Antibiotics becoming ineffective at treating some child infections

[**Denis Campbell**](http://www.theguardian.com/profile/deniscampbell)**Health policy editor**

Tuesday 15 March 2016 23.30 GMT

Study finds overuse is to blame for bacteria becoming resistant to drugs in urinary tract infections caused by E coli

[Children](http://www.theguardian.com/society/children) are becoming powerless to fight off common infections because antibiotics they take are unable to kill the bacteria involved, experts warn.

New research shows that overuse of antibiotics by children is to blame for bugs becoming drug-resistant for up to six months at a time in cases of urinary tract infections (UTI) caused by *E coli*.

Antimicrobial resistance among children with such infections in rich countries is so great that certain common antibiotics do not work in about half of all cases, academics from Bristol University and [Imperial College London](http://www.theguardian.com/education/imperialcollegelondon) found.

“Prevalence of resistance to commonly prescribed antibiotics in primary care in children with urinary tract infections cased by *E coli* is high, particularly in countries outside the [OECD](https://www.theguardian.com/business/oecd). This could render some antibiotics ineffective as first-line treatments for urinary tract infection,” according to a Bristol PhD researcher Ashley Bryce and colleagues.

They blame [GPs](http://www.theguardian.com/society/gps) for prescribing antibiotics to children too often. “Routine use of antibiotics in primary care contributes to antimicrobial resistance in children, which can persist for up to six months after treatment,” they add, in a paper published in BMJ.

Their conclusions are based on an analysis of 58 previous studies looking at 77,783 cases of UTIs in 26 countries, including the UK, which were linked to the bacteria.

*E coli* causes an estimated 80% of them. [NHS](http://www.theguardian.com/society/nhs) Choices states that UTIs are “a relatively common infection during childhood”. It is estimated that about one in 10 girls and one in 30 boys will have had a UTI by the time they turn 16.

NHS figures show that about 5% of children who visit a GP when they become acutely unwell have a UTI. About 40% of them are given up to three different prescriptions for antibiotics.

Among acutely unwell children who are given antibiotics by their GP, half are handed one prescription, 25% receive two and another 25% get three or more prescriptions, said Bryce. Children receive about 80% of all antibiotics from GPs.

Experts voiced unease at the findings. Conor Jamieson, the antibiotics pharmacist for the Royal Pharmaceutical Society, said: “The results of the study, that antibiotic resistance in children treated with commonly used antibiotics is high and can persist for up to six months, are worrying.”

The research was particularly troubling because evidence shows that the number of antibiotics that they can be given safely is lower than with older age groups, added Jamieson. He urged doctors to remember that “antibiotics are not ordinary medicines and must be used prudently”.

The problem is worse in poorer, non-OECD countries. But the authors found that resistance to the common antibiotic ampicillin was as high as 53.4% among children with a UTI caused by *E coli*in OECD nations. The bug also proved resistant to two other first-line drugs: co-trimoxazole in 30.2% of children and to trimethoprim in 23.6%.

“The concern must be that the reduced effectiveness of these antibiotics may force clinicians to turn to alternative agents which may be less effective, or have more side-effects, in a potentially vulnerable patient group,” added Jamieson.

Resistance is higher among children under five than in those aged between six and 17.

“The results suggest [that] previous antibiotic use increased the subsequent risk of *E coli* resistance to that particular antibiotic for up to six months after treatment,” said co-author Dr Céire Costelloe of Imperial College London.

The findings show that levels of antimicrobial resistance are just as high in under-18s as in adults.

The government has made the growing resistance to antibiotics a key priority and Prof Dame Sally Davies, the chief medical officer, has warned that doctors may become unable to perform certain operations if the tide is not turned.

NHS England is offering hospitals and GP surgeries financial incentives to prescribe fewer antibiotics as part of what it says is the world’s largest healthcare incentive scheme to tackle the problem. The [World Health Organisation](http://www.theguardian.com/world/world-health-organisation) has warned that antimicrobial resistance could claim as many as 10 million lives a year in future decades.

A Department of [Health](http://www.theguardian.com/society/health) spokesperson said: “We know that we are using too many antibiotics, and that the bugs they fight are becoming more and more resistant. This is putting our future health at risk so we must reduce the amount of antibiotics we are using.

“We all have a part to play and it’s important for people to understand that antibiotics should be used to treat bacterial infections only, and not viruses like cold and flu.

“We have already seen GPs across England reducing prescribing over the last few years, and we’ve invested millions in research to tackle drug resistance, but there is more to be done by all sides.”