

## Health is Wealth

### Breaking the Social Contract: What the U.S. Can Learn from Singapore

the United States when news broke in Flint, Michigan, that the city's water supply had unacceptably high levels of lead. At the time, it was unimaginable to Americans and the rest of the world that such an event could occur in the most powerful nation on the planet. Although the water in Flint has returned to acceptable quality and water pipes are being replaced, the incident nevertheless shook public trust in U.S. government agencies, especially since the city government initially claimed that lead levels were within allowable limits. One would expect that, because the United States is the world's largest economy, public goods provision would be high. But in 2015 it ranked tenth in terms of the human development index (HDI), behind much smaller economies such as Singapore.

### Adult Immunizations



Everyone should receive immunizations. Check with your doctor to see which vaccines are important for you. It is important that parents and grandparents are protected so that they do not bring infections home to their children and they are well enough to take care of their children! Parents and children 6 months and older should receive the flu vaccine.

All adults should receive the tetanus, diphtheria, acellular pertussis (Tdap) vaccine to avoid getting whooping cough. Pregnant women should receive a dose of Tdap during each pregnancy to protect the newborn from whooping cough.

Adults who have received Tdap should get a booster dose of the tetanus and diphtheria (Td) vaccine every 10 years, or sooner if you have an injury that can lead to tetanus.

People older than 65 years should receive the older version of the pneumococcal vaccine (the polysaccharide vaccine).

Adults who did not have chickenpox should consider getting the vaccine (although, interestingly, most adults who don't remember having chickenpox are actually found to be already protected when their blood is tested for the presence of antibodies).

Adults who may be exposed to blood or who are adopting children from areas of the world where hepatitis B is common should get the hepatitis B vaccine. Travelers should consider hepatitis A vaccine and others depending on where you are traveling.

### Health Issues



Despite incredible improvements in health since 1950, there are still a number of challenges, which should have been easy to solve. Consider the following:

One billion people lack access to health care systems.

36 million deaths each year are caused by noncommunicable diseases, such as cardiovascular disease, cancer, diabetes and chronic lung diseases. This is almost two-thirds of the estimated 56 million deaths each year worldwide. (A quarter of these take place before the age of 60.)

Cardiovascular diseases (CVDs) are the number one group of conditions causing death globally. An estimated 17.5 million people died from CVDs in 2005, representing 30% of all global deaths. Over 80% of CVD deaths occur in low- and middle-income countries.

Over 7.5 million children under the age of 5 die from malnutrition and mostly preventable diseases, each year.

In 2008, some 6.7 million people died of infectious diseases alone, far more than the number killed in the natural or man-made catastrophes that make headlines. (These are the latest figures presented by the World Health Organization.)

AIDS/HIV has spread rapidly. UNAIDS estimates for 2008 that there are roughly:

33.4 million living with HIV

2.7 million new infections of HIV

2 million deaths from AIDS

Tuberculosis kills 1.7 million people each year, with 9.4 million new cases a year.

1.6 million people still die from pneumococcal diseases every year, making it the number one vaccine-preventable cause of death worldwide. More than half of the victims are children. (The pneumococcus is a bacterium that causes serious infections like meningitis, pneumonia and sepsis. In developing countries, even half of those children who receive medical treatment will die. Every second surviving child will have some kind of disability.)

Malaria causes some 225 million acute illnesses and over 780,000 deaths, annually.

164,000 people, mostly children under 5, died from measles in 2008 even though effective immunization costs less than 1 US dollars and has been available for more than 40 years.

### Today, Around 21,000 Children Died Around the World



That is equivalent to:

1 child dying every 4 seconds

14 children dying every minute

A 2011 Libya conflict-scale death toll every day

A 2010 Haiti earthquake occurring every 10 days

A 2004 Asian Tsunami occurring every 11 days

An Iraq-scale death toll every 19-46 days

Just under 7.6 million children dying every year

Some 92 million children dying between 2000 and 2010

The silent killers are poverty, hunger, easily preventable diseases and illnesses, and other related causes. Despite the scale of this daily/ongoing catastrophe, it rarely manages to achieve, much less sustain, prime-time, headline coverage.

## Science & Technology

### Drones Don't Wear Uniforms. They Should Israel's use of consumer drones against protesters heralds a dangerous, lawless age of conflict.

BY FAINE GREENWOOD, OSSAMA A. ZAQQOUT

A drone is flown for recreational purposes in the sky above Old Bethpage, New York, on Aug. 30, 2015. (Bruce Bennett/Getty Images) A drone is flown for recreational purposes in the sky above Old Bethpage, New York, on Aug. 30, 2015. (Bruce Bennett/Getty Images) The video from Gaza starts with a just-visible multirotor drone juxtaposed against a remarkably blue sky. A group of TV journalists in blue helmets stand at the bottom of the frame, looking up at it. It hangs there for a second, and then tear gas canisters fall from it, issuing waving tails of white smoke. The canisters come to earth immediately in front of the cameras, and the reporters begin to run in all directions, coughing. The camera looks to the blue sky again, and the little black dot recedes, mysteriously, into the distance.

Shabtai went into more detail to "Hadashot" TV news, explaining that the "equipment neutralizes any danger to the troops."

The drones began to pop up more and more after March 22. As the Palestinian right to return protests intensified after March 30, a self-assembly arms race began: Palestinian protesters started to send gossamer-thin kites that carried flaming material across the border barrier between Gaza and Israel (although they were often thwarted by stiff winds). On May 11, as Haaretz reported, the IDF recruited hobby drone pilots to counter the kites. The insectlike toy drones with neon-colored propellers had been equipped with sharp fishhooks to sever the kites' strings.

Some Palestinians claim that the IDF drones are using a chemical agent more potent than even those usually deployed against crowds in Gaza.



### Welcome to the next stage of the drone revolution.

Israel may have become the first-ever nation observed using armed consumer drones in a real-world setting on March 12, when a Lebanese news network ran footage (probably dating from March 9) of one dropping tear gas on Gazan protesters. The deployment of drones against crowds of protesters — even armed ones — raises new and worrying questions about legality, identification, and purpose. Such usage may be unavoidable, but the international community at the very least needs to establish — and enforce — legal and ethical standards as soon as possible.

The origin of these tear gas-dropping drones is no secret. They are manufactured by an Israeli defense company called ISPR, which specializes in "non-lethal devices for riot control, crowd management, anti-terror equipment and police gear."

Its website contains an informative brochure for the Cyclone Riot Control Drone System. Beyond Israel, an ever-increasing number of armed groups and other nonstate actors are using consumer drones in war zones. The Islamic State, armed Sunni separatists, extremists in the Philippines, and others have used small drones to drop explosives and to conduct surveillance. The U.S. military was using consumer drones made by Chinese company DJI until last year, when it paused due to security concerns.

The ISPR Cyclone is also a consumer drone, or at least, it was built on top of one. It is almost certainly an altered version of the DJI S1000+ octocopter model, which is regularly used by photographers, and looks very much like those civilian drones from the ground. The Cyclone, and the IDF's choice to use it, highlights the blurring of lines between consumer and military drones, and their uncertain status under international humanitarian law.

The drones didn't appear out of nowhere. Tear gas delivery via drone has been an area of active experimentation among defense contractors since at least 2001: By 2016, multiple companies offered them to defense and law enforcement buyers. ISPR's specialized crowd-control drone has been available since at least January 2015, and the company calls itself a "preferred supplier" of Israeli defense and police forces on its website.

The Israel Defense Forces also isn't a stranger to consumer drone technology: It distributed foldable Mavic drones made by DJI throughout the army in 2017. While Israeli military sources told Haaretz that its new crowd control via drone method was "experimental" and not yet operational on March 12, on March 22, Border Police Deputy Commissioner Yaakov

On May 14, witnesses told the Associated Press that Israeli drones have "dropped incendiary materials, setting ablaze tires that had been collected for use in a planned Gaza border protest." A Twitter video from that day appears to depict a drone dropping a device that punches through the hole of a tent and then bursts into flames.

Mohammed Abu Mosabeh, the head of the emergency and disaster response unit at the Palestine Red Crescent Society, says that people were used to tear gas being fired from guns, but not gas dropped from the air, in unexpected places. Mosabeh says that the gas caused potent reactions, more potent than was usual for tear gas. "Some people had massive convulsions, where the whole body vibrates like electricity," he tells us. "Others passed out for 20 or 30 minutes." (This video from April 8 purports to show convulsions caused by this gas).

These reports are worrisome, but they have yet to be confirmed by outside researchers. An Amnesty International researcher told me the gas could simply be exceptionally potent tear gas, which is dangerous in its own right. Whatever it is, both the tear gas and the drones are a departure from the norm not just for Gaza, but for the entire world.

There are two legal frameworks that we can apply to small, weaponized drones — international humanitarian law and international human rights law — and there is fierce debate over which applies in Gaza. In April, Israeli and Palestinian rights groups brought a petition to the Israeli Supreme Court: The groups argued that Israel's use of lethal fire against the Gazan demonstrators was not permitted in a law enforcement operation under international human rights law. (The International Committee of the Red Cross and Amnesty International, among others, agree with this interpretation).

In response, the Israeli government disclosed its own legal position on its actions on the Gazan border. The state argued that the border protests constitute armed conflict between Israel and Hamas, which is subject to the law of armed conflict, which is also known as international humanitarian law. Controversially, the Israeli state argues that (as Eliav Lieblach describes in an excellent article on the website Just Security) its activities in Gaza fall under a separate law enforcement regime embedded in international humanitarian law, which is "inspired by" but is not actually similar to the law enforcement regime from international humanitarian rights law — thus making it lawful for Israel to use lethal force against protesters in this situation.

Continued on Page 7

