

# NHS could save 89 million and further fight against antimicrobial resistance

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The NHS could save up to £89 million a year on unnecessary prescriptions for antibiotics, and further its efforts in the fight against antimicrobial resistance—if it was to comprehensively introduce already available and accurate point-of-care (POCTs) diagnostic tests.

These are the findings of a vast new national study, published in the *Journal of Medical Economics*, which has also found that £326 million is currently being spent on unwarranted antibiotics per year.

The study also showed that if new (yet to be made commercially available) POCTs were introduced, the savings made could theoretically rise to £178 million per year.

Acute respiratory infections such as bronchitis, sinusitis and pharyngitis account for over two-thirds of total UK [antibiotic prescriptions](#), even though most are caused by viruses that do not respond to antibiotics. As it can be difficult to distinguish between bacterial and [viral infections](#) from physical symptoms alone, and because some patients demand antibiotics, physicians often end up prescribing them for viral infections.

However, 80-90% accurate POCTs, which detect protein biomarkers specific for viral or bacterial infections, can provide physicians with the ability to distinguish between bacterial and viral infections, enabling more objective evidence for a diagnosis.

Yet—despite previous studies showing at least 50-60% of surveyed GPs

expressing interest in using POCTs—costs have prevented the universal introduction into the healthcare system.

A team of researchers from the US and Switzerland, led by Dr. John Schneider at Avalon Health Economics LLC, have now discovered however that the price of purchasing the required amount of POCTs does offset the savings that arise from reducing the unnecessary prescribing of antibiotics.

By analysing National Institute for Health and Care Excellence (NICE) data and direct costs (antibiotics, antibiotic-related adverse events, POCTs) derived from already published literature, Dr. Schneider and his team concluded that British doctors were prescribing antibiotics for 50% of acute respiratory infections, whereas bacteria were probably only responsible for around 9% of these infections. They then calculated that the annual cost for this unnecessary prescribing was over £326 million.

This was made up of the direct cost of the antibiotics, and the indirect costs of further consultations when the antibiotics didn't work and of treating unpleasant side effects as well as potentially life-threatening antibiotic-associated secondary infections such as C. difficile Infection (CDI). In contrast, the [annual cost](#) of purchasing POCTs to diagnose bacterial or viral infections and then treating those infections was much less, between £148 million and £290 million depending on the POCT, producing savings of up to £89 million.

"A major benefit of POCT is the ability to improve antibiotic stewardship in the primary and urgent care setting by providing tangible results that both increase diagnostic certainty and confidence to delay or withhold antibiotics when [bacterial infection](#) is unlikely," Dr. Schneider explains.

"Without POCT, the UK health system spends over £326 million

annually and with POCT this can lead to over £36 million to over £89 million in annual savings depending on the type of POCT deployed."

As well as cost savings, reducing the unnecessary prescribing of antibiotics would also directly benefit patient health—with antibiotics known to commonly cause unpleasant side effects and adverse events, including allergic reactions and secondary infections, in susceptible patients; often all without having any effect on the [infection](#).

"Not only can point-of-care diagnostic testing help to prevent the misuse of [antibiotics](#) that leads to antibiotic resistance, which in turn benefits public and global health, but it is also beneficial to identify potential patients requiring isolation to reduce spread of disease and reduce healthcare spending and adverse event-associated morbidity carried by the individual," adds Dr. Schneider.

Dr. Schneider and his team believe these findings should also apply to many other countries, especially those with universal healthcare systems. He says, "outside of the UK, similar antibiotic pressures are felt in lower- and middle-income countries and access to inexpensive testing may have an even greater impact on resource limited regions. What is more astounding is that these cost savings do not include the potential costs related to the management of antibiotic resistance itself."

To introduce POCTs universally, the researchers note that a lack of reimbursement is the major limiting factor, whilst other considerations include space to accommodate a range of technologies, time to train staff, regulatory requirements and historically based uncertainty about test accuracy.

However, these [costs](#) may be partially or completely offset by enhanced workflow and payment strategies whilst significant changes in facilities and infrastructure are also not needed, they argue.

**More information:** John E. Schneider et al, Application of a simple point-of-care test to reduce UK healthcare costs and adverse events in outpatient acute respiratory infections, *Journal of Medical Economics* (2020). [DOI: 10.1080/13696998.2020.1736872](https://doi.org/10.1080/13696998.2020.1736872)

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