

the northeastern United States and Europe, the Dominican Republic got hit hard and early with COVID-19. More than 30,000 Haitians lost their jobs there and were either forced out or fled home—some bringing the virus with them. Another 300,000 had commuted back and forth for occasional work.

For several weeks, Haiti saw large numbers of COVID-19 cases, often overwhelming the relatively few available hospital beds. Because many Haitians lack shelter, food, and medical care, the United Nations Economic and Social Council warned that COVID-19 could trigger a humanitarian catastrophe, a theme echoed in a letter co-authored by Deschamps and published on 16 June in *The New England Journal of Medicine* titled Facing the Monster in Haiti.

The letter warned that stigmatization—once directed against those with HIV—was now impeding care for those with COVID-19. Health care workers have endured threats and had stones thrown at them. Some patients have been driven from their homes and shunned by relatives, forcing them to live on the streets. Deschamps has directed community health workers to try to combat stigma and educate people about safety measures, but she acknowledges it isn't easy. "How can you ask someone to adopt proper distancing measures when five people are living in one room?"

So far, however, the worst predictions haven't come to pass. Although testing and surveillance is limited, the official number of confirmed cases declined from almost 300 per day in mid-June to about 100 in mid-July. As of 9 August, Haiti had reported only 183 COVID-19 deaths in its population of 11.2 million. Deschamps says that even at current levels COVID-19 represents a huge burden, but she is "hopeful and skeptical at the same time" about the future.

Some other resource-poor countries have reported similar declines in cases. Global health experts have speculated that those countries may benefit from relatively younger populations, shanties that though crowded are well-ventilated, or a more effective early immune response to COVID-19 because of the many other infections people face. "We just don't know the reasons for this but it is a very intriguing question," says immunologist Barry Bloom, former dean of the Harvard T.H. Chan School of Public Health.

Although she could live and practice medicine anywhere, Deschamps insists she'll never leave Haiti. "This is my place," she says. Haitians are resilient, she says, in spite of all they've endured. "It's not that we forget ... [but] we are always looking for the light." ■

Robert Bazell, an adjunct professor at Yale University, is a journalist based in New Haven, Connecticut.



Children run past a mural warning about COVID-19 in Nairobi, Kenya. Kenya has reported relatively few cases so far.

## COVID-19

# Africa's pandemic puzzle: why so few cases and deaths?

Antibody surveys tell a different story than official tolls

By **Linda Nordling**

**A**lthough Africa reported its millionth official COVID-19 case last week, it seems to have weathered the pandemic relatively well so far, with fewer than one confirmed case for every thousand people and just 23,000 deaths. Yet several antibody surveys suggest far more Africans have been infected with the coronavirus—a discrepancy that is puzzling scientists around the continent. "We do not have an answer," says immunologist Sophie Uyoga of the Kenya Medical Research Institute–Wellcome Trust Research Programme.

After testing more than 3000 blood donors, Uyoga and colleagues estimated in a preprint last month that one in 20 Kenyans aged 15 to 64—or 1.6 million people—has antibodies to SARS-CoV-2, an indication of past infection. That would put Kenya on a par with Spain in mid-May, when that country had 27,000 official COVID-19 deaths. Kenya's official toll stood at 100 when the study ended. And Kenya's hospitals are not reporting huge numbers of people with COVID-19 symptoms.

Other antibody studies have yielded similarly surprising findings. From a survey of 500 asymptomatic health care workers in

Blantyre, Malawi, immunologist Kondwani Jambo of the Malawi–Liverpool Wellcome Trust Clinical Research Programme and colleagues concluded that up to 12.3% of them had been exposed to the coronavirus. Based on those findings and mortality ratios for COVID-19 elsewhere, they estimated that reported number of deaths in Blantyre at the time, 17, was eight times lower than expected.

Scientists who surveyed about 10,000 people in two cities in Mozambique, Nampula and Pemba, found antibodies to SARS-CoV-2 in 3% to 10% of participants, depending on their occupation; market vendors had the highest rates, followed by health workers. Yet in Nampula, a city of approximately 750,000, a mere 300 infections had been confirmed at the time. Mozambique only has 16 confirmed COVID-19 deaths. Yap Boum of Epicentre Africa, the research and training arm of Doctors Without Borders, says many people in Cameroon have COVID-19 antibodies as well.

So what explains the huge gap between antibody data and the official toll? Part of the reason may be that Africa misses many more cases than other parts of the world because it tests far less. Kenya tests about one in every 10,000 inhabitants daily for active SARS-CoV-2 infections, one-tenth of

the rate in Spain or Canada. Nigeria tests one out of every 50,000 people per day. Even many people who die from COVID-19 may not get a proper diagnosis. But in that case, you would still expect an overall rise in mortality, which Kenya has not seen, says pathologist Anne Barasa of the University of Nairobi. Uyoga cautions that the pandemic has hamstrung Kenya's mortality surveillance system, however.

Marina Pollán of the Carlos III Health Institute in Madrid, who led Spain's antibody survey, says Africa's youthfulness may protect it. Spain's median age is 45; in Kenya and Malawi, it's 20 and 18, respectively. Young people around the world are far less likely to get severely ill or die from the virus. And the population in Kenya's cities, where the pandemic first took hold, skews even younger than the country as a whole, says Thumbi Mwangi, an epidemiologist at the University of Nairobi.

Jambo is exploring the hypothesis that Africans have had more exposure to other coronaviruses that cause little more than colds in humans, which may provide some defense against COVID-19. Another possibility is that regular exposure to malaria or other infectious diseases could prime the immune system to fight new pathogens, including SARS-CoV-2, Boum adds. Barasa, on the other hand, suspects genetic factors protect the Kenyan population from severe disease.

More antibody surveys may help fill out the picture. A French-funded study will test thousands for antibodies in Guinea, Senegal, Benin, Ghana, Cameroon, and the Democratic Republic of the Congo. And 13 labs in 11 African countries are participating in a global SARS-CoV-2 antibody survey coordinated by the World Health Organization.

If tens of millions of Africans have already been infected, that raises the question of whether the continent should try for "herd immunity" without a vaccine, Boum says—the controversial idea of letting the virus run its course to allow the population to become immune, perhaps while shielding the most vulnerable. That might be preferable over control measures that cripple economies and could harm public health more in the long run.

"Maybe Africa can afford it," given the apparent low death rate, he says. But Glenda Gray, president of the South African Medical Research Council, says it could be dangerous to base COVID-19 policies on antibody surveys. It's not at all clear whether antibodies actually confer immunity, and if so, how long it lasts, Gray notes—in which case, she asks, "What do these numbers really tell us?" ■

Linda Nordling is a journalist in Cape Town, South Africa.

## CAREERS

# Fed-up archaeologists aim to fix field schools' party culture

## Drinking and harassment spur experiments, including local projects and student stipends, for core training course

By **Lizzie Wade**

**E**ach year, archaeologist Carol Colaninno guides undergraduates through a consequential choice: Where should they go to field school? Every budding U.S. archaeologist must attend one to learn hands-on skills such as excavation, and to have any hope of landing a job or entering grad school for archaeology.

The undergrads can choose from hundreds of field schools, many in remote areas. But Colaninno, who teaches at Southern Illinois University, Edwardsville, knows from former students and information passed privately among others in her whisper network that some field schools have a reputation for faculty who sexually harass with impunity. Many schools are also famed for heavy drinking.

Traditional field schools foster "the archaeology cowboy mentality ... working really hard during the day but playing really hard at night—and drinking a ton," says Katrina Eichner, an archaeologist at the University of Idaho. If directors of these field schools encourage that atmosphere, she

adds, "it devolves into a frat party." Over time, that cowboy culture gets perpetuated across academic generations.

Now, Colaninno, Eichner, and other archaeologists are trying to change the script. With the help of a National Science Foundation (NSF) grant, Colaninno is studying, and plans to implement, best practices for preventing sexual harassment at field schools. And some archaeologists, aware that remote summer courses can cost thousands of dollars and keep students of modest means out of the field altogether, are rethinking the whole model: They teach field skills at local sites during the regular semester. "We don't have to create the same environment that we didn't want to be in when we were students," says Jane Eva Baxter, an archaeologist at DePaul University and the author of a respected guide for field school instructors.

Although field schools are on hold this year because of the COVID-19 pandemic,

researchers say it's more important than ever for academic archaeologists to take the lead in making such schools safe. New regulations under Title IX, the U.S. federal law governing sexual harassment in higher education, no longer require universities to investigate incidents that happen in their programs abroad.

Although anecdotes of sexual harassment in field schools are plentiful, data on such episodes are limited. But studies show they are common in archaeology, as they are in other field-based disciplines. In a survey by the Southeastern Archaeological Conference, 68% of 244 respondents of all genders

reported inappropriate remarks in the field; another 13% reported unwanted sexual contact. Remote sites and field schools have been considered "an alternative space where different rules applied," Baxter says.

The current culture at such sites and schools may drive some students out of the profession, according to a paper published last month in *American Anthropologist*. An atmosphere of informality, including frequent drinking, undermined expectations

of professionalism and excluded people who weren't willing or able to navigate the unspoken rules, according to the paper's analysis of archaeological field sites and an anonymous field school in Chile. "It weeds out people," says author Mary Leighton, an anthropologist at the University of Michigan, Ann Arbor. "The people who love it, stay [in archaeology]. And the people who don't like it leave."

To create a more welcoming and professional culture, Colaninno's team recently offered recommendations from the first phase of its research. The suggestions include: Create an environment that doesn't trivialize harassment, offer multiple ways to report harassment other than going to the field director, and reflect weekly on what's working and what isn't. The team, which published its guidance in May in *Advances in Archaeological Practice*, plans to implement those policies at eight U.S. field

**"The archaeology cowboy mentality ... devolves into a frat party."**

**Katrina Eichner,**  
University of Idaho

## Africa's pandemic puzzle: why so few cases and deaths?

Linda Nordling

*Science* **369** (6505), 756-757.  
DOI: 10.1126/science.369.6505.756

ARTICLE TOOLS <http://science.sciencemag.org/content/369/6505/756>

RELATED CONTENT <http://stm.sciencemag.org/content/scitransmed/12/557/eabc5332.full>  
<http://stm.sciencemag.org/content/scitransmed/12/550/eabc3539.full>  
<http://stm.sciencemag.org/content/scitransmed/12/554/eabc1126.full>  
<http://stm.sciencemag.org/content/scitransmed/12/555/eabc9396.full>

PERMISSIONS <http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

---

*Science* (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. The title *Science* is a registered trademark of AAAS.

Copyright © 2020 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works