Our position on
Technology transfer and local manufacturing

What is the issue?

Technology transfer involves the sharing of a manufacturing process that includes proprietary know-how (such as trainings, formulae, methods and algorithms) and potentially material (like formulated bulk, cell lines and reagents) with a recipient manufacturer. This can allow the recipient to consistently replicate the originator's manufacturing process and can be used, for example, to boost supply capacity of a product.

Technology transfer is a broad term that can entail different approaches. These can involve the license of a process to a third-party contractor for manufacture – while the product remains owned and marketed by the intellectual property (IP) holder – or the transfer of the ownership of a technology or process, usually in conjunction with a product divestment or partnership arrangement. *For our approach to licensing, see our position on IP.*

Some stakeholders seek widespread transfers of technology ownership, based on a belief that localised manufacturing capabilities will deliver more reliable and more affordable access to medicines and vaccines for local populations. For some governments, technology transfers can be seen as a means of securing investment and access to new technologies. Stakeholders have also recognised the benefits for patients, payers and health systems of achieving efficiencies, economies of scale, and resilience across global manufacturing networks.

We carefully assess how and where to invest our resources and establish partnerships in order to deliver reliable supply and patient impact at scale, while also reflecting value for shareholders. This paper sets out our approach to technology transfer, including our position on local production.

What is GSK's view?

- **Technology transfer, in the right circumstances, can be one of the tools used to build security of supply and facilitate access to medicines and vaccines by boosting supply capacity**. We consider technology transfer when it reflects the best use of resources; it is economically sustainable; appropriate enabling conditions are in place, such as a supportive regulatory environment, a viable local market and enforceable IP rights; and when we can identify a partner organisation with proven expertise and ability to meet the highest standards on compliance, quality and safety required for medicines and vaccines production.
- **Technology transfer agreements are long-term partnerships, which require significant time, resource investment, and trust to execute**. Voluntary arrangements, on mutually agreed terms, enable the owner(s) of the technology to identify the most appropriate partner(s), ensure that the partnership respects the interests of all parties involved including IP rights, and foster the collaboration necessary for success.
- **GSK is actively involved in several technology transfer efforts** for both medicines and vaccines in different countries. This includes long-standing partnerships that have been in place for over 30 years. In particular, we actively take a partnership approach for our Global Health pipeline projects and assets targeting high burden diseases in lower income countries to ensure that our innovations achieve maximum health impact at scale; this approach includes consideration of technology transfers agreements where they can be an effective mechanism to improve product availability in lower income countries.
- **We work with policymakers across the world to create local conditions that will generate good health outcomes for patients and are attractive to life science investment. We recognise the goal of governments to make a greater share of the healthcare products needed for their**

countries, to support industrial development and bolster health security. Key factors that enable the pharmaceutical industry to invest in a country and/or partner with local organisations include: attractive economic, scientific and market conditions; an efficient regulatory authority; and a robust legal framework, with robust intellectual property rights.

- **To supply our medicines and vaccines to patients all over the world in a safe, timely and most cost-effective manner, we rely on a diverse and global supply chain**. We continue to invest in reshaping, simplifying and strengthening our manufacturing network, including using technology to increase the speed, quality and scale of product supply.
- **For the vast majority of countries, establishing purely local supply chains is rarely sufficiently resilient or economically sustainable, and is therefore not an effective approach to facilitate affordable access and health resilience**. Manufacturing medicines or vaccines is capital intensive due to the need for complex infrastructure; stringent quality and safety processes, often involving complex biological mechanisms, also contribute to the cost of, and time required, for making healthcare products. Diversified sourcing – of active pharmaceutical ingredients, excipients and other inputs – is essential to facilitate a cost-effective and resilient supply chain that can respond to surges in demand. Concentrating manufacturing at high volume in large plants in stable locations around the world that enable onward supply to all regions, with minimal tariff and non-tariff barriers to the movement of goods, achieves cost efficiencies and economies of scale, and supports a flexible, resilient global supply chain for all patients.
- **Expanding sustainable access to medicines and vaccines requires more than local production capacity and/or technology transfer**. Factors like timely regulatory approval, reliable and early demand forecasts, procurement funding mechanisms, robust cold chains and health system capacity, are all critical in order to maintain a sustainable, commercial proposition for manufacturers and ensure delivery to the patient.

Background

The importance of global supply chains

Our supply chain network consists of 33 manufacturing sites (as of October 2025), complemented by a significant number of Contract Development and Manufacturing Organisations (CDMOs). Together, these facilities play a crucial role in ensuring the delivery of our medicines and vaccines. In 2024, this collaborative network supplied 1.7 billion packs of medicines and 409 million doses of vaccines.

We recognise the goal of governments to make a greater share of the healthcare products needed for their countries, to support industrial development and bolster health security. For some countries, this will be a longer-term, whole-of-government endeavour to develop the highly skilled sector and operating environment necessary to make such investment partnerships viable.

However, it is not practical or realistic to establish an end-to-end manufacturing solution in every country. Manufacturing medicines or vaccines is capital intensive and highly regulated; it needs complex infrastructure, highly qualified staff, and reliable and continuous supplies of water, gas and electricity. Stringent quality and safety processes, often involving complex biological mechanisms, contribute to the cost of, and time required for, making healthcare products – especially for preventative products like vaccines which are given to healthy populations.

A technology transfer takes a number of years to complete even where production facilities are already in place, depending on the complexity of the product and the technical capabilities of the recipient. If

manufacturing facilities also need to be established and achieve qualification, this can add significant time and complexity to the process.

Critical enabling factors for technology transfer

We consider technology transfer to build security of supply and facilitate access by boosting supply capacity when opportunities are practical and appropriate given disease burden and local conditions; reflect best use of resources; and are economically sustainable. Key enabling factors include:

- **Trust, skills and partner quality:** Highly specialised scientists and other technical personnel are needed to carry out medicines or vaccines manufacturing; we seek to partner with organisations with proven expertise for large-scale pharmaceuticals or vaccines manufacturing and a proven ability to meet the highest standards on compliance, quality and safety as well as a strong track record on issues such as environmental sustainability, labour and human rights. We require all contract manufacturers that make our products to align with GSK standards, and regularly conduct audits to provide us with assurance that they do.
- **Enforceable IP rights:** Proprietary processes, materials and know-how will often be covered by IP protection – such as patents, copyright, design rights, or trade secrets. Enforceable IP rights provide innovators with the confidence that they can share their product designs, manufacturing technologies and know-how with others – including potential competitors – without misappropriation by those parties. Robust IP rights also enable supply chain flexibility, and therefore increased security of supply, where CDMOs use their own platform(s) as part of a product's manufacture. Steps that weaken IP protections (compulsory licensing, ineffective anti-counterfeiting measures, or inadequate regulatory data protection) diminish confidence and reduce the likelihood of technology transfer agreements.
- **Infrastructure and a supportive regulatory environment**: To ensure impact, we prioritise environments that support specialist manufacturing with reliable supply chains, well-developed infrastructure and public utilities, economic stability, a robust legal framework that is established and enforced, and an efficient regulatory authority. Regulatory capacity is extremely important to ensure that any products produced meet stringent criteria on quality, safety and efficacy, and secure timely review and marketing authorisation.
- **A viable and accessible local market**: Technology transfer is only effective when there is a viable commercial proposition for the manufacturer, including the size of market. Economies of scale may not be possible for speciality products targeting specific patient populations. Other important factors include the availability of accurate, early demand forecasts and procurement funding mechanisms to support the purchase of the product at attractive and sustainable volumes over the long-term.

Examples of our technology transfer partnerships

We have, and continue to be, engaged in several technology transfers, which are agreed on a case-by-case basis, to help us get ahead of disease together:

- Over the last 30 years we have forged partnerships with Brazilian public organisations – such as Fundação Oswaldo Cruz (Fiocruz), Instituto de Butantan, and Fundação Ezequiel Dias (Funed) – that involve technology transfer of several products. This includes partnerships for HIV medicines, and technology transfer that has supported supply to the Brazilian National Immunisation Programme, addressing polio, Haemophilus influenzae b, rotavirus, Measles/Mumps/Rubella (MMR), pneumococcal disease, and meningococcal disease (C and ACWY); as well as diphtheria, tetanus

and pertussis (whooping cough) through the transfer of a GSK component for the local development of a booster vaccine.

- In 2013, we initiated a technology transfer and license of our **typhoid conjugate vaccine** to the Indian pharmaceutical company, Biological E. In this partnership, Biological E ran the Phase 3 trials of the vaccine and now manufactures and distributes the vaccine.
- In 2019, we licensed and began the transfer of the technology for our three **vaccine candidates for *Ebola Zaire, Ebola Sudan* and *Marburg virus*** to the US-based Sabin Vaccine Institute.
- In 2020, we partnered with Samsung Biologics (a Korean-based CDMO) to scale up supply of **a treatment for lupus** using a technology transfer. It continues to be marketed by GSK.
- In 2021, we agreed to transfer our **cephalosporin antibiotics** business for a number of markets to Sandoz (a Europe-based organisation). During the transfer of the manufacturing operations, the antibiotics continue to be manufactured at GSK sites.
- In 2021, GSK, PATH, and Bharat Biotech (an India-based biotechnology company) agreed to transfer the manufacturing of the antigen of our ***Mosquirix* vaccine against malaria (RTS,S)**, which aims to be fully completed by 2028. GSK retains production of the vaccine adjuvant and will continue to supply it to Bharat; we have granted Bharat a license to commercialise and supply the vaccine.
- We have partnered with a contract manufacturing organisation in India to fully produce a **single-dose malaria treatment** from the active pharmaceutical ingredient to the finished product. We have provided ongoing support to ensure that the contract manufacturer meets environmental, health, safety and quality standards.
- In 2025, we agreed to license and pursue a technology transfer of our ***Shigella* vaccine candidate** to Bharat Biotech, to enable them to advance the vaccine candidate through late-stage development, and, if successful, through regulatory pathways and large-scale manufacturing. Following the technology transfer, GSK will collaborate with Bharat Biotech on its design of the Phase 3 trial and support Bharat Biotech's efforts to secure external funding.
- Through partnerships and using technology transfers, ViiV Healthcare has achieved the fastest rollout of a **child-friendly, dispersible HIV treatment**, now available in over 100 countries[i]. Since 2018, ViiV Healthcare has collaborated with the Clinton Health Access Initiative (CHAI) and Unitaid to provide technology transfer and regulatory support to generic manufacturers that hold sublicences for the paediatric medicine from the Medicines Patent Pool (MPP) or directly with ViiV.
- By July 2025, with global health partners, ViiV Healthcare delivered a long-acting injectable HIV prevention option to public health programmes reaching 17 countries. In parallel, ViiV signed a voluntary license with the MPP in 2022 and has been supporting sublicensee manufacturers with technical know-how to enable development, supply and potential use of generic versions of the **long-acting injectable for HIV prevention** across 133 countries. Existing generic licensees for prevention will be able to develop, manufacture and supply one generic long acting injectable for use in combination with a second long-acting injectable, subject to required regulatory approvals being obtained, to help enable access to the **long-acting HIV treatment** in 133 countries[i].

[i] ViiV Healthcare voluntary licensing agreements include all least-developed, low-income, lower middle-income and Sub-Saharan African countries, as well as countries where ViiV Healthcare does not have patent rights for the treatments involved.