Dear investors and analysts

In our Q1 update, we highlight recent updates on our AGM 2023, news on Sandoz and profile our approach to risk management.

Additionally, we include a short interview with Lutz Hegemann, President of Global Health and Sustainability at Novartis.

We appreciate your engagement on all ESG-related topics and include your top 10 questions and responses.

The latest version is now called ‘Impact and Sustainability Update’, formerly known as the ‘ESG Update’. We are renaming it as we believe that ESG is too broad a topic and we would like to focus on our efforts related to impact and sustainability going forward. We welcome any feedback on this and other topics.

Thank you.

For further questions or comments please contact:

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Update on AGM 2023

Our 2023 Annual General Meeting (AGM) was held on March 7, 2023.

Shareholders approved the 26th consecutive Novartis dividend increase to CHF 3.20 (+3.2%) per share for 2022, which represents a 4.0% yield and approximately 61% payout of free cash flow.

Shareholders re-elected Dr. Joerg Reinhardt as Board Chair and all members of the Board who stood for re-election.

All resolutions were passed. Below are some key highlights:

New Board Member elected

John D. Young was appointed to the Novartis Board of Directors. As background, John D. Young has nearly 35 years of experience in the healthcare industry and will bring a wealth of experience in leadership, strategy, business development and commercialization of innovative medicines to the Novartis Board of Directors. He joined Pfizer in 1987 as a sales representative and held positions of increasing seniority across the company, including as a member of Pfizer’s Executive Leadership Team from 2012. As Pfizer’s Group President and Chief Business Officer from 2019 until 2022, John also played an integral role in the development and delivery of the Pfizer-BioNTech COVID-19 vaccine. He is independent from Novartis according to the independence criteria set forth by the Board of Directors.

Virtual Annual General Meetings

We had many discussions with our shareholders, and have seen that views have recently evolved in several markets. This has shown that there are certain reservations about virtual AGMs. To address these concerns, Novartis proposed to shareholders at the 2023 AGM to include the respective provision in the articles of incorporation, to allow for virtual AGMs and submit the corresponding authorization to another shareholder vote at the 2025 AGM. This approach was welcomed by institutional investors and proxy advisors.

Compensation

In two separate binding votes, shareholders approved the total maximum aggregate amount of compensation for the Board of Directors, covering the period from the 2023 AGM to the 2024 AGM and the total maximum aggregate amount of compensation for the Executive Committee for the financial year 2024. Shareholders also endorsed the 2022 Compensation Report in an advisory vote.
Potential further share repurchase

To allow for the full completion of the already announced share buyback of up to USD 15 billion, and potential additional share buybacks, shareholders authorized the Board of Directors, in addition to the remaining authorization of CHF 7.4 billion, to repurchase shares as deemed appropriate from time to time up to a maximum of CHF 10 billion between the 2023 Annual General Meeting and the 2026 Annual General Meeting.

Amendment of the Articles of Incorporation

Shareholders approved the Board of Directors’ proposal for the amendment of the Articles of Incorporation of Novartis AG implementing the requirements of the reform of Swiss corporate law that came into force on January 1, 2023 and taking into account current best corporate governance practice.

Pre-AGM engagement with our shareholders

We welcome the dialogue with our investors and continued engagement. We held a series of virtual meetings to hear your feedback on a range of governance and AGM agenda topics, and noted your views on board diversity and compensation topics.
Progress on access to medicines in LMICs

At Novartis, we not only discover and develop new medicines, but also aim to make them available to as many people as possible. We have been committed to increasing access to medicines for decades. Over the years, we have evolved as an organization and in our approach. We have moved from a donations-based approach to one that employs a combination of access models for more sustainable social impact. In 2022, our access programs and initiatives reached 54.6 million patients, predominantly in LMICs.

Some of our key achievements in LMICs in 2022 include:

- 100% of new launches in IM had an LMIC access and tiered pricing strategy
- We continue to make progress on the SLB targets:
  - 1.2 million patients reached with our strategic innovative therapies in LMICs (+26% vs. PY), representing +119% since 2019
  - 31.2 million patients reached with our global health programs (vs. 22.6 million required to achieve our 2025 target), representing +107% since 2019
- Novartis became the first pharmaceutical company to grant a non-exclusive voluntary license for an innovative treatment (for chronic myeloid leukemia) to Medicines Patent Pool as part of the Access to Oncology Medicines coalition (ATOM)
- We pledged additional USD 250 million funding for research into new medicines for neglected tropical diseases and malaria
Update on Sandoz spin-off

The planned spin-off remains on track for H2 2023. Completion of the transaction is subject to certain conditions, including consultation with works councils and employee representatives (as required), general market conditions, tax rulings and opinions, final Board of Directors endorsement, and shareholder approval in line with Swiss corporate law. The transaction is expected to be tax neutral to Novartis.

Upcoming dates of interest:

**June 8, 2023**  
Sandoz Capital Markets Day  
**New York**

**June 12, 2023**  
Sandoz Capital Markets Day  
**London**
CARDIO4Cities accelerator

By 2050, 70% of the world’s population will live in cities.

They will face:
- A growing burden of chronic diseases
- The constant threat of new emerging diseases
- Impacts of climate change
- An inverse age pyramid
- Healthworker shortage

The CARDIO4Cities accelerator

Cardiovascular disease is predicted to rise significantly in the coming decades, disproportionally so in underserved populations, thereby increasing existing inequities. That is why the Novartis Foundation and IntraHealth International are launching the CARDIO4Cities accelerator, to globally replicate the proven population health approach. As a neutral broker between city governments, health experts, industry, implementing partners, funders, and investors, the accelerator pledges direct action and funding toward improving cardiovascular population health and equity.

By enabling governments and partners to replicate the CARDIO4Cities approach, the accelerator aims to improve cardiovascular population health in 30 cities around the world within the next three years.

Averted strokes and heart attacks during implementation

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<thead>
<tr>
<th>City</th>
<th>Percentage of Strokes Averted</th>
<th>Percentage of Heart Attacks Averted</th>
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<tbody>
<tr>
<td>São Paulo</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Dakar</td>
<td>3%</td>
<td>3%</td>
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<tr>
<td>Ulaanbaatar</td>
<td>10%</td>
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We are looking for investors who are interested in creating tremendous impact by transforming the way cardiovascular disease, the world’s leading cause of death, is addressed globally. If you are interested in an innovative financing model, and would like more information, please get in touch at investor.relations@novartis.com

For more information on the CARDIO4Cities approach visit: novartisfoundation.org/transforming-population-health/cardio4cities

A holistic approach to risk management

At Novartis, our continued success depends on our ability to manage risks and effectively respond to crises. We actively and regularly monitor all risks and share more details on our process.

### Integrating risk management with strategy

A key element in accomplishing our mission is our ability to effectively identify, assess and treat the enterprise risks that are most material to our strategy.

Our approach in Enterprise Risk Management is to continuously engage our business and risk leaders to develop and update our ‘Novartis Risk Story’, which connects our strategic objectives to key external trends and top risks. Our risk story is based on risk workshops that we conduct across all key countries and functions, as well as our annual enterprise-level risk workshop.

Our risk story serves as our guide on the actions that we need to take to mitigate the key risks to delivering on our mission and strategy. The Novartis Risk Story is captured in our Annual Novartis Risk Report, which is endorsed by the Executive Committee Novartis (ECN) and shared with the Risk Committee of the Board of Directors.

### Risk Governance

- The Risk Committee of the Board of Directors (BoD) oversees the risk management system and processes within Novartis and receives the Novartis Annual Risk Report.
- The Executive Committee of Novartis (ECN) is accountable for assessing regulatory risks and fostering a culture of risk awareness and endorses the Novartis Annual Risk Report.
- The Risk Leadership Team, comprising risk leaders across our key divisions and functions, is tasked with overseeing the key risks across our organization.
- The Risk and Resilience Team (part of the Ethics, Risk and Compliance function) is responsible for ensuring consistent standards and processes to identify, assess and act upon risks, are applied across Novartis.

### Risk Intelligence: Proactively monitoring our dynamic external environment

The external environment defines the context in which Novartis operates - it is therefore critical to proactively monitor and assess the impact of key external trends on our strategy. To this end, we have established a ‘risk intelligence’ network of internal and external experts to regularly identify and assess the consequences of external developments.

### Novartis Risk Approach

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<thead>
<tr>
<th>External environment</th>
<th>Novartis strategic priorities</th>
<th>Technology</th>
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<tr>
<td>Geopolitics</td>
<td>Accelerate growth</td>
<td>Climate change and pandemics</td>
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<td>Evolving societal expectations</td>
<td>Deliver returns</td>
<td>Operational risks</td>
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<td>Macroeconomics</td>
<td>Strengthen foundations</td>
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<td></td>
<td>Strategic and emerging risks</td>
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Novartis top risks
**Insights on impact and sustainability and expanding access to healthcare**

**Lutz Hegemann**
President of Global Health & Sustainability

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**What are you most excited by in your job?**

Throughout my career, I have seen how innovative treatments can deliver lasting change. I began my career working with leprosy patients in India at a time when the disease was only just beginning to be treatable. Since then, medical interventions have reduced the number of newly infected patients by 95%. This is what excites me most – the way that we can improve medical outcomes among communities that have previously been underserved and enhance the positive impact we have on society.

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**How do you mobilize such a large and complex organization like Novartis to take ESG topics seriously?**

In our Novartis purpose to reimagine medicine to improve and extend people’s lives lies an inherent social drive, which is at the heart of ESG. We are fortunate to have an organization that is committed to creating long-lasting, sustainable impact on millions of people around the world. Part of the effort to mobilize the organization has been to embed material ESG factors in our operations and how we make decisions every day. To do this, we created the Sustainability & ESG Office to help us prioritize and allocate resources to areas that matter most to internal and external stakeholders. We remain committed to and are on track to meeting our ambitious ESG targets and report on our progress against them annually in our Novartis in Society Integrated Report.
What are your top learnings from 2022?

The COVID-19 pandemic brought the issue of inequitable access to medicines and healthcare to the forefront of public attention. It highlighted how inequity is not a local phenomenon, but rather a global issue that even extends to comparably well-developed healthcare systems, ultimately affecting us all. Over the years, we learned that getting medicines on shelves is just one challenge – and ‘zero profit’ or ‘at cost’ pricing models will only get us so far. R&D, health systems strengthening, and affordability are all key determinants to improving health equity and are central pillars of our strategy.

We also need to find ways to stay the course on the global health agenda. It is crucial that we keep in mind the growing complexity and urgency to build resilient health systems at all levels, so that we not only deliver immediate benefits but create a higher level of preparedness for future global health threats. And finally, this year has cemented my belief that it is our responsibility as a company to step outside the realm of just producing treatments, and in addition, work together with key partners to address clinical and non-clinical barriers for patients to expand access to innovative treatment solutions for the long-term for as many people as possible.

What are the biggest health system challenges that you’re facing? How do you manage these?

The challenges are vast and can range from under-resourced health systems, and lack of sufficiently qualified and skilled healthcare workers, to stigma and discrimination – to name a few. The crucial first step is identifying access barriers and addressing the root cause – not just the symptoms.

Our Sickle Cell Disease (SCD) program in Africa is a good example of where we have seen first-hand the complexities involved with navigating health system challenges. The program was launched in 2019 in Ghana – but has since expanded – with the aim of bridging access gaps to SCD care and providing comprehensive and innovative treatment solutions.

A critical challenge for SCD patients in Africa, when the program first started, was access to Hydroxyurea, the generic, first line standard-of-care treatment. Expanding access to Hydroxyurea – and developing a novel, child-friendly formulation – involved, crucially, partnership with governments and healthcare providers. For instance, we worked closely with the public health service in Ghana to ensure that Hydroxyurea treatment could be safely implemented at low cost and monitored on a large scale.

However, providing medicines for low or zero-cost is not enough, as we have seen in other areas. A multidrug therapy to cure leprosy, which Novartis has been donating to WHO for all leprosy patients since 2000, has been effective in reducing the number of patients. Still, in recent years, the number of patients with leprosy has stopped decreasing, despite the availability of this highly effective treatment.

Cultural differences can also play a significant role: For instance, people with SCD, can experience cultural stigma, preventing many from seeking a diagnosis to avoid social marginalization. In parts of Africa, we have heard from social workers that mothers find themselves blamed for a child’s diagnosis and are often abandoned or left destitute. Young children who survive often encounter abuse, or struggle to access food, care, and education. Again, the challenge resides not only in granting the medication, but ensuring that those in need are able to access care and treatment. Hence, we are working to strengthen early intervention in SCD treatment, particularly among young children. Our new partnership with the American Society of Hematology agreed in 2022, will improve screening and diagnosis at health institutions in seven sub-Saharan Africa (SSA) countries.
One in five people are affected by neglected tropical diseases (NTDs) – how are you addressing that?

Innovation through investments in R&D is critically important to continue tackling NTDs. Therefore, in 2022, we renewed our commitment to the Kigali Declaration with a pledge to invest USD 250 million over five years to advance R&D of new treatments for malaria and NTDs. We integrated capabilities built by existing NTD and malaria programs such as versatility and flexibility, which were strongly based on innovation through investing in R&D, to fight COVID-19 more quickly and effectively than would have otherwise been the case.

Let’s shift to racial biases in medicine – how can that be addressed?

We know that healthcare disparities (based on race or ethnicity) are a problem not only limited to low-income countries. Black, indigenous and people of color (BIPOC) have endured education and health disparities for instance in the US for centuries. This very issue even became prevalent in science: For a long time, Black researchers have been excluded from the R&D process. We have seen how this omission from research can impact the effectiveness of medicines and medical devices that are developed. To address this, we need to engage with the people whose challenges we want to help solve. That’s the core principle of the Beacon of Hope initiative, a 10-year, USD 50 million collaboration with Historically Black Colleges, Universities and Medical Schools to co-create programs that address the root causes of systemic disparities in health outcomes. One example from this initiative comes from the fact that patients are more trusting when they see doctors or clinical trialists who resemble themselves. By offering training and incentives to increase the number of doctors and researchers of color through this program, we hope to increase the number of patients of color who participate in trials. Addressing racial biases in medicine also means looking at diversity and inclusion in a different way. We need diverse minds and a diverse workforce to come up with innovative and inclusive solutions.

What will be success for you in two years and five years’ time?

Every day, we work to deliver high-value medicine that alleviates society’s greatest disease burden through technology leadership in R&D and novel access approaches. It will take time to move beyond transactional approaches and to look holistically at what the real barriers are for patients, so it may be hard to measure success in two years’ or even five years’ time. That said, I firmly believe our approach to Impact & Sustainability is the right one. We are ensuring access strategies are incorporated into all our new product launches, expanding access to innovative treatment solutions for the long-term for as many people as possible. For us, success in the coming years would be seeing progress towards the elimination of NTDs and malaria – our pioneering anti-malarial drug combination, KLU156, entering phase III trials, for instance – and further enhancing medical outcomes in disease areas in sub-Saharan Africa and geographies where we can make a unique contribution.
Top 10 impact and sustainability related questions from shareholders and our responses

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| 1  How does your Board assess risks?                                    | • Risk is an important topic for our Novartis Board and is regularly assessed in a systematic process and by various committees.  
• Our Chief Ethics, Risk and Compliance (ERC) Officer updates the Board once a year and the Audit & Compliance Committee twice a year on risk management issues.  
• The Chief ERC Officer is a permanent attendee of the Risk Committee (RC) and the Audit and Compliance Committee (ACC) and plays an active role with the RC Chair in shaping the Board agenda regarding risk. The RC regularly receives updates from Chief ERC Officer and Global Head of Risk & Resilience on enterprise risk management mitigation measures and results.  
• As part of its primary responsibilities, the RC oversees the risk management system and processes, reviews the prioritization and handling of risks, the risk portfolio, and actions implemented by management. The Committee is also responsible for fostering a culture of smart risk-taking and investigating key risk areas. After each meeting of the Risk Committee, the RC Chair debriefs the Board on its actions and learnings. |
| 2  What is your approach to over-boarding at Board level?                | • Novartis actively engages with shareholders on over-boarding concerns and we note the diverse approaches to assessing overboarding which include time spent on commitments and number of mandates.  
• We review the external mandates of our Board members regularly and ensure that they are compliant with the Novartis articles of association, which allow for up to four additional mandates in other listed companies (whereas chair positions count as two mandates). Any potential mandate in listed and non-listed companies requires pre-approval, where Novartis assesses the overall mandates of a Board member as well as potential conflicts of interest.  
• Additionally, we pay close attention to time spent on external commitments and time required for travel and the attendance record of our Board members.                                                                                           |
| 3  What is the Board’s approach to diversity and have you recently appointed a diverse Board member? | • Novartis meets the threshold of 30% female representation on the Board of Directors and gender equity is one of the criteria we consider in our commitment to Diversity, Equity, and Inclusion. Our most recent female Board member is Ana de Pro Gonzalo.  
• We have recently welcomed a new member to the Board of Directors following a strict succession planning process and the criteria of diversity, professional experience and set of competences that the Board currently requires. John Young brings the profile that fits with the current Board skills matrix and the constitution structure (supporting the governance for the Board and its Committees). Board succession planning will continue to ensure the most effective succession plans for the future and continue to consider diverse candidates. |
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| **4** Can you provide details regarding approach to Sandoz compensation? | • The Executive Compensation structure for Sandoz will retain key principles of the Novartis Executive Compensation structure, such as benchmarking against the relevant companies for Sandoz, ensuring strong linkage between pay and performance, transparent performance metrics, and alignment with external market best practices in Executive Compensation.  
• We will provide more details closer to the date of spin-off. |
| **5** What are your efforts on biodiversity and what progress have you made? | • Novartis is committed to exploring efforts to improve biodiversity as it represents an important source of potential new drugs to Novartis.  
• Existing work related to biodiversity includes our efforts on reducing water consumption and ongoing efforts to reduce PMI (process mass intensification) and carbon emissions in creating active pharmaceutical ingredients.  
• Novartis recognizes the growing demand and need for companies to both assess and disclose their impacts and dependencies on nature (e.g. COP15 Kunming-Montreal Global biodiversity framework, Taskforce on Nature Related Disclosures (TNFD), inclusion of Biodiversity disclosure questions in CDP, GRI, etc.).  
• In 2023, Novartis is aiming to conduct a biodiversity/nature risk assessment of its operations, develop a biodiversity/nature strategy and roadmap, and draft disclosures. |
| **6** Do you aim to reduce animals needed for R&D? | • In 2022, Novartis recognized 3Rs (replacement, reduction and refinement of animal experimentation) award winners and launched a new 3Rs Innovation Grant Program to fund research projects that validate alternatives, reduce animal numbers, and refine the animal experience. Projects include exploring the use of microphysiological systems for safety assessments, organoid development for early discovery research, and using new home cage monitoring technologies for better animal experience.  
• Novartis has implemented various initiatives to reduce the number of animals used in research, such as:  
  - 86% reduction in the number of animals via cross-divisional collaboration for Amyotrophic Lateral Sclerosis (ALS) model  
  - Exhaust air dust analysis replaced up to 60% of sentinel animals to maintain rodent health  
  - 80% animal reduction for nerve regeneration studies through artificial intelligence screening  
  - 10-fold animal reduction for opthalmology study via adoption of a novel study design  
  - Novel human cell-based in vitro tests used as a replacement for mice in a rheumatoid arthritis study  
  - Luciferase labelled cancer cells used to reduce number of mice for metastasis study |
**Question 7**

How are you addressing the gender/racial pay gap?

- As part of our commitments, we monitor the pay gap on an annual basis. The results of the 2022 data analysis will become available in Q2 2023. The latest published pay gap analysis results are available in the Novartis in Society Integrated Report.
- As part of our EPIC pledge in 2018, we have committed to positively influence the overall pay gap by 2023.
- In the US, Novartis conducts annual pay equity reviews based on gender and race/ethnicity as required of all federal contractors at each of our US sites to ensure equal pay for similar work. Novartis also advocates for pay transparency in the US and now discloses salary ranges on all job adverts.
- To address the gender pay gap caused by unequal representation, we strive for gender balance in management and equal pay for equal work. Our management recruitment process includes diverse candidates and selection panels, and we're working towards eliminating historical salary data.

**Question 8**

What actions is Novartis taking on managing AMR risks?

- Novartis supports the scientific consensus on AMR and focuses on four key areas to tackle the issue:

  **Responsible Manufacturing to prevent antibiotics entering the environment**
  - Novartis is committed to the proper use of resources, optimal hygiene and safe waste disposal throughout the value chain. Novartis works with coalitions including the AMR Industry Alliance and the CEO Water Mandate to advancing water stewardship.
  - In 2021, Novartis announced an investment of more than EUR 100 million in new manufacturing technology for production of oral amoxicillin active pharmaceutical ingredient (API) at Kundl, Austria. In 2022, this investment was increased by EUR 50 million to further upgrade technology and processes in Kundl to increase manufacturing capacity, bringing the antibiotics network investment in Europe to over EUR 250 million.

  **Responsible Access to high-quality, affordable antibiotics**
  - Novartis efforts in access are recognized by the Access to Medicine Foundation in its bi-annual AMR Benchmark report, which ranked Novartis fourth out of eight large research-based companies.

  **Responsible Use ensuring prescription of the right antibiotic at the right dose for the right indication**
  - In 2022, Novartis signed a partnership with the Ecumenical Pharmaceutical Network focused on Kenya, Malawi, Nigeria to:
    - Strengthen antibiotic stewardship and infection management in health facilities.
    - Increase accountability, monitoring and surveillance of antibiotic prescription and supply; and
    - To advocate antimicrobial stewardship and implement improved waste management of antibiotics in at least one of the three countries.
  - Novartis is also ensuring educational activities, leveraging ubiquitous smart-phone technology (MedShr) and storytelling, tailored for Community Healthcare Workers (Healthy Family) and Pharmacists (Commonwealth Pharmacists Association) in the most rural areas of developing countries.

  **Responsible Innovation**
  - Novartis seeks active exploration of innovation opportunities through partnerships and networks, including collaboration with the AMR Industry Alliance.
  - Novartis supports the AMR Action Fund to develop two to four new antibiotics by 2030.
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| **9** Can you comment on some of your recent efforts to promote diversity at Novartis? | • Our DEI programs are globally governed and reviewed on a regular basis for its progress. Gender equity is an important part of our DEI strategy with women representing 47% of our overall management, compared with 46% in 2021, and 42% five years ago. In 2022, we were recognized for our progress through the Stonewall Top Global Employer Silver Award and Bloomberg Gender Equality Index.  
• In 2020, Novartis launched our Multicultural Engagement Program (MEP) to strengthen our inclusion efforts and ensure engagement – and improve retention – of ethnically and racially diverse employees later expanding to include Hispanic employees in 2021. We partner with external organizations including the Center for Disability Integration at the University of St Gallen, to identify and develop best practice solutions for disability inclusion.  
• We have 80+ dedicated employee resource groups connecting employees with shared experiences/backgrounds. We also support the UN Standards of Conduct for Business to tackle discrimination against LGBTQI+ employees and are members of the International Labor Organization’s (ILO) Global Business and Disability Network. |
| **10** How are you engaging with your suppliers to ensure they meet expected standards of behavior? | • We established a third-party risk management (TPRM) framework to help identify and manage risks when interacting with third parties. In April 2022, we extended our TPRM program to perform risk assessments on wholesalers and distributors in addition to vendors and suppliers.  
• Third parties are audited, and subsequent remediation actions (where required) as defined by the relevant Risk Function. A re-assessment of each third party is triggered every three years.  
• In January 2023, we updated our Third-Party Code to further specify human rights due diligence and environmental sustainability expectations from third parties. Our Third-Party Code is consistent with the Pharmaceutical Supply Chain Initiative principles for responsible supply chain management. |