5% other)           | 39.9▶ (universal access in public providers) | 80                       | 98.4  |
| HCE (Health Care Expenditure) / GDP***                        | 9.5                                                | 9.0                                                                    | 7.2                                                                 | 8.3                                          | 5.0                      | 8.8   |
| Health Expenditure (HE) per capita 2017 (current US dollars)* | 1,280                                              | 2,182                                                                  | 960                                                                 | 954                                          | 680                      | 3,994 |
| Public expenditure / Total HE (THE)*                          | 43.0                                               | 59.9                                                                   | 73.5                                                                | 52.8                                         | 45.5                     | 71    |
| Out-of-pocket health expenditure (OOP) / THE (%)*             | 27                                                 | 34                                                                     | 16                                                                  | 39                                           | 28                       | 21    |
| Doctors (per 100,000 hb.)*                                    | 1.8                                                | 2.5                                                                    | 2.2                                                                 | 2.0                                          | 1.3                      | 3.5   |
| Nurses (per 1,000 hb.)*                                       | 1.5                                                | 2.7                                                                    | 1.3                                                                 | 2.5                                          | 2.4                      | 8.8   |
| Beds (per 1,000 hb.)*                                         | 2.3                                                | 2.1                                                                    | 1.7                                                                 | 1.5                                          | 1.6                      | 4.7   |
| ICU beds (per 100,000 hb.)*                                   | 17.0                                               | 5.2                                                                    | 10.8                                                                | 6.8                                          | 2.5                      | NA    |
| Ventilators (per 100,000 hb.)*****                            | 29.6                                               | 6.8                                                                    | 10.8                                                                | 10.5                                         | 0.9                      | NA    |

\*(10-11); \*\*(13); \*\*\* (14); \*\*\*\*(4); • (15); ▶(16) +(17); \*\*\*\*\* (18).

Note: NA: not available. Hb.= inhabitants.

# COUNTRY HEALTH & DEVELOPMENT PROFILES

- High risk factors, specially prevalence of obesity

**Table 3**

Health Risk factors for Peru, Chile, Brazil and Colombia [3,10,11,21].

|                                                                               | Brazil | Chile | Colombia | Ecuador | Peru  | OECD  |
|-------------------------------------------------------------------------------|--------|-------|----------|---------|-------|-------|
| Life expectancy at birth*                                                     | 79.3   | 83.1  | 78.2     | 79.3    | 77.9  | 80.7  |
| 65 or over (%)*                                                               | 8.9    | 10.9  | 7.9      | 7.9**   | 8.0** | 17.4  |
| Prevalence of obesity (age standardized, %)*                                  | 22.1   | 28.0  | 22.3     | 19.9    | 23.1  | 19.5* |
| Death rate from cardiovascular diseases (age standardized per 100,000 hb.)*** | 225    | 139   | 185      | 142     | 109   | -     |
| Smoking prevalence (% of age 15+)*                                            | 10     | 25    | 13       | 7       | 4.8   | 18    |
| Alcohol consumption (liters per capita 15 years+)*                            | 7      | 8     | 5        | 4       | 6     | 8.9   |

Source:\* (10) and (11); \*\*(3);\*\*\*(21).

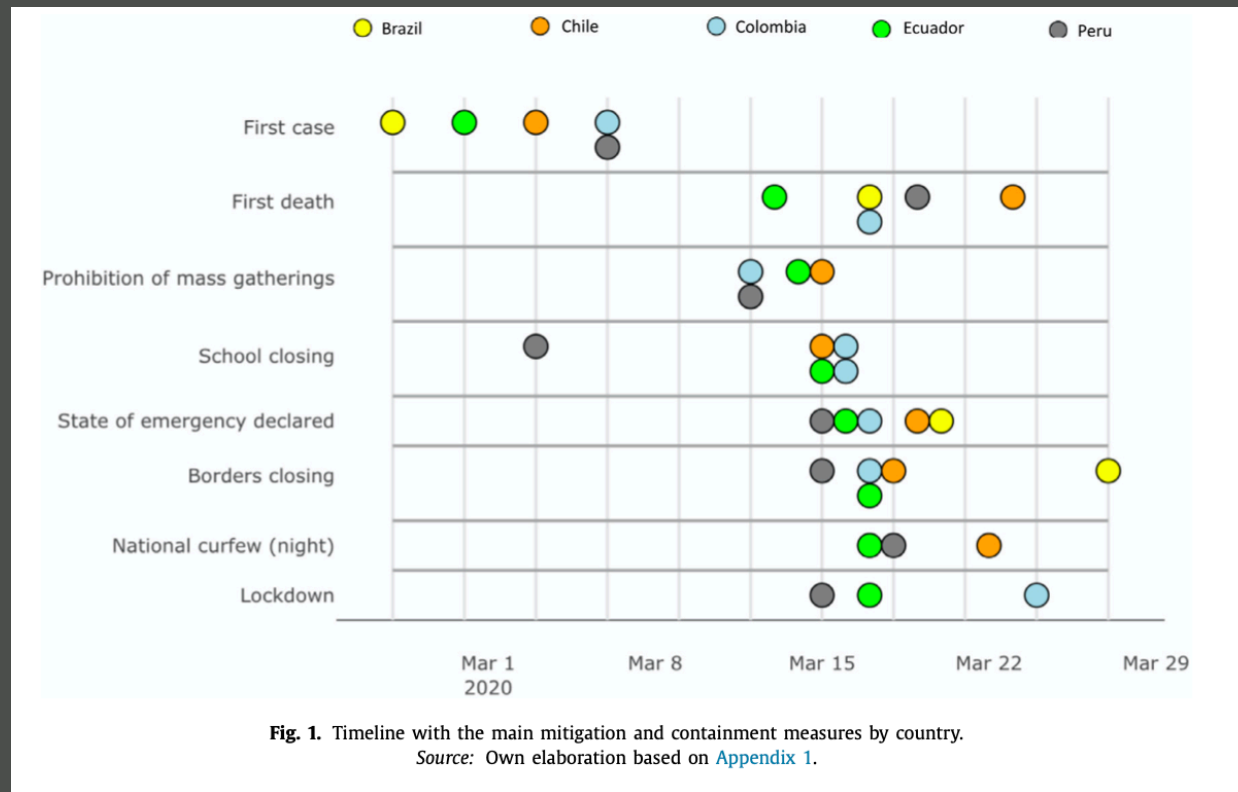
Note: Hb. = inhabitants.

# RESPONSE TO THE PANDEMIC

- 3 points of interest to explain the pandemic response:
  - Timing and stringency of the country's measures
    - Mitigation and containment measures
    - Economic measures
  - Compliance with containment and mitigation measures
    - Mobility
    - Pandemic management
    - Socioeconomic context
  - Health system response
    - Health system capacity and access
    - Testing and tracing

# RESPONSE TO THE PANDEMIC:

## Timing and stringency of the country measures



# RESPONSE TO THE PANDEMIC: cont.

Despite containment stringency, cases kept going up as positivity rates (except Chile)

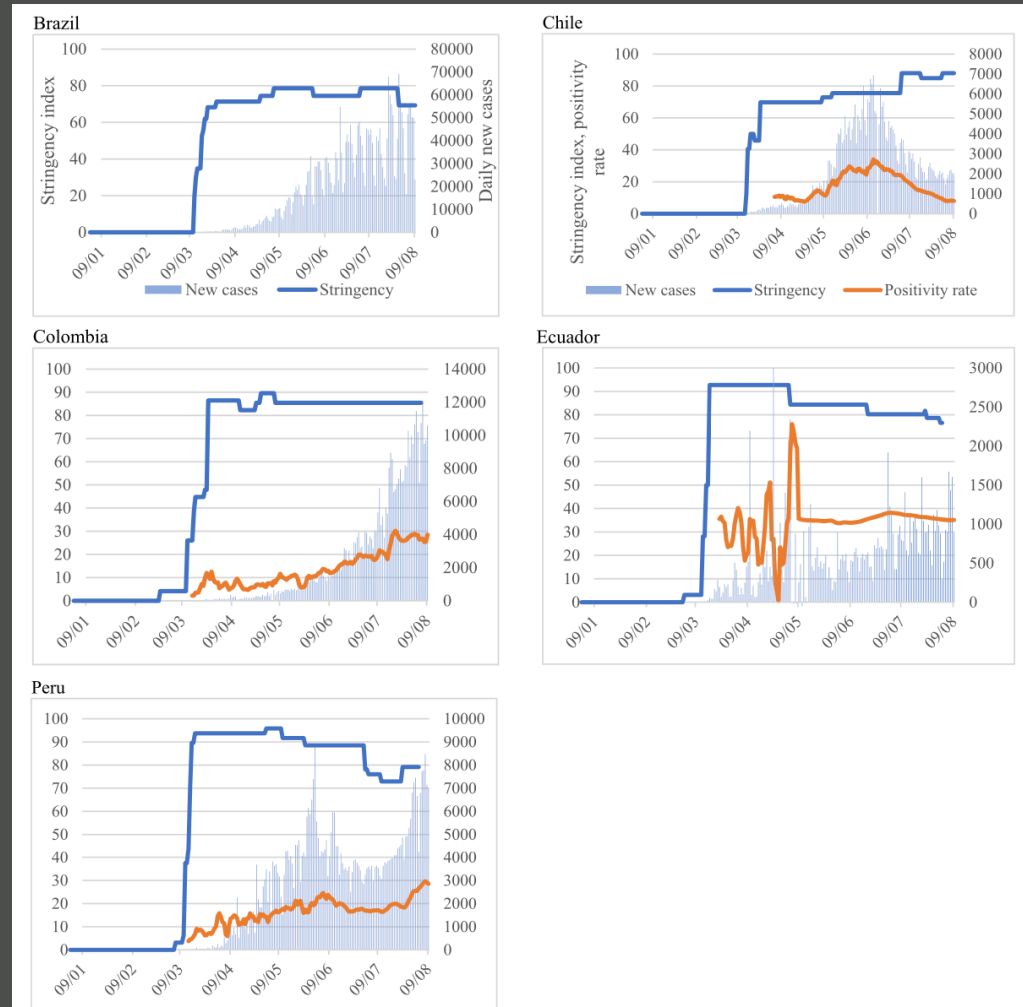


Fig. 2. Evolution of the containment stringency index for each country and COVID-19 cases (new cases and positivity rate) [31–36].



# RESPONSE TO THE PANDEMIC: cont.

- Pre-pandemic context mentioned, have undermined the efficacy of the measures
- Despite high stringency, cases kept going up.
- The timing of the measures was not appropriate

|                                          | Brazil*    | Chile**    | Colombia   | Ecuador    | Peru       |
|------------------------------------------|------------|------------|------------|------------|------------|
| Lockdown                                 | 2020-03-19 | 2020-04-02 | 2020-03-24 | 2020-03-17 | 2020-03-15 |
| Days until income support                | 18         | 4          | -7         | 12         | 1          |
| Days until food baskets                  | 64         | 50         | 9          | 12         | n.a        |
| Days until informal worker support       | 11         | 6          | 15         | n.a.       | 54         |
| Days until support for vulnerable groups | 19         | -3         | -6         | 15         | 1          |

(Note: \* Number of days since the first restrictions were introduced in Rio de Janeiro. \*\* Number of days from lockdown in the first "low income" municipality.)

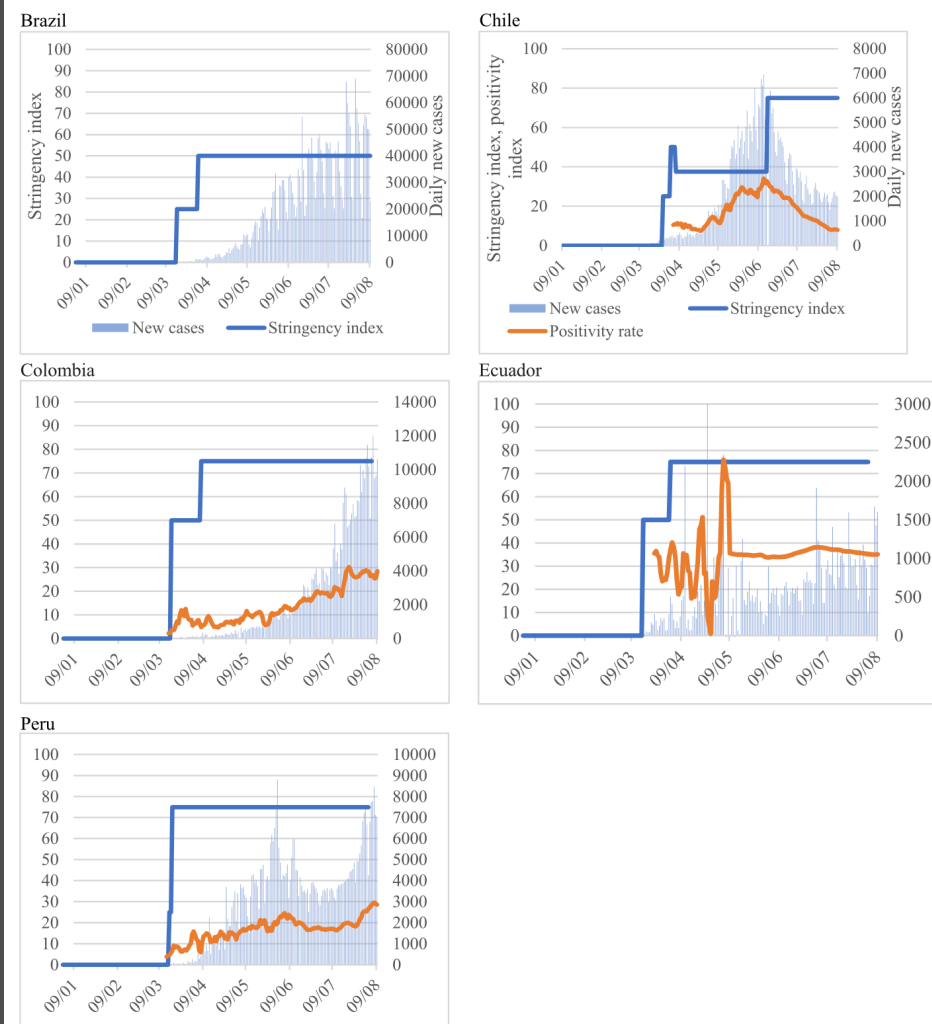


Fig. 4. Evolution of economic stringency index and COVID-19 trends [31–36].

# **RESPONSE TO THE PANDEMIC:**

## **Compliance with containment and mitigation measures**

Mobility to explain the spread of the virus.

- Ecuador: “Plataforma Digital COVID-19”: 40% of movement in April (Guayaquil and Quito) during mandatory lockdown.
- Chile: “Instituto de Sistemas Complejos de Ingenieria”. Mobility decreased between 60% and 40% in selected high income municipalities, while those with higher index of vulnerability reduced mobility between 20 and 30%.

# **RESPONSE TO THE PANDEMIC:**

## **Compliance with containment and mitigation measures**

- Pandemic management key to make citizens collaborate and comply with the measures.
- Brazil: mismanagement reflected in many aspects, e.g. changes of 2 health ministers
- Chile: Conflict between government and COVID-19 advisory board, and between central government and local authorities.
- In Latam: Fetzer et al report that 43% of the population believe their government are not telling the truth about COVID-19 (60% in Brazil, and 70% in Chile and Colombia)

# RESPONSE TO THE PANDEMIC:

## HEALTH SYSTEM RESPONSE

- Given the prepandemic context, the health system had a significant upscale of resources.

**Table 5**

Increase in health system capacity around the first 100 days of pandemic [18,33,55–57]

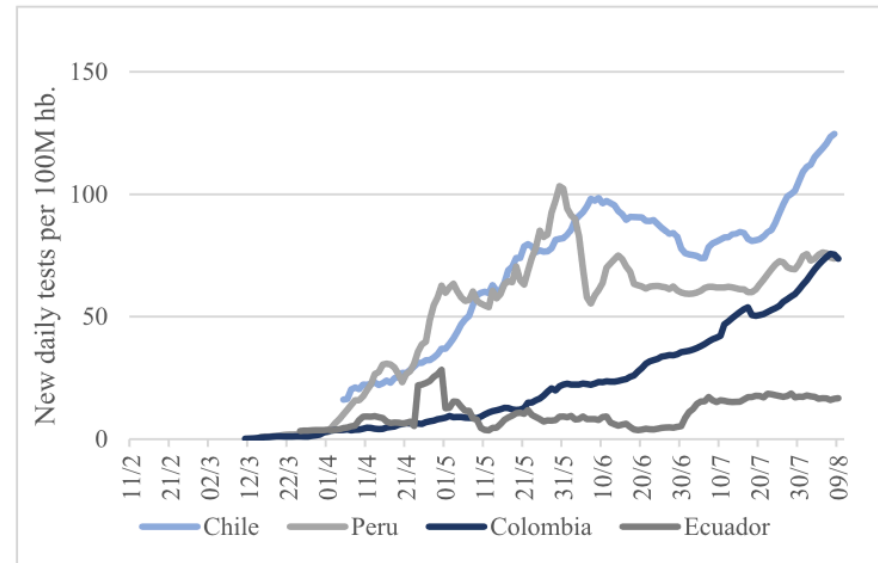
| Increase (%) in | Brazil | Chile | Colombia | Ecuador | Peru |
|-----------------|--------|-------|----------|---------|------|
| ICU beds        | 20     | 212   | 16       | 63      | 349  |
| Ventilators     | 7      | 121   | 84       | NA      | 83   |

*Note:* For Brazil the initial number of ICU beds has been calculated using the data of deaths per 100,000 population. NA=not available data.

# RESPONSE TO THE PANDEMIC:

## HEALTH SYSTEM RESPONSE

- While other elements such as testing and tracing have been lacking.
- Specifically in countries such as Ecuador.



**Fig. 6.** Evolution of daily tests conducted per 100,000 population (7 days average) [33–36].

Note: No public data for daily numbers of tests realized in Brazil.

# CONCLUDING REMARKS

- All five countries adopted strict measures early on to contain the first wave of COVID-19, including lockdowns (national or focalized) and curfews.
- However, the **effectiveness** of the measures was undermined by the existing **fragility** of the health systems, which are characterized by **insufficient investment** in health resources, regional **disparities**, modest information systems and poor communication and coordination.
- Indeed, the health systems have been overwhelmed in the first 100 days of the pandemic, with ICU beds reaching nearly 100% occupancy in some regions.

# CONCLUDING REMARKS

- The existence of a large **informal sector** affected the ability of individuals to comply with the containment and mitigation measures further undermining their effectiveness.
- While the five countries introduced **income support** measures, they were by and large **too timid or too late** to achieve high levels of **compliance**.
- Moreover, there was a lack across the five countries of a comprehensive strategy for **early detection, isolation, surveillance, and tracking of patients and close contacts**.

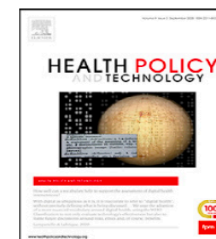




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# VALUE IN HEALTH ECONOMICS AND POLICY VheP

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BY OUR RESEARCH NETWORK:  
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- group of researchers, consultants, practitioners and industry leaders
- based at the University of Newcastle

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# HEALTH ECONOMICS, MANAGEMENT AND POLICY PROGRAMS

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| MASTER OF HEALTH ECONOMICS,<br>MANAGEMENT & POLICY (GLOBAL)                              | <b>2 years</b> full-time or part-time equivalent up to 6 years maximum.             | Qualifications and organisational experience from any discipline or industry |
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| MASTER OF BUSINESS<br>ADMINISTRATION (MBA) -<br>HEALTH AND SOCIAL SERVICE<br>MANAGEMENT* | <b>1.5 years</b> full-time or part-time equivalent up to 5 years maximum.           | Mode of delivery: Face to Face,<br>Remote online study option, online*       |
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# THANK YOU



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- International trends indicate consistent and sustained growth in demand from: pharmaceutical and medical devices firms, health insurers, regulatory agencies, hospitals, integrated care organisations, health ministries, health departments, and other governmental agencies, as well as universities and commercial consultancy and research organisations.
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# HEALTH ECONOMICS, MANAGEMENT AND POLICY PROGRAMS

|                                                                                 |                                                                           |                                                                              |
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