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ERADICATION EFFORTS AGAINST GLOBAL DISEASE ARE FOCUS OF *COUNTDOWN TO ZERO*

SPECIAL EXHIBITION OPENS JANUARY 13, 2015

The challenges of eliminating devastating diseases are enormous, but successful strategies can bring about colossal social and economic benefits. *Countdown to Zero*, a new exhibition about scientific and social innovations that are ridding the world of ancient afflictions, will open at the American Museum of Natural History on January 13, 2015. The exhibition, developed in collaboration with The Carter Center, focuses on several global efforts that have been able to contain, eliminate, or eradicate disease. Chief among these is the 30-year campaign that may soon eradicate Guinea worm disease, positioning it to become only the second human disease ever eradicated, after smallpox. The exhibition also highlights the ongoing programs to eliminate polio and prospects for more localized elimination of river blindness, lymphatic filariasis, and malaria.

The Museum has a long tradition of communicating to the public information about scientific questions with direct bearing on human health, going back to the groundbreaking *International Tuberculosis Exhibition* in 1908, and including, more recently, its exhibitions in the 1990s and early 2000s *Epidemic! The World of Infectious Disease* and *The Genomic Revolution*. *Countdown to Zero* draws on a core area of the

Museum's scientific research: the diversity of microbial life. This work is increasingly integral to the study of human health as the lessons learned from non-human evolution can be used to help medical researchers understand the origin, evolution, and diversity of disease-spreading parasites and microbes, such as malaria, as well as how these organisms have adapted to humans.

One of the diseases highlighted in the exhibition is the Guinea worm parasite *Dracunculus medinensis*, which is transmitted in contaminated drinking water. Although a distant memory in many places on Earth, Guinea worm disease has plagued humanity for thousands of years, striking the infected with debilitating wounds that can render them incapable of caring for themselves or their children, working, attending school, or growing crops to feed their families. When former U.S. President Jimmy Carter and The Carter Center launched a coordinated program against Guinea worm disease in 1986, 3.5 million people in Africa and Asia were estimated to be infected. By 2013, the number of cases had been reduced to 148, a decrease of more than 99.99 percent.

Countdown to Zero will show visitors how eradication efforts have broken devastating disease cycles. The successful fight against smallpox, led by intensive vaccination efforts, was followed by the vaccination campaign to eradicate polio, underway since 1988. Like many infectious diseases in conflict zones, polio, which mainly infects children and can lead to permanent paralysis or death, is again resurgent after reaching an all-time low in 2012.

In the absence of a vaccine or curative medicine for Guinea worm disease, eradication efforts have mostly relied on interrupting the parasitic worm's life cycle using simple cloth filters. The key approaches shared by the smallpox, Guinea worm, and polio eradication programs are detailed data collection to track every infectious case, and massive mobilization of motivated people on local, national, and even international scales. Unique among such campaigns is the Guinea worm eradication program's focus on community-based interventions to change human behavior. As a result, this eradication effort helps empower populations to take charge of their own pressing health needs.

The exhibition also will highlight elimination efforts against lymphatic filariasis (elephantiasis) and river blindness (onchocerciasis), which affect tens of millions of people. These diseases are caused by parasitic worms that are transmitted by bites of mosquitoes and black flies, respectively. Prevention includes the distribution of insecticidal bed nets for lymphatic filariasis and the mass administration of safe, effective, and donated drugs for both diseases.

Finally, *Countdown to Zero* will look toward the future possibility of eradicating malaria. Although a number of antimalarial strategies and tools are available now to control the parasites that cause malaria, new strategies and tools are being sought to realize a time when it too could be eradicated. Research efforts include vaccine development, new insecticides, and genetic modification of the mosquitos to prevent them from being capable of transmitting the parasite.

Countdown to Zero will open in the Akeley Gallery on January 13, 2015, and remain on view until July 12, 2015. The exhibition is curated by Mark Siddall, curator in the Museum's Division of Invertebrate Zoology, in collaboration with Donald Hopkins, disease eradication expert and The Carter Center vice president for health programs.

Note to reporters: Photos available upon request

AMERICAN MUSEUM OF NATURAL HISTORY (AMNH.ORG)

The American Museum of Natural History, founded in 1869, is one of the world's preeminent scientific, educational, and cultural institutions. The Museum encompasses 45 permanent exhibition halls, including the Rose Center for Earth and Space and the Hayden Planetarium, as well as galleries for temporary exhibitions. It is home to the Theodore Roosevelt Memorial, New York State's official memorial to its 33rd governor and the nation's 26th president, and a tribute to Roosevelt's enduring legacy of conservation. The Museum's five active research divisions and three cross-disciplinary centers support 200 scientists, whose work draws on a world-class permanent collection of more than 32 million specimens and artifacts, as well as specialized collections for frozen tissue and genomic and astrophysical data, and one of

the largest natural history libraries in the Western Hemisphere. Through its Richard Gilder Graduate School, it is the only American museum authorized to grant the Ph.D. degree. In 2012, the Museum began offering a pilot Master of Arts in Teaching program with a specialization in Earth science. Approximately five million visitors from around the world came to the Museum last year, and its exhibitions and Space Shows can be seen in venues on five continents. The Museum's website and collection of apps for mobile devices extend its collections, exhibitions, and educational programs to millions more beyond its walls.

THE CARTER CENTER (CARTERCENTER.ORG)

A not-for-profit, nongovernmental organization, The Carter Center has helped to improve life for people in more than 80 countries by resolving conflicts; advancing democracy, human rights, and economic opportunity; preventing diseases; and improving mental health care. Based in Atlanta, Georgia, The Carter Center was founded in 1982 by former U.S. President Jimmy Carter and former First Lady Rosalynn Carter, in partnership with Emory University, to advance peace and health worldwide.

Beginning with the Center's leadership of the international Guinea worm eradication campaign since 1986, which has reduced cases by more than 99.9 percent, the Center has pioneered neglected disease eradication and elimination by targeting river blindness, lymphatic filariasis, blinding trachoma, and malaria (island of Hispaniola). The International Task Force for Disease Eradication is housed at The Carter Center and chaired by Carter Center Vice President for Health Programs Dr. Donald Hopkins.

The Center uses evidence-based practices to carefully evaluate whether its interventions are significantly reducing the burden of disease. In conjunction with ministries of health and other partner organizations, The Carter Center conducts rigorous annual peer reviews and evaluations of its five infectious disease health programs.

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No. 83