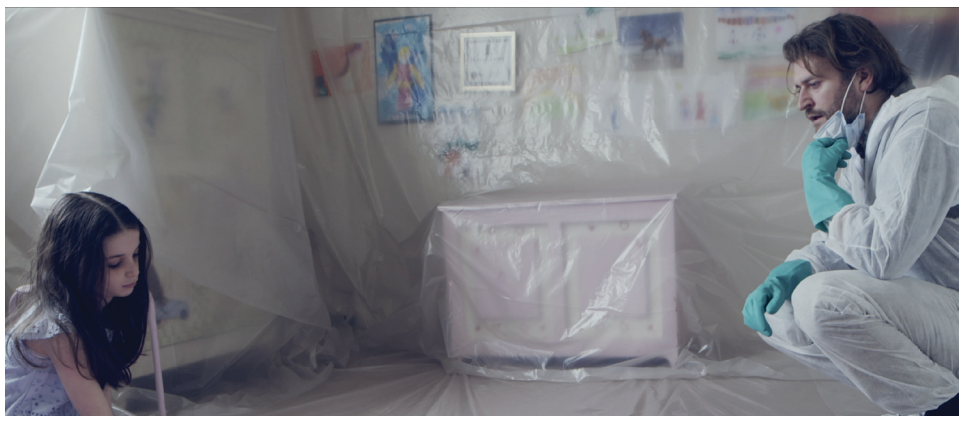
CATCH a Glimpse of our Grey Future

To tie in with World Antibiotic Awareness Week, **Redbrick** interviews the writer-directors of *CATCH*, a new short drama giving us a terrifying look of the post-antibiotic world we are heading towards

Rachel Kahn
Redbrick Reporter
@rachellk96



'In a world without antibiotics, a young girl becomes sick and her father faces a terrible choice: give her up to the authorities or risk infection himself'. *CATCH*, a film written by Dominic Rees-Roberts and Paul Cooke, delve into the very real possibility of a 'post-antibiotic' era, giving us a terrifying insight into the realistic situation we may be heading toward.

The writer-directors of the film, Dominic Rees-Roberts and Paul Cook both have scientific backgrounds having studied science-related subjects at undergraduate level. They're both heavily involved in communicating scientific issues and have worked on the production of programmes including BBC's *Horizon* and Channel 4's *Experimental*.

Redbrick were lucky enough to be given a sneak preview of the film. The captivating sixteen-minute piece is based on strong scientific foundations, giving the audience a daunting reminder of where we might be heading. Amy develops a bacterial infection that antibiotics can no longer cure. The film explores the struggles that Amy and her father, Tom, now face. Does Amy still have autonomy, and the ability to live a normal childhood with friends, school and extracurricular activities, or is she to face quarantine due to the infection risk she poses to others which could result in societal mayhem?

Whilst the idea of authorities intervening due to resistant infection may seem foreign, the concept of quarantine due to resistant infection is something very real and far closer than you may first think. Described as, 'one of the biggest health threats of our time', the misuse of antibiotics is putting societies across the world in a highly fragile position. Antibiotic resistance is happening now, with infections caused by resistant bacteria killing more than 700,000 people a year.

The film features Lollie McKenzie, playing the character of Amy. Lollie has recently been nominated for Best Young Actor at the Birmingham Film Festival. She is best known for her role as the eponymous *Matilda* in the RSC production from 2013-2014.

Henry Douthwaite plays Amy's father, Tom. Henry has vast experience in both Theatre and Television, and stars in the up-and-coming feature film *Off-Piste*, due for release in 2015.

University of Birmingham's Professor Laura Piddock was one of the science advisors for the film. As well as her role as a Professor of Microbiology, she is also Director of the global initiative, 'Antibiotic Action' which strives for and has successfully influenced policy change around the correct use of antibiotics. She commented, 'We all take these drugs, and therefore we are all part of the problem; we need to be part of the solution. If we don't get on top of this problem now, then I'm really quite concerned about what the future holds for my grandchildren.'

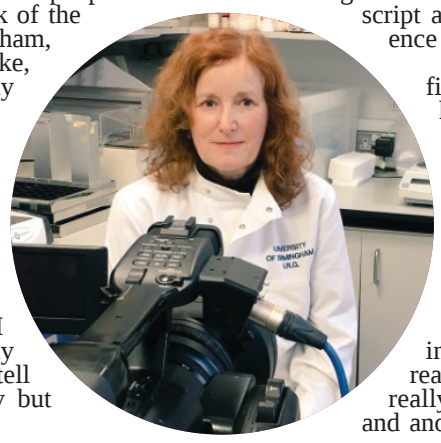
Having just been selected for a screening at the Birmingham Film Festival on the 26th November, Redbrick caught up with *CATCH*'s writer-directors Paul Cooke and Dominic Rees-Roberts.

What gave you the idea to develop a short film based around antibiotic resistance?

Paul: 'Dom and I work predominantly on factual TV, particularly with a science angle. We both have science backgrounds, Dom's a doctor of Parasitology, I'm 'just' a regular graduate of physics. I was working on a BBC *Horizon* piece about antibiotic resistance, and being a physicist it was interesting, because I kind of knew about the issue but I didn't know that much, and I think unlike a lot of science issues that perhaps the media and the press can make sound potentially more scary or serious than they actually are, what I found knowing a little about the topic, but then researching it for a documentary, was that when I talked to scientists in the field, the more they knew about the issue, the more scared they were.

'It wasn't like they were saying 'don't worry about it, the media are making it out to be way worse than it actually is', it really was the case that people like Professor Piddock of the University of Birmingham, were saying things like, 'I'm concerned for my grandkids.'

'For me in my mind, antibiotic resistance was already something people knew about but something they didn't necessarily know about on a personal level and I thought that's a really interesting story to tell not as a drama film.'



Laura Piddock, Professor of Microbiology, University of Birmingham

Dom: 'Yes I think it was a pub in Westfield in Shepherds Bush we had the idea!'

Paul: 'Was it really?'

Dom: 'We'd been looking for a strong idea to make a drama short film of and we wanted to make something that had a strong scientific message behind it. When Paul explained the idea to me, it was obvious it was going to be a really strong idea and it didn't take long for us to formulate a story, a narrative, and we ended up with *CATCH*!'

Where did the name *CATCH* come from?

Paul: 'I don't know where that came about from! We definitely 'brain-stormed' an awful lot of different ideas. It kind of came along early on and it stuck.

'I'm a big fan of a single word title, something short and snappy and obviously there are multiple meanings to it. You catch an infection, in a way Amy is caught in quarantine, so it worked on a number of levels.'

What was the process of filming *CATCH*?

Dom: 'We didn't set ourselves a target as to when we would actually get *CATCH* filmed and finished and we took quite a long time in the development process, writing the script and re-writing the script and sending it to our science experts.

'We crafted the story to fit in with the resources we had available. It was a small cast to be filmed in a single location and we'd found a house in South London. We were also working on a small budget, using much of our own money to fund it.

'We started the casting process which was really interesting and it was really close between Henry and another actor, but there was something about Henry as he was really good with the child actors that we were auditioning.'

Paul: 'I think one of the main reasons Henry was so good with the child actors was because he has a daughter about the same age as Amy. When we were filming, you could really feel him placing his daughter in that horrible situation and you could really feel his performance which definitely counted in his favour.'

Dom: 'Paul had a contact who suggested we got in contact with Lollie, who plays Amy, who had been playing Matilda in the West End and we went to see her and thought she was really good. Fortunately, her mum was willing to read the script and she loved it, showed it to Lollie who also loved it and agreed to come in for a casting session. We very quickly realised she was a very good performer and pairing her up with Henry during rehearsals brought the whole thing to life.

'Now we had the cast, and we were really buoyed by that. We had a location and our crew was coming together.

'As we got the script and gave it to people, everybody was getting on board, feeding back and nourishing the project which was great so we felt like we had huge momentum and then the fortnight before we were set to film in London, the owner decided they didn't want a film crew in their house and pulled out.

'It was a really bitter blow because we felt like we had huge momentum and it all sort of fell apart.

'In that two weeks we tried to find another location.

'We were there thinking of places that were really isolated and barren and miserable and Paul offered his parents' house in Shropshire!

'Paul's parents, who are lovely by the way, were really understanding in letting us traipse around their house.'

Paul: 'It goes all the way back to the fifteenth century. We wrote the whole thing with the idea that it would be a suburban story. It's a very captivating house.'

Dom: 'Funnily enough, I grew up 20 miles down the road from Paul's family home, on the Welsh side so it was funny that we'd met four years earlier on a mas-

"You could really feel him placing his daughter in that horrible situation"

ters cause at Imperial College only to discover that actually we were almost next door neighbours!'

Paul: 'Hence the name of our production company, BorderPoint Films!'

Dom: 'Everyone worked really hard, Piers, the Director of Photography, was

great because he understood the limitations of our schedule. It was quite a lot to film in three and a half days and he really pushed everything forwards.

'We got back completely elated to finish filming, but it took us a while to start editing.

'We knew that we'd do an assembly edit and then try and get an editor on board who would polish it which is exactly what happened.

'Alex Rees came into the project with his own very personal story of antibiotic resistance so he was very moved by what we were trying to do and really put in a lot of effort.

'We did a Kickstarter campaign to try and fund post-production which was amazing. It felt like a huge risk, we hadn't done anything like this before. The fact we were trying to do a film with a strong message was in our favour so we were able to rally support around it.

'We showed it to some people and it was mixed feedback. The Executive Producer was moved to tears and we thought great, that's fantastic!'

Paul: 'Generally there were a couple of things that we tweaked.'

Dom: 'One of the big ones was putting a caption at the beginning [giving the definition of antibiotic resistance]. We thought those dictionary quotes set the tone and worked really well.'

What were the biggest challenges you faced?

Paul: 'I think one challenge we faced was getting the money together. It's a very obvious challenge that any independent filmmaker faces. Originally it was going to be a much larger budget but as soon as we started showing it to people like Piers the Director of Photography, they were so enthusiastic, they provided us with lots of materials and worked for free on it. We realised people were so enthusiastic, that the budget started reducing and actually between my money, Dom's money and our Executive Producers money, we could film it ourselves and worry about post-production later.

'Then, obviously the second challenge was post-production but we were blown away by the response we got on Kickstarter which was really humbling, it was amazing.'

Dom: 'It's funny because you do feel a bit exposed. You're putting your passions for the public to decide whether it's worthy or not so it was great to get the response we did.

'If you desperately have a story to tell, you'll always find a way.

'The other thing is, at the heart of the project we wanted to get the message out and we realised the most important thing is that once we've finished the festival run, we needed to make it freely available for everyone to watch and that's what's going to happen sometime next year.'

How did your scientific advisors influence how *CATCH* was made?

Paul: 'They were primarily involved in the scripting, and every so often we would send the script to our advisors. All of them were incredibly helpful and incredibly generous with their time.

'We met with Timothy McHugh, Laura Piddock and Ruth McNerney a couple of times to do the interviews with them.

'We were mostly asking, 'is this reasonable?' We don't want to be scare-mongering. We got their feedback on things we could also add in to increase scientific veracity.

'The interviews we did with them, we were really glad we could do and they add to the back end of the project. If you see the film and want to find out more, you can go to the website and there are those nice online videos to find more about the factual side of the film.

'The Royal College of Pathologists actually gave us a bit of funding to do the interviews with our advisors and we're very grateful for that, they really supported us.'

What are the intended outcomes and impact of *CATCH*?

Dom: 'I guess very generally speaking it goes back to the mission statement of trying to engage people emotionally with this topic. So the first thing we hope to achieve is that people watch the film and have some sort of emotional reaction, to the extent that they remember what the film was about, and feel moved to go away and find out more.'

Paul: 'Or perhaps they'll feel differently when they read an article about antibiotic resistance. They'll remember *CATCH* and not just read stats, and the process of how bacteria become resistant but they'll associate it with the film and make that emotional connection with the issue.

'Our goals were always to get it into a good variety of festivals, to try and build up press as that's a great way to get your film noticed. We've been very lucky that we have had some selections so far and we've hopefully got some more to come and we want to go to as many countries and continents as we can to get the film out there.

'We want to get it in front of as many people as possible.

'Interestingly, we're working as hard now promoting the film as we were writing and making it! It does take a lot of time, staggeringly so, but it's definitely worth it.'

"If you desperately have a story to tell, you'll always find a way"

What is next for you both?

Paul: 'In terms of our day jobs, we're still very much making Factual TV but in terms of extracurricular filmmaking we're working on a couple of feature scripts around similar areas. Not about antibiotic resistance, but more around our kind of unique selling point of being filmmakers but once scientists and so a couple of things we're working on still have a scientific issue or a scientific basis at their cores.'

Resitant infection kills more than

700,000

people every year

What is antibiotic resistance?

In essence, antibiotic resistance means antibiotics cease to be effective at treating infection caused by bacteria. Resistance levels vary across bacteria and if one strain is resistant to a specific antibiotic, it is hoped an alternative drug will work. However, with resistance now being observed to what we call our 'last-resort' antibiotics, resistance is sending us down a slippery slope, to a place where all antibiotics are ineffective at treating infection.

"Without antibiotics, even the simplest surgeries could not take place"

What causes resistance to antibiotics?

Bacteria can become resistant to antibiotics through a number of different mechanisms. One way they do this is by producing a 'pilus' which is effectively a thin tube connecting two bacteria. A resistance gene can be passed down this thin tube from bacterium A to bacterium B and hence, bacterium B now possess the same resistance.

Just as mutations in human DNA can alter how our cells work, bacteria see mutations in their DNA, which can also lead to resistance. Antibiotics target specific aspects of the bacterial framework, such as the cell wall and if a mutation occurs here, the antibiotic will no longer be effective against its target.

Bacteria also have the unique ability to uptake DNA from the environment around them and incorporate it into their own genome. This means that if a resistance gene exists in the environment around them, they can acquire this gene and become resistant to antibiotics themselves.

Why is it such a prominent topic of conversation?

Back in September, all 193 countries of the United Nations signed a global agreement to invest in preventing the problem of antibiotic resistance getting worse, only the fourth time they have signed an agreement of its kind. Antibiotics are vital throughout medicine. Yes, they treat bacterial infection, but they are also used before surgery as a preventative of infection and used in patients undergoing chemotherapy. This means, without antibiotics, even the simplest surgeries could not take place and treatments such as chemotherapy could not happen due to the risk of infection.

Not only are antibiotics used for human medical use, but they are also used throughout agriculture and in antibacterial cleaning products. These are both areas contributing to the crisis. Our environment is not sterile and we all need to acknowledge this. If we continuously expose bacteria to antibiotic compounds they will get used to it. If you continuously hide behind a door and jump out and scare me, eventually I will learn that you are behind the door and I will begin to expect it. Bacteria do the same thing and if continuously exposed to an antibiotic, they can change their DNA so they are no longer affected by the antibiotic.

What can I do to help prevent resistance?

Individual responsibility is absolutely essential. Antibiotic resistance is a unique medical crisis because it will literally affect us all. We have all been on antibiotics, we are all at risk of developing bacterial infection and as *CATCH* shows, the prospect of a post-antibiotic era is close. Ask your GP, 'do I really need these antibiotics?', of course if you do need them, absolutely take them, but make sure you take them as prescribed and always finish the course you are given. Encourage dialogue about antibiotic resistance among your peers and ensure everyone understands just why we need to protect the resources we have left.