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Health costs of the UK-US trade deal on pharmaceuticals

Samuel Cross, Karl Claxton, and Andrew Hill argue that diversion of billions of NHS funding to pay more for new drugs under the UK-US trade deal will harm public health and result in thousands of excess deaths

Samuel Cross,¹ Karl Claxton,² Andrew Hill³

Health systems worldwide are facing growing pressure from rising pharmaceutical expenditure, ageing populations, and constrained public finances. In publicly funded systems with finite budgets, higher spending in one area inevitably takes away the opportunity to spend elsewhere. This makes decisions about medicine pricing fundamentally decisions about how healthcare resources are allocated, and who the shortfall in funding affects most. This, in health economics is what is known as opportunity cost.

On 1 December 2025, the government announced the UK-US pharmaceuticals deal as a “landmark” to “safeguard medicines access and drive vital investment for UK patients and businesses.”¹ The agreement, which secures a 0% tariff on UK pharmaceutical and medical device exports to the US for the next three years, formed part of broader UK-US trade and economic negotiations focused on strengthening bilateral cooperation in strategically important sectors, including life sciences and pharmaceuticals.²

However, it also committed the NHS to substantially higher expenditure on branded medicines over the coming decade through changes to drug pricing arrangements and health technology assessment. Without a corresponding increase in available NHS resources, this will create substantial opportunity costs elsewhere, having a direct effect on population health.

Effect on UK drug pricing

The National Institute for Health and Care Excellence (NICE) evaluates whether new medicines provide sufficient health benefit relative to their cost. NICE generally assesses this using quality adjusted life years (QALYs), which combine gains in survival and quality of life into a single measure. Historically, NICE has operated with cost effectiveness thresholds of around £20 000-£30 000 per QALY gained. This means that the NHS has generally been willing to pay within this range for one additional year of life in full health, although this threshold can be - and often is - breached in exceptional circumstances, such as drugs to treat cancer.³ These thresholds exist because of opportunity cost and represent an attempt to balance the health gains garnered by new medicines against the health likely to be lost elsewhere in the system when resources are displaced.

In March 2026 ministers took powers to instruct NICE to increase the thresholds they use to judge cost effectiveness.⁴ From April 2026, instead of paying

£20 000-£30 000 for every additional QALY gained by using a new medicine, the NHS will now pay £25 000-£35 000 for the same health benefits. The agreement also changes the way health benefits are measured, meaning NICE's assessment of the QALY benefits offered by new medicines will be higher for the same actual benefit.⁵

Another mechanism by which NHS drug expenditure is controlled is the voluntary scheme for branded medicines pricing, access, and growth (VPAG). This agreement between the pharmaceutical industry and the UK government is designed to limit growth in NHS expenditure on branded medicines through industry rebate payments when spending exceeds agreed targets. The rate of increase in the prices of new medicines is linked to the amount repaid to the NHS by drug companies, discouraging price inflation. In 2025 the rebate rate was 23%; under the new agreement this has been cut to 14.5%.⁶

These changes, alongside the government's commitment to increase expenditure on new medicines from 0.3% to at least 0.6% of gross domestic profit (GDP) in 2036 without corresponding increases in available NHS expenditure, raise serious concerns over the population health costs.⁷ The impact assessment undertaken by the Department of Health and Social Care (DHSC) to assess these costs has not been made public, despite requests.⁸ Nonetheless, it is now possible to make an accurate but conservative assessment of the additional costs of this deal to the NHS and the population cost NHS patients will face.

Estimating the financial costs of the deal

This deal commits government to increasing expenditure on new medicines from 0.3% to at least 0.6% of GDP in 2036, with interim targets for expenditure of 0.35% of GDP in 2028 and 0.4% of GDP in 2030.⁷ Assuming these targets are met and using the Office for Budgetary Responsibility's (OBRs) long term forecast of real GDP growth (1.5%), the additional annual costs to the English NHS will be at least £1.3bn in 2028 (£25m per week), and £8.8bn in 2036 (£170m per week).⁹ Figure 1 shows the estimated additional annual costs over the 11 years of the deal. The cumulative additional cost will be £2.6bn by the end of 2028 and £44.7bn by the end of 2036. Costs are even higher if the impact on publicly funded adult social care is also considered - modelling of English local authority data indicates that every £1bn the NHS must find to fund this deal will increase the costs of adult social care by £118m because of increases in morbidity and mortality.¹⁰

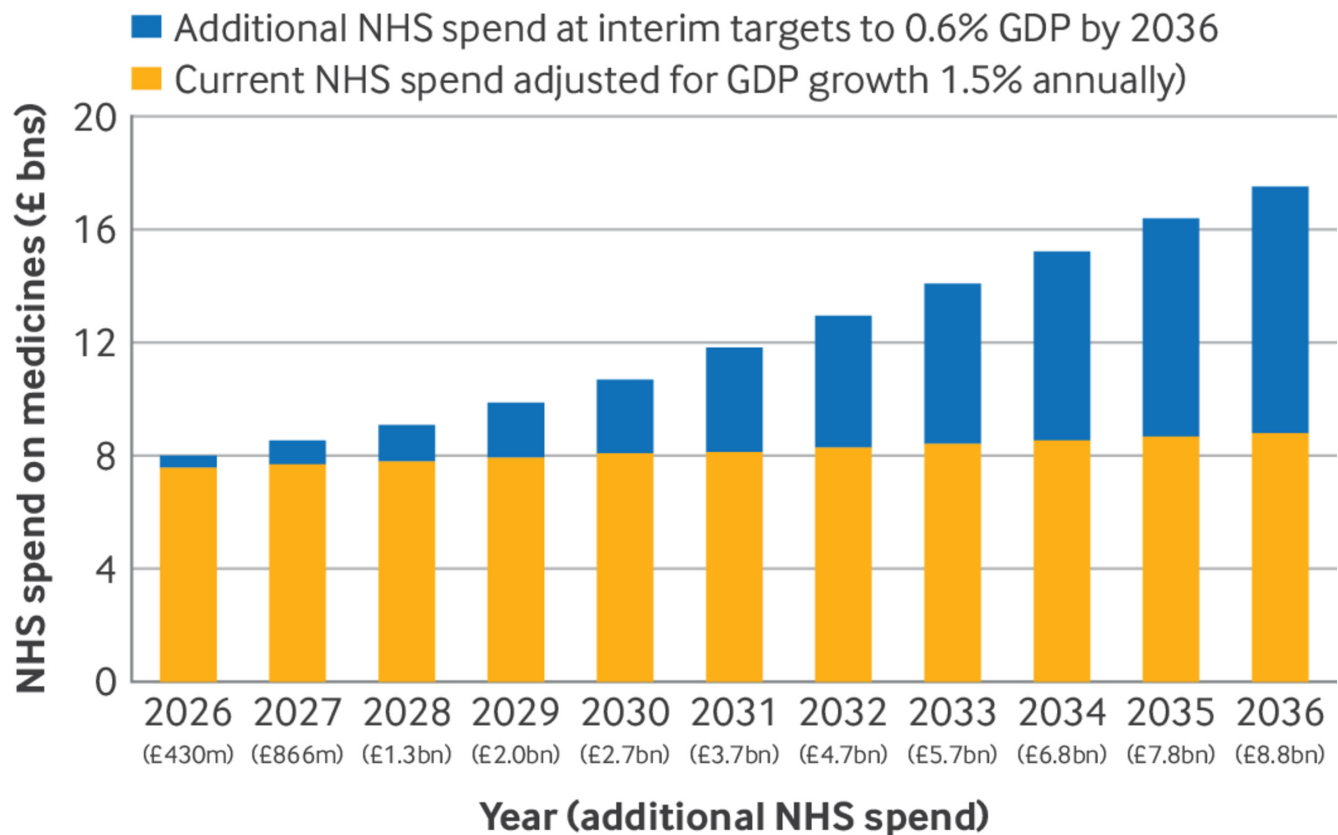


Fig 1 | Additional costs to English NHS associated with UK-US trade deal

Ministers have largely focused on the short term costs of the agreement, with several ministers (including the secretaries of state for science and health) stating that the agreement would cost the NHS “around £1bn” over the spending review period,²¹¹¹² although subsequent Office for Budget Responsibility estimates projected roughly £3.3bn in additional expenditure on new medicines between 2025-26 and 2028-29.¹³

Ministers have offered less discussion of the agreement’s longer term implications for NHS expenditure, despite industry acknowledgment that spending on newer medicines is expected to more than double.⁶ As part of the deal the government has agreed to “establish an industry-government working group” to implement further changes by January 2029⁷; the direction of travel is seemingly clear, with comments from the chief executive of the Association of British Pharmaceutical Industry describing this deal as, “only the first step.”⁶

Estimating the population health cost of the deal

We have made conservative estimates of the financial costs of this deal, but what will the population cost be - that is, the cost to NHS patients? Considerable published evidence spanning 18 years of expenditure and outcome data provides reliable estimates of how changes in available NHS expenditure affect health outcomes, including mortality, morbidity, and QALYs.¹⁴ The estimates, which are used by DHSC in impact assessments, are derived from robust analyses linking changes in NHS expenditure to mortality outcomes across disease areas while accounting for health need, reverse causality, and other confounding factors.¹⁵

The population costs of this deal will be the excess deaths that can be avoided if the resources required are not devoted to paying more for new medicines. These are called the “health opportunity costs” (fig 2). They are estimated by combining the published causal estimates with projected NHS expenditure and local mortality data from 2024-25.¹⁶

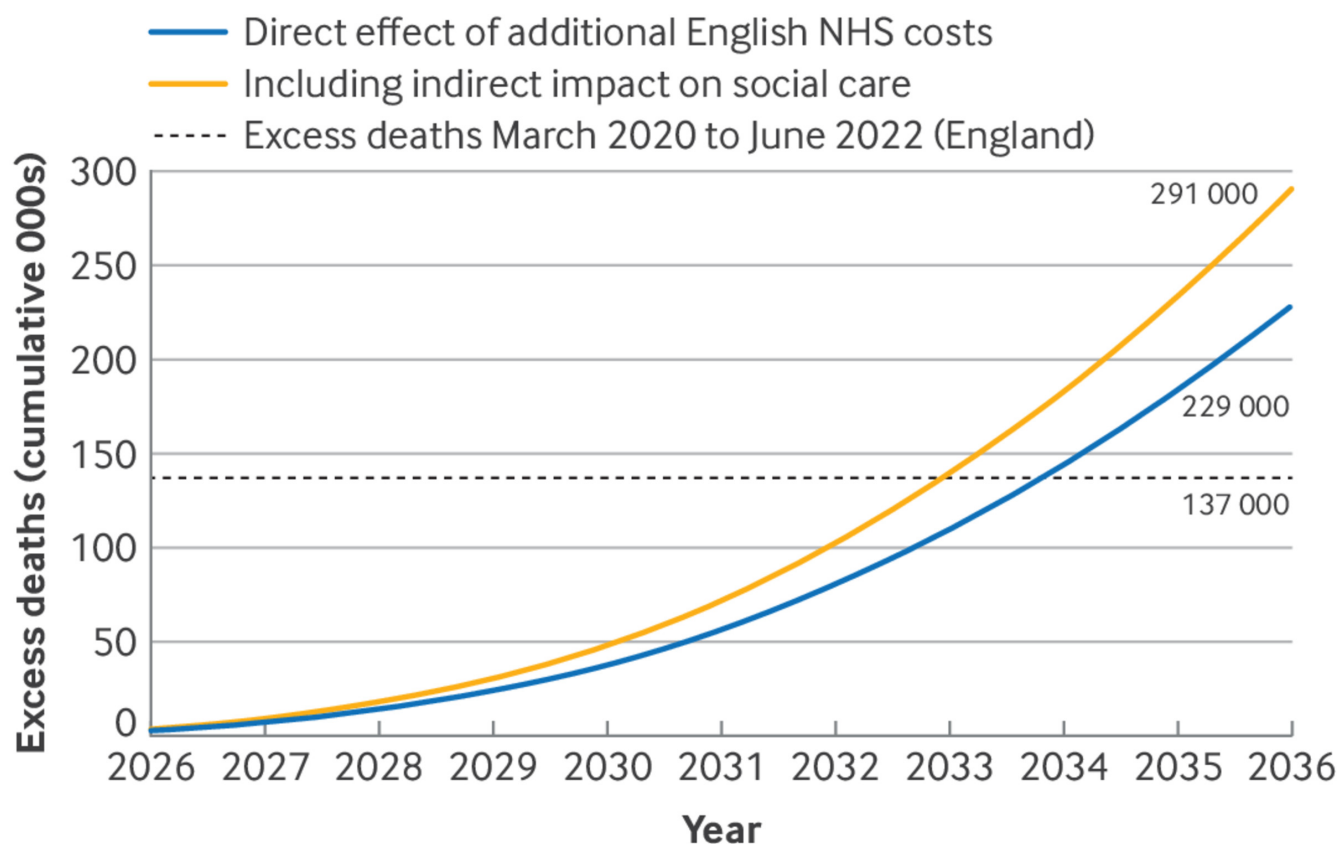


Fig 2 | Excess deaths from the UK-US pharmaceuticals deal

Figure 2 shows that even if we restrict attention to the direct effect of reductions in available NHS expenditure, by 2036 this deal is likely to result in roughly 229 000 excess deaths—more than during the covid-19 pandemic between March 2020 and June 2022 (137 000). If the indirect effect on adult social care is also included, the increase in excess deaths is even greater (291 000).

The largest estimated impacts on mortality are in cardiovascular, respiratory, and gastrointestinal disease and cancer, with broader effects on quality of life across these areas as well as neurological, endocrine, musculoskeletal, and mental health problems. Previous research also suggests that reductions in available NHS expenditure have greater effects in areas with higher deprivation and baseline mortality, further entrenching existing health inequalities, which continue to grow in the UK¹⁷ and are estimated to cost the NHS nearly £5bn annually in hospital admissions.¹⁸

These findings, though unsurprising, are particularly relevant given existing pressures on the NHS and the large burden of unmet need in highly cost effective areas of care. Non-communicable diseases, for example, were estimated to be accountable for over 400 000 deaths and around 18 million disability adjusted life years (DALYs) in the UK in 2021 alone.¹⁹ Cardiovascular disease accounts for most of the non-communicable disease burden and is estimated to cost the NHS £7.4bn annually.²⁰ It is also the most strongly linked with deprivation.²⁰

Cheap generic medications that treat resulting chronic disease are available for less than £20 a year. However, cardiovascular disease is considered largely preventable through modifiable risk factors, for which targeted interventions typically cost less than £7000 per QALY²¹ (table 1). This falls far below the new NICE threshold of £35 000 per QALY, and in some cases these interventions save the NHS money overall, because their effects on health reduce the need for other care.

Table 1 | Cost effective NHS interventions to modify risk factors for cardiovascular disease²¹

Risk factor	Intervention examples	Incremental cost effectiveness of interventions (cost per QALY)	Estimated eligible population (UK adults)
Smoking	Nicotine replacement therapy, cognitive behavioural therapy, opt-out, tailored interventions, bupropion	Maximum £6875; most interventions cost saving	6 million
Alcohol	Screening and brief interventions, primary care	£5865-£21 430; most interventions cost saving	10 million
Obesity/overweight	Behavioural, physical activity, semaglutide, tirzepatide	£6317-£21 372; some interventions cost saving	28 million
Physical inactivity	Brief advice, walking groups, workplace programmes	£495-£2754; some interventions cost saving	17 million
Mental ill health	Group cognitive behavioural therapy, behavioural activation, drug treatments	£541-£10 905; some interventions cost saving	7.5 million
Mental wellbeing	Friendship programmes, digital literacy for older adults	Maximum £15 962; some interventions cost saving	10.8 million aged ≥65

Despite this evidence and reassurances that “frontline services” will be protected, the NHS will need to fund this deal from allocations made six months before the deal was agreed.^{10 11} The evidence suggests that if additional public expenditure was available, it could be more effectively deployed within the NHS itself. For example, based on a cost per death averted of £153 000 (by updating the latest evidence on causal effect¹⁶ with 2024-25 mortality data), reallocating an equivalent £44bn into existing health services could prevent more than 287 000 deaths by 2036, particularly in areas of high mortality and deprivation.²²

Suggested benefits of deal are uncertain

The agreement has been presented as a mechanism to improve access to new medicines.² However, NICE estimates that increasing cost effectiveness thresholds may result in only two to five additional medicines being approved annually.²³ Moreover, NICE already approves more than 90% of medicines it evaluates, suggesting that the agreement is more likely to increase the prices paid for medicines already entering the NHS rather than substantially expand access.⁴ The opportunity cost of new medicines at prior thresholds and current expenditure is already being felt by most NHS patients; between 2000 and 2020, new medicines approved by NICE garnered 3.75 million healthy life years at an opportunity cost of five million.²³

Claims that higher UK medicine prices will stimulate pharmaceutical innovation and inward investment are also uncertain. Pharmaceutical research and development operate within a global market, of which the UK represents a relatively small share. As such, there is limited evidence that UK domestic pricing materially influences global investment decisions.²⁴ Even so, evidence suggests in most cases the UK is already paying more than 100% of the long term value of new medicines; incentivising production of new medicines under this deal will do long term harm to the public health objective of the NHS.²⁵

The agreement also establishes zero tariffs on UK pharmaceutical and medical device exports to the US for three years. However, the UK remains a net importer of medicines, meaning that much of the additional expenditure is likely to accrue to multinational manufacturers rather than remain within the NHS or wider UK economy.²⁶ Furthermore, any economic benefits associated with increased drug expenditure must be balanced against evidence that reductions in available health and social care resources may negatively affect population health and local economic productivity.²⁷ Furthermore, the economic benefits of securing zero tariffs for UK pharmaceutical exports has been substantially diminished since the US Supreme Court ruling reducing the

proposed tariffs from 100% to 10%. Indeed, the projected costs of the agreement are expected to exceed the total annual value of UK medical exports to the United States (£5bn) before 2031.²⁶

Other economic and industrial considerations, including reports that AstraZeneca had considered moving its listing from London to New York because of concerns around the international competitiveness of the UK life sciences sector, may have also contributed to pressure for reform.⁸

Need for transparency

The government’s willingness to accommodate industry pressure while the NHS absorbs the resulting costs raises important questions about transparency and accountability and marks a significant shift from its assurances in 2019.²⁸ More importantly, it emphasises a broader structural problem at the heart of a health system conceived with the intention of delivering equitable, patient centred care, now reduced to underwriting risk in global pharmaceutical markets.

Advocacy for full details of this deal, and especially the unredacted impact assessment, to be made public, have garnered the support of scrutiny from the House of Lords²⁹ and triggered legal action by campaign groups Global Justice Now and Just Treatment on behalf of NHS patients.³⁰ Both focus on the appropriateness and legality of using secondary legislation (which receives more limited parliamentary scrutiny) to implement policy changes with substantial implications for NHS expenditure and population health.

Patients and clinicians can continue to advocate for the full details of this deal to be made public as well as voicing their opposition to such changes in policy without appropriate discourse and debate. Only with transparency, can there be proper parliamentary scrutiny by backbenchers and committees to facilitate a more fully informed public discussion. This is especially important for the devolved nations, which have not been party to this deal but will nonetheless have to pick up their share of the total UK bill (at least £9.9bn of the total £54.6bn by 2036), with similarly dire health consequences.

At a systemic level, all parties should see this as an opportunity to advocate a shift away from health policies increasingly influenced by the commercial determinants of health and detached from the patients and populations they affect, both in the UK and elsewhere. It seems essential to advocate for policy grounded in public value and social purpose, and for renewed commitment to the NHS as a public institution with equity at its core, before it is too late.

Key messages

- The UK-US trade deal on pharmaceuticals more than doubles the amount of money the NHS will pay for new medicines over the next 11 years, costing an additional £44.7bn by the end of 2036
- Diversion of NHS funds to pay more for new drugs will be detrimental to population health, leading to 229 000 excess deaths and increased health inequalities
- Ministers have emphasised proposed benefits of the agreement, including incentives for innovation and access to new medicines, but the longer term implications for NHS expenditure and service provision remain insufficiently accounted for
- Greater transparency, including publication of the health department's impact assessment, would support more informed public and parliamentary debate about pharmaceutical pricing policy

Contributors: KC has extensive experience in evaluating the impact of healthcare expenditure on population health outcomes. KC led the conceptualisation, formal analysis, investigation, data curation, and drafting and reviewing of the manuscript, and is the guarantor. SC has experience in global health and health systems, contributed to investigation, data curation, analysis, and drafting and review of the submitted manuscript and the revised manuscript. AH is a pharmacologist with expertise in drug pricing and global access to medicines, and contributed to study design, interpretation, and critical revision.

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- 1 UK Government. Landmark UK-US pharmaceuticals deal to safeguard medicines access and drive vital investment for UK patients and businesses. Press release, 1 Dec 2025 <https://www.gov.uk/government/news/landmark-uk-us-pharmaceuticals-deal-to-safeguard-medicines-access-and-drive-vital-investment-for-uk-patients-and-businesses>
- 2 Reply to open letter. PO-1666918 Dr Zubir Ahmed MP Parliamentary Under-Secretary of State for Health Innovation and Safety. 3rd Feb 2026 <https://www.york.ac.uk/che/people/karl-claxton/#research-content>
- 3 Charlton V, Lomas J, Mitchell P. NICE's new methods: putting innovation first, but at what cost? *BMJ* 2022;379:e071974. PMID: 36442870. doi: 10.1136/bmj-2022-071974
- 4 NICE. Changes to NICE's cost-effectiveness thresholds confirmed. <https://www.nice.org.uk/news/articles/changes-to-nice-s-cost-effectiveness-thresholds-confirmed>
- 5 Navega Biz A, Alava MH, Walloo A. Switching From EQ-5D-3L to EQ-5D-5L in England: the impact in NICE technology appraisals. *Value Health* 2026;29:801. PMID: 41895683. doi: 10.1016/j.jval.2026.03.007
- 6 ABPI. VPAG payment rate for newer medicines will be 14.5% in 2026. n.d. https://www.abpi.org.uk/media/news/2025/december/vpag-payment-rate-for-newer-medicines-will-be-14-5-in-2026?utm_source=chatgpt.com
- 7 UK Government. Arrangement between the United States of America and the United Kingdom on pharmaceutical pricing. Policy Paper. 2026. <https://www.gov.uk/government/publications/uk-us-arrangement-on-pharmaceutical-trade-and-pricing/arrangement-between-the-united-states-of-america-and-the-united-kingdom-on-pharmaceutical-pricing.html#v-monitoring-progress>
- 8 Bureau of Investigative Journalism. Inside the £64bn pharma deal that could cost more lives than covid. 2026. <https://www.thebureauinvestigates.com/stories/2026-04-13/inside-the-64bn-pharma-deal-that-could-cost-more-lives-than-covid>
- 9 Claxton K. Impact assessment the recent UK-US pharmaceuticals trade deal. <https://www.york.ac.uk/che/people/karl-claxton/#research-content>
- 10 Longo F, Claxton K, Martin S, et al. More long-term care for better healthcare and vice versa: investigating the mortality effects of interactions between these public sectors *Fisc Stud* 2023;44:216. doi: 10.1111/1475-5890.12322
- 11 Lord Vallance. Letter to Dame Chi Onwurah MP on US Life Sciences deal. 2026. <https://committees.parliament.uk/committee/135/science-innovation-and-technology-committee/news/211725/costs-of-uk-us-pharma-deal-will-be-met-by-dhsc-science-minister-confirms/>
- 12 Kendall L. Letter to Dame Chi Onwurah on US Life Sciences Deal. 2025. <https://committees.parliament.uk/publications/51168/documents/284070/default/>
- 13 Office for Budget Responsibility. Economic and fiscal outlook. CP 1439. 2025. https://obr.uk/docs/dlm/uploads/OBR_Economic_and_fiscal_outlook_November_2025.pdf
- 14 Claxton K, Hinde S, Lomas J, Longo F, Martin S, Rice N, et al. Estimating the health effects of changes in health care expenditure. 2023. <https://www.york.ac.uk/media/che/documents/papers/researchsummaries/Summary%209.pdf>
- 15 Department of Health and Social Care. Impact assessment: Statutory scheme-branded medicines pricing 2025 (Annex D). 2025. <https://assets.publishing.service.gov.uk/media/67d2b8ed4a7430093f1e04f/statutory-scheme-for-branded-medicines-pricing-2025-impact-assessment.pdf>
- 16 Martin S, Claxton K, Lomas J, et al. The impact of different types of NHS expenditure on health: Marginal cost per QALY estimates for England for 2016/17. *Health Policy* 2023;132. doi: 10.1016/j.healthpol.2023.104800. PMID: 37004415
- 17 Martin S, Claxton K, Lomas J, et al. How responsive is mortality to locally administered healthcare expenditure? estimates for England for 2014/15. *Appl Health Econ Health Policy* 2022;20:72. PMID: 35285000. doi: 10.1007/s40258-022-00723-2
- 18 Public Health England. Place-based approaches for reducing health inequalities: main report. Public Health England, 2021. <https://www.gov.uk/government/publications/health-inequalities-place-based-approaches-to-reduce-inequalities/place-based-approaches-for-reducing-health-inequalities-main-report>
- 19 *Global Burden of Disease 2021*. Institute for Health Metrics and Evaluation, 2021.
- 20 *Health matters: preventing cardiovascular disease*. Public Health England, 2019.
- 21 Owen L, Taylor M. Quantifying the case for prevention: disease burden and cost-effective interventions in UK. *J Public Health* 2026;48:9. doi: 10.1093/PUBMED/FDAG028.
- 22 Soares MO, Sculpher MJ, Claxton K. Health opportunity costs: assessing the implications of uncertainty using elicitation methods with experts. *Med Decis Making* 2020;40:59. PMID: 32441558. doi: 10.1177/0272989X20916450
- 23 Naci H, Murphy P, Woods B, et al. Population-health impact of new drugs recommended by the National Institute for Health and Care Excellence in England during 2000-20: a retrospective analysis *Lancet* 2025;405:60. doi: 10.1016/S0140-6736(24)02352-3
- 24 Drug pricing and pharmaceutical innovation: a false promise. *Lancet* 2025;406. doi: 10.1016/S0140-6736(25)02160-9. PMID: 41139084.
- 25 Woods B, Lomas J, Sculpher M, et al. Achieving dynamic efficiency in pharmaceutical innovation: Identifying the optimal share of value and payments required. *Health Econ* 2024;33:19. PMID: 38227458. doi: 10.1002/hec.4795
- 26 Observatory of Economic Complexity. Pharmaceutical products in United Kingdom Trade. 28 May 2026. <https://oec.world/en/profile/bilateral-product/pharmaceutical-products/reporter/gbr>
- 27 Longo F, Claxton K, Mason A, et al. Is caring productive? The effect of adult social care on paid production in England. *Health Econ* 2025;34:95. doi: 10.1002/HEC.70026.
- 28 Jozepa I, Ward M, Powell T. *Future trade deals and the National Health Service*. House of Commons Library, 2019.
- 29 House of Lords raises concern over UK-US pharma deal terms. Pharmacy Business 22 May 2026. <https://www.pharmacy.biz/house-of-lords-concern-uk-pharma/>
- 30 Campaigners threaten legal action over UK-US deal on prices NHS pays for drugs Guardian 18 May 2026. <https://www.theguardian.com/society/2026/may/18/campaigners-threaten-legal-action-over-uk-us-deal-on-prices-nhs-pays-for-drugs>