In foreign policy, it is difficult to state anything with certainty. Intelligence agencies have sources that journalists do not. As a result, publicly available information is often incomplete. For North Korea, this problem is made exponentially worse by the reclusive nature of the regime. All conclusions should be thought of as tentative.

Given those caveats, a team of researchers at Harvard's Belfer Center scoured the globe for whatever was publicly available on North Korea's biological weapons program. Referencing news articles, journal papers, expert interviews, and government reports, the team assembled a comprehensive study of the knowns and unknowns. The main findings are summarized below.

**North Korean Biological Weapons: The Knowns**

1. Kim Il-Sung, the first leader (known as the "Great Leader") of North Korea, established a biological weapons program in the 1960s and produced weapons by the 1980s. Unlike its nuclear program, which is easy to detect and of which the country is immensely proud, North Korea has denied the existence of its biological weapons program.

2. North Korean soldiers are vaccinated against smallpox. U.S. soldiers deployed to the Korean Peninsula are required to receive smallpox and anthrax vaccinations. Both of these facts strongly imply that North Korea is in possession of biological weapons -- or at least had them at some point in the past.

3. It has been widely reported that North Korea is in possession of 13 different biological agents -- including plague, smallpox, and anthrax -- and probably has the capability to weaponize them.
Some of their industrial facilities appear to be "dual-use," meaning they can be converted from civilian to military purposes.

**North Korean Biological Weapons: The Unknowns**

(1) Possessing the desire and equipment necessary to produce biological weapons does not mean North Korea is actually capable of doing so because weaponization requires technical expertise. Thus, the extent of North Korea's weaponization is contested. One alarming assessment from South Korea concluded that the North could weaponize all 13 of its agents within 10 days, but that seems unlikely. If North Korea does have a weaponization capability, it would likely focus its efforts on smallpox and anthrax.

(2) How North Korea would deliver a biological weapon is also unknown. Missiles are not realistic, as the impact would likely destroy the biological agent. North Korea has flown drones into South Korea, and a drone could be fitted with an aerosolization device. Another method would be to infect a person with a disease and send him or her into South Korea. North Korea has a reckless disregard for human life -- including the lives of those working for the regime -- as the VX poisoning of Kim Jong-Nam demonstrated. The trouble with human agents is that, depending on the disease, a person is usually not infectious until symptomatic. But once symptoms develop, a person may be too sick to walk around.

(3) The reliability of publicly available information and government intelligence depends on the credibility of the sources. Unfortunately, much of the information on North Korea comes from sources who have an incentive to exaggerate to raise awareness (such as the South Korean government) or to demonize to seek vengeance (such as regime defectors). Defectors, in particular, have a dubious track record. The decision to invade Iraq, for instance, was based on flawed information on its supposed nuclear program provided by a defector.

**Preparing for the Worst**

Obviously, there is much that U.S. intelligence needs to learn. Out of an abundance of caution, the U.S. may want to consider preparing for the worst, just in case North Korea does have an active biological weapons program. There are two additional benefits to this.

First, readying a government response to biological weapons has the added benefit of readying it for a natural disease outbreak, such as that which occurred with Ebola in 2014. Second, it serves as deterrence, a policy that has worked well in the past.
