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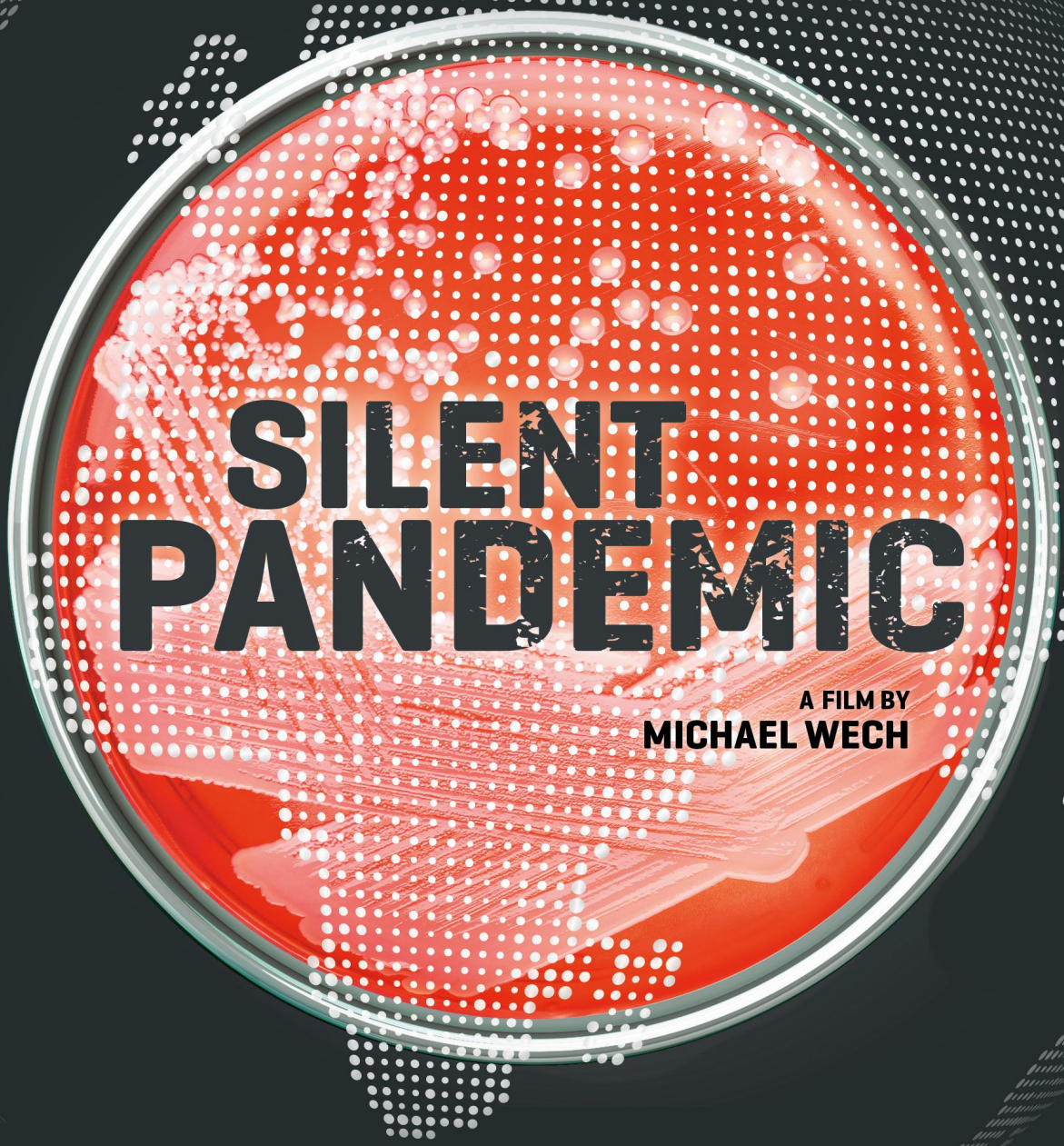

SILENT PANDEMIC

A FILM BY
MICHAEL WECH

THE GLOBAL FIGHT AGAINST ANTIMICROBIAL RESISTANCE

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BROADVIEW DISTRIBUTION PRESENTS A BROADVIEW PICTURES FILM A CO-PRODUCTION WITH ZDF IN COOPERATION WITH ARTE A FILM BY MICHAEL WECH PRODUCED BY LEOPOLD HOESCH
"SILENT PANDEMIC – THE GLOBAL FIGHT AGAINST ANTIMICROBIAL RESISTANCE" CINEMATOGRAPHY BY JOHANNES IMDAHL SVEN KIESCHE EDITED BY MICHAEL SCHEFFOLD MUSIC ANDREAS LUCAS
SOUNDDESIGN & RE-RECORDING MIXER OLIVER ACHATZ DESIGN & TITLES FEEDMEE PRODUCTION MANAGER CARSTEN GÖTSCHE RESEARCHER LILLY SOLMS COLOR GRADING MAURICE LANGEHEIN PRODUCTION CONTROLLER BETTINA KLUGE
COMMISSIONING EDITOR MARTIN PIEPER (ZDF/ARTE) CREATIVE PRODUCER PETER WOLF DIRECTED BY MICHAEL WECH PRODUCED BY LEOPOLD HOESCH

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BROADVIEW PICTURES

SILENT PANDEMIC

The global fight against Antimicrobial Resistance

A film by
Michael Wech

Produced by
Leopold Hoesch

documentary I 90 Minutes I 4K

www.amr-film.com

TABLE OF CONTENT

PRESS NOTE

The world is on the cusp of an ominous development: bacteria are building resistance to existing antibiotics faster than new antibiotics are entering the market. An ever-widening cavity is opening up. This "antibiotic gap," as experts call this development, marks the beginning of a new era in medicine. For the first time in recent history, we have to come to terms with the fact that not all bacterial infections are treatable anymore - with implications for all areas of medicine, from surgery to oncology. The WHO has been using the term "silent pandemic" since the fall of 2021 because, unlike Corona, antibiotic resistance is creeping into our society unnoticed - but it is shaking up our healthcare system just as overarchingly. The issue is currently so serious that it is being treated with the same degree of urgency on the international policy stage as climate change or migration.

In the acclaimed documentary “Resistance Fighters - The Global Antibiotics Crisis” (2019), Michael Wech and the team around producer Leopold Hoesch tackled the causes of antibiotic resistance and the far-reaching significance of the problem in the style of a scientific thriller. With SILENT PANDEMIC, they now continue the story and once again name the problem, but this time they mainly take a look at the search for solutions. They show how countries, scientists and private initiatives around the world are networking and forming alliances, and what strategies and measures they are using to counter the advance of antibiotic resistance. Much has happened since the UN resolution in 2016: Almost all countries have activated national action plans to combat resistance since then, foundations and NGOs have launched projects and measures in poorly developed countries and achieved initial, promising successes. And even on the most controversial issue, the use of antibiotics in animal farming, there are initial successes, as poultry producers in the USA have found ways to continue their production on a large scale without antibiotics.

SILENT PANDEMIC also focuses on the successes achieved so far in the fight against antibiotic resistance: Scientists in Uganda used the simplest of means to set up a monitoring system that can detect tuberculosis diseases ten times faster than before; in Pakistan, three female scientists succeeded in containing the outbreak of resistant typhus pathogens and thus preventing their worldwide spread. At the same time, the film showcases the work of the British government's special envoy on antimicrobial resistance, who is raising awareness of the continuing urgency of the problem around the world.

SILENT PANDEMIC was shot entirely in 4K. It was directed by Michael Wech (Schumacher, "Hello, Dictator" - Orbán, the EU and the Rule of Law, Boris Becker - The Player). SILENT PANDEMIC was produced by Emmy award winner Leopold Hoesch, BROADVIEW Pictures, in co-production with ZDF and in cooperation with ARTE.

PROTAGONISTS

Ella Balasa
Ella Balasa has suffered from the lung disease cystic fibrosis since childhood, in which thick mucus forms in the respiratory tract on which bacteria settles. The resulting infections can only be treated with antibiotics, and increasing antibiotic resistance poses life-threatening danger to her.

Dame Sally Davies
The british physician, Dame Sally Davies leads the global strategy to combat antibiotic resistance as the United Kingdom's special envoy (her title: "UK special envoy on AMR"). The medical diplomat in Her Majesty's service is fighting directly on the diplomatic front: at the WHO in Geneva, she is partly responsible for drawing up and coordinating the global action plan against antibiotic resistance. The threads come together in her office at Trinity College, Cambridge. As master of the prestigious university, which has produced 32 Nobel laureates, Sally Davies spins networks around the world. To address the global antibiotic crisis, she focuses primarily on helping developing countries. That's because resistance is developing more rapidly there than in the rest of the world.

Isaac Stoner, MBA
CEO and co-founder of Octagon Therapeutics, a small biotech molecular pharmaceutical company that has developed a new drug to specifically target resistant bacteria. Due to a lack of investment from large pharmaceutical companies in antibiotic research, Octagon Therapeutics had to withdraw from antibiotic development.

Prof. Paul Verweij
Paul Verweij, microbiologist and professor of clinical mycology at Radboud University in Nijmegen, has been able to demonstrate through detective scientific research that fungicide use in the Dutch flower industry is creating resistance in molds that can cause serious health consequences in immunocompromised people. With over sixty percent of all flower bulbs produced in Holland, the resistant fungus has spread throughout the world.

Prof. Lance Price
Professor at George Washington University and co-director of the Antibiotic Resistance Action Center. He has been studying antibiotic resistance since he first learned how antibiotics are used in factory farming. He was the first scientist to use sophisticated genetic analyses to prove beyond a doubt that the new resistance mechanisms in pathogens that have emerged due to high antibiotic use in livestock are also being transmitted directly to humans, causing diseases that are difficult to treat with antibiotics.

Rumina Hasan, Ph.D., MBBS, M.Sc. and **Zahra Hasan**
Microbiologist Rumina Hasan and molecular pathologist Zahra Hasan discovered unusual cases of typhoid fever in Pakistan in late 2016 that were resistant to a new antibiotic, unlike other previously known cases. Thanks to rapid analysis and with international support, they were able to determine the pathogen and the cause of the outbreak, preventing it from spreading worldwide.

Ramanan Laxminarayan, Ph.D., M.P.H.
Ramanan Laxminarayan is founder and director of the Center for Disease Dynamics, Economics & Policy (CDDEP) in Washington. As a scientist, he served on the close advisory staff of the National Antibiotic Resistance Strategy under President Obama. His institute, with offices in Washington and New Delhi, has been studying the global spread of antibiotic resistance since 1995. He observes with concern that meat consumption in many Asian countries, and especially in India, has increased 68 percent since 2000. Laxminarayan's research found that the number of detectable antibiotic-resistant germs in slaughtered animals has increased rapidly over the same period: threefold in poultry and more than double in pigs. Laxminarayan is therefore urging the Indian government to regulate antibiotic use in animal fattening more closely.

Christina Fuhrman
The 38-year-old from Columbia, Missouri, contracted C. Difficile, a common bacterial intestinal infection in the United States, in 2012. C. Diff bacteria gain the upper hand in the gut and secrete deadly toxins when healthy intestinal flora has been destroyed by increased antibiotic use. This was the case with Christina Fuhrman, who was, in her own words, "addicted" to antibiotics. The negligent use of antibiotics caused her illness, from which she nearly died. The joy of her recovery did not last long. For her daughter Pearl, born shortly thereafter, also became infected with C.Diff. in the Fuhrmans' home. Today, Christina Fuhrman is an activist and is regularly invited to congressional hearings in Washington, D.C. She is also an advocate for the use of her antibiotic. She pillories herself with her antibiotic abuse - to help others. Her message is clear: The days of careless antibiotic use are over. The reconnaissance begins.

Alena Ehlers
Suffered sepsis at age 17. Due to the lengthy diagnosis, which prevented targeted treatment, her arms and legs had to be amputated.

Dr. Joep Stohr
The microbiologist is conducting research to improve diagnostics and has helped develop procedural systems that can process a large number of samples at once. This has greatly reduced the time needed to identify a pathogen and determine possible resistance mechanisms.

Gladys Nambayo
This young woman lives in Kampala, Uganda. She has been HIV-positive since birth and is therefore very susceptible to tuberculosis. She has already been infected with the disease three times. Despite adverse living conditions, she survived the severe infections - thanks to good diagnostics, she was given the right medication in time. These drugs still help - but pan-resistant TB, against which no antibiotic is currently effective, has already spread to 123 countries. Every year, 1.6 million people die from infection with tuberculosis.

Prof. Moses Joloba
Prof. Moses Joloba is chairman of the Department of Medical Microbiology at Makerere University College of Health Sciences in Kampala, Uganda. He leads one of the most advanced TB control programs in the world. In Uganda, Joloba has established a high-tech laboratory for the diagnosis of multi-drug resistant tuberculosis pathogens, evaluating samples from across Africa to help contain the rampant disease. Transporting the highly infectious samples throughout Uganda and East Africa are "Boda Boda," motorcycle couriers who bring them from distant parts of the country to the central laboratory in the Ugandan capital, Kampala, and can be located at any time via smartphone.

Evelyn Wesangula
A health policy analyst at Kenya's Ministry of Health in Nairobi, developed the national action plan for combating antibiotic resistance. The Kenyan government's strategy focuses primarily on infection prevention. In addition, the sale of prescription antibiotics under the counter will be prosecuted.

Bruce Stewart-Brown
A veterinarian, Stewart-Brown heads quality assurance at U.S. poultry producer Perdue. The company produces 13 million broilers per week, with annual sales of $80 billion. Recently, in a complete surprise, the family-owned company run by Jim Perdue announced that the company would completely eliminate antibiotics from 95 percent of its poultry production, effective immediately. For more than ten years, Perdue had been working in secret on the "No Antibotics Ever" program under the supervision of Bruce Stewart-Brown. It's a milestone in industrial poultry production. The push could turn the tide on the development of resistance - until now, 70 percent of all antibiotics administered in the U.S. were used in livestock production.

Lisa Smith
After a caesarian section Lisa smith battled with a multidrug-resistant wound infection that required antibiotics for 6 straight weeks, with several readmissions to the hospital.

Steffi Rocchi, Ph.D.
Microbiologist Steffi Rocchi's research at the Université de Franche-Comté in Besançon includes the spread of resistant molds. For the first time in France, she and her research team were able to detect a resistant strain of Aspergillus fumigatus in the lungs of a patient and in his environment.

Muhammad Zaman, Ph.D.
Health Scientist at Boston University.

Elizabeth Dodds Ashley
Professor in Medicine (Infectious Diseases) at the Duke University school of medicine.

Further Protagonists:

Agnes Balasa – Mother of Ella Balasa

Ana Berceanu – Oncologist at CHRU Besançon.

Badru Miyule – Survived infection with multi-drug resistant tuberculosis thanks to 18 months of antibiotic treatment.

Bas Zwaan – Geneticist

Christine Najuka – Microbiologist

Claire Gordon – Microbiologist. Fleming Fund

Dane Fuhrman – Mother of Christina Fuhrman

Farah Qamar – Pediatrician

Sijmen Schoustra – Microbiologist

SOUND BITES AND FACTS

"As these infections just became harder to treat, they just would come back quicker and come back worse than before. So, I was seeing this trend starting, and that's when I knew that my life wouldn´t be sustainable for very long with that frequency of needing antibiotics and the fact that they were not, they were starting to not work. Antibiotic resistance will remain a threat in my life for the rest of my life."

Ella Balasa

"The UK government recognizes that AMR is an important issue that's growing, but we can conquer this. I championed the need to take action nationally and globally because we need cooperation and collaboration. But starting from there talking to ministers, I then realized that people didn't know enough about it. The latest data shows the deaths are going up. We have a silent pandemic. More than five and a quarter million people die of bacterial infections associated with AMR. That puts it in the top three underlying causes of death. That should worry people. That should make us pick up and do things."

Sally Davies

"Without antibiotics, modern medicine would not exist. We need a supply of new antimicrobials. Antibiotics underpin cancer treatment. At least one in three cancer patients end up in hospital, generally for an infection. Cancer doctors are now saying that in the next five years, they think AMR is going to be one of the biggest risks to curing their patients. And there's a delay of at least 10 years from finding a druggable target to having a drug in the market for use. So, we really need to move now."

Sally Davies

The last new class of antibiotics was discovered in the 1980s. Since then, the pipeline for new developments has been almost empty. There are no signs of this trend reversing. Most international pharmaceutical corporations have shut down their antibiotic R&D departments. Small companies are to fill this gap. According to the WHO, none of the 43 antiobiotics currently in development are directed against the most dangerous pathogens.

"There are hundreds of small companies like ours who are doing the innovation, and then we have the dozens of much larger companies that Roche's and Pfizer's, Novartis that are really good at the late-stage clinical development. Typically, the way the ecosystem works is, we'll do the innovation and eventually we'll license or sell our products to these larger companies to take them across the finish line and begin to do that commercialization piece. Because those larger companies are no longer active in the antibiotic development space that ecosystem no longer exists. It doesn't work."

Isaac Stoner

"Because resistance develops, we will always need new antibiotics that just goes without saying, even if we use antibiotics appropriately, but especially when you don't use them appropriately, then you're going to need them even faster. So, the question is like if the road is bad and your car always breaks down because the road is bad. Do you fix the road or do you buy a new car every time? Investing only in the new antibiotics is like buying a new car every time. What is the actual answer is, we need to fix this road."

Ramanan Laxminarayan

In the USA, the CDC estimates that 47 million prescriptions for antibiotics are written each year for infections that cannot be treated with antibiotics. That is 30 percent of all antibiotics prescribed in the USA.

Since 2019, the USA has been pursuing a well-defined strategy to curb the excessive use of antibiotics. All hospitals are required by law to carry out strict testing before administering antibiotics. This is a first step in the fight against the silent pandemic.

“Antibiotic effectiveness is just like trees, it's just like fish. It's a societal resource and belongs to all of us, and every time we use or misuse an antibiotic, we're using up a pool of effectiveness that belongs to everybody. It's not about one doctor, one hospital, one pharmacy. It's really about all of us have a responsibility here, and I think we all have a capability of making change."

Ramanan Laxminarayan

Every year, about 94,000 people in Germany die of sepsis. Faster diagnostics could identify the pathogens that trigger this kind of blood poisoning. Without a clear diagnosis, life-saving treatment with antibiotics is often impossible.

“Diagnostics can help with finding out if it's a virus or bacteria. It can help with finding out what kind of bacteria it is, because then you can treat with a narrow spectrum antibiotic, which only kills that bacteria and not everything else. Instead, what we're doing right now is the equivalent of dropping huge bombs that kill everything because we don't have the precision bombs or missiles to kill exactly what we want. And diagnostics are like the radar to guide that precision missile. If you don't have the actual, you know, the guidance system and the radar, you will not be able to figure out where your missile is going and what it's killing.”

Ramanan Laxminarayan

“So, we know people are getting an infection, every hour you wait before treating a patient who has a microorganism in their blood actually decreases survival, incredibly decreases survival. So rapidly identifying which microorganism and what kind of resistance that microorganism has against various antibiotics is absolutely important for survival of patients who have serious infections.“

Joep Stohr

“We've not invested enough in diagnostics that we are still overusing antibiotics, and I think the day you can just swab someone's throat or whatever, take a blood sample and within two minutes know if they have a viral or bacterial infection just with a finger prick. The whole life will change for how antibiotics can use, we're not there yet."

Ramanan Laxminarayan

Worldwide, there are about 1.8 billion people infected with tuberculosis. Every year, around 1.5 million fall ill with the disease.
Multidrug-resistant tuberculosis poses a major challenge to doctors and patients. It requires lengthy therapy.

“I believe very strongly in the importance of data for pushing the politicians, the policy and driving action. So, I asked our Chancellor of the Exchequer for the Fleming Fund 265 million of development aid to help low-income countries develop their surveillance. They need laboratories, they need to get

the data, they need to understand how to use the data. It's doing wonderful things and people are really rising up and learning how to do it. And what I like is that they're not doing it the way we do in Britain or the states. They're doing it in ways that are context specific and work for them, and they're teaching us things. "

Sally Davies

"As a result of governance and this issue of governance and ensuring that the regulatory framework is in place to ensure that people who don't have to have antibiotics are not having them. So, that is an overuse, the drugs are handled because people needed them. There is a market for them, if there is a demand, the supply will be there. And I think the only way we can correct this is if the governance of this country ensures that drugs that are needed in the hospital are available, but for the people who need them."

Christine Najjuka

"Inappropriate use, that's a major driver of AMR, because if anyone can access antibiotics with or without a prescription, then you are actually providing good ground for the breeding of resistant microorganisms.
We've reviewed the criteria for licensing the pharmacies, we'll re-emphasize to the providers that antibiotics are prescription only medicines. So, we are now working on a mechanism that will support self-regulation by their practitioners because there has to be two aspects. You must have a carrot and you have to have a stick. So, the stick is linking re-licensure to submission of antibiotic sales or the number of prescriptions that you have saved from your particular point of sale. So, we will be looking at antibiotic use practices from the community, and this will be linked to the the relicensing of of the premises. "

Evelyn Wesangula

"I think it's important to understand the basics of the evolutionary processes of resistance. Whenever you give, whenever you use antibiotics, you're putting this really powerful selective pressure, this evolutionary pressure on the bacteria to become resistant to those drugs. So, it's it's Darwinian evolution, but you don't look back in the fossil record. You can look at it in real time."

Lance Price

"We're seeing very clear evidence that there are these new genes that are evolving in animals because of all this pressure of antibiotic use, and those are moving into pathogens that are infecting people too. And that is really scary when these genes get mobilized, they can disseminate around the world."

Lance Price

"I've heard a lot of people say that no antibiotic programs is inconsistent with commercial poultry. We would say that's not the case. We've done this over a period of time, been successful."

Bruce Stewart-Brown

It was consumer pressure that set this revolution in motion. Perdue began producing its poultry according to the principle of "no antibiotics ever" and all of a sudden, the term "antibiotic free" became a marketing tool. McDonald's, Subway and other food companies have announced they are switching to antibiotic-free poultry. Yet in the European Union, even antibiotics of last resort remain allowed in animal production. The WHO argues that these life-saving drugs should be reserved for human medicine.

“Two kinds of bacteria fuzing together and then sharing or exchanging their DNA. So one bacteria that becomes resistant to one thing, another bacteria that is risen to the other thing can basically really take it from something else and become what is called multidrug resistance, even though that bacteria itself had never been exposed to the first drug.“

Muhammad Zaman

“It's definitely a pandemic, there's no question about it. One of the things that we struggle with is that it's a pandemic, not of a single disease. It could be typhoid, it could be TB, it could be strep. So, you have a whole series of diseases. So, in some ways, you have a pandemic that within it has a whole bunch of diseases. Right. So, it's it's it's a grand pandemic. It's a master pandemic of sorts that has many other pandemics within it. We're choosing not to pay attention to it. And the question is, so is it a choice that we are making that we don't care? We have made it silent. It's actually not that Silent. It is actually not that hidden. You're sort of hiding from it rather than it hiding from us. “

Muhammad Zaman

INTERVIEW WITH DIRECTOR MICHAEL WECH

Mr. Wech, we have all been living with a "loud pandemic" for almost two years. What is meant by 'silent pandemic' in your film?
For some time, the term "silent pandemic" has been circulating in global public health circles. In 2021, the WHO Secretary-General used it publicly for the first time to draw attention to the urgent problem of global antibiotic resistance. It's a call to pay more attention to the issue because it's a problem that's spreading beneath the surface. Unlike viral outbreaks such as Ebola or now Corona, you don't see people in full-body coveralls suddenly disinfecting subway shafts with pressure washers. Antibiotic resistance does not produce these images. People are dying from it anyway. Some time ago, someone coined the term "slow-motion tsunami." I think that sums it up: it is a threat that is slowly approaching before it is upon us. It is urgently time to confront it.

After Resistance Fighters, you are now dedicating a second film to this subject. What fascinates you so much about this subject?
I myself had to be hospitalized twice within a short period of time because of bacterial infections. Fortunately, resistant pathogens did not play a role. But for the first time in my life I became aware of the importance of antibiotics in medicine. Without these drugs, even the high-tech medicine of the 21st century is often powerless.

What was the reaction to Resistance Fighters in the scientific and policy community?
We all felt that this was the film that everyone had been waiting for. It was even shown in 2019
even screened on the sidelines of the UN General Assembly in New York - with the then U.S. Secretary of Health and Human Services in attendance. I felt that was an appreciation - after all, it's really not that easy to present this complex subject matter in a film suitable for cinema. It must succeed in showing connections that are not recognizable at first glance and yet must be comprehensible in the long term. From this point on, Resistance Fighters, distributed by dogwoof in London, has gone its way, has been screened worldwide and has won at two international film festivals.

So, what exactly is different about this film? What was the approach this time?
Resistance Fighters was a dark film. It was meant to be a wake-up call. That was exactly its task. But it's also clear that you have to do something about this threat. So, this time I tried to show the urgency of the problem again and thus raise awareness, but at the same time also present possible solutions, i.e. show ways in which each individual and entire industries can combat antibiotic resistance. It will probably cause heated debate that in this film Perdue Farms, one of the largest poultry producers in the USA and probably also worldwide, i.e. factory farmers par excellence, are suddenly portrayed as "the good guys". But: the big guys can do big things. And Perdue Farms has converted its entire

production from eggs to slaughter chickens to antibiotic-free. It was an intense visit to Perdue's barns, hatchery factory and gigantic large-scale slaughterhouse. We were able to move completely freely, we also saw and show the unpleasant sides of factory farming. But in the end, what sticks is that someone like Chief Veterinarian Bruce Stewart-Brown says "when things change, you have to adapt, and do it differently. That means questioning something you've done all your life, even if you've been successful at it. You should constantly reinvent yourself.

SILENT PANDEMIC also has a global approach, in keeping with the theme. How long and where did you shoot this time?
We started shooting in Uganda at the beginning of February 2020. The Corona pandemic was still at its very beginning, so we were able to travel without any problems. Then the project was on hold for a while and we didn't continue it until 2021, and were in the US, Holland, France and finally Pakistan. As someone told us during the filming of Resistance Fighters, "It's a 7.5 billion people problem." It can only be solved globally. What happens in Pakistan is as important to us as events that happen here in Germany or France. It is actually quite logical. But you have to keep pointing it out. And the example of the resistant mold that was promoted by the flower industry in Holland shows that antibiotic resistance can also spread from Europe to the whole world.

How much did the thematic knowledge and contacts that you and the entire team acquired during Resistance Fighters help?
Every project is new and unique. As a documentary filmmaker, nothing is given to you. I think I can go so far as to say: we fight for every single frame. And that's how it was this time, too. But it's true: The reference to Resistance Fighters was helpful in opening a door or two for this project.

To what extent were you influenced by Covid 19 during the shooting? Regardless of the organizational side, Corona probably claimed a lot of scientific resources as well?
We felt the same way as everyone else: Who would travel to Pakistan without a Covid 19 vaccination? Since we work very close to infection events from time to time, it was also important for our team to have the self-confidence that had only been restored by our own Corona vaccination. I am referring primarily to the real vaccination protection. But this protection also has a psychological effect. It basically doesn't change precautions. We have continued to take them all. Until today. But you still feel more at ease. And there were also travel restrictions. The U.S. was closed off to Europeans until November 2021. We had to prove that our visit in the summer was in the national interest of the US.

Resistance Fighters was made before the Corona pandemic. Now that we've all learned about the magnitude of a pandemic, have you felt a difference in how the issue of antibiotic resistance is perceived? Is there progress in dealing with it, an increasing awareness?
I'm afraid it's more the other way around. The Corona pandemic has set back engagement with everything else. That's true for the literacy rate of young girls in the global South, the fight against tuberculosis, the programs against hunger. And, of course, the fight against antibiotic resistance, which has taken a back seat. It's hard to generate attention for this in times of global pandemic. But we need it more than ever. But the pandemic also had something good: it showed that it is possible to improve diagnostics enormously in a short time, an issue that is key to combating antibiotic resistance in particular. Suddenly, seemingly mundane issues such as prevention through improved hygiene have been brought back into focus. And vaccines have emerged that previously took years, if not decades, to develop. If all these achievements can also be applied in the fight against antibiotic resistance, much will have been gained.

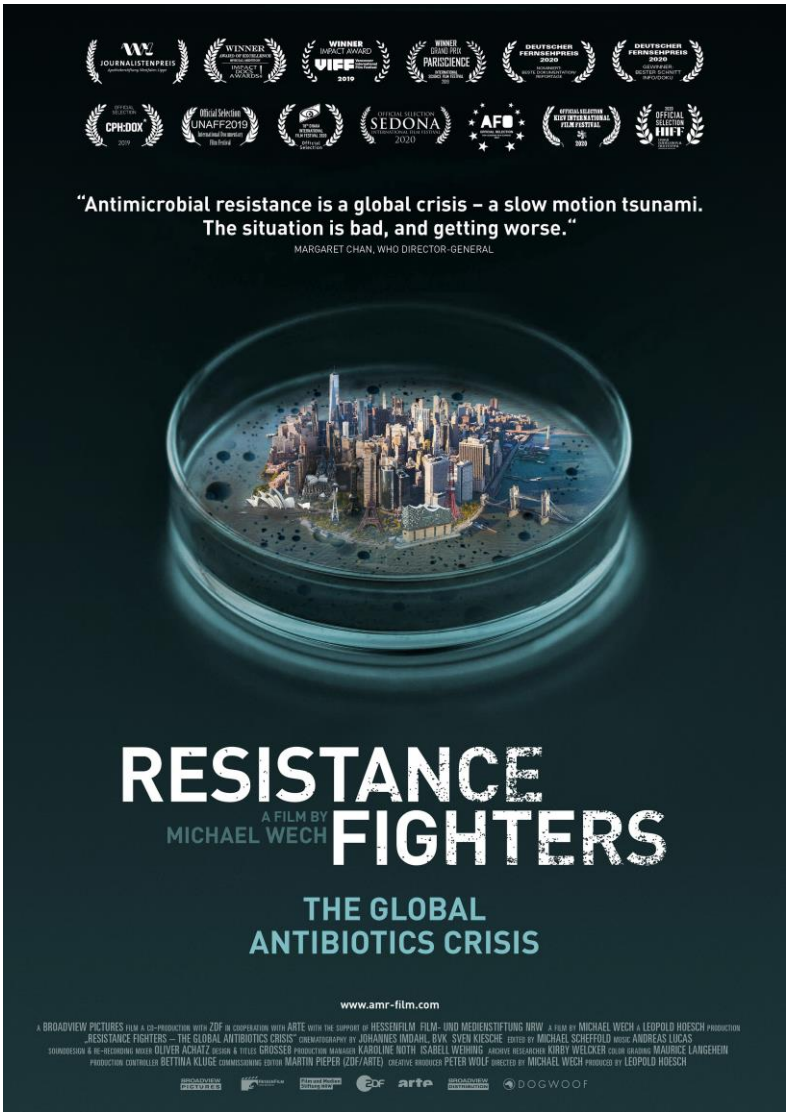
What would you say today: What are the chances of getting the problem under control? Better than they were three years ago?
Since we are more concerned with solutions than new resistance in the current film, I don't have any current examples of novel resistance. But I spoke at great length just before Christmas with Oxford University microbiologist Timothy Walsh, who was in Pakistan in December 2021 for much, much longer and in different parts of the country than we were. His message was crystal clear: the situation

was devastating. He said it was right to point to the successes in the fight against antibiotic resistance. But we should not forget the urgency of the situation: The abuses are much worse than we could imagine, he said.

Once again, the film's high-quality production is striking. It was made by exactly the same team as Resistance Fighters, which won numerous national and international awards.
The film is not a report in which a narrator and original sounds from experts alternate and are strung together. Instead, with every project I ask myself anew: How can I shape this topic narratively? How do I manage to translate the knowledge and insights of the experts into a narrative? Because if I can't tell a story - why should anyone watch a film for 90 minutes? That was the starting point and the goal this time as well. I hope we achieved it.

Is there something that is close to your personal heart about this topic?
I find it fascinating to experience that there are people in the (supposedly) remotest parts of the world who work highly professionally on complex interrelationships and search for solutions. And they do this under conditions that are almost unimaginable for us, miserable conditions and with minimal resources. It is more true than ever: "A disease anywhere is a disease everywhere" At the end of the day, there is the realization that anyone researching tuberculosis in a remote hospital in Uganda or searching for a typhoid pathogen in a slum in Karachi is doing the same for all of us. We must never forget that. That touches me.

RESISTANCE FIGHTERS – THE GLOBAL ANTIBIOTICS-CRISIS



All information about the film and public viewing opportunity at
www.amr-film.com/

If you are interested in a viewing, please also contact graf@boxfish-films.de.

The content: Mankind is on the brink of the "post-antibiotic era" - a time when antibiotic-resistant germs threaten to become the number one cause of death worldwide. On a global search for reasons and solutions to this development, the documentary "Resistance Fighters" becomes a real scientific thriller, with the "Resistance Fighters" themselves at its center: Doctors desperately fighting it, scientists rebelling, patients wrestling with death, and diplomats advocating for concrete solutions.

Experts predict that the death toll from antibiotic-resistant germs could increase tenfold by 2050. If nothing is done, these pathogens could kill tens of millions of people every year. Antibiotic resistance would be the number one cause of death worldwide. How could it get this far, and what can we do?

"Resistance Fighters" goes on a worldwide search for reasons as well as solutions for the crisis and relentlessly proves the global connections that lead to an ever more rapid spread of resistance. Starting from a UN special meeting on antibiotic resistance in September 2016, author Michael Wech follows renowned antibiotics experts such as economist Jim O'Neill over the course of two years and takes viewers to hotspots such as Vietnam, Bangladesh, Lower Saxony and Reno in Nevada. He shows how the mass use of antibiotics in animal fattening leads to the uncontrolled release of resistant germs into the environment, and that renowned companies are continually withdrawing from antibiotics research because immense development costs and increasing resistance, even with new antibiotics, make their business incalculable. The documentary thus develops into a genuine scientific thriller. It is a highly suspenseful portrait of an increasingly uncontrollable crisis that gives an insight into what people are really up against: Antibiotic resistance is one of the greatest global challenges of our time.

TV premiered Resistance Fighters - The Global Antibiotics Crisis in March 2019 on ARTE. Since then, the film has been screened internationally at numerous festivals and won numerous awards:

- Nominated at the German Television award 2020 for "Best Documentary" and winner for "best Editing"
- United Nations Association Film Festival – Official Selection
- Pariscience International Science Film Festival – Winner "Grand Prix"
- CPH:DOX – International Documentary Film Festival Copenhagen – Official Selection
- Vancouver International Film Festival – Winner “Impact Award”
- Dhaka International Film Festival – Official Selection
- Hawaii International Film Festival – Official Selection
- Kiev International Film Festival – Official Selection
- Sedona International Film Festival – Official Selection
- Impact DOCS Awards – „Special mention“
- Academia Film Olomouc – Official Selection
- Journalistenpreis der Apothekerstiftung Westfalen-Lippe

MICHAEL WECH | DIRECTOR

Michael Wech, born in 1969, worked as a trainee for the filmmaker and book author Egmont R. Koch and then studied Political Science and International Relations in Hamburg and London and as a scholarship-holder at Bilkent University in Ankara.

Since 1998 he has made documentaries for ARTE, ARD and 3sat, including:

Filmography (Selection)

2021 „Hallo, Diktator“ – Orbán, die EU und die Rechtsstaatlichkeit

Schumacher (mit Vanessa Nöcker und Hanns-Bruno Kammertöns)

2019 Resistance Fighters – Die globale Antibiotika-Krise

2017 Boris Becker – der Spieler (mit Hanns-Bruno Kammertöns)

2016 Der lange Arm des IS (mit Andreas Spinrath, Georg Heil, und Volkmar Kabisch

2015 Todesflug MH17 (mit Demian von Osten und Ralph Hötte)

2014 Der Mann, der Udo Jürgens ist (mit Hanns-Bruno Kammertöns)

2012 Was macht Merkel? Die Kanzlerin in der Euro-Krise (mit Stephan Lamby)

Der Domino-Effekt – Kippt der Euro? (mit Stephan Lamby)

2011 Fischer, Schily: Mein 11. September! Wie der Terroranschlag die Bundesregierung traf (mit Stephan Lamby)

die story. Protestbürger

2008 Duelle: Helmut Kohl gegen Franz-Josef Strauß

2006 Gerhard Schröder. Kanzlerjahre (mit Jürgen Leinemann)

Jörg Immendorf – Der letzte Kampf des Künstlers (mit Hanns-Bruno Kammertöns und Stephan Lamby)

2002 Im Schatten des Schakals: Die deutschen Terroristen hinter Carlos

2001 Viren – Die unsichtbare Macht der Zellpiraten

PETER WOLF | CREATIVE PRODUCER

Born in Cologne in 1981, Peter Wolf grew up bilingually and went to school in Cologne and the south of France. After his German Abitur and French Baccalauréat, he studied Medieval and Modern History, Political Science and German Studies and has been working for BROADVIEW TV as Creative Producer and Director for 15 years. As a director he realized *Mildred Scheel – Die First Lady und der Kampf gegen den Krebs* (2015, WDR), *Dynastien in NRW: Die Gerlings* (2010/15, WDR) und *Mythos Deutscher Wald – Erkundung einer Seelenlandschaft* (2021, ARTE) among others the documentaries. As Creative Producer he was responsible for and designed the BROADVIEW Pictures cinema documentaries *Klitschko* (2011), *NOWITZKI. Der Perfekte Wurf.* (2014), *Auf der Jagd – Wem gehört die Natur?* (2018), *KROOS* (2019) as well as the international award-winning documentaries *Mein Kampf. Das Gefährliche Buch* (2015, ARTE), Die Steinkohle (2018, ARTE/ZDF), *Resistance Fighters – Die Globale Antibiotika-Krise* (ZDF/ARTE, 2019) and *Schwarze Adler* (2021 Prime Video/ZDF).

LEOPOLD HOESCH | PRODUCER – BROADVIEW PICTURES

Born in Cologne in 1969, Emmy award winner Leopold Hoesch is the founder of the production company BROADVIEW TV.

He graduated from the universities of Cologne and Seville with a Master in Latin before switching to the film industry. Since founding the company in 1999, he has produced more than 250 films - both for television and for the big screen. The thematic focus of BROADVIEW TV's documentaries is on politics, history, arts, science, culture and sport.

Leopold Hoesch is German Ambassador of the International Academy of Television Arts & Sciences.

Filmography (Selection)

2022	Stille Pandemie (TV)	Michael Wech
	Angela Merkel – Im Lauf der Zeit (TV)	Torsten Körner
2021	Schwarze Adler (TV) (Deutscher Fernsehpreis)	Torsten Körner
	Haut an Haut /TV)	Annebeth Jacobsen
	„Hallo, Diktator“ – Orbán, die EU und die Rechtsstaatlichkeit (TV) (Nominierung Deutscher Fernsehpreis)	Michael Wech
	Kroos. Eine Familie und der Fußball (TV)	Manfred Oldenburg
2020	Die Unbeugsamen (Kino)	Torsten Körner
	Gerhard Schröder – Schlage die Trommel (TV)	Torsten Körner
2019	Kroos (Kino)	Manfred Oldenburg
	Resistance Fighters – Die globale Antibiotika-Krise (TV) (Grand Prix Pariscience, VIFF Impact Award)	Michael Wech
	Palast der Gespenster – Der letzte Jahrestag (TV)	Torsten Körner
2018	Die Steinkohle (TV) (Nominierung Deutscher Fernsehpreis)	Jobst Knigge / Manfred Oldenburg
	Auf der Jagd – Wem gehört die Natur (CIC Kommunikationspreis)	Alice Agneskirchner
	3 Tage im September (TV)	Torsten Körner
2016	Angela Merkel – Die Unerwartete (TV)	Torsten Körner
2014	Nowitzki. Der perfekte Wurf. (Nominierung Deutscher Filmpreis)	Sebastian Dehnhardt
2013	Ein Hauch von Freiheit (TV) (RIAS Medienpreis 2015)	Dag Freyer
2012	Drei Leben: Axel Springer (TV) (Bayer. Fernsehpreis, Deutscher Wirtschaftsfilmpreis)	Sebastian Dehnhardt, Jobst Knigge, Manfred Oldenburg
2011	Klitschko (Romy)	Sebastian Dehnhardt
2006	Stalingrad (TV) (Magnolia Award, Shanghai)	Sebastian Dehnhardt, Manfred Oldenburg
2005	Das Drama von Dresden (TV) (International Emmy Award)	Sebastian Dehnhardt

THE CREW

Written and Directed by	Michael Wech
Produced by	Leopold Hoesch
Production Company	BROADVIEW Pictures
Creative Producer	Peter Wolf
Cinematography	Johannes Imdahl, BVK Sven Kiesche
Edited by	Michael Scheffold
Music	Andreas Lucas
Production Manager	Carsten Götsche
Production Controller	Bettina Kluge
Commissioning Editor (ZDF/arte)	Martin Pieper

CONTACT

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