



UCLA Global partner research course:

# Supporting the COVID-19 Response in Peru

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# Disclaimer

I am a former member of one of Peru's COVID-19 advisory boards

My views and opinions have not and do not necessarily represent those of the Peruvian Ministry of Health, the Peruvian Government or Cayetano University



# COVID-19 in Peru

- “First” case reported on Mar-6, first death on Mar-18
- Swift response: schools closed on Mar-11
- Travel ban and strict lockdown for 3.5 months:
  - Curfew from 6 PM to 6 AM and 24h on Sundays
  - No walks for two months
  - Only one person allowed out for essential purchases
  - Several additional full 24h lockdown days



# Major challenges faced

- Complex, decentralized and neglected health system
- ICU capacity historically at limit
- Delays in social support delivery
- Decreasing lockdown compliance & pandemic fatigue
- Significant political instability



**Presence in markets dropped, GoogleMaps data, Hugo Nopo**



**Crowds in markets, Radio Capital**



# Seven advisory boards appointed in the first 60 days of the response

- Clinical experts
- Prospective
- Social sciences
- Research ethics
- Research & innovation
- Occupational & environmental health
- Information technology



Ministry of Health

**Six former ministers of health support the response**



# The scientists

- Reach new audiences: policy, politics, news media, the general public
- Different attention levels, expectations, language, media (social networks)
- Other spokespeople and very mediatic “experts”
- Trying to communicate complex ideas clearly



# Navigating pandemic uncertainty together



# Science-policy bridges in LMICs

- Add scientific information and technology
- Cross-disciplinary and trans-sectorial work
- Data processing and analytics
- Access to global expertise
- External/unbiased perspective, at least at first





# Source data

- Sinadef, death certificates system
- Timely: 99% reported within two days, open online data
- COVID-19 deaths chosen via related phonemes (SARS, COVID, coronavirus, etc) in death certificate
- Robust data, independent of testing intensity and methods



# Other data

- Occupation of COVID-dedicated inpatient and ICU beds
  - Permanent saturation, and with changing bed-usage protocols when demand decreases
- Percent test positivity, antigen and molecular tests
  - Limited molecular testing, mostly main cities. Lower sensitivity of antigen testing and test distribution
- Number of positive cases
  - Biased by test availability, processing delays, etc

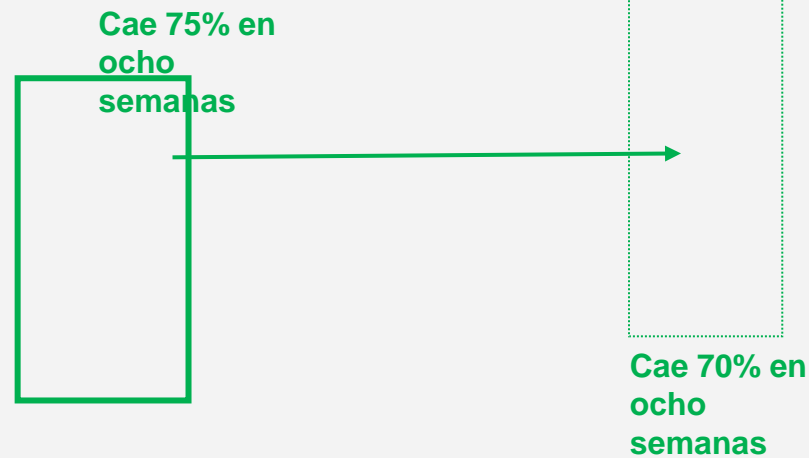


# **Navigating pandemic uncertainty together**



## La pandemia esta semana

- **Fallecidos semanales bajan - 410 (21.6%).** Quinta mayor caída
- Lima metropolitana cae 115, (21.6%), igual que caída de la semana previa
- Bajan 22 regiones, todas >10%, 17 >14 fallecidos, igual que semana previa
- Ica y Moquegua suben, provincias en Cusco y Arequipa
- Suben 11 provincias, casi igual que las 13 de la última semana
- Ocupación camas UCI y no UCI baja 1.5% y 2.4%, no desacelera





## Ocupación de camas UCI y hospitalización n

UCI



UCI



Hospitalización



Hospitalización



- Sube el # de camas de hospitalización operativas
- UCIs saturadas, ocupación de 89.7%,
- Baja 1.5%, cae cuatro semanas, mayor bajada a la fecha
- 50.0% ocupación de camas de hospitalización, baja 2.4%
- Cae nueve semanas



# Fallecidos semanales por región\*

- **Octava gran caída nacional seguida: -410, 21.6%**
  - Cae 70% en cinco semanas
- Lima metropolitana aporta 27% de la caída, pero está en 14% de su pico
- 22 regiones bajan, 11 bajan >14
- Caen >30%
  - Amazonas, Cajamarca, Lambayeque y Ancash
  - San Martín, Loreto, Ucayali y Madre de Dios
  - Pasco y Apurímac
- Sur sigue prendido
  - Suben Ica (Ica, Pisco y Nazca) y Moquegua (Mariscal Nieto)
  - Caylloma superó su record semanal de pandemia
  - Canchis y La Convención suben
  - Puno y Arequipa siguen >50% de pico

\* Datos de la semana actual incompletos. Totales de fila incluyen semanas no mostradas  
Records semanales de pandemia (rojo) y 2a ola (amarillo)



# Costa Centro

## Fallecidos bajan fuertemente. UCI saturadas, ligera bajada. Ocupación camas hospitalización baja

Fallecidos

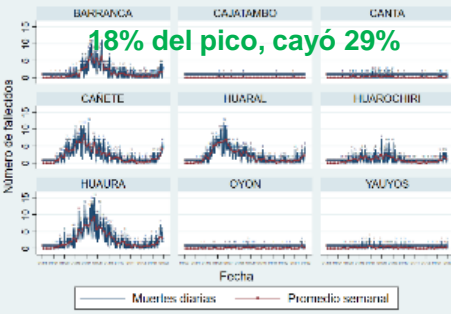
19% del pico, cayó 22%  
 Positividad sube siete semanas  
 Sube Ascope  
 Valores altos



19% del pico, cayó 32%



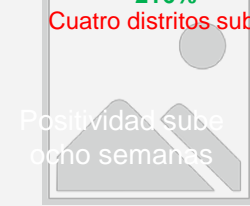
18% del pico, cayó 29%



14% del pico, cayó 30%  
 Ventanilla sube

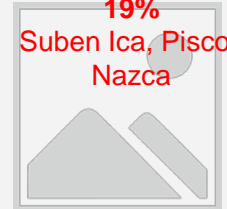


14% del pico, cayó 216%  
 Cuatro distritos suben

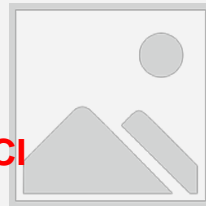


Positividad sube ocho semanas

37% del pico, sube 19%  
 Suben Ica, Pisco y Nazca



UCI



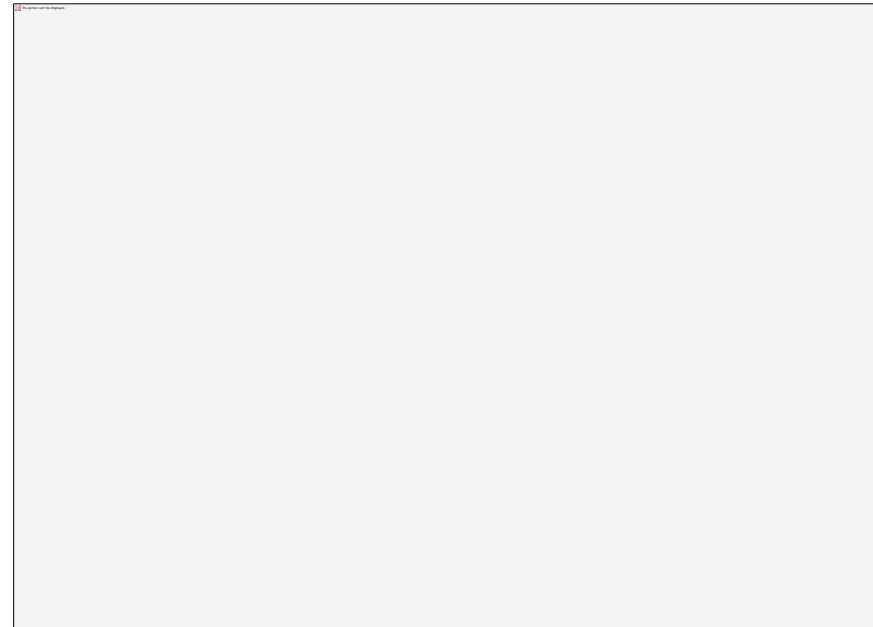
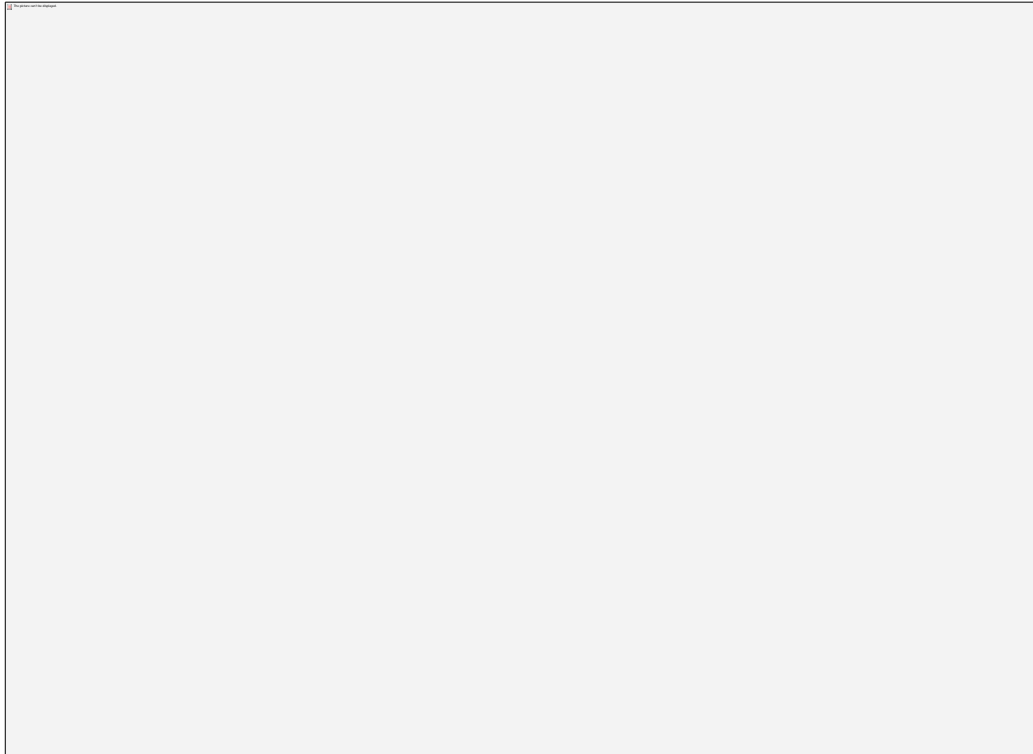
Hospitalización





# Heterogeneidad epidemiológica macro-regional

- Costa sur comienza a bajar
- Resto del país en bajada casi uniforme
- Heterogeneidad entre macro-regiones e intra-regional en el sur







# First wave seroprevalence estimates

City/Region, Author	First estimate, period	Second estimate, period
Iquitos city, DIRESA Loreto	71%, end of June	75%, mid August
Lambayeque region, EsSalud Lambayeque	29.8%, early July	41%, mid September
Lima and Callao, CDC Perú	21.5% seroprevalence 25.4%, + molecular tests Early July	39%, November
Cusco Different sources	2.8% in Cusco city, May DIRESA	38% Cusco city 35% Cusco periphery 20% Quillabamba September, C. Huamaní Quimioluminescence

Compilation from multiple different sources



# Four-fold seroprevalence gradient by socioeconomic status

- High: 13.1%
- Medium high: 25.8%
- Medium: 38.5%
- Medium low: 52.8%
- Low: 49.7%

CDC Peru, Lima & Callao seroprevalence survey, November 2020

<https://www.facebook.com/minsaperu/videos/459695455415034/>



# **Substantial Political Noise Affects the Signal**



# Peru's president Martín Vizcarra ousted in impeachment vote

Congress votes to remove centrist on bribery allegations after earlier attempt failed



▲ Peruvians take to the streets to protest against president's ousting - video

Peru has been tipped into political uncertainty after its Congress voted to oust President Martín Vizcarra from office, as the country battles one of the world's worst outbreaks of Covid-19.

<https://www.theguardian.com/world/2020/nov/10/impeachment-kicks-out-president-martin-vizcarra-of-peru>

## Unprecedented political instability

### Peru's interim president Merino resigns after deadly protest








*Manuel Merino announces resignation after a night of protests demanding his removal in which two died, dozens wounded.*



<https://www.aljazeera.com/news/2020/11/15/peru-interim-president-manuel-merino-resigns-after-deadly-protest>



# DURACIÓN DE LA GESTIÓN MINISTERIAL Y LOGROS EN SALUD EN EL PERÚ

Ernesto Gozzer <sup>1,a</sup>, Fredy Canchihuamán <sup>1,2,b</sup>, Vilma Chalco <sup>1,c</sup>, Gabriela Huari <sup>1,d</sup>, Ana Cisneros-Dionisio <sup>1,e</sup>, Wildo Quispe <sup>1,c</sup>, Rubén Espinoza <sup>1,a</sup>

- “Average tenure was of 13,7 months and the median was 11 months”
- “The longest was found to be 67 months ... and the shortest was one day”
- “The length of ministerial tenure is shorter compared to that of other countries and is decreasing since 2016”



# Covid-19: Peru's official death toll triples to become world's highest

Owen Dyer

Peru has revised its official death toll in the covid-19 pandemic from 69 342 to 185 380, after a scientific review of medical records ordered by the government. The new figure means that Peru has had 5551 covid deaths per million population, proportionally the worst official toll in the world. Hungary, which before this week had the world's highest official toll per capita, now stands a distant second at 3094 deaths per million.

More than 0.5% of Peru's people have died from covid-19, a toll worse than that recorded by the UK in the 1918-20 "Spanish" influenza pandemic.

"We think it is our duty to make public this updated information," said the Peruvian prime minister, Violeta Bermúdez, at a news conference announcing the publication of the report.<sup>1</sup>

Many covid-19 deaths were not initially classified as such, said health minister Óscar Ugarte, because of a lack of testing. But a review of cases that sought covid symptoms has brought the official figure into line with the country's actual spike in excess deaths over the past year.

Whether Peru is actually the hardest hit country is unclear, as several others show evidence of undercounting their losses, including Russia, India, Mexico, and much of Eastern Europe and Central Asia.<sup>2</sup>

There is no doubt that Peru's pandemic experience has been exceptionally grim, despite a government response that won praise from international experts.

Russia's statistics agency Rosstat seemed to contradict the country's health ministry in February by reporting 162 429 covid deaths in 2020, while the ministry's figure for that year was 57 019.<sup>4</sup>

But neither of those updates changed the country's official figure. Peru's update, by contrast, is now reflected on global databases such as that maintained by Johns Hopkins University.

- 1 Ministerio de Salud. Criterios técnicos para actualizar la cifra de fallecidos por COVID-19 en el Perú. 31 May 2021. <https://www.gob.pe/institucion/minsa/informes-publicaciones/1944190-criterios-tecnicos-para-actualizar-la-cifra-de-fallecidos-por-covid-19-en-el-peru>
- 2 Dyer O. Covid-19: Study claims real global deaths are twice official figures. *BMJ* 2021;373:n1188. doi: 10.1136/bmj.n1188 pmid: 33972234
- 3 Dyer O. Covid-19: Mexico acknowledges 50 000 more deaths than official figures show. *BMJ* 2020;371:m4182. doi: 10.1136/bmj.m4182 pmid: 33122250
- 4 Dyer O. Covid-19: Russia's statistics agency reports much higher death toll than country's health ministry. *BMJ* 2021;372:n440. doi: 10.1136/bmj.n440 pmid: 33579671

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# Epidemiological Conclusions

- Heterogeneous, complex epidemiology
- Significant excess deaths in Peru
- Social connectivity and disparities have contributed importantly to the pandemic
- A major challenge for the already overburdened health systems of most LMICs



# Lessons learned

- It's critical to appreciate different perspectives
  - Even if you disagree with many of them
- Take that media training course now!
- Build long-term bridges
- “There will be epidemics”
  - ASTMH 2017





# Thank you



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