

Superbugs take over the Science Museum

- Explore humanity's response to unprecedented challenge of antibiotic resistance in a new exhibition
- Exhibition reveals remarkable discoveries and personal stories of those waging war on the superbugs



Superbugs: The Fight For Our Lives

9 November 2017 – Spring 2019

A free exhibition at the Science Museum

sciencemuseum.org.uk/superbugs

Major Sponsor: Pfizer

Associate Sponsor: Shionogi

Supported by UK Research and Innovation and the University of East Anglia

We share our world with bacteria. Trillions live on and inside you, and although many are harmless they can also cause infection and death. Thanks to antibiotics, millions of people each year are cured of previously untreatable bacterial diseases. But bacteria have fought back, evolving into superbugs resistant to antibiotics.

Opening on 9 November 2017, *Superbugs: The Fight For Our Lives* explores humanity's response to the unprecedented global threat of antibiotic resistance. Today superbugs kill almost 700,000 people a year globally and by 2050 this could rise to 10 million. Examining antibiotic resistance at the microscopic, human and global scale, this exhibition features remarkable scientific discoveries from across the globe and reveals the personal stories of those waging war on superbugs.

Visitors will glimpse twelve real bacteria colonies in the exhibition, including nine deadly bacteria that the World Health Organisation classifies as a significant threat to human health. Grown by bioartist Anna Dumitriu, the bacteria include *Escherichia coli*, often first to colonise new-born babies' stomachs, *Staphylococcus aureus*, one of the earliest superbugs identified and *Neisseria gonorrhoeae*. The exhibition includes a digital interactive examining the microscopic world of bacteria and reveals how *Bdellovibrio bacterivorus* (a bacterium that eats other bacteria) and bacteriophages (a virus that infects bacteria) battle superbugs.

At the human scale, we delve into the stories of those tackling antibiotic resistance, from a superbug survivor to healthcare professionals preventing infections and a designer's solutions to stop bacteria spreading. Geoffrey, a former patient who was in isolation for five months after antibiotics failed to treat a bacterial

infection acquired during surgery, shares his story with visitors. Doctors Zoe Williams and Imran Rafi examine why millions of antibiotics are taken unnecessarily, and with 1.3 million people catching bacterial infections in UK hospitals each year, visitors can investigate how Sarah Whitney prevents bacteria spreading at The Royal Marsden Hospital. As almost half of antibiotics are used in agriculture, the exhibition also explores how robotic chickens and listening to pigs coughing can help farmers reduce antibiotic use.

Ian Blatchford, Director of the Science Museum said: 'As the home of the greatest medical collection in the world, it is fitting that the Science Museum is to open an exhibition on antibiotic resistance – the most pressing medical challenge facing our society. With the resurgence of diseases once thought banished to history books, this exhibition shines a light on the remarkable scientific research that could stop the spread of the superbugs.'

Superbugs: The Fight For Our Lives also examines the antibiotic resistance crisis on a global scale. Thirty years since the last antibiotic was approved for human use, researchers are hunting for new antibiotics in unusual places. Visitors can dive with University of Illinois at Chicago researchers in a video which explores the Icelandic fjords that may provide a new source of antibiotics. Also on display are South American leafcutter ants, which use fungi and bacteria to produce antibiotics that can kill superbugs like MRSA. University of East Anglia researchers are investigating how these bacteria function to help develop new antibiotics.

Four prototypes made by teams across the globe vying to win the £8 million Longitude Prize – awarded by the UK Government and Nesta to the first team to develop a fast, affordable and accurate diagnostic test for bacterial infections – will also be on display. Stellenbosch University in South Africa are developing a test that can detect when the body's immune system responds to a bacterial infection, while the UK's GFC diagnostics have created a fluid which turns blue when bacteria with antibiotic resistant genes are found.

Meeting the unprecedented challenge of antibiotic resistance requires global action. By acting as the head of a global health organisation, visitors can attempt to stop the spread of superbugs across the globe in a new interactive game developed exclusively for the exhibition.

Sheldon Paquin, curator of *Superbugs: The Fight For Our Lives* said: 'For over seventy years antibiotics have been essential to medicine, helping save hundreds of millions of lives. As antibiotics become increasingly ineffective, our exhibition investigates the latest research in our battle against superbugs.'

Superbugs: The Fight For Our Lives is supported by Pfizer (Major Sponsor) and Shionogi (Associate Sponsor) with additional support from UK Research and Innovation and the University of East Anglia.

The exhibition is open daily from 9 November 2017 until spring 2019, with late opening until 22.00 on the last Wednesday of each month (except December) for [Lates](#) at the Science Museum.

Ends

Notes to Editors

For further information about *Superbugs: The Fight For Our Lives* please contact Will Stanley in the Science Museum Press Office on 020 7942 4429 or email will.stanley@sciencemuseum.ac.uk.

What is antibiotic resistance?

Antibiotics are chemicals made by bacteria and fungi to kill other bacteria. These naturally occurring medicines have been widely used since the 1940s to treat everything from tuberculosis and syphilis to sore throats. As antibiotic use has increased, bacteria have evolved resistance to specific antibiotics rendering them ineffective. This enables infections to persist, resulting in longer illnesses and more deaths. Bacteria resistant to multiple antibiotics are known as superbugs.

Today, antibiotic resistance and superbugs are one of the biggest threats to global health.

The exhibition features nine bacteria classified by the World Health Organisation as posing the greatest threat to human health: *Escherichia coli*, *Staphylococcus aureus*, *Neisseria gonorrhoeae*, *Acinetobacter baumannii*,

Streptococcus pneumoniae, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Enterococcus faecalis* and *Enterobacter cloacae*.

About the Science Museum

As the home of human ingenuity, the Science Museum's world-class collection forms an enduring record of scientific, technological and medical achievements from across the globe. Welcoming over three million visitors a year, the Museum aims to make sense of the science that shapes our lives, inspiring visitors with iconic objects, award-winning exhibitions and incredible stories of scientific achievement. More information can be found at sciencemuseum.org.uk.

About Pfizer

At Pfizer, we apply science and our global resources to bring therapies to people that extend and significantly improve their lives. We strive to set the standard for quality, safety and value in the discovery, development and manufacturing of health care products. Our global portfolio includes medicines and vaccines, as well as many of the world's best-known consumer health care products.

Since the successful mass production of penicillin in the 1940s, Pfizer has been actively engaged in the research and development of innovative medicines, policies and educational programmes to address the evolving needs and challenges in infectious diseases. Today, we provide one of the most comprehensive portfolios of anti-infective medicines in the industry with agents used in the treatment of bacterial, fungal, viral and parasitic infections, including treatment options for serious hospital infections and MRSA.

About Shionogi

Shionogi & Co., Ltd. is a major research-driven pharmaceutical company dedicated to bringing benefits to patients based on its corporate philosophy of "supplying the best possible medicine to protect the health and well-being of the patients we serve." Our commitment is to ensure that the real-life challenges patients face every day remain the primary driver of medical research and development. It is our ambition to be a leader in healthcare through the discovery and supply of medicines that offer the greatest possible level of satisfaction to patients, their families and healthcare providers, and that improve quality of life. We believe our patient-first approach lays strong foundations on which to build a centre of excellence in R&D. As a research-led organisation, we are defined by a distinct openness and close partnership approach to creating vaccines and medicines spanning infectious diseases, pain/CNS, women's health and oncology. For more information please visit www.shionogi.eu and www.shionogi.co.jp/en/.

About the University of East Anglia (UEA)

UEA is a UK Top 15 university. Known for its world-leading research and outstanding student experience, it was awarded Gold in the Teaching Excellence Framework and has achieved a Top 5 ranking for overall satisfaction in the National Student Survey every year since the survey began in 2005. UEA is a leading member of Norwich Research Park, one of Europe's biggest concentrations of researchers in the fields of environment, health and plant science. www.uea.ac.uk/research

About the UK Research and Innovation

UK Research and Innovation is a new organisation that, from 1 April 2018, will bring together the seven Research Councils, Innovate UK and Research England. The aim is to create a system that maximises the contribution of each Council and creates the best environment for research and innovation to flourish. The vision is to be the best research and innovation organisation in the world. More information can be found at www.ukri.org

About Discover South Kensington

[Discover South Kensington](#) brings together the Science Museum and other leading cultural and educational organisations to promote innovation and learning. South Kensington is the home of science, arts and inspiration. Discovery is at the core of what happens here and there is so much to explore every day.