

1**Cyclospora Outbreak**

Oct 2016 - Ontario, Canada

Cyclospora is a microscopic, single-celled parasite commonly found in tropical countries that causes intestinal illness when ingested. Following an outbreak in Canada, a total of 81 cases were reported. As of October 6th, the Public Health Agency of Canada reports that the outbreak is over and that the Canadian Food Agency suspects imported fresh produce to be the culprit.

2**Rapid-Response Vaccines**

Jul 2016 - Massachusetts, USA

The slow production of conventional vaccines hinders responses to emerging epidemics. Earlier this year, Daniel Anderson and colleagues at MIT synthesized a new, multi-purpose vaccine by encasing antigen RNA in a modified polymer nanoparticle that protects the RNA from degradation. After a single dose, the vaccine protected mice against lethal exposure to a myriad of deadly pathogens, including Ebola virus, H1N1 influenza, and parasitic *Toxoplasma gondii*. The researchers hope that their work will pave the way for the testing of synthetic vaccines on humans.

10**Synthetic Bones**

Oct 2016 - Illinois, USA

Dr. Ramille Shah and colleagues from Northwestern University recently developed a 'hyperelastic bone' using a 3D printer. The hyperelastic bone is comprised of hydroxyapatite, a calcium-based mineral that is similar to those found in animal bones. After implanting grafts into mice, rats, and a macaque, researchers found that the material fused with tissue and triggered bone regeneration. Upon testing its strength and elasticity, Shah's team found that the synthetic bone was able to withstand loads of similar weight to their natural counterparts.

9**Zika Virus and Guillain-Barré Syndrome**

Oct 2016 - Bogotá, Colombia

Since the outbreak of Zika Virus (ZIKV), the number of Guillain-Barré Syndrome (GBS) cases in Colombia has increased. GBS is a demyelinating disease that causes muscle weakness and paralysis. Researchers tested GBS patients for ZIKV using RT-PCR assays on blood, cerebrospinal fluid, and urine. The results revealed virologic evidence of ZIKV in GBS patients, thus establishing a link between the two diseases. Research on the etiology of ZIKV-related GBS is currently underway.

8**Polio Reemerges**

Aug 2016 - Borno, Nigeria

Following two years of latency, three cases of wild polio type one were reported by the government of Nigeria in Borno. Symptoms of polio include fever, fatigue, vomiting, leg pain, and neck stiffness. The government has declared the outbreak a public health emergency. In response, the World Health Organization is presently organizing large-scale immunization.

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