

are only the third and fourth Arab countries to establish formal diplomatic relations with Israel, following Egypt in 1979 and Jordan in 1994. Until now, Israeli citizens had generally been barred from entering the UAE, and although Israel had no law banning UAE citizens, entry required explicit permission from the Ministry of Foreign Affairs.

But a new generation of Gulf leaders, backed by the administration of US President Donald Trump, is challenging that narrative. Between the UAE and Israel, scientific cooperation is a high priority, says Spigelman.

The 31 August meeting included early discussions about potential cooperation on satellites and experiments in low Earth orbit, as well as coordinating astronaut visits to the International Space Station, she says. “They didn’t sound like they were new in this neighbourhood, even though they are. So it was very impressive,” she adds. Israeli firm SpaceIL in Tel Aviv launched a government-backed mission to the Moon in 2019, although the lander crashed. The UAE has a human space-flight programme and was one of three nations to launch a Mars mission in July.

Future collaborations are also likely to focus on artificial intelligence and quantum science, as well as agriculture, desert studies and water security, says Spigelman. Both countries are also carrying out extensive research in cybersecurity, energy and desalination technology.

A UAE-based researcher who studies ancient civilization in the Middle East, and who asked not to be named because of the sensitivities surrounding the accords, says archaeology should also benefit. The UAE’s boycott of Israel meant that exchanging artefacts and samples had until now been a problem, she says. “There were some civilizations that lived in the Gulf region and also moved into the territories of Israel today, so I don’t really know how those civilizations are currently studied.”

### Running start

Collaboration will not start from scratch. Researchers from the UAE and Israel co-authored 248 papers between 2017 and 2019, according to the Scopus database (including co-authorship as part of mega collaborations, such as experiments at Europe’s particle-physics laboratory, CERN). This compares with 183 papers co-authored by scientists in Israel and Egypt during the same period, and 98 between Israel and Jordan. UAE universities awarded their first PhDs only in 2010, and many senior academics there come from other countries, which do have diplomatic ties to Israel.

Moreover, technology businesses in the UAE – as well as Qatar and Saudi Arabia – already have informal relationships with counterparts in Israel to procure what are viewed as crucial technologies, such as those used in protecting oil and gas infrastructure, says Robert Mogleinicki, a researcher in political

economy at the Arab Gulf States Institute in Washington DC. Both countries already have extensive links with China, he adds.

But now, researchers are looking forward to forming more and deeper connections. Not only can Israeli collaborators now visit, but UAE institutions can begin student exchanges, says Andrea Macciò, an Italian astrophysicist at New York University Abu Dhabi, who frequently collaborates with Israeli colleagues. Israel is “one of the closest countries in the area with a substantial research programme”, says Macciò, who hopes the accord will lead to institutional-level collaborations, as well as research calls for joint programmes and regional scientific summits.

Spigelman says that the countries could indeed sign a bilateral scientific agreement under which they release joint funding calls.

### Criticisms and concerns

But sensitivities remain. *Nature* had difficulty finding Emirati scientists willing to speak about collaboration with Israel (people in the UAE can be jailed for speaking against government policy). And Palestinian academics are angry about the accords, says philosopher Sari Nusseibeh, former president of Al-Quds University in East Jerusalem. But Nusseibeh is confident that the agreement will boost Palestinian involvement in research collaboration. “Can the UAE use its new partner to help Palestinians? I am sure it can,” says Nusseibeh. “Given the Palestinian suffering under occupation, the sky is the limit as to what it can do. Let us hope it does.”

At present, Palestinian scientists have restrictions on where they can travel, and on the materials they can import, says Mario

Martone, a particle physicist at the University of Texas at Austin and co-founder of the advocacy group Scientists for Palestine.

Baharoon says that Emirati researchers are unlikely to let politics influence their business or life decisions, and that that attitude bodes well for future research collaborations. “From a number of people I spoke to, I think there is an admiration of Israel as the start-up nation, and one that has done a lot when it comes to science and technology,” he says.

But Mogleinicki cautions that although governments are excited about the prospects for research and development, relationships between individual Israeli and Emirati academics will be key to success. “How will researchers in both countries navigate potentially awkward relations with colleagues, that are a bit more conservative and do not feel as optimistic about this normalization? That’s a big question that remains to be seen,” he says.

Nonetheless, Baharoon hopes the accord will prove to be a ‘proof of concept’ for other Gulf countries. Bahrain publicized its intention to normalize relations with Israel just weeks after the UAE’s own announcement, and there is speculation that others will follow.

Spigelman also hopes that the accord will inspire similar deals between Israel and other nations. “There are other very advanced countries in the Gulf with strong universities and resources in science and technology, and we would love to cooperate with them,” she says.

*Nature* asked a representative of the UAE Ministry of Foreign Affairs and International Cooperation for comment, but the ministry did not respond by the time this article went to press.

## STILLBIRTH RATE RISES DURING CORONAVIRUS PANDEMIC

### Emerging data link disrupted antenatal services to a rise in pregnancy complications in several countries.

By Clare Watson

**D**isruptions brought about by the COVID-19 pandemic have had a profound effect on health care worldwide, contributing to an increase in deaths from chronic conditions such as heart disease. Now, a slew of studies has reported a significant rise in the proportion of pregnancies ending in stillbirth, in which babies die in the womb. Researchers say that, in some countries, pregnant women have received less care

than they need because of lockdown restrictions and disruptions to health care. As a result, complications that can lead to stillbirths were probably missed, they say.

“What we’ve done is cause an unintended spike in stillbirth while trying to protect [pregnant women] from COVID-19,” says Jane Warland, a specialist in midwifery at the University of South Australia in Adelaide.

The largest study to report a rise in the stillbirth rate, based on data from more than 20,000 women who gave birth in 9 hospitals



Researchers are concerned that high-risk pregnancies are going undetected.

across Nepal, was published in *The Lancet Global Health* on 10 August<sup>1</sup>. It reported that stillbirths increased from 14 per 1,000 births before the country went into lockdown to stop the spread of the coronavirus in late March, to 21 per 1,000 births by the end of May – a rise of 50%. The sharpest rise was observed during the first four weeks of the lockdown, under which people were allowed to leave their homes only to buy food and receive essential care.

The study, led by Ashish K.C., a perinatal epidemiologist at Uppsala University, Sweden, and his colleagues, found that although the rate of stillbirths jumped, the overall number was unchanged during the pandemic. This can be explained by the fact that hospital births halved, from an average of 1,261 births each week before lockdown to 651. And a higher proportion of hospital births during lockdown had complications. The researchers don't know what happened to women who didn't go to hospital, or to their babies, so they cannot say whether the rate of stillbirths increased across the population.

The increase in the proportion of stillbirths among hospital births was not caused by COVID-19 infections, says K.C.. Rather, it is probably a result of how the pandemic has affected access to routine antenatal care, which might have otherwise picked up complications that can lead to stillbirth, he says. Pregnant women might have been unable to travel to health facilities for lack of public transport; in some cases, antenatal appointments were reportedly cancelled. Others might have avoided hospitals for fear of contracting SARS-CoV-2, the virus that causes COVID-19, or had consultations by phone or Internet. "Nepal has made significant progress in the

last 20 years in health outcomes for women and their babies, but the last few months have deaccelerated that progress," says K.C..

Birth data from a large hospital in London showed a similar trend. In July, Asma Khalil, an obstetrician at St George's, University of London, and her colleagues reported<sup>2</sup> a nearly fourfold increase in the incidence of stillbirths at St George's Hospital, from 2.38 per 1,000 births between October 2019 and the end of January this year, to 9.31 per 1,000 births between February and mid-June.

Khalil calls this the collateral damage of the pandemic. She says that, during lockdown, pregnant women might have developed

**“What we've done is cause an unintended spike in stillbirth while trying to protect pregnant women from COVID-19.”**

complications that were not diagnosed, and might have hesitated about coming to hospital and therefore been seen by doctors only when a complication was advanced, when less could be done.

Four hospitals in India also reported<sup>3</sup> a jump in the stillbirth rate during the country's lockdown. And as in Nepal, fewer women had their babies in those hospitals. Referrals of women requiring emergency pregnancy care also dropped by two-thirds. This suggests that more births were happening unattended, at home or in small facilities, according to the authors. Scotland – one of a few countries that collates data on stillbirths and infant deaths monthly – has also detected an uptick in the

rate of stillbirths during the pandemic.

In normal times, the World Health Organization recommends that women be seen by medical professionals at least eight times during pregnancy – even if the pregnancy is judged low-risk – to detect and manage problems that might harm the mother, the baby or both. Much of the risk of stillbirth can be averted if women sleep on their side from 28 weeks' gestation, stop smoking and notify their midwife or doctor if their baby is moving less. The last trimester of pregnancy is particularly important for regular health checks, but women are typically monitored for risk factors such as restricted fetal growth and high blood pressure throughout pregnancy.

When the pandemic hit, professional bodies for maternity-health providers recommended that some face-to-face consultations be substituted with remote appointments to protect women from the coronavirus.

But health-care workers can't take someone's blood pressure, listen to their baby's heartbeat or do an ultrasound remotely, says Warland. Because of this, high-risk pregnancies might have been missed, she says, particularly among first-time mothers who are less likely to know what an abnormality feels like. For instance, St George's Hospital reported a drop in the number of pregnant women presenting with high blood pressure during the UK lockdown. This suggests that “women with hypertension aren't being managed as they normally would, and undetected hypertension is a risk factor for stillbirth”, says Warland.

The studies are a call to arms to support maternal and newborn health services, especially in low-to middle-income countries, says Caroline Homer, a midwifery researcher at the Burnet Institute in Melbourne, Australia. “This is not the moment to reduce” these services, she says. Homer says that, across the Asia-Pacific region, the maternal-health workforce has pivoted to working on the COVID-19 front line, and antenatal care services have reduced face-to-face contact with pregnant women. In some places, services have shut completely, she says.

But Pat O'Brien, the vice-president of the Royal College of Obstetricians and Gynaecologists in London, says the reasons behind this rise in the rate of stillbirths need further exploration. “We are aware anecdotally of pregnant women presenting late with reduced fetal movements, which can be a sign their baby is unwell, and of women missing antenatal appointments. This may be due to confusion around whether these appointments count as essential travel, fear of attending a hospital or not wanting to burden the NHS,” says O'Brien.

1. K.C., A. et al. *Lancet Glob. Health* [https://doi.org/10.1016/S2214-109X\(20\)30345-4](https://doi.org/10.1016/S2214-109X(20)30345-4) (2020).

2. Khalil, A. et al. *J. Am. Med. Assoc.* **324**, 705–706 (2020).

3. Kumari, V., Mehta, K. & Choudhary, R. *Lancet Glob. Health* **8**, E1116–E1117 (2020).