AstraZeneca

Leading with health

Sustainability Report 2018

At AstraZeneca, we lead with health because we are committed to the health of people, the planet and our business.

This report

This is our fourth annual sustainability report, and it describes our progress and challenges from 1 January 2018 to 31 December 2018. The content of this report is based on those sustainability issues deemed material through comprehensive stakeholder engagement and analysis. We include three years of data where available. All our business operations worldwide are in scope regardless of their function, unless otherwise stated.

Assurance

Bureau Veritas has provided independent external assurance to a limited level for the sustainability key performance indicators shown in the Sustainability Data Summary and described in the sustainability letter of assurance. Assurance was also provided for select sustainability information in the 2018 Annual Report. Assurance is in accordance with the International Standard on Assurance Engagements 3000 (ISAE 3000), and in accordance with ISAE 3410 Assurance Engagements on Greenhouse Gas Statements.

Main cover image:
Oncology combination therapies: AstraZeneca is investigating combinations of biologic and small molecule therapies for the treatment of cancer. These combinations target the tumour directly and some help boost the body's own immune system to induce tumour cell death.

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We lead with health

Our pioneering medicines, investments and partnerships touch the lives of millions of people, giving us the opportunity to connect to the wellbeing of patients, their families and their communities.

Recognising the links between a healthy environment and human health, we believe our environmental stewardship will prevent diseases and strengthen access to healthcare. We also embrace an ethical and transparent approach for our workforce and how we operate, to support a more equitable and prosperous society. On our sustainability journey, we aim to reduce our negative impacts and do more good for society, the environment and our business.

2018 performance overview

Sustainability strategy

Lead with health to support healthy people, a thriving planet and an ethical business culture

16
new focus areas identified through our materiality refresh

100%
of Senior Executive Team areas delivered a sustainability initiative

25+
performance targets and metrics tracked (see Sustainability Data Summary for full list)

Access to healthcare

Address the global burden of non-communicable diseases (NCDs) through a holistic approach – from prevention to pipeline to treatment

35,000+
healthcare workers trained

12+ million
people reached through our portfolio of access programmes

9.3 million
people reached though our Patient Assistance Programmes

Environmental protection

Manage our environmental impact across all our activities and products

61%
of our total electricity use is sourced or generated from renewable sources

8%
reduction in our water use since 2015

93%
of active pharmaceutical ingredient discharges from suppliers demonstrated as safe[1]

Ethics and transparency

Create positive societal impact and promote ethical behaviour in all markets across our value chain

44.6%
women in management: Career Level F (senior middle management) or higher

83%
of employees feel that AstraZeneca is a great place to work

56.6
instances of non-compliance with the Code of Ethics per thousand employees in commercial regions

About us

Our purpose:
We push the boundaries of science to deliver life-changing medicines.

We are a global, science-led biopharmaceutical company. We discover, develop and commercialise prescription medicines. Our medicines primarily treat diseases in three therapy areas:

Oncology
Our ambition is to eliminate cancer as a cause of death through scientific discovery and collaborations.

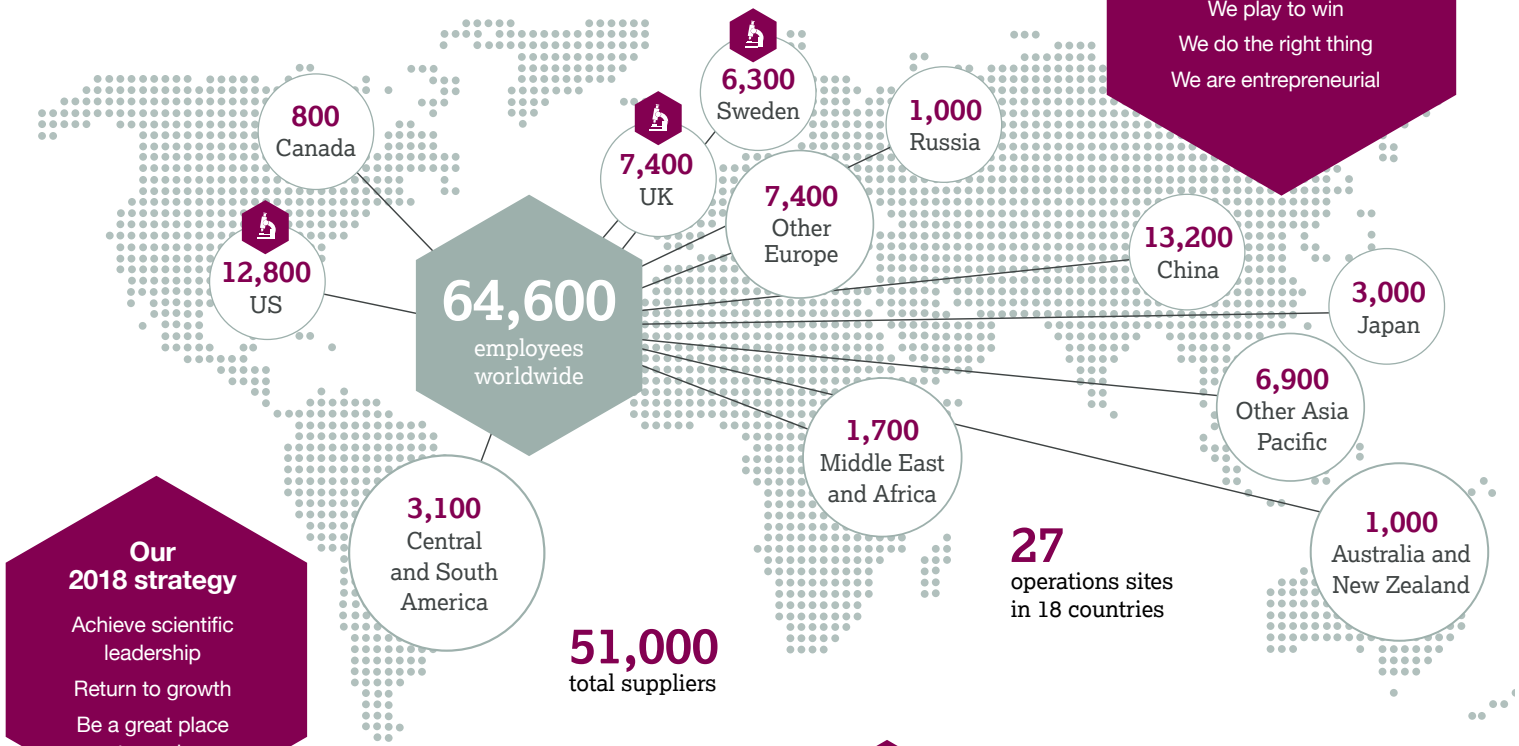
Cardiovascular, renal and metabolic diseases
We are following the science to transform how these diseases are understood, interact and impact one another.

Respiratory
We aim to transform the treatment of respiratory disease with our growing portfolio of medicines and scientific research targeting disease modification.

We are also active in other disease areas – autoimmunity, neuroscience and infection.

$5.9bn
R&D spend

$22.1bn
total revenue



Our recognition

Dow Jones Sustainability Indexes
World and Europe

Global 100 Most Sustainable Companies
Corporate Knights

CDP A LIST 2018
A List Climate Change
A List Water Security
Supplier Engagement Leader Board

"Outperformer" 8th of 159
Sustainalytics

FTSE4Good
Index series constituent

AA
MSCI

access to medicine index
9th of 20

Leadership messages

Katarina Ageborg, Executive Vice-President, Sustainability and Chief Compliance Officer; President AstraZeneca AB, Sweden, speaks with a sustainability enthusiast, Christe Fraser, safety specialist at AstraZeneca.

What sparked your interest in the field of sustainability?
I have had a strong personal interest in sustainability since the start of my career. I have a background in environmental law and also worked in the area of compliance for many years before I took on my current role. To me, sustainability is about taking responsibility for how we conduct our business and helping our employees be motivated to embed a sustainable mindset into their day to day work. I see sustainability as a core part of our company culture, and for us to be successful, it is critical that our sustainability strategy is an integral part of the overall company strategy.

Image:
Katarina Ageborg, Chief Sustainability Officer, has a video chat with Christe Fraser, safety specialist at AstraZeneca.

What do you love about your role?
What I love the most is the diversity, knowledge and experience of all the people I have the opportunity and pleasure to work with across the company. In AstraZeneca, we have chosen to focus our sustainability strategy on three pillars – Access to healthcare, Environmental protection, and Ethics and transparency – and it is very fulfilling to me to see how we, by working together across functions, skills areas and locations, help drive and influence the future of the company.

What is your favourite of the three strategic pillars?
It is very hard to pick one as all three are equally important and they all influence each other. Ethics and transparency is critical as it is about our licence to operate. To be successful as a pharmaceutical company, we have to be great in this area and foster the same high standard of ethical practice in all countries in which we operate. It is of course also important to do everything we can to protect the environment and our planet, and we are doing very well in this area. We take a scientific approach and set clear, science-based targets to reduce our environmental impact. Access to healthcare is the area where we have the most social responsibility and, as a healthcare company, the opportunity to make an impact. We use our scientific expertise to drive programmes that help educate and empower people to understand how disease prevention or environmental and lifestyle changes may improve health outcomes.

So, as you can see, I'm very proud of the work we are doing across all three of our strategic pillars.

Where would you like to see AstraZeneca in the next five to ten years?
I would like us to be in a place where we actually talk less about sustainability – it should be in our DNA, embedded in the way we make decisions, in the way we think and plan and develop our business strategies in all areas across the business. I'd also like us to continue developing our working environment to increase diversity at all levels and make sure everyone in the company feels valued and included and can bring their whole selves to work every day.

Do you have any advice for your employees?
I would just like to ask everyone to make sure they are familiar with our refreshed sustainability strategy, and for every employee to look for an area in their daily work where they think they can make an impact on our sustainability priorities. I encourage everyone to be creative, talk to colleagues, be innovative and feel empowered to bring new ideas forward, big or small. Sustainability needs to be at the heart of our operations and our decision-making – ultimately it is the way we will continue to drive innovative science and deliver life-changing medicines.

"As a sustainable organisation, our commitment to society, people and the planet lies at the heart of all that we do. I am tremendously proud of the progress that we continue to make, in particular in our three priority areas: Access to healthcare, Environmental protection, and Ethics and transparency. As we enter a period of growth, sustainability will continue to play a key part in our success as a company. Central to this will be continued engagement with our stakeholders to ensure AstraZeneca remains valued and trusted as a source of great medicines and an indispensable ally in the quest to meet global healthcare challenges."

Pascal Soriot, Executive Director and CEO

Image below:
While visiting our Healthy Heart Africa and Young Health Programme in Kenya, Pascal met with a school health club and spoke with peer educators who teach disease prevention.

Sustainability at AstraZeneca

We have built our sustainability strategy around three pillars that put health at the heart of our work – beginning with Access to healthcare.

We are committed to the health of our patients, employees, environment and the communities we reach through our medicines, our investments and our partnerships. All of this is underpinned by a healthy business culture, centred on integrity, respect and transparency.

	Access to healthcare Health is at the heart of our business	**Environmental protection** The health of the planet impacts all life	**Ethics and transparency** Healthy societies promote equality and prosperity for all
Our ambitions for 2025	Address the global burden of NCDs through a holistic approach – from prevention to pipeline to treatment	Manage our environmental impact across all our activities and our products	Create positive societal impact and promote ethical behaviour in all markets across our value chain
The connection to human health	We promote disease prevention in our communities and support our patients, regardless of barriers they may face	We manage our environmental impacts, which helps to prevent the onset of certain diseases and improve health outcomes	We create environments across our worldwide operations, including our supply chain, that promote health and wellbeing
Our material issues	Disease prevention and treatment, Responsible R&D, Investments in health systems, Environment's impact on health and Affordability	Product environmental stewardship, Greenhouse gas reduction, Pharmaceuticals in the environment, Water stewardship and Waste management	Ethical business culture, Inclusion and diversity, Talent and workforce evolution, Workforce wellbeing and safety, Responsible supply chain and Human rights
Our United Nations SDG impact			

Our approach

Sustainability at AstraZeneca is about using our capabilities to make the most meaningful impact where society needs it – health.

We work hard to develop medicines to save lives, foster inclusive workplaces and multiply positive impact throughout our operations and supply chain. We believe there is a strong connection between the health of our patients, our business, our workforce and the planet, and each of these impact one another.

As a global company, we seek to leverage our reach, scale and expertise to effect real change in a range of sustainability issues. We align our business imperatives to health demands, in a way that holistically addresses both internal and external needs.

In a complex world, a siloed approach to sustainability is not an option. We manage our value chain across the many facets, with the intention of promoting human health and wellbeing, encouraging inclusive working environments, creating growth and development opportunities, managing our environmental impacts and developing a wide range of programmes for our patients and communities.

Sustainability integration

Operating model
Being 'a great place to work' is one of our three corporate strategic priorities for the company as a whole. Its success includes delivering our sustainability targets. Those targets are a part of the company's global scorecard that sets the course for business and are the responsibility of every employee to achieve.

Employee training
All newly hired employees take an induction module that includes sustainability training. We also incorporate sustainability education into our Leading People training for managers.

Financial reporting
Sustainability-related occurrences are now incorporated into publicly released quarterly results for investors.

Risk management
We recognise the connection between enterprise risk management and sustainability management. In 2018, enterprise risk management helped inform the sustainability materiality assessment and we used the results to better align our risk and sustainability classifications. Sustainability helps inform our quarterly risk reviews.

Code of Ethics
Our Code of Ethics is based on our company Values. It provides clear guidance and direction to employees in carrying out their daily work. Annual training on the Code is mandatory for all employees. Sustainability is featured as one of four high-level Global Policies in the Code of Ethics.

For updates on our progress for metrics, see the Sustainability Data Summary

Sustainability governance

Bold leadership and accountability throughout the company frame the way we operate.

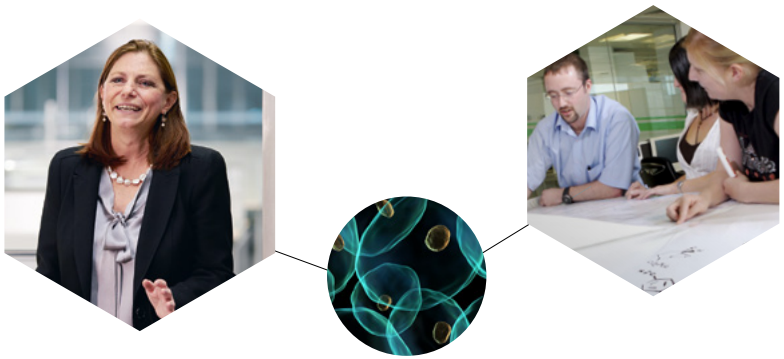
"The in-depth materiality assessment carried out by AstraZeneca has helped it find a powerful focus in its aspiration to be a leader in global sustainability. AstraZeneca's resulting focus includes preventative healthcare through environmental actions. For example, our collaborative project at Dunga Beach in rural Kenya has real potential to build the evidence base needed to accelerate the switch to clean cooking fuel, for both community and environmental improvement."

Dame Polly Courtice, Sustainability Advisory Board

Board of Directors

Non-Executive Director Geneviève Berger (pictured below) oversees implementation of sustainability matters on behalf of the Board of Directors.

This year the Board reviewed the new company ambition to be a leader in sustainability by delivering the strategy from the sustainability materiality assessment.



Senior Executive Team

Every member of the Senior Executive Team (SET) is accountable for a specific sustainability initiative. Katarina Ageborg, Executive Vice-President, Sustainability and Chief Compliance Officer; President AstraZeneca AB, Sweden, is responsible for the overall sustainability strategy execution, including tracking our progress towards our targets, and liaising with company leadership to ensure strategy is aligned with business priorities.

Sustainability Advisory Board

Our Sustainability Advisory Board comprises five SET members and four external sustainability experts. It met in 2018 to approve strategic direction, recommend opportunities and provide insight, as it did for the materiality assessment.

The value created by external advisers

External advisers help to inform and shape our strategy. Each adviser has deep expertise in one or more fields, spanning climate change, corporate social responsibility, strategy, sustainability and nutrition. This range of perspectives helps us to understand the diverse needs and concerns of external stakeholder groups. The advisers offer insights from other sectors and industries that we may not have considered otherwise. Most importantly, they challenge our thinking and push us to see things differently.

External advisers:

Pankaj Bhatia
Deputy Director, Climate Program, World Resources Institute

Dame Polly Courtice, DBE, LVO
Director, Cambridge Institute for Sustainability Leadership, University of Cambridge

José Lopez
Former Executive Vice President for Operations, Nestlé SA

Mary-Jane Morifi
Chief Corporate Affairs Officer, Tiger Brands Limited

Stakeholders

Throughout the year, we engaged with employees and external stakeholders, including healthcare providers, investors, ministries of health, non-governmental organisations (NGOs), patients and suppliers to hear their concerns and feedback related to our current sustainability initiatives and their expectations for the future. See more in the Stakeholder engagement section.

United Nations (UN) Sustainable Development Goals

The UN 2030 Agenda for Sustainable Development is a universal action plan for a fairer, safer and healthier world. It represents the collective voice of stakeholders who normally are not heard – the world's most disadvantaged and vulnerable.

Success is measured using the 17 Sustainable Development Goals (SDGs). Businesses, governments, non-governmental organisations and communities are helping global society make progress towards these goals. As a global biopharmaceutical company investing in improving human health and advancing science, we are listening, and we recognise our responsibility to contribute to the delivery of these ambitious and valuable goals.

We measure our contribution to society by connecting our company targets to the SDG targets. In 2018, we continued our work on the SDGs. We believe our refreshed strategy can have the greatest positive impact on six of the SDGs. These six SDGs are related to our core business – health. Health is at the heart of what we do, and we are dedicated to providing holistic health solutions, ranging from medicines for patients to workforce wellbeing initiatives. These efforts drive our contribution to the SDGs.

SDG 3
Good health and wellbeing

Why it matters
Non-communicable diseases (NCDs) kill more than 40 million people each year, equivalent to 70% of all deaths globally. It is estimated this will cost the global economy $47 trillion by 2030 if the rate of NCDs remains status quo.[2]

Material issues
Disease prevention and treatment, Responsible R&D, Investments in health systems, Environment's impact on health, Affordability

Targets
3.4 Reduce premature mortality from NCDs
3.5 Strengthen prevention and treatment of substance abuse
3.6 Halve the number of global deaths and injuries from road traffic accidents
3.8 Achieve universal health coverage
3.c Increase the health workforce in developing countries

Our progress
AstraZeneca sponsors the Lead2030 Challenge for Goal 3 through the Young Health Programme. See Disease prevention and treatment. With our partner Plan International, we designed a challenge for young people to create health promotion ideas to reduce health risk behaviours in youth.

- Over 12 million people reached through our portfolio of Access to healthcare programmes (Healthy Heart Africa, Healthy Lung and Phakamisa)
- Over 3 million youth reached through our Young Health Programme
- Over 35,000 healthcare workers trained
- Over 1,600 health facilities activated or partnered.

SDG 5
Gender equality

Why it matters
Empowering women is essential to expand economic growth, promote social development and enhance business performance. Women's equality in the workplace could add as much as $28 trillion to global annual gross domestic product by 2025.[3] It would take 217 years to achieve gender equality in the workplace if all things remained equal.[4]

Material issues
Inclusion and diversity, Ethical business culture, Talent and workforce evolution, Human rights, Responsible supply chain

Targets
5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life

Our progress
- 44.6% women Career Level F or higher (senior middle management) (from 44.4% in 2017)
- 30.2% women Career Level I and J (executive management) (from 28.1% in 2017)
- 42% women representation on Board of Directors (from 42% in 2017).

United Nations sustainable development goals
continued

SDG 8
Decent work and economic growth

Why it matters
Inequality is rising globally and there are not enough jobs to keep up with a growing labour force. Substandard working conditions are often related to poverty, inequality and discrimination. In many contexts, vulnerable groups – such as workers with disabilities, women and migrants, among others – face significant obstacles in accessing decent work and may be particularly at risk of abuses.[5]

Material issues
Workforce wellbeing and safety, Talent and workforce evolution, Ethical business culture, Human rights, Responsible supply chain

Targets
8.5 Achieve full and productive employment and decent work for all women and men, and equal pay for work of equal value

8.8 Protect labour rights and promote safe and secure working environments for all workers

Our progress
- Increased supplier assessment – 82% spend through our third-party risk management programme
- 100% of countries where we operate were evaluated for local living wage performance
- 3rd most active company out of 93 healthcare companies – Virgin Pulse Global Health Challenge
- 26% reduction in reportable injury rate from 2015 baseline
- 9% reduction in vehicle collision rate from 2015 baseline.

SDG 12
Responsible consumption and production

Why it matters
Currently, 40% of the world's population lives in water-stressed river basins.[6] Each year, nations generate 1.3 billion tonnes of waste, a number that is expected to triple by 2100.[6] Waste includes chemicals that can accumulate in water sources and impact human health.

Material issues
Product environmental stewardship, Pharmaceuticals in the environment, Water stewardship, Waste management

Targets
12.2 Achieve the sustainable management and efficient use of natural resources

12.4 Achieve the environmentally sound management of chemicals and all wastes, and reduce their release to air, water and soil

12.5 Reduce waste generation through prevention, reduction, recycling and reuse

12.6 Encourage companies to adopt sustainable practices and to integrate sustainability information into their reporting cycle

12.7 Promote public procurement practices that are sustainable

Our progress
- 8% reduction in water use
- 50% of active pharmaceutical ingredient (API) syntheses met resource efficiency targets in 2018
- 100% of API discharges from AstraZeneca sites assessed as safe
- 93% of API discharges from suppliers demonstrated as safe.

SDG 13
Climate action

Why it matters
Since 1970, CO_2 emissions have increased by about 90%,[8] with current atmospheric concentrations measuring at over 400ppm.[9] Air pollution is a leading cause of lung cancer, chronic obstructive pulmonary disease (COPD), stroke and heart disease.[10]

Material issues
Environment's impact on health, Product environmental stewardship, Greenhouse gas reduction

Targets
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

13.2 Integrate climate change measures into national policies, strategies and planning

Our progress
Working towards our science-based targets:
- 6% reduction in Scope 1 emissions from 2015 baseline
- 54% reduction in Scope 2 emissions from 2015 baseline
- 0.4% reduction in operational greenhouse gas (GHG) footprint from 2015 baseline
- 61% of electricity imports sourced from renewable sources
- 7% of our vehicle fleet in the US, UK and Japan is hybrid, plug-in or electric, up from <1% in 2017.

SDG 17
Partnership for the goals

Why it matters
Nearly 2 billion people have no access to basic medicines.[11] Public–private partnerships have proved to be one of the most visible manifestations of the power of collaboration to improve access to holistic healthcare.

Material issues
All

Targets
17.17 Encourage and promote effective public, public–private and civil society partnerships

Our progress
- In a new partnership with the University of Cambridge Institute for Sustainability Leadership, AstraZeneca is one of the founding members of The Prince of Wales Global Sustainability Fellowship Programme. The programme aims to attract academics from around the world with the support of leading companies to identify breakthrough solutions to meet the SDGs.
- We have been Signatories of the United Nations Global Compact since 2010 and joined as Participants in 2018.

See Sustainability Data Summary for full list of metrics and progress

Materiality refresh

As a responsible business, we refine our strategy by examining significant trends and engaging internal and external stakeholders. This process helped to define the social, environmental and governance issues that matter most, and that give our business the chance to achieve the biggest positive impact.

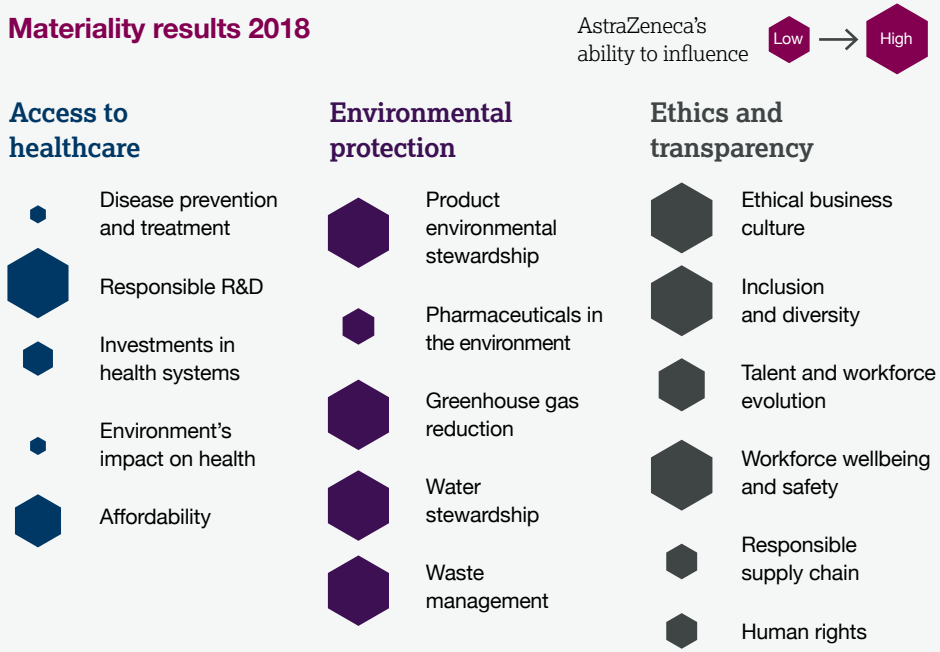
This year, we worked with an independent consultancy to conduct our sustainability materiality assessment, which helped us identify 16 priority material issues. Our latest assessment sharpens our focus – narrowing the field of issues we prioritise by about 50% – which will maximise our opportunity for impact.

Our process was rigorous, robust and comprehensive, given its geographic breadth, depth of input from stakeholders and alignment with enterprise risks. The assessment aligned with Global Reporting Initiative reporting recommendations and included innovative approaches to materiality, such as a megatrends analysis and big data tools. We also honed in on certain geographies with region-specific analyses, which helped to identify differences across our markets. All this work was informed by extensive input from our employees and external stakeholders.

Our interactive prioritisation process

1. We conducted an interactive prioritisation workshop with AstraZeneca's Sustainability Advisory Board, which comprises external sustainability experts and internal leaders.
2. We then used online and social media tools to gather big data about external stakeholder priorities on pharmaceutical sector megatrends and emerging issues.
3. We conducted 19 interviews with external representatives from key stakeholder groups, as well as 20 interviews with employees across many career levels and locations.
4. To further inclusivity by 25-fold, we gauged the views of our employees by sending 150 in-depth surveys, hosting a focus group for 20 employees and crowdsourcing through online quizzes open to all employees.
5. Our final step was to analyse the results and consider how the issues we surfaced aligned with our Enterprise Risk Management function and our company's business strategy through 2025.

Materiality results 2018



Workplace culture topics such as Inclusion and diversity, and Talent and workforce evolution were elevated in comparison to the previous assessment

We retained our 3 priority categories

You can find more information on other topic areas in our Sustainability Data Summary and at astrazeneca.com/sustainability.

Stakeholder engagement

We value insights from stakeholders inside and outside our business, which help us shape, advance and implement our sustainability strategy.

We actively seek stakeholders' input, so we can refine our approach to providing solutions that improve the health of communities, the planet and our business culture. To build strong connections with our stakeholders, we emphasise transparency and open dialogue, which help us understand diverse perspectives and work together to improve the lives of patients. Read more about our approach to stakeholder engagement through our 2018 in-depth materiality assessment.

We use a wide range of communication channels with our stakeholders, including digital engagements and face-to-face conversations. Through our multi-stakeholder engagement approach, we also create opportunities for interaction with stakeholders in a group setting. Our global standard on stakeholder engagement – Ethical Interactions and Anti-Bribery/Anti-Corruption – guides our approach. You can read more about how stakeholders can raise concerns in the Ethics and transparency section of this report.

Hear from our stakeholders

In 2018, we asked for feedback on our sustainability efforts and future direction. We heard more than 2,000 positions and recommendations from employees and key external stakeholders.

Look for this symbol to see their quotes throughout this report.

Featured engagements

Patients
Our Frontier Markets team improved access to medicines for patients in 2018. To ensure that life-saving medicines get to patients in new and smaller markets as quickly as possible, our team has standardised the approach for new drug applications to expedite approvals. Our team has increased medical coverage in Sri Lanka and Cambodia and has expanded to two new markets: Myanmar and Bangladesh.

Healthcare professionals
For the first time, we conducted a survey of healthcare professionals in Belgium to understand their expectations of sustainability in the pharmaceutical industry. Ninety per cent stated that sustainable practices are important and they want companies to prioritise Disease prevention and treatment, Product environmental stewardship, and Workforce wellbeing and safety.

Communities
We provided over $740 million in community investment sponsorships, partnerships and charitable donations worldwide, including our product donation programmes and Patient Assistance Programmes, which make our medicines available free of charge or at reduced prices. See the Access to healthcare section for more information.

Suppliers
We are a member of the Pharmaceutical Supply Chain Initiative (PSCI), an industry collaboration that supports principles for responsible supply chain management for ethics, labour, health, safety, environment and related management systems. These principles are incorporated into our Expectations of Third Parties Handbook. In 2018, an AstraZeneca team member began serving as Vice Chair on the PSCI Board of Directors. We aim to collaborate with industry in an effort to reduce duplication of the industry's suppliers' efforts to report on their sustainability performance.

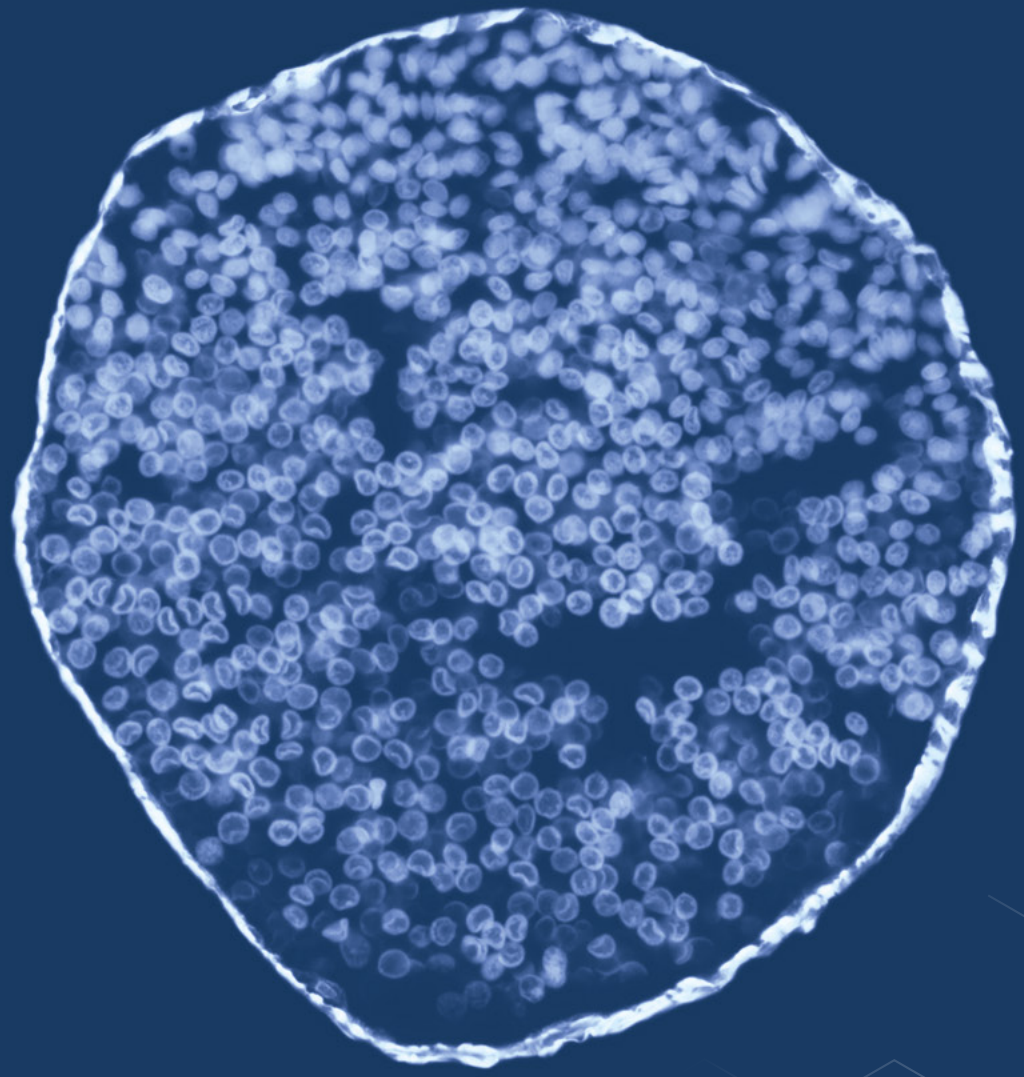
Employees
We launched a new, enterprise-wide social media platform called Workplace in April 2018. It allows our employees to come together as one global team, make connections with colleagues, share, communicate and work together. Workplace is designed to be intuitive and has a similar layout to Facebook. We leverage this platform to interact with employees across the business in sustainability conversations and actions. Our Sustainability Matters page membership consists of more than 20% of all employees.

Investors/analysts
In addition to content reflected in the Annual Report, we report on sustainability-related occurrences by incorporating content in a dedicated section within the year-to-date and quarterly results for investors.

Government bodies and regulators
Our significant and long-standing collaborations with the Chinese government's healthcare system have helped with the introduction of several improvements to the continuum of care. In 2018, China launched new pulmonary and critical care medicine national guidelines and newly updated asthma and chronic obstructive pulmonary disease guidelines for general practitioners, and added two of our medicines to its Essential Drugs List. These developments are part of our China respiratory team's accomplishments and will drive our goal of a step-change improvement in care for patients with respiratory disease.

Access to healthcare

We build healthy communities by taking a holistic approach to addressing the global burden of illness – from prevention to pipeline to treatment. We shape societal health directly through our healthcare solutions, and we also work on a systematic level by concentrating on the role of health in our initiatives focused on a responsible supply chain, environmental stewardship, and workforce wellbeing and safety.



In this section

Access to healthcare overview | Disease prevention and treatment
Responsible R&D | Investments in health systems
Environment's impact on health | Affordability

Access to healthcare overview

Health is central to a functioning society and connects us all. Providing access to healthcare is the core of our business, which is why we take a holistic approach to supporting people's health – from prevention to pipeline to treatment.

We work with the industry and other partners to remove barriers to access for people, regardless of social or economic condition. Our strategy is centred on our understanding of the healthcare systems and needs of the people who live in emerging economies. We develop medicines, create supporting programmes and channel our investments – including those focused on prevention and strengthening health systems – to meet the needs of communities. In addition, by educating and empowering people to understand how lifestyle choices and the environment affect health, we hope to play a key role in creating a healthier society.

Governance

We manage the discovery, development, manufacturing and commercialisation of our pipeline across more than 100 countries. Every employee has a role in delivering our impacts on societal health and every SET area leads a different aspect. An Access to healthcare working group convenes quarterly and is chaired by the Global Sustainability department to enable data monitoring and best practice sharing. It is just one of the processes we use to facilitate better access. We have more than 600 collaborations worldwide that aim to leverage cooperative thinking to deliver health solutions.

Material issues

Our strategy addresses five health issues, as identified by our materiality assessment:

- **Disease prevention and treatment**
- **Responsible R&D**
- **Investments in health systems**
- **Environment's impact on health**
- **Affordability**

Impact 2018

12+ million
people reached through Healthy Heart Africa, Phakamisa and Healthy Lung (cumulative)

3+ million
youth reached through our Young Health Programme (cumulative)

9.3 million
reached through Patient Assistance Programmes (cumulative)

54
countries have active AstraZeneca initiatives

35,000+
healthcare workers trained (cumulative)

$686+ million
of medicines donated by Patient Assistance Programmes

Key accomplishments

- Young Health Programme won Community Investment Programme of the Year at Ethical Corporation's Responsible Business Awards
- Expanded Healthy Lung programme to four new countries
- Notable results from Access to Medicine Index:
  - AstraZeneca maintained a strong performance in 2018, particularly in the application of advanced methods for determining prices for different population subsets
  - The largest pipeline of all companies evaluated, with a process for access-planning and a total of 218 R&D projects
  - Above-average transparency regarding access-related practices.

Access to healthcare approach and programme highlights

We invest in health systems' capabilities around the world, to ensure that our medicines get to people who need them. We work to improve affordability and access. We seek to expand disease prevention and treatment whenever possible, through screenings, awareness programmes and training healthcare professionals.

9.3 million
reached through Patient Assistance Programmes

Healthy Lung

This programme, now active in 13 countries, is designed to build local health systems to support the diagnosis and treatment of respiratory diseases.

AZ&Me

This programme provides our medications at no cost to eligible patients who cannot afford them.

35,000+
workers trained in healthcare

54
countries have active AstraZeneca initiatives

12+ million
people reached by Healthy Heart Africa, Phakamisa and Healthy Lung Asia

$686+ million
of medicines donated by patient assistance programmes

Healthy Heart Africa

This programme, now active in three African countries, is committed to tackling hypertension and decreasing the burden of cardiovascular disease across Africa.

3+ million
youth reached through our Young Health Programme

Disease prevention and treatment

Non-communicable diseases (NCDs) are the number one cause of death and disability globally. They kill more than 40 million people each year and cause negative social impact at the local and global levels.

In most cases, NCDs, such as cancer, asthma and heart disease, are long-term and put a huge strain on the public health system and personal finances. They are also increasingly common in younger adults, with 70% of NCDs linked to behaviours started in adolescence, such as smoking and poor diet.[12] It is estimated NCDs will cost the global economy $47 trillion by 2030 in lost productivity.[13] This has the potential to bankrupt health systems, making prevention and treatment both necessary tools for our future. We are in a strategic position to leverage our scientific expertise to develop and scale health solutions for NCDs.

Our definition

Company activities aimed at preventing the onset and progression of diseases (including NCDs).

Our approach

While disease prevention and treatment are two distinct methods that occur along a continuum to improve health, many of our tactics include elements of both. Because prevention and treatment are outcomes of our efforts as a healthcare company, we can connect them to many of our sustainability endeavours. For example, we put our commitment to health into action through internal programmes with our workforce, as well as external programmes with our patients and partners.
See more in Investments in health systems and Workforce wellbeing and safety.

Prevention
Many NCDs can be addressed through health promotion and behaviour change programmes.[14] However, behavioural change can require a variety of approaches through multiple methods to be successful. With health at the heart of our business, we seek to support people on their path to better health. We do this in a variety of capacities, thereby adding value to both individual lives and the global economy.

We have three focus areas for disease prevention:

1. **Health promotion**
2. **Advocacy**
3. **Research**

Treatment
We focus on the societal value of our medicines, whether it's concentrating our portfolio on our three main therapy areas that target the three leading causes of death or breaking down cultural barriers to improve treatment adherence. We work alongside scientists at leading institutions to better understand diseases and accelerate drug development, and hope that our open research environment will fast-track treatments for NCDs. We are hard at work, with 150 projects in the pipeline as of 31 December 2018.

Sustainability in action

Young Health Programme updates

In 2018, we reached more than 3 million young people with health information on NCDs and risk behaviours and trained more than 18,000 peer educators and healthcare workers. In partnership with local governmental and non-governmental groups, we launched new programmes in Indonesia, Serbia, Turkey and Australia and approved the development of new programmes in Vietnam, Myanmar, Mexico and Panama. This brings the total number of developing and active Young Health Programme (YHP) initiatives to 18.

We supported our partners, NCD Child and Plan International, as they advocated for the inclusion of adolescent health and NCD prevention in the Political Declaration on NCDs and at the Third UN High-level Meeting on NCDs. We continued to mentor and support the development of young global health leaders by sending a delegation of 20 young people to the One Young World Summit in The Hague.

YHP won Community Investment Programme of the Year at Ethical Corporation's Responsible Business Awards. Learn more on our YHP website.

Image above:
©Marco Betti for YHP

Disease prevention and treatment
continued

Sustainability in action

Driving patient-centric solutions

AstraZeneca is committed to finding solutions that put our patients first, through innovation and collaboration. In this spirit, we held the First International Future Healthcare Forum in Cambridge, UK. This event brought together over 70 global experts in healthcare innovation from industry, academia and government institutions to discuss innovation in life sciences at key research hubs around the world. This will become an annual event, which will create a best-in-class environment for collaboration and allow these hubs, as well as others that come on board, to pursue opportunities that drive the next wave of biomedical innovation.

Early Action in Diabetes policy initiative

Diabetes is one of the most common NCDs globally. To address this NCD, in partnership with the International Diabetes Federation, the World Heart Federation and Primary Care Diabetes Europe, we created the Global Diabetes Policy Forum in 2014. The forum brings together experts from more than 20 countries to build momentum for policy changes to improve care for people with type 2 diabetes. At a summit in Copenhagen, representatives from 15 countries developed strategic roadmaps to reduce the burden of diabetes. Our overarching goal is to improve policymaking at a national level, to address this public health concern that contributes to 13% of healthcare spending today and could impact 693 million people worldwide by 2045.[15]

Image right:
Dr. Xavier Cos, Chairman of Primary Care Diabetes Europe, presenting a call to action to policymakers at the 54th Annual Meeting of the European Association for the Study of Diabetes Congress in Berlin, Germany.

Rapid response to Ebola

An Ebola outbreak between 2013 and 2016 took the lives of over 11,300 people in a West African epidemic. Two consecutive Ebola outbreaks were declared in 2018 and continue to take lives in the Democratic Republic of Congo (DRC). MedImmune was able to participate in the outbreak response effort by working with the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health, to manufacture the monoclonal antibody mAb114 and to later provide it to treat Ebola-infected patients at the DRC's request. NIAID's Vaccine Research Center, in collaboration with the *Institut National de Recherche Biomedicale*, the Department of Defense (DARPA, DoD) and Humabs BioMed, isolated mAb114 from a human survivor of the 1995 Ebola outbreak in Kikwit, DRC. MedImmune conducted process development and GLP toxicology, and manufactured the material for clinical studies of mAb114 (Phase 1). This material has also been shipped to the DRC to be administered under an Expanded Access Protocol and a Randomised Controlled Trial currently being conducted in the DRC, with assistance from the World Health Organization. The Vaccine Research Center and DoD are manufacturing additional lots of mAb114, following tech transfer of the process, to ensure an uninterrupted supply of mAb114 for clinical studies.

> "We are proud to have had the opportunity to collaborate with our colleagues at NIAID and other partners for the advancement of science and the benefit of public health."
>
> Tonya Villafana, Senior Director and Project Development Team Lead, MedImmune

Outcomes

3+ million
youth reached through YHP

18,000+
healthcare workers trained in adolescent health

15
active YHP countries

52
US-based non-profits funded through the AstraZeneca Foundation[15]

Disease prevention and treatment
continued

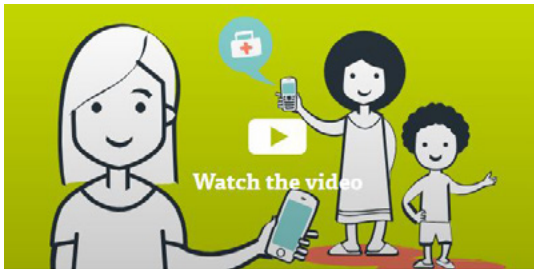
Challenges

Many of the factors that cause NCDs, such as smoking, drinking, sedentary lifestyles and poor diet, occur outside the pharmaceutical industry. This means that we must take a systemic approach to NCDs and engage stakeholders outside our industry. To do this, we seek cross-sectoral and inter-sectoral partnerships and collaboration to effect real change in this space.

Many ways to impact disease outcomes
Many of our Access to healthcare programmes include a dimension of disease prevention. For example, our Healthy Lung programme raises the profile of respiratory disease and Healthy Heart Africa educates on hypertension risks.
See more in Investments in health systems.

Highlights

Employees fund health insurance in Kenya
Building on the work of our Healthy Heart Africa programme (see more in Investments in health systems), AZHealthConnect enables AstraZeneca employees to immediately support families in Kenya. Employees' voluntary donations will directly help a mother or father in Kenya provide their family with basic healthcare, such as medicines and appointments with healthcare professionals. AstraZeneca will match the amount of all employee donations to provide even more families with healthcare.



Partnering to reach more patients
Since 2010, our partnership with Americares and the Sihanouk Hospital Center of Hope has supported the Cambodia Breast Cancer Initiative to address challenges in access to healthcare services. In 2018, the programme provided 963 screenings, administered 24,000 units of free medicine, gave 14,700 individuals information on early detection and screening, diagnosed 93 cases of breast cancer and continued to treat 661 patients who were previously diagnosed.

AstraZeneca Healthcare Foundation[16]
We continue to support *Connections for Cardiovascular Health*SM, a programme of the AstraZeneca HealthCare Foundation that was launched in 2010 to address heart health in the US. In 2018, we provided $1.16 million in grants to 11 non-profit organisations for programmes that aim to prevent and reduce cardiovascular disease. Learn more on the Foundation website.

Stakeholder dialogue

"We should think about putting people first. We should get to people before they become patients."

Compliance employee, International

Stakeholder dialogue

"If a pharma company invests in things that help a person stay healthy, not selling me on anything, then I would believe that they are trying to prevent disease."

External stakeholder, US

Image at right:
©Marco Betti for YHP

Responsible R&D

Continuous innovation and a long-term perspective are critical to address current and future medical needs. This challenges us to think differently about R&D.

Non-communicable diseases (NCDs) are the greatest cause of death worldwide.[17] We know that even as we strive to use the most effective means to reach as many people as possible, we have a long way to go. Today, we focus on creating innovative medicines designed for unmet medical needs, including in low and middle-income countries, and appropriate for use in local contexts. This helps make our medicines available, in a responsible manner, to diverse patient populations globally. Responsible R&D is also good business because it drives us to innovate, establish new and expand existing partnerships, venture into new markets and develop new medicines.

Our definition

Development of an innovative product portfolio strategy to drive global health outcomes by:

1. **Addressing unmet medical needs and barriers to patient journey**
2. **Increasing the speed and breadth of patient access**
3. **Driving excellence in product life-cycle management**
4. **Striving to understand long-term impacts of scientific advances**

Our approach

AstraZeneca has a robust pipeline and we recognise the impact we can make to the treatment of NCDs for patients around the world. Responsible R&D is not new at AstraZeneca, but framing it within the context of sustainability and Access to healthcare is an evolving endeavour. We will work in 2019 to further advance our approach to responsible R&D and identify innovations that demonstrate it. Already, we aim to increase the number of people we reach with our medicines by addressing unmet medical needs. We consider many settings, including low and middle-income countries, in clinical trial development to incorporate new and relevant clinical evidence as it applies to these geographies and provide early access. We engage in collaborations to advance scientific understanding and build local capacity for R&D. We invest in science and technology, such as digitalisation and precision medicine, which can help reduce costly infrastructure and ensure the patient receives the treatment they need most effectively. We also consider the range of ethical issues that arise from biological and medical science. These activities help us reach more patients responsibly by designing for unmet needs and taking a more comprehensive view in the R&D process.

Responsible R&D is closely related to other key areas of our approach, including affordability, investments in health systems, product environmental stewardship and ethical business culture including bioethics; as we build our strategy in 2019, these connections will be further understood.

Ensuring our products are safe for people and the environment around the world
Through our work on product safety and product environmental stewardship, we consider how our products will affect the populations they intend to treat within the R&D phases. Further integration of our Responsible R&D strategy with these other key areas will occur in 2019.

Sustainability in action

Collaboration with Guangzhou University

Our respiratory team joined forces with the Guangzhou Medical University to conduct a study on chronic obstructive pulmonary disease (COPD) in China, with the aim to find better ways of diagnosing and preventing incidence and to explore whether environmental factors like air pollution interact with known triggers. This joint study involves over 300 patients for two years.

Our team had previously carried out COPD studies in many Western countries and was interested in comparing earlier findings with those from China, where COPD is highly prevalent and a leading cause of death. What does this mean for patients in China? It means we may be able to identify the different types of COPD and predict exacerbations before they occur, thereby transforming the way we treat COPD and the way patients receive therapies so that they are most appropriate for local contexts.

Learn more about this collaboration.

Responsible R&D
continued

Sustainability in action

Improving local R&D capacity

An external collaboration platform in R&D, education, technology and government affairs, iDREAM is an initiative being implemented through local bio-hubs in our Emerging Markets. These bio-hubs improve local capacity for R&D to address local needs. In 2018, AstraZeneca launched iDREAM hubs in Russia, Brazil and Taiwan, with important collaboration agreements signed.

Following all of our efforts to bring innovation to patients at a country level, as part of the next phase in our iDREAM journey we aimed to connect this culture across the whole region. In December 2018 at the University of Cambridge, our cross-functional AstraZeneca International Science Board team launched the inaugural **International Future Healthcare Forum**, bringing together our iDREAM hubs from Russia, Brazil and Taiwan, as well as potential hubs from Australia, Turkey and China, to share and collaborate on the latest developments in life sciences innovation.

This annual forum showcased our iDREAM initiative and demonstrated the value of an integrated science ecosystem, connecting education, R&D and government affairs across our International region. It also allowed our hubs, as well as potential hubs, to pursue opportunities with potential partners to drive the next wave of biomedical innovation. Learn more about iDREAM.

Open Innovation drives discoveries

Since the launch of Open Innovation in 2014, we have engaged in more than 250 new collaborations, and we have received over 500 proposals for new research collaborations from scientists in 23 countries across 4 continents. These actions expand our collaborative efforts in R&D and transparency. Open Innovation has over 250,000 compounds available from our screening library, with 30 completed, ongoing or planned clinical studies and over 250 planned or ongoing preclinical studies.

Outcomes

Approximately **90%** of pipeline has a precision medicine approach

Challenges

As we develop innovative approaches to personalise medicine and transform the nature of drug development, we recognise the inherent challenges in this process, particularly for expanded access. For instance, while we have made promising developments in biologics, these present challenges related to oral dosing and cold chain storage when it comes to providing access to care. To address these issues, we are exploring how to further embed access considerations into our development process, and we will continue to evolve our approach going forward.

Stakeholder dialogue

"AstraZeneca should be leading the UN Sustainable Development Goals 3 (good health and wellbeing) and 5 (gender equality). The last also includes the design of pre-clinical studies, to assure we capture potential gender differences in the data we generate."

Employee

Highlights

Committed to R&D to meet public health needs
AstraZeneca has the largest pipeline for diseases in scope of the 2018 Access to Medicine Index. The prevalence of NCDs, such as cancer and cardiovascular, metabolic and respiratory diseases, is increasing worldwide. With a robust pipeline and a core focus on our three main therapy areas – oncology, cardiovascular, renal and metabolic diseases, and respiratory – we are working to treat NCDs with a high public health burden.

Precision medicine
Our precision medicine approach is based on those individual characteristics that make some patients respond to treatment better than others. We use this knowledge to develop diagnostic tests that doctors can use to help prescribe the best treatment for each patient.

PT&D advances patient reach with innovative, sustainable design
Our Pharmaceutical Technology and Development (PT&D) group integrates sustainability into its Science and Innovation Strategy, where patient-focused and access-driven designs are considered and advanced as appropriate. An example of this is the development of low-cost injector devices with improved stability, enabling further use in low-income areas that lack access to costly cold-chain storage systems.

Partnership with Drugs for Neglected Diseases initiative
We have an existing agreement with the Drugs for Neglected Diseases initiative (DNDi) for products to treat neglected tropical diseases. Learn more about DNDi.

Investments in health systems

Healthcare is provided within systems that influence the quality of care people receive in many parts of the world.

The systems comprise patients, families, hospitals, clinics, pharmacies, insurance companies, pharmaceutical companies, governments and more. We recognise the complexity of these systems and endeavour to collaborate to create the system-wide changes necessary to ensure that everyone receives the quality of healthcare they need. Our global footprint gives us the reach and scale to partner with diverse organisations to make this possible. Our investments help patients, and they also make business sense – helping us build relationships and gain a more intimate understanding of local health challenges so that we can help address gaps in the market and develop specific medicines and treatments for underserved communities.

Our definition

Company contributions to strengthening healthcare capabilities and infrastructure – particularly in developing and emerging markets – to facilitate access to healthcare and improved quality of healthcare and outcomes.

25 million

people we aim to reach by 2025 through our Healthy Heart Africa, Healthy Lung, and Phakamisa programmes

Our approach

We aim to understand how we can work most effectively and strengthen healthcare frameworks and capabilities while remaining culturally sensitive. We have teams dedicated to building relationships across the public, private and non-profit sectors to understand the healthcare needs of their communities. We work through local partnerships to build the capacity of healthcare systems to better respond to patient needs. Working with partners and healthcare professionals, we can provide education and screening to identify high-risk patients and establish systems to treat and monitor those patients.

Stakeholder dialogue

"The most important element in establishing AstraZeneca as a leader in sustainability would be expanding access to the emerging markets by investing (today) in the infrastructure that would enable us to test our drugs in those areas and reach more patients around the world."

Employee

Sustainability in action

Healthy Heart Africa reaches more patients

The Healthy Heart Africa (HHA) programme is committed to tackling hypertension and decreasing the burden of cardiovascular disease across Africa. The programme comprises four stages: patient education and awareness, screening, diagnosis and treatment/monitoring. It aims to reach 10 million people across Africa by 2025. We make branded medicines available at a significant discount, but one that enables us to implement a no-profit/no-loss business model. The programme was launched in Kenya in 2014 and Ethiopia in 2016. In 2018, HHA was launched in Tanzania, with a focus on integrating child and maternal health. We also continued our innovative public–private partnership with the US President's Emergency Plan for AIDS Relief to optimise the HIV/hypertension integration. See more information on HHA online.

9.97 million

cardiovascular screenings, 1.8+ million people identified with elevated blood pressure, and 5,800+ workers trained in healthcare

Advancing access in Colombia

In countries with universal health coverage, AstraZeneca aims to be a partner for the healthcare system to optimise access to healthcare. For example, in Colombia, we offer patient adherence initiatives that benefit oncology patients across our whole portfolio. In 2018, we proposed risk sharing agreements, which are being discussed with the local health maintenance organisations, to help ensure that patient care is put first by the entire system. These agreements would include possible reimbursement of the cost of medicines over a specific period of time for the number of patients who present certain event recurrences above the defined target. We are also supporting the community through the peace process after 50 years of civil war. Taking into consideration the Colombian government's and the British Embassy's input, our employees are helping conflict-surviving mothers and children rebuild their lives through digital literacy and health outreach efforts.

Investments in health systems continued

Sustainability in action

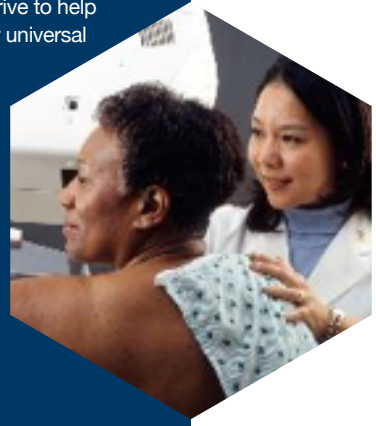
Supporting India's healthcare development

AstraZeneca is investing $90 million over the next five years in India, as part of a joint declaration on innovation partnerships for a sustainable future between Sweden and India made in 2018. This investment will support scientific data generation, quality manufacturing, science talent development and collaborative development of innovative solutions to improve the standard of care for non-communicable diseases (NCDs) in India.

This commitment commemorates the 40th anniversary of AstraZeneca India. The investment will span across our diverse footprint in India with an aim to foster a strong business across our manufacturing, clinical operations, patient safety and regulatory science, IT services and commercial operations to address NCDs in India. The commitment also aligns with the Indian government's initiatives to create a stronger business, innovation and healthcare environment.

Advocating for cancer patients in universal healthcare system

AstraZeneca Brazil has partnerships with patient associations and oncologists to drive outcomes for cancer patients and their families. As part of these partnerships, AstraZeneca Brazil has supported patients in advocating for their right to have access to precision medicine for oncology, for example genetic tests for mutations related to cancer, in the universal healthcare system. There was a public hearing held in the Senate in 2018 and in 2019 AstraZeneca Brazil will strive to help pass a law which would make precision medicine a right for universal healthcare patients.



Outcomes

12+ million
people reached through Access to healthcare programmes

35,000+
workers trained in healthcare

1,600+
health facilities activated

Challenges

Some of our programmes have been active for a few years now. This means that we have enough experience and data to systematise our efforts across diverse countries and share best practices and learnings. This process involves diverse stakeholders, both internal and external, and must balance taking a global approach while being responsive to local needs and context.

Highlights

Phakamisa – partnerships for preventing cancer

In collaboration with the Cancer Association of South Africa and the Breast Health Foundation, we have trained 523 Phakamisa 'Navigators' – teams of volunteers and counsellors who go out into the community. To date, the initiative has reached over 1.48 million people, making it possible to identify over 5,800 malignant lumps and refer patients for treatment. We created an innovative app for our NGO partners to share and communicate patient screening data.

Healthy Lung increases impact

The Healthy Lung programme is designed to build local health systems to support the diagnosis and treatment of respiratory diseases. This includes capacity building of healthcare professionals, medical infrastructure and policy advocacy. Healthy Lung was launched in 2017 in nine Asian countries. This year it expanded its reach by going into four new countries: Saudi Arabia, United Arab Emirates, Oman and Mexico (see map below).

Environment's impact on health

There is a strong connection between human health and the health of our planet.

This means that negative impacts on the environment can have a negative impact on humans. For example, air pollution can cause respiratory diseases;[18] in fact, air pollution has been recognised as the second leading cause of non-communicable disease (NCD) deaths worldwide, behind tobacco smoke.[19] People in low and middle-income countries are disproportionately impacted, which exacerbates pre-existing inequalities.[18] The good news is that we can have positive impacts on human health by taking action within our operations and through partnerships across healthcare to improve our environmental impacts, which can in turn prevent certain diseases, such as chronic obstructive pulmonary disease, lung cancers, stroke and heart disease. The benefits can be quick – positive impacts to human health can take effect within a few years of reducing emissions and modifying environments.[20] With health at the heart of our business, we are in a strategic position to raise awareness around the connection between the environment and human health, thereby actively contributing to disease prevention. This work drives our environmental health strategy – Healthy Planet, Healthier People.

Our definition

Company efforts to prevent disease and improve health outcomes by addressing environmental determinants of health. This includes the built environment, changing disease patterns, increasing allergens, and heat-related and pollution-related illnesses and deaths, among others.

Our approach

We recognise that everything is interconnected. The health of our planet has a direct impact on human health. We strive to prevent disease and improve health by addressing how the environment impacts human health. Our strategy on this issue is Healthy Planet, Healthier People, which signals that through a healthy planet, we can help facilitate better health for people. In 2019, this strategy will be launched to understand and address our environmental impacts from the very beginning of our research process to prevention programmes for patients, which will include an internal and external engagement plan since we recognise the close connection health and environment have across many areas of our business.

Sustainability in action

Turning waste into clean energy to reduce respiratory illnesses

In 2018 we launched a pilot project at Lake Victoria's Dunga Beach in Kenya to transform waste into clean energy. Through this programme – a partnership with the Cambridge Institute for Sustainability Leadership – biodigestors turn organic waste into clean energy. This reduces air pollution, which contributes to respiratory illnesses in the community. Today 3 billion people, including 77% of the population in Sub-Saharan Africa, use biomass such as wood, dried leaves, dung or hay as their main energy source.[21] This project aims to improve the community's respiratory health by reducing people's exposure to smoke from wood-burning cook fires. It also reduces the time women and children must spend collecting firewood, giving children more time for school and women more time to engage in income-generating activities.

Environment's impact on health
continued

Sustainability in action

Nature's health is your health

Our employees have connected the dots between nature, air pollution and our health. Recognising that forests are the factory for clean air because trees absorb carbon and decrease air pollution, employees started an initiative called AZForest. Trees are essential to mitigate effects of climate change. To date, our employees have planted more than 600 trees. Employees are encouraged to post pictures of their planted trees using #AZForest on our internal employee social media platform.

Tackling antimicrobial resistance

The increasing resistance of infectious diseases to antibiotics is an urgent global issue. Antimicrobial resistance (AMR) is predicted to become the leading cause of mortality by 2050,[22] with a person dying from a resistant infectious disease every three seconds. We invest in R&D for infection, and we stand with our colleagues across the industry and beyond with a multi-stakeholder 'one health' approach to tackle the threat that AMR poses to society and the barriers that prevent new antibiotics coming to the market.

We partnered with the Joint Programming Initiative on AMR and other international experts on a report to further explore the drivers involved. It outlines critical knowledge gaps and four urgent research needs related to the environmental dimensions of AMR.

We are co-funding research to establish approaches to defining safe environmental levels for antibiotics entering the environment through drug production and patient use. In 2018, we published our first paper, which showed that understudied parts of ecosystems could be just as important as clinical settings to understand how bacteria mutate, resulting in antibiotic resistance.[23]

Through the AMR Alliance – a coalition of over 100 healthcare companies and associations aiming to provide solutions to curb AMR – we published a framework promoting responsible antibiotic manufacturing. This framework provides a methodology and minimum requirements needed to conduct a site risk evaluation of antibiotic suppliers.[24] We also published the first list of discharge targets to guide environmental risk assessments for the manufacture of antibiotics.[25] These targets, which followed the recommendations in our *Environment International* publication,[26] were based on protecting both environmental and human health.

Outcomes

Launched new waste-to-energy programme in Lake Victoria's Dunga Beach in Kenya

2

new collaborations joined

Health is Everyone's Business
Cross-industry group to support progress on Sustainable Development Goal 3, as part of the United Nations Global Compact. See white paper outlining the connection between healthy people and a healthy planet.

BSR Healthcare Working Group
Industry partner collaboration to explore solutions for advancing holistic healthcare.

Stakeholder dialogue

"Connecting environmental impacts to human health consequences is an area where there is a global need for leadership. This should be a focus for progressive and leading ambition from AstraZeneca."

External stakeholder

Challenges

This is a new lens through which we are viewing our priorities in delivering Access to healthcare. We are following the science, and the world too is building its understanding of how environmental issues affect health. As we continue to define our work in this area, we are clarifying our strategic approach and how addressing the environment's impacts on health delivers value beyond our existing strategies for environmental protection and Access to healthcare. Addressing global health through this methodology will help us fully realise our role in NCD prevention through improving our impact on the environments in which people live, work, and thrive.

Highlights

WELL Building
The International WELL Building Institute's mission is to improve human health and wellbeing in buildings and communities across the world through its WELL Building Standard (WELL). Our China Small Scale Facility, a pillar of the China Acceleration programme built on the existing Wuxi site in 2018, received the WELL. The facility will have good manufacturing practice manufacturing as well as pharmaceutical development capabilities.

Image:
Employees have planted more than 600 trees in the AZForest.

Environment's impact on health
continued

Healthy Planet, Healthier People

We aim to drive progress in disease prevention and improve health outcomes by addressing the environmental determinants of health throughout our value chain and by engaging in meaningful collaborations.

Pipeline
Increasing our understanding of environment's impact on health in relation to our therapy areas.

Production
Driving improved environmental performance of our operations for measured impact on human health.

Products
Life-cycle considerations of human health impacts for manufacture, use and disposal of our products.

Programmes
New programmes and scaling existing programmes to improve human health through healthier environment.

Partnerships
Cross-sector collaborations and research for environmental health indicators and outcomes.

Affordability

For most people, medicines and healthcare in general are expensive – often so expensive that they are inaccessible to many sick people.

There are many reasons for this, including gaps in health systems, global inequalities and the high costs of R&D. By 2020, healthcare spending is projected to rise to 10.5% of global GDP.[27] We hear and recognise these concerns related to the unsustainable nature of the biopharmaceutical industry model. With health at the heart of our business, we strive to address these concerns through our diverse patient access programmes, which help ensure our medicines are accessible to the people who need them the most.

Our definition

The company's position, policy and performance on the pricing of medicines, including tiered pricing, differential pricing, capped pricing, early access programmes, Patient Assistance Programmes, royalty-free licensing, pricing transparency, reimbursement strategy, and commercialisation, strategy, availability and registration.

Our approach

The price of our medicines is designed to ensure the financial sustainability of the healthcare system and our research-led business model. Our methodology helps us understand the burden of treatment cost and level of affordability when patients have to pay for their own medicines. We aim to make our medicines more affordable through:

1. **Patient Assistance Programmes tailored to each market that can make our medicines available through donation**
2. **Patient access programmes that coordinate with health systems to deliver medicines at lower out-of-pocket costs for the patient (see Investments in health systems section)**
3. **Our targeted pricing strategy, which considers ability to pay**
4. **Structured product donation programmes**
5. **Mainstream operations**

In 2018, we published our Pricing Statement to provide more transparency into our business model and the determinants of pricing.

Sustainability in action

Patient assistance in China

AstraZeneca collaborates with charity organisations to relieve patients' economic burden and help more patients obtain timely and effective treatment, as well as higher quality of life. We carry out more than 10 Patient Assistance Programmes for oncology, cardiovascular, diabetes and respiratory treatment.

The One Dose programme, launched in 2015 in partnership with the Chinese Red Cross Foundation, donates dual antiplatelet therapy for acute coronary syndrome patients (an AstraZeneca medicine and aspirin) to improve the success rate of treatment. The One Dose project changes the 'patient waits for medicine' scenario into a 'medicine waits for patient' one. As of September 2018, the project has covered 4,089 hospitals, emergency command centres and community health service centres, and more than 1.9 million patients have benefited. It was honoured with the 10th China Charity Award by the Ministry of Civil Affairs of China, the top award of its kind.

4,089
hospitals, emergency command centres and community health service centres and more than 1.9 million patients covered by the project

Image above:
The One Dose programme receives the 10th China Charity Award from the Ministry of Civil Affairs of China.

Affordability
continued

Sustainability in action

Patient Assistance Programmes

At AstraZeneca, we have offered programmes for discounts and donations for more than 35 years. Our Patient Assistance Programmes had cumulatively reached 9.3 million patients by the end of 2018. We continue to add new programmes. In 2018, we donated more than $686 million of medicines through our assistance programmes, the largest of which is AZ&Me in the US. Here are a few of the programmes we currently operate around the world to provide access to our medicines:

- Disfruto Mi Salud in Central America and the Caribbean
- AZyYo in Chile
- Karta Zdorovia in Russia
- FazBem in Brazil
- Patient Access Card in Central and Eastern Europe
- Elegir Salud in Argentina
- AZ&Me in the US.

Outcomes

9.3 million
people reached by Patient Assistance Programmes

$686 million
in product donations through Patient Assistance Programmes

Challenges

A universal solution to affordability does not yet exist. Reducing patients' out-of-pocket cost for medicines helps improve access but isn't enough. We continually evaluate how we reach patients by addressing education and cultural barriers, infrastructure and awareness. We rely on local partnerships to overcome some of these challenges. Introducing personalised medicines brings additional challenges related to how we assess their value and how healthcare systems can adapt to provide the appropriate infrastructure.

Stakeholder dialogue

"We have a responsibility to bring down the cost of drugs to make them more affordable for patients. There is a sweet spot between return to shareholders and driving access for patients."

External sourcing employee, UK

Stakeholder dialogue

"We need more [price] tiers within countries, especially middle-income countries, where our drugs are only accessible to rich patients."

Oncology Strategy employee, International

Environmental protection

We recognise the strong connection between a healthy planet and healthy people and work to foster environments in which all life can thrive. In particular, we understand that as climate change intensifies, so do its impacts on health. We seek opportunities to promote environmental stewardship and mitigate climate impacts by protecting natural resources and ensuring environmental safety of our products across our operations and value chain.

In this section

Environmental protection overview | Product environmental stewardship
Greenhouse gas reduction | Pharmaceuticals in the environment
Water stewardship | Waste management

Environmental protection overview

In recognition of the strong links between a healthy environment and healthy communities, we work to minimise the impacts of our operations on the Earth.

We aim to conserve natural resources, ensure the environmental safety of our products, and mitigate the negative impacts of climate change on health in our operations and value chain. We know that by investing in new product design, clean technologies and more efficient processes, we will save money and resources. These investments secure the future of our company and build resilience in the face of dwindling natural resources, a growing global population, and more frequent and severe climate-related weather events. As a company that leads with health, we embed environmental sustainability throughout our operations to minimise environmental impacts on health and support a planet that allows all life to thrive.

Governance

Environmental matters are handled by Katarina Ageborg, our Executive Vice-President, Sustainability and Chief Compliance Officer; President AstraZeneca AB, Sweden. Our global safety, health and environment (SHE) management principles are embedded in our Code of Ethics and this is the overarching guide for our environmental management system (EMS). We monitor and manage performance through comprehensive assurance programmes, including performance reporting and internal auditing. Our approach is set globally and executed by environmental professionals locally at our sites.

Our environmental management is based on frameworks provided by the International Organization for Standardization (ISO). These voluntary standards are helpful in conducting business globally, as they provide a basis for comparison of practices. Our environmental approach is compatible with ISO 14001, which is the standard for an EMS. Some of our internal SHE auditors are trained in ISO 14001 and our Macclesfield, UK site is ISO 14001 certified. Two of our largest sites, Gaithersburg in the US and Macclesfield, are ISO 50001 certified, meaning they have an energy management system and are highly energy efficient. Together, these sites account for 25% of our energy footprint.

Investment

To help us meet our natural resources strategy targets, our Natural Resources Reduction Governance Group (NRRGG) fund has invested $71 million in environmental efficiency innovations since 2015, including $19 million for 30 new projects in 2018. We use site water stress assessments and natural resource audits to identify opportunities for management and investment.

Material issues

Our approach addresses five environmental issues, as identified by our materiality assessment:

- **Product environmental stewardship**
- **Greenhouse gas reduction**
- **Pharmaceuticals in the environment (PIE)**
- **Water stewardship**
- **Waste management**

See Environment's impact on health section for more ways we are addressing a healthy planet.

Impact in 2018

$19 million
invested in environmental efficiency projects (NRRGG fund)

61%
of our total electricity use is sourced or generated from renewable sources

100%
of API discharges from AstraZeneca sites assessed as safe[28]

7%
of our vehicle fleet in Europe, North America and Japan is hybrid, plug-in or electric, up from <1% in 2017

Key accomplishments

- One of six companies worldwide to achieve double A Listing for Climate Change and Water Security for three consecutive years
- Ranked within the top 3% on the CDP Leader Board for Supplier Engagement
- Sustainability, Environmental Achievement and Leadership (SEAL) 2018 Business Sustainability Award – among the 50 most sustainable companies globally
- Scored in the 90th percentile for the Environmental Dimension indicators of the Dow Jones Sustainability Index, with a 100 for Environmental Reporting
- Publication of PIE Position Statement with transparency of environmental risks and environmental reference concentrations
- Launch of Pharmaceutical Supply Chain Initiative Environmental Sustainability Assessment for suppliers.

See Sustainability Data Summary 2018 for more metrics and our progress.

Product environmental stewardship

In our field, patients and healthcare professionals have gained a deeper understanding of the connections between products, waste and pollution. Many countries are particularly focused on ways to reduce plastic waste and packaging.

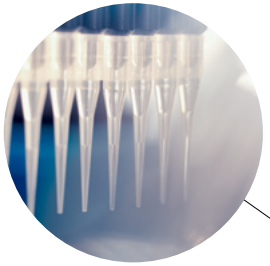
We hear and share these concerns. By emphasising environmental stewardship of our products, we address greenhouse gases, pharmaceuticals in the environment, water and waste. While our products don't account for our whole environmental footprint, they do represent a significant portion of our impact, which can, in turn, affect human health. We strive to design out negative impacts, including resource depletion, waste, and emissions to air, water and land. We do this through a hierarchy that prevents, minimises and renders harmless impacts at all stages of the product life cycle. Not only does this reduce our environmental impacts and hence impacts on human health, it also makes business sense: as we improve our processes, we save money by reducing the resources we use to make products, which allows us to reinvest in life-changing medicines and improve patient access to healthcare solutions.

Our definition

Company efforts to identify and address the environmental impact of products from discovery in early R&D through development to launch of a new product and during its commercial lifetime to end-of-use.

Our approach

Although we have worked on product environmental stewardship for many years, along with our stakeholders, we have now made it a priority issue through the materiality assessment. We follow a life-cycle approach that covers all stages of our products, including procurement of raw materials, manufacturing, distribution, sale, use, and end-of-life or reuse. Once we have identified the impacts, we look for solutions to prevent impacts. Then we focus on minimising and, when possible, completely eliminating impacts. Our approach involves a wide range of activities, as explored in the infographic on the following page.



Stakeholder dialogue

"This is my number one issue, since it connects all environmental factors. GHG emissions, water, waste, etc. are all combined and end in product environmental stewardship – from design to end-of-life."

External stakeholder, UK/Europe

Product environmental stewardship
continued

Product life cycle

We are committed to ensuring effective environmental management of our products, from pre-launch through to product end-of-life. We strive to address all environmental impacts from our product value chains. We look for opportunities, wherever possible, to close the production loop and ensure our products are contributing to the circular economy.

Active pharmaceutical ingredient (API) production and formulation

Our approach
Green chemistry – developing manufacturing processes that use less energy and water, as well as fewer and less environmentally impactful chemicals

2018 highlights
- Significant decrease in process mass intensity (PMI) – our metric for resource efficiency in API production – and chemical solvent tool shared with all pharmaceutical companies
- **65%** of projects had an environmental assessment
- **22%** decrease in PMI across product portfolio

Disposal

Our approach
Patient education programmes to raise awareness on the importance of responsible disposal of medicines and pilot projects to support recycling

2018 highlights
- Pilot project completed for mail-back of inhalers in US
- **9,000** patients engaged
- **1,000** recycled inhalers

Device production

Our approach
Environmental sustainability assessments (ESAs) ensure selection of most sustainable materials

2018 highlights
- **3** ESAs in 2018
- **30%** reduction in plastics and packaging waste achieved by new autoinjector
- **55%** reduction in carbon footprint by switching to renewable electricity

Patient use

Our approach
Patient education programmes to raise awareness of medicines and pharmaceuticals in the environment programmes to understand the environmental risks of our products

2018 highlights
- Appropriate environmental risk assessments submitted with all new marketing applications and post-approval queries addressed
- Ecopharmacovigilance programme successfully delivered, with no new environmental product risks identified

Packaging

Our approach
Better packaging solutions that reduce resource consumption and waste – decreasing size of packaging, switching to recycled materials and using materials that are readily recyclable

2018 highlight
- **30%** less packaging waste will result from the launch of new tablet blister laminate

Distribution

Our approach
Improved transportation solutions – switching from air to sea, which is less carbon intensive and pollutes less

2018 highlight
- **62%** of freight (tonne-km) transportation was converted from air to sea

See the Pharmaceuticals in the environment section for more information on our API discharges

Product environmental stewardship
continued

Sustainability in action

Spreading our Green Chemistry knowledge

We created an innovative Green Chemistry tool to facilitate solvent selection. We recognised the impact this tool could have so we made it available to the public by donating it to the American Chemical Society Green Chemistry Institute Pharmaceutical Round Table (ACS GCIPR). Composed of 27 global pharmaceutical companies, this collaborative group is a leader in promoting environmental stewardship.

Solvents have a large impact on sustainability, especially in the pharmaceutical industry where around 50% of materials used to manufacture bulk active pharmaceutical ingredients are solvents. This tool allows users to consider environmental properties alongside aspects such as physical properties and regulatory needs. Our tool has predictive capability, and this is an advantage over other tools, which only provide a retrospective environmental lens. The simple nature of the tool has generated positive feedback across industry and academia. AstraZeneca is leading the further development of this Green Chemistry tool through the ACS GCIPR.

Designing out inhaler environmental footprint

Our pressurised metered dose inhaler (pMDI) therapies rely on hydrofluoroalkane (HFA) propellants, which are emitted during use and disposal, and contribute to our Scope 3 greenhouse gas footprint. While HFAs have no ozone depletion potential and a third or less of the global warming potential than the chlorofluorocarbons they replaced, they are still potent greenhouse gases.

During 2018, we initiated a project spanning all key business functions to investigate options available from an environmental, technical, regulatory, medical and commercial viewpoint. The environmental review includes life-cycle assessment of current products and potential options, and an initial pilot study for pMDI take-back and recycling programmes (learn more in the Waste management section). It is imperative that decisions to address the product use phase greenhouse gas footprint do not substitute the climate impact for another environmental impact.

Smart packaging reduces footprint, saves money

We piloted a project to optimise the packaging of our tablets in blisters. This pilot redesigned packaging for a medicine used to treat high cholesterol. We have used a new, higher-quality foil to develop a pack that uses 30% less material. The benefits identified during this pilot were:

715 tonnes
of CO_2e reduced per year

$500,000
savings in material cost per year

$480,000
savings per year from increased productivity

$1.5 million
savings per year in logistics costs

Outcomes

50%
of API syntheses met resource efficiency targets in 2018

65%
of projects had an environmental assessment

22%
decrease in PMI across product portfolio

Challenge

Technology exists and is in development to reduce the greenhouse gas emissions from manufacture and patient use of our pMDI products. The real challenge here is that it takes many years for a product to be designed, approved and ultimately sold commercially. We place importance on investing in long-term solutions for new inhalers to reduce greenhouse gas emissions, even when the return is not immediate.

Greenhouse gas reduction

Climate change threatens to undermine the last half-century's advances in global health.

However, the solutions to climate change have direct and indirect health benefits – from reducing air pollution to improving diet – representing one of the greatest opportunities to improve global health.[29] Addressing this issue is a business imperative, as climate change is projected to have detrimental impacts on workforce health and productivity.[30] We aim to minimise greenhouse gas (GHG) emissions along our value chain and adapt to the environmental and human impacts of climate change.

Our definition

Company operations, such as manufacturing and transportation, emit GHGs including carbon dioxide (CO_2), methane (CH_4) and hydrofluorocarbons (HFCs), contributing to climate change. Emissions from product use are largely discussed in the Product environmental stewardship section, and we include the impact of our most material products in our operational GHG footprint.

Our approach

Science Based Targets
We use science to contribute to the global fight against climate change. We set science-based emissions reduction targets and were one of the first companies in the FTSE 350 to have them approved by the Science Based Targets initiative, which means that our targets are in line with the level of decarbonisation required to keep global temperature increase below 2 degrees Celsius.

There is a clear link between energy consumption and GHG emissions. We manage both in consideration of the other. Using the Institute of Environmental Management and Assessment GHG hierarchical approach,[31] we work to avoid energy demand, reduce consumption and emissions through efficiencies, substitute our energy supply with renewables and compensate for unavoidable emissions.

Our GHG emissions footprint can be grouped into two categories: the first category are those sources of emissions in our 'sphere of control', such as site operations and our key suppliers, our commercial road fleet, how we move goods and employees around the globe, and what impacts our products have during use – these sources we group as our operational GHG footprint and we have absolute reduction targets for them in place.

The second category of sources of emissions are those within our 'sphere of influence' and this includes all the goods and services we use but the impact of which we do not directly measure or manage – we estimate the scale of this impact and set intensity reduction targets.

We also classify our emissions using the World Resources Institute/ GHG Protocol guidance for Scopes 1, 2, and 3. Our greatest source of emissions is Scope 3, which are emissions from our supply chain. It is also our greatest opportunity to address our climate-related impacts. We use our influence to mobilise our extensive global supply chain to reduce GHGs.

Stakeholder dialogue

"If we can fix climate change, other issues fall into place, such as human rights."

External stakeholder, UK/Europe

Institute of Environmental Management and Assessment GHG hierarchy

1	2	3	4
Avoid	**Reduce**	**Substitute**	**Compensate**
Eliminate through major business decisions, e.g. Cambridge BREEAM Excellent, Freight and Logistics' Air2Sea programme	Lower emissions by improving commercial fleet fuel efficiency and managing energy demand (e.g. automating lighting, influencing behaviour)	Adopt on-site renewables (solar PV) and lower-impact fuels	Apply high-quality carbon offsets and compensation strategy for unavoidable emissions

Greenhouse gas reduction
continued

Our GHG emissions across the value chain

Our total emissions: 6.7 million tCO_2e

	Upstream	Our operational GHG footprint			Downstream
Where our emissions occur	Upstream production and R&D at non-AstraZeneca sites	Outsourced supply of active pharmaceutical ingredients, formulation and packaging, and transportation	Our sites and fleet	Site waste incineration and customer use	End-of-life for packaging and patient travel
Percentage of total tCO_2 emissions	58% Scope 3	6% Scope 3	7% Scopes 1 and 2	13% Scope 3	15% Scope 3
How we're working to reduce GHG emissions	Working with suppliers including: Assessing data to understand the wider impact Identifying emissions hotspots through life-cycle assessments	Energy efficiencies including: Recognising critical direct suppliers for sustainability performance Switching from air to sea freight Enabling virtual conferencing	Investing in our sites and fleet including: Committing $15-20M per year to natural resource efficiency projects Using 100% renewable power on all our sites by 2025 Driving 100% hybrid, plug-in or electric vehicle fleet in Europe, North America and Japan by 2025	Product and process advancements including: Researching alternative propellants for pressurised metered dose inhaler therapies Investing in hazardous waste reduction	Product and packaging advancements including: Designing waste out of our packaging Enabling better adherence to reduce patient travel

A full description of our GHG emissions methodology is located in our Sustainability Data Summary.

Sustainability in action

Puerto Rico energy alternatives

iPR Pharmaceuticals, an AstraZeneca subsidiary, has been very active in seeking out energy alternatives. Over the last two years, the site launched a pilot to switch from crude oil to liquefied natural gas as a fuel source for heat generation, and has since completed the installation of a combined heat and power plant. The benefits are many, including a 40% reduction in emissions, improved energy efficiency and energy resilience through significantly lowering the site's exposure to natural disasters exacerbated by climate change. The site's adaptation shows leadership in climate resiliency; it is now more prepared to face natural disasters that threaten business operations, such as Hurricane Maria, which adversely affected the site in late 2017.

40%
reduction in emissions

Carbon neutral air travel

During 2018 we launched a pilot programme to purchase carbon offsets equivalent to the air travel emissions of our Global Sustainability department. Different from renewable energy certificates, these offsets directly funded projects to support respiratory health via GHG reduction. We aimed to take responsibility for emissions and explore adding a premium to the cost of travel based upon environmental impact. We purchased 1,021 tonnes of carbon offsets from two certified Gold Standard projects:

Biogas clean cooking in Vietnam
Biogas digesters convert animal waste into clean biogas that is used to cook and light homes in place of more expensive wood and fossil fuels. The benefits go beyond GHG reduction to cleaner air, better affordability and local job creation.

'LifeStraw' clean water in Kenya
Gravity-driven water filters that require no consumables provide safe drinking water to families and avoid the emissions from boiling water to make it safe. Carbon finance has enabled delivery of this project, including the employment of health educators to ensure its continued success beyond the project term.

Greenhouse gas reduction
continued

Sustainability in action

Clean energy transition in Sweden

Gothenburg, Sweden is close to reducing its reliance on fossil fuels to zero. Energy use is 3% lower than 2015 and substitution of its energy sources has reduced carbon emissions by 89%. The site imports 100% renewable power, the district heating supplier uses a majority of bioenergy feedstocks, and gas is sourced from certified biogas producers that use waste materials as the feedstock. The site has also installed three highly efficient heat pumps, which has allowed it to drastically reduce its use of gas. There are plans to expand and improve the technical solution even further with a fourth, more advanced, heat pump. It would be supported by a more than $2.5 million investment from Horizon 2020, the EU's research and innovation programme, because it is a recognised technical solution that can be scaled to reduce climate-related emissions broadly in society. To support sustainable commuting, we introduced a green travelling plan together with approximately 120 charging stations for electric vehicles.

Our green fleet expands

Transportation is the fourth-largest contributor to the world's GHG emissions.[29] Our road fleet accounts for 31% of our Scope 1 footprint. This underscores the importance of making commercial fleets more sustainable. We launched our green fleet in the EU, US and Japan with approximately 12,500 vehicles, equal to about two thirds of our 19,000 company car fleet. In the US, a new hybrid-only car list was launched, which will mean 2,000 hybrid cars will be delivered by 2020, and by 2022 our entire US fleet will comprise hybrids. As a result, AstraZeneca could be the first large pharmaceutical company in the US to have an all-green fleet before 2025.

Outcomes

6%
reduction in Scope 1 emissions since 2015

54%
reduction in Scope 2 emissions since 2015

2%
reduction in Scope 3 emissions intensity since 2015

0.4%
reduction in total operational GHG footprint since 2015

61%
of our total electricity use is sourced or generated from renewable sources

See Sustainability Data Summary for full metrics and methodology.

Challenges

Our Puerto Rico site has been subject to increasingly severe storms. At another site in Södertälje, Sweden, we have had challenges with our facility's cooling capacity due to extended hot periods during 2018. We aim to align our strategy to help limit global warming to the 1.5 degrees Celsius scenario. We plan to review our exposures to climate-related impacts in relation to potential climate scenarios.

Highlights

Renewable power commitment RE100
Through this commitment, we aim to substitute all our power consumption with certified renewable energy by 2025 globally and by 2020 in the US and EU.

Access to renewable energy
To help accelerate the global expansion of renewable energy capacity, AstraZeneca is exploring alternatives for entering into power purchase agreements with external suppliers.

Stakeholder dialogue

"The most important element in establishing AstraZeneca as a leader in sustainability would deal with our cars. A significant number of our employees are field based, and we need to make sure we start moving people to sustainable forms of transportation like electric cars."

Employee

Pharmaceuticals in the environment

As a responsible healthcare company, we are committed to the health and safety of society and the planet.

We make it a priority to effectively manage the risks associated with pharmaceuticals in the environment (PIE). PIE is a key concern with many of our primary stakeholders. The European Commission is conducting a strategic review of PIE across the whole of the product life cycle and the United Nations has identified environmentally persistent pharmaceutical pollution as an emerging global priority under its Strategic Approach to International Chemicals Management programme.

Pharmaceuticals enter the environment predominantly as a result of societal use, when medicines are excreted by patients and end up in our waterways. Drug manufacture, formulation of active pharmaceutical ingredients (APIs) and the improper disposal of unused medicines also add to the trace levels of pharmaceuticals in rivers, lakes, soils and, in some instances, drinking water.

Our definition

Patient excretion, improper disposal of unused medicines and discharges from drug production result in the release of APIs into the environment. Potential impacts include effects in aquatic life from low-level and long-term exposure.

Our approach

We believe that, even at very low concentrations, the risks associated with PIE should be determined and managed. We dedicate resources to better understand and minimise the impacts of our medicines. We lead our industry in the management of PIE-related concerns; we are the only company with targets for discharge limits that are externally verified and the only company with a visible approach to ecopharmacovigilance. We were also the first company to publish our environmental risk assessment data on our web pages. We know we don't have all the answers on PIE, so we look externally to stimulate conversations and research, to encourage responsible and collective action.

For more information see the Product environmental stewardship section.

Read our new PIE Position Statement

Collaborating on regulatory and industry research

We chair the extended environmental risk assessment (ERA) working group and sit on the governance team of the European Federation of Pharmaceutical Industry Associations, Medicines for Europe and the Association of the European Self-Medication Industry PIE task force. We also have company representatives that sit on the executive team for the Innovative Medicines Initiative (IMI) iPiE project and lead its research on the prioritisation of established medicines for environmental testing.

3 main ways pharmaceuticals get into the environment:

Patient use (pass through our bodies and into waterways)

Unused medicines that people don't dispose of properly

Waste from production

Stakeholder dialogue

"PIE and AMR are topics of growing interest and pharma companies are taking them seriously. Some see it as an opportunity to differentiate from other companies. Companies that get ahead of this issue (and develop drugs in this area) will be better in the long run."

External stakeholder, UK/Europe

Pharmaceuticals in the environment
continued

Evaluating our impacts

We aim to lead our industry in understanding and mitigating the environmental fate and effects of PIE. As a minimum, we are committed to ensuring effective environmental management of our products from pre-launch through to product end-of-life. To do this we:

Assess the environmental risk of our medicines to support drug marketing authorisations

Make our ERA data and safe discharge standard concentrations visible on our web pages

Set safe discharge standards and actively manage the environmental risks associated with the APIs discharged from our manufacturing operations and supply chain

Conduct ecopharmacovigilance (EPV) to review emerging science, looking for new information that might change the way we assess the environmental risks associated with our APIs

Revise our safe discharge limits and ERAs if reliable data justifies a change in our environmental protection goals. This helps to ensure that we have up-to-date, science-based targets to help ensure the environmental safety of our products

Form effective partnerships and co-sponsor research to fill scientific gaps to understand and mitigate the risks of PIE

Collaborate with industry, government and other stakeholders to manage environmental risk across the product life cycle, including efforts to improve medicine disposal programmes and education

20 years of PIE leadership

1998
AstraZeneca publishes its first paper on PIE, describing reproductive effects in fish

2003
AstraZeneca reviews the environmental risks of its APIs

2004
AstraZeneca Operations supports the development and roll-out of a safe discharge programme

2011
AstraZeneca rolls out its safe discharge programme to suppliers

2012
AstraZeneca is the first company to publish (i) its ERA data on its webpage and (ii) its approach to safe discharges and associated safe limits

2013
AstraZeneca launches and publishes its approach to EPV

2015
AstraZeneca partners in the IMI iPiE project, to develop predictive tools to identify environmental risks of medicines

2018
AstraZeneca leads calls for innovation, using artificial intelligence approaches in environmental toxicology

Pharmaceuticals in the environment
continued

Sustainability in action

Making it easier to dispose of medicines

People improperly disposing of their unused medicines is one of the three main ways pharmaceuticals can enter the environment. One way we're combating this is by providing a way for patients to dispose of their medicines in a safe way, regardless of whether it is an AstraZeneca product or not. In Colombia, for example, we partner with the *Punto Azul* (Blue Point) programme and other pharmaceutical companies to set up collection containers in pharmacies, universities and large markets across the country. The bins are used for unused and expired medicines, and medicine containers and packaging. Not only does this fight pharmaceuticals waste in the environment, it helps avoid counterfeiting and landfill waste.

Ecopharmacovigilance review

Part of our ongoing due diligence in addressing PIE involves ensuring any associated environmental issues are identified in a timely way and managed appropriately. We conduct quarterly reviews of emerging science for environmental risks of our APIs. To begin, we collate measured environmental concentrations of our APIs in surface waters and domestic sewage effluents. We then compare these values with the values that are considered safe according to our ERA and safe API discharge programme.

In many cases, our APIs are not detected in the environment – either because those particular ingredients are not being monitored or because their levels are below the limits of detection used by environmental chemists. In the cases in which our APIs have been detected in the environment, we concluded by using established scientific approaches that these APIs currently pose low or insignificant environmental risk.

Working with other pharmaceutical companies, we have published a comprehensive ERA of metformin, an active ingredient used widely in diabetes treatment, and its metabolite guanylurea.[32] This ERA indicated that neither metformin nor its metabolite are predicted to pose any risk to the environment based on current data.

View our table of ERAs for more information.

Outcomes

100%
of API discharges from our sites assessed as safe

93%
of API discharges from suppliers demonstrated as safe

88
safe API discharge supplier assessments completed

Challenges

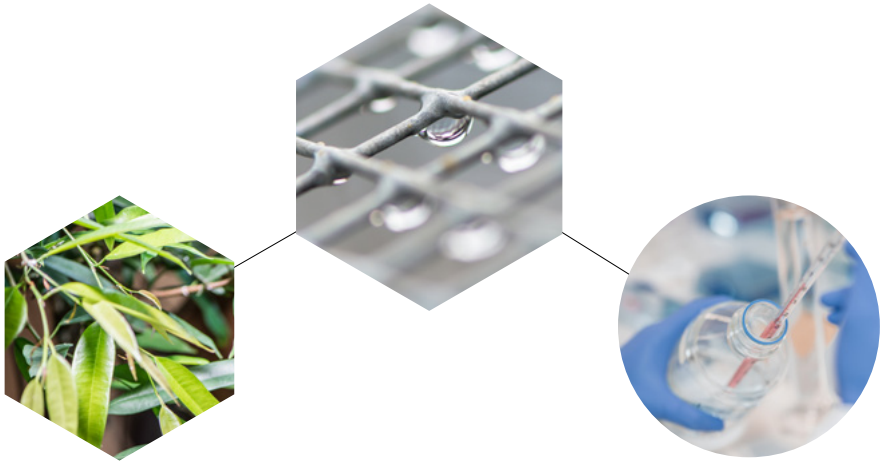
Impact of PIE
Environmental monitoring demonstrates that PIE resulting from patient use currently poses low or insignificant environmental risk for our APIs and the presence of these trace levels does not cause a problem. However, there can be some location-specific environmental risks for some particular pharmaceuticals, especially in regions where there may be inadequate sewage treatment and high populations of people discharging waste into rivers with low dilution conditions. While trace concentrations of pharmaceuticals in drinking water are very unlikely to pose risks to human health, knowledge gaps still exist.

Highlights

IMI iPiE project 2018 actions:

- Reviewed approaches to prioritising the risks of established APIs that lack environmental data and proposed a new holistic risk-based prioritisation framework for drugs in the environment[33]
- Continued to develop and validate more environmentally relevant biodegradation studies that identify and prioritise potentially persistent compounds, including pharmaceuticals[34]
- Applied machine learning approaches to predict bioconcentration factors in fish and invertebrates[35] and published a viewpoint article calling for the increased integration of artificial intelligence and machine learning approaches within environment hazard and risk assessment.[36]

Visit our website to learn more about the risks associated with PIE and what we are doing to manage them.



Water stewardship

Water is fundamental to life. Not only does it regulate our bodily functions, making it essential to human health, it also maintains the ecosystems that provide our food and other essential goods and services.[37]

Unfortunately, the world is facing a water crisis, and millions of people lack access to clean, reliable water sources. As a company that puts health first, we strive to use water efficiently and responsibly. We also need water to develop and manufacture our products, so it makes business sense for us to manage water responsibly. While all our facilities use water, our sites with the largest water footprints are located in the UK, Sweden and the US. Some of our sites are situated in water-stressed areas.

Our definition

Company operations can have adverse impacts on water. In water-stressed regions, water quality and availability may be more pronounced for local stakeholders and company operations. This also includes responsible wastewater discharge of active pharmaceutical ingredients. We address water impacts from the use of our products in the Pharmaceuticals in the environment section.

Our approach

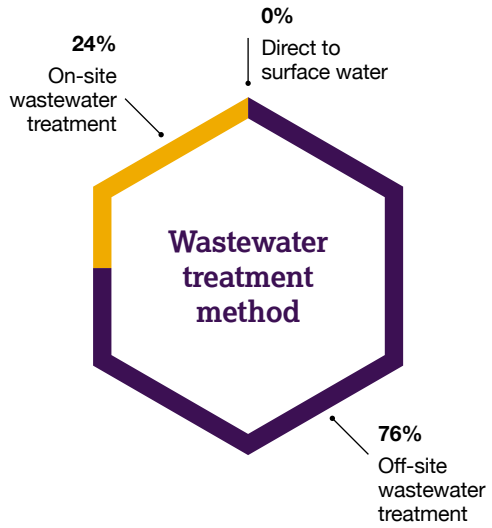
Our approach to responsible water use and management is based on the World Resources Institute (WRI) Aqueduct tool. Each year, we conduct plant-wide water audits at select manufacturing sites to identify water-saving opportunities. We also produce water conservation plans for all our major sites and those in water-stressed areas.

These plans highlight water risks and mitigation measures. We set a target to maintain absolute water use at the 2015 level through 2025. We prioritise water efficiencies in water-stressed areas. Since setting the target, we've implemented:

- Water audits at nine sites, including Yelahanka, Bangalore; Shanghai, China; and Newark, US, with two planned for 2019
- Rainwater harvesting at four sites: Wuxi, China; Cambridge, UK; Macclesfield, UK; and Frederick, US.

Wastewater treatment

Our on-site and off-site wastewater treatment methods are designed to protect the local environment. We do this by removing most of the residual chemical oxygen demand (COD), which is the amount of oxygen required to oxidise organic matter in wastewater. This is important because high COD loads can reduce the oxygen in water bodies, which could damage aquatic life. We measure the COD of wastewater as it leaves our sites. This year our COD was 547 tonnes, up by 93% from 2017. This increase is primarily due to an increase in activity at our biological manufacturing sites.



Sustainability in action

Cooling method reduces water footprint

We look for opportunities across our operations to limit the amount of water we use and to ensure the quality of the water that leaves our sites. At our site in Södertälje, Sweden, we designed a new cooling system to reduce our water use and footprint. At this site, we must cool down the purified water we produce. Traditionally, we used water from the city system for this process. Our new system, however, uses a closed-loop process that cools down the purified water, leading to substantial savings:

44,000m³
of water saved annually

Equal to 1%
of AstraZeneca's total water footprint

Image above:
New cooling system to reduce water use in Södertälje, Sweden.

Water stewardship
continued

Sustainability in action

Rainwater harvesting in Cambridge

Our commitment to safeguarding water security goes beyond our manufacturing processes. At the building site for our future headquarters in Cambridge, UK, we installed rainwater retention tanks to collect, treat and store water for use across the site. Not only does this reduce our need for fresh water, it lowers our flood risk. Through this installation, any rainwater that falls onto the site enters our rain tanks, where it is stored for future use. This project also enabled the Borehole Water Saving Initiative, which won a Green Apple Environment Award. The site's geothermal system required the drilling of 166 boreholes, which needed a supply of fresh water to help remove the dirt.

2+ million
litres of potable water saved

$9,000
approximately saved

Investing in water projects

Between 2017 and 2018, the Natural Resources Reduction Governance Group fund supported 10 projects to reduce our future water use by 154,000m³ a year (4% of current water use). Another seven projects are scheduled for 2019 and are projected to reduce future water use by another 4%.

Outcomes

8%
reduction in water use since 2015

3%
increase in water use in 2018

Absolute water use (million m³)

2025 Target
Maintain absolute water use at 2015 level of 4.34 million m³

Stakeholder dialogue

"Water use plays into anti-microbial resistance (AMR). If you invest in WASH – universal access to water, sanitation and hygiene – you would see a proportional response in reducing AMR."

External stakeholder, UK/Europe

Challenges

Water stress presents direct risk to our operations – our business requires continuous access to reliable water sources. Water scarcity has the potential to cause site shut-downs across our network or supply chain. Additionally, as a significant water consumer in many catchment areas, our licence to operate could be damaged during periods of water scarcity. Although during 2018 we did not see any major threats to water supplies at our sites, we continue to take steps to use water responsibly and ensure adequate supplies for our business, our employees and the communities they live in.

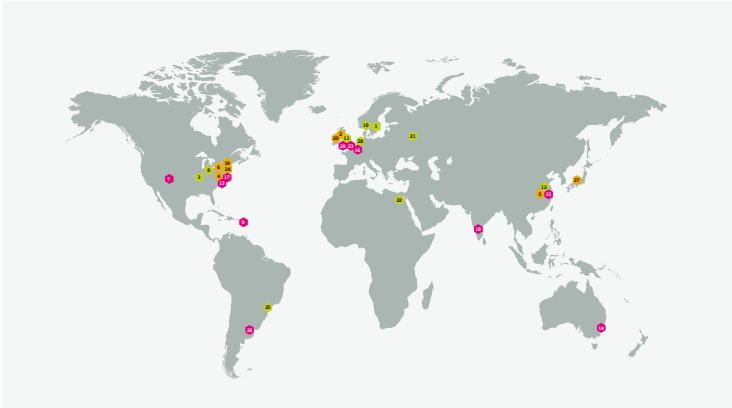
Highlights

CDP Water Security A List
We are recognised on the CDP Water Security A List for demonstrating water stewardship and transparency of water risks. We are one of only nine companies worldwide to have been on the A list for three consecutive years.

Rainwater harvesting in Wuxi, China
Replaces irrigation and cooling tower supply water with annual savings of 6,000m³ in a water-stressed area.

Site water stress assessment
We have developed a standard methodology to assess water risk at every site. Based on the WRI Aqueduct tool, it has enabled us to broaden our understanding of our water-related risks and identify priorities for investment.

Site water stress assessment



See larger map for detail

AstraZeneca water stress rating
Key: High Medium Low

Waste management

Waste is accumulating across the world at an increasing rate. Waste can have negative impacts on humans and the planet.

Improperly disposed of waste can cause respiratory diseases and other adverse health effects, as contaminants are absorbed from lungs into other parts of the body.[38] Waste can also contaminate surface water and marine environments, leading to negative impacts for humans and ecosystems.

Packaging plays a vital role in ensuring our products reach patients safely, and we recognise that there is growing concern from stakeholders – including employees – to minimise plastic and packaging. See Product environmental stewardship for more. This makes business sense because it increases efficiency and saves us money, and also reduces human and environmental risks. We realise we must be part of a circular economy to balance the use of natural resources to what the Earth sustainably can reproduce.

Our definition

Company operations generate waste, including biological waste and hazardous waste, and manage its disposal. Waste can have adverse impacts on the environment and human health through pollution.

Our approach

Working with colleagues and external specialists, we take a holistic approach to addressing waste, looking not only at waste in its end state but also evaluating how it got there. We assess initiatives that address waste produced in distinct ways:

1. **Production**
2. **On-site with employees**
3. **Disposal**

We prioritise waste prevention and work to change our processes to reduce the volume of waste we generate. For example, we are investing in solvent recovery systems, allowing us to reuse solvents in our processes, minimising waste streams and reducing our reliance on raw materials. We also aim to maximise recycling, ensure the safe treatment of our waste, and promote responsible end-of-life disposal of our medicines. Our sites align with global packaging standards, introduced in 2016, which improve efficiency by defining standard pack designs and materials.

Process mass intensity

We use a metric called process mass intensity (PMI) to measure our efficiency in materials use. PMI is measured as kilograms of raw materials used to produce a kilogram of the final active pharmaceutical ingredient (API). A lower PMI means we are using our materials more efficiently. We set a PMI target for all drug molecules to achieve at launch, based on projected peak year sales. We have used PMI since 2010 as a strategic target to help us measure our impact and focus our approach so we can recognise successes in our product pipeline. We have completed a PMI assessment for 65% of our development portfolio.

Sustainability in action

Take-back pilot in US

In January 2018, Express Scripts pharmacy management and recycling company TerraCycle launched an inhaler recycling programme pilot for 9,000 patients using AstraZeneca inhalers. The primary goal was to assess the ability to recover and recycle the unused propellant gas remaining in the inhaler canister and measure the impact it could have on our greenhouse gas footprint. In addition, the plastics and metals were also recycled. The pilot concluded in June with a participation level four times higher than other similar-sized initiatives conducted by Express Scripts.

1,023
inhalers were received back through the programme = the recovery of 21kg of plastic, 10kg of metals and 2kg of gas

251km
the gas recovered is equivalent to greenhouse gas emissions from 251km driven by a passenger vehicle

Waste management
continued

Sustainability in action

System PMI and waste improvements

We installed improved lab reactor systems at our Macclesfield, UK site to replace the existing ageing equipment. The new systems are improving the efficiency of our drug development teams, allowing us to develop more efficient ways of manufacturing our products. The new systems require 97% less energy and reduce solvent use by 80%. But more significantly, through PMI improvements, the new systems reduce the amount of materials needed in API manufacture. The efficiency improvements gained in the development of our cancer medicine resulted in a PMI reduction from 501 to 112, meaning we could produce more than four times the API with the same amount of input materials. We also realised reductions of up to 778 tonnes of hazardous waste and 1,840 tonnes of CO_2 per year.

Waste cut drastically for breast cancer medicine

Process improvements cut waste during substance manufacturing by 89% for a breast cancer medicine. These improvements, designed and developed in just eight months, resulted in an 88% decrease of by-products used during early manufacturing. Financial savings included that the associated medicine substance costs were cut in 2018 by 60%. This achievement demonstrates how investment can have long-term impacts across the portfolio and have sustainability benefits. Prior to this discovery, a process called chromatography was employed to control medicine impurities, with associated waste by-products and costs of $65,000 per kilogram of medicine substance. The subsequent discovery of a process without chromatography led to the reduction in waste and cost savings. The new process was suitable for further scaling, with the result that additional materials were manufactured in November 2018, avoiding the need for several smaller and costlier deliveries.

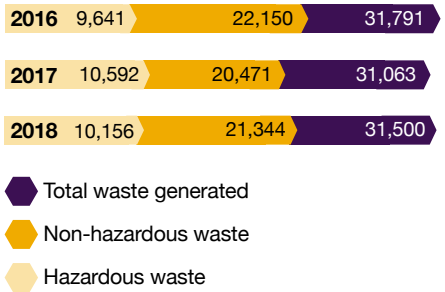
89%
reduction in waste during substance manufacturing

Outcomes

3%
increase in waste generated since 2015

46%
of total waste was recycled

Total, hazardous and non-hazardous waste (tonnes)



2025 target
27,589 tonnes' total waste, a 10% reduction from 2015 baseline

Challenges

Growing production levels have generated increased waste volumes, specifically hazardous waste. As production levels are projected to continue to grow, achieving our total 10% reduction target will be a challenge. We continue to seek ways to decouple business growth from waste generation through less material-intensive APIs, and device and process design, as well as building material loops by recycling for future sustainable sourcing.

Stakeholder dialogue

"The most important element in establishing AstraZeneca as a leader in sustainability would be to be more visible to the consumer as it relates to pharmaceutical waste and recycling. There's currently no easy or highly visible way to return expired or unused medicines in my country, yet there are multiple opportunities: drugstores, drive-through pharmacy windows, supermarkets, etc."

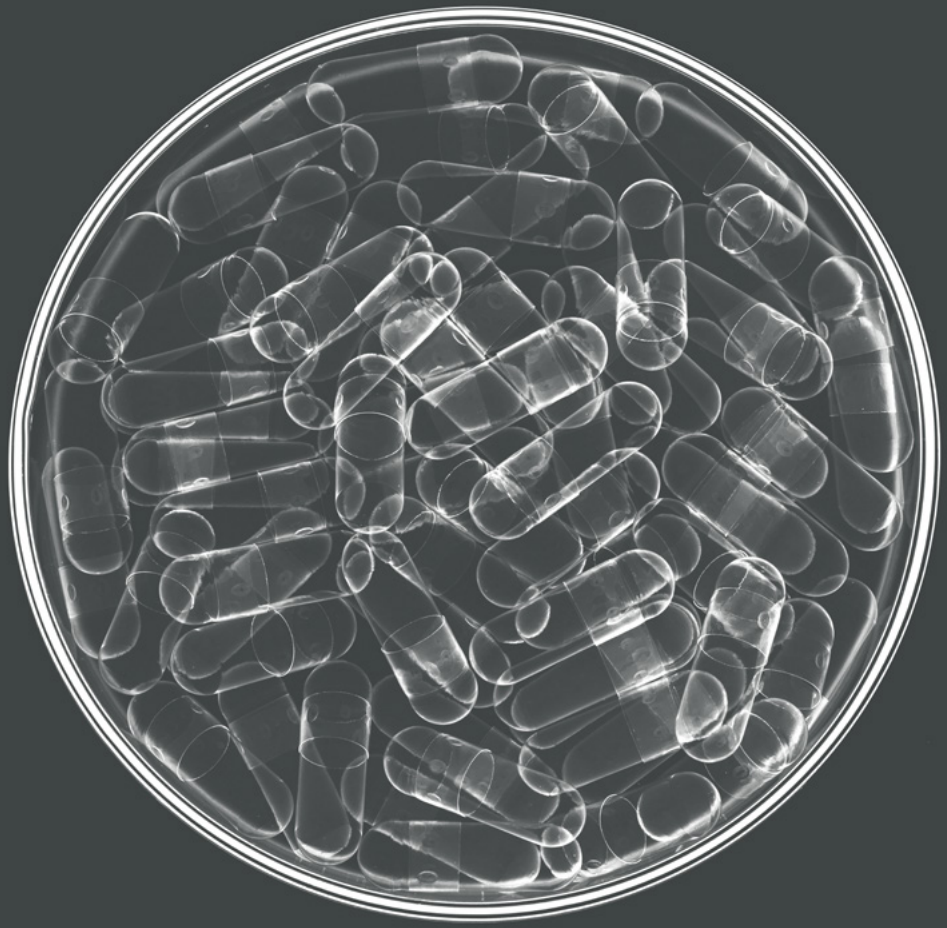
Employee

Highlights

Participating in the circular economy
AstraZeneca is part of the UK Research and Innovation (UKRI) Circular Economy Approaches to Eliminate Plastic Waste team awarded $1.25 million from the Plastics Research Innovation Fund. The team had a successful proposal in the Creative Circular Economy Approaches to Eliminate Plastics Waste competition, managed by UKRI, to develop innovative solutions to eliminate plastic waste. We will be working alongside industrial, technical and academic partners to advance new plastic recycling techniques, develop faster-degrading plastics and implement the circular economy (e.g. product take-back).

Investing in waste projects
The AstraZeneca Natural Resources Reduction Governance Group fund supported eight projects to reduce the waste generated by our future production by 1,050 tonnes a year (3.5% of total waste generation).

Ethics and transparency



We want to be valued for not only our medicines, but also for the way we work. We believe integrity, respect and transparency comprise the foundation of a healthy business culture. We build trust by demonstrating ethical business practices, integrity and transparency in everything we do within our company, across our value chain and in society.

In this section

Ethics and transparency overview | Ethical business culture
Ethical business culture – bioethics | Inclusion and diversity
Talent and workforce evolution | Workforce wellbeing and safety
Responsible supply chain | Human rights

Ethics and transparency overview

We believe a healthy business culture is built around strong ethics, integrity, respect and transparency. Our core company Values, including putting patients first and doing the right thing, guide our decision-making, define our beliefs and foster a strong AstraZeneca culture.

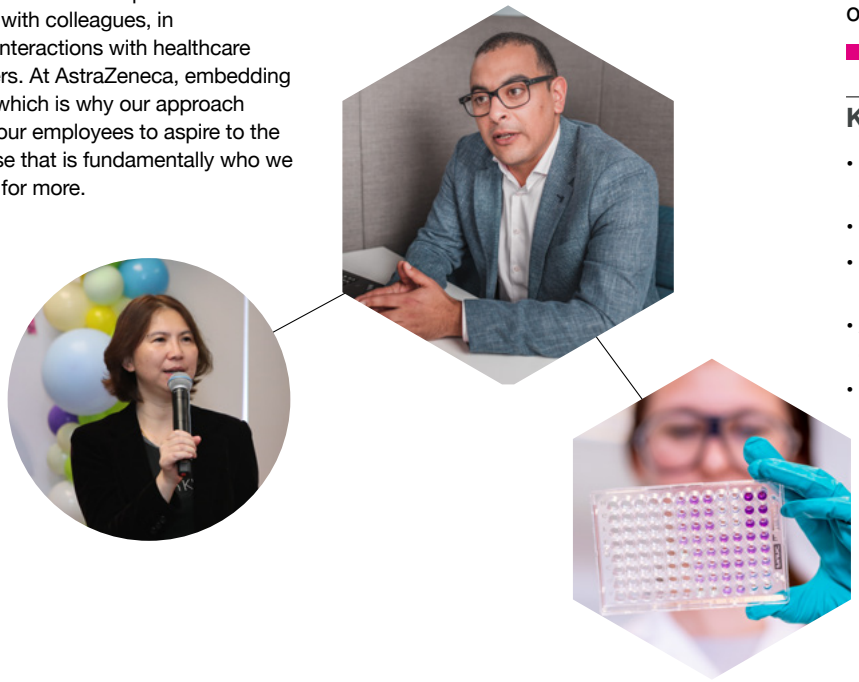
We embrace ethics and transparency in everything we do, from the way we treat our employees and patients, to our emphasis on human rights and equality, to our partnerships with our suppliers. Our ethical behaviour underpins our activities at our company and serves as a compass for our interactions.

In addition to our core company Values, we have established policies that define how ethics apply in our interactions with colleagues, in scientific research in the laboratory, and in our interactions with healthcare professionals, patients and supply chain partners. At AstraZeneca, embedding ethics into our company culture is paramount, which is why our approach goes beyond rules and policies: we want all of our employees to aspire to the highest level of ethics and transparency because that is fundamentally who we are as a business. See Ethical business culture for more.

Material issues

Our approach addresses six ethics issues identified by our materiality assessment:

- **Ethical business culture**
- **Inclusion and diversity**
- **Talent and workforce evolution**
- **Workforce wellbeing and safety**
- **Responsible supply chain**
- **Human rights**



Impact in 2018

82%
of supplier spend was assessed through our third-party risk management process

44.6%
of women in Career Level F roles or higher (senior middle management)

76%
of employees feel that AstraZeneca has a ‘Speak Up’ culture

Key accomplishments

- New global standards on anti-sexual harassment and anti-bullying to raise awareness and encourage a Speak Up culture
- Launch of Workforce Wellbeing global strategy
- Fair Wage Network data used to assess our living wage performance in all countries
- 28 employee entries for our Council for Science and Animal Welfare Awards encourage continued improvements in animal welfare
- Launch of new Supplier Sustainability Framework.

Ethical business culture

Balanced transparency helps build trust. And trust is paramount to building a healthy, productive workforce and partnerships necessary for innovation and bringing healthcare solutions to more people.

We recognise that our industry faces a trust hurdle, which is why we have initiatives in place to ensure that we are transparent and open in our operations. Our new efforts include releasing six new global standards and positions on our website including on human rights, gender pay differences and pricing.

Our definition

Company Values and norms, practices, standards and principles that guide the actions and behaviour of employees, including the Code of Ethics, and acting in an ethical manner that goes beyond compliance with policies and regulation. This applies across our company's operation and our entire value chain. This issue includes bribery and corruption, responsible sales and marketing, responsible lobbying, bioethics, animal welfare, clinical trials and intellectual property.

Our approach

We strive to model an ethical business culture by going above and beyond legal requirements. This means fostering an environment where our employees can speak up if they have questions or encounter wrongdoing. We ask our leaders to demonstrate desired behaviours, and we provide employees with the tools and training to act ethically. To reinforce ethical behaviours and encourage all employees to embrace our ethical culture, we provide awards and publicly recognise employees who inspire us.

Recognising that our workforce is composed of individuals empowered to make their own decisions, we know that setting rules is not enough – which is why we emphasise culture and key principles. We foster this culture by encouraging all employees to adopt a sustainability mindset that embraces one of our core values: 'doing the right thing' for all our partners.

Read our Global Policy on Ethical Interactions and Anti-Bribery/ Anti-Corruption.

Governance

In 2017, we relaunched our Code of Ethics to strengthen employee understanding and adherence by outlining our commitments in simple terms and focusing on why these commitments matter. The updated Code comprises our company Values, expected behaviours and Global Policies. Additional requirements at the global, local and business-unit level complement our Code, providing clear guidance for employees in carrying out their daily work.

We also integrate ethics into our Compliance function, which we renamed the Global Sustainability function in 2018 to reflect our emphasis on building a sustainable culture. Within Global Sustainability, the compliance, sustainability, and safety, health and environment programmes report to our Chief Compliance and Sustainability Officer, who reports directly to the CEO.

Bribery and corruption is a concern for our industry and society more broadly. Our Audit Committee annually reviews AstraZeneca's systems and controls to prevent bribery and corruption. Our Chief Compliance Officer is accountable for the Global Compliance Department's reporting to the Audit Committee on bribery and corruption risk, safeguards and breaches. Where a breach has been substantiated after investigation, we take corrective action, including termination of employment or termination of a third-party engagement, where appropriate. We also take steps to prevent recurrence, such as additional training or enhancements to our controls.

Ethical business culture
continued

Sustainability in action

Employees shape sustainability

At sites across the globe, we reinforce our commitment to responsible behaviour by hosting an AstraZeneca Sustainability Week. Each activity features a different aspect of sustainability, for which we emphasise accountability and how to take action. Here are three examples:

Europe

- At least **2.6 million patients** engaged in European patient programmes to support access to healthcare
- **All EU marketing companies** introduced a green fleet policy (see more in the GHG reduction section)
- **AZForest** introduced, with 600 trees planted
- **'Say no to plastic'** policy promoted and commitment made to **avoid buying 350,000 plastic bottles every year** starting in 2019.

Japan

- Entire month of activities
- All 3,000 AstraZeneca Japan staff were engaged
- Two patient-centric activities gave employees the opportunity to learn more about patients and diseases
- Ambitious goals were exceeded:
  - 10.4% decrease in paper use achieved against a target of 10%
  - 13.3% decrease in electricity use achieved against a target of 3%.

China

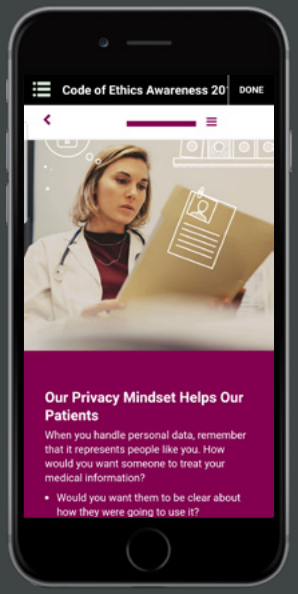
- 10,000 AstraZeneca China staff were engaged
- Knowledge sharing for patient support programmes, featuring smart nebulisation centre and chest pain centre
- Committed to environmental protection with these targets for 2019:
  - Reduce energy consumption by 4% (against 2015 baseline)
  - Reduce water consumption by 40% (against 2015 baseline)
  - Increase recycling rate from 6% to 10%.

Promoting our Code of Ethics through a company-wide campaign

In 2019, we expanded our Act Right Now Code of Ethics training with additional materials on sustainability topics. Our innovative training reinforces our culture of strong ethics, which is linked to the values and behaviours we expect of all of our employees. This new campaign is intended to keep the conversation alive beyond the annual Code training.

The new materials cover a wide range of subjects, from preventing bribery and working ethically with third parties, to reducing pharmaceuticals in the environment, to promoting health and wellbeing. The materials are designed to increase understanding of the active role we can all play in making AstraZeneca an ethical place to work.

See our Code of Ethics.



Ethical business culture
continued

Outcomes

100%
of active employees trained on Code of Ethics

8.7
concerns reported through AZethics Helpline per 1,000 employees in Commercial Regions

56.6
instances of non-compliance per 1,000 employees in Commercial Regions

71.1
corrective actions taken per 1,000 employees in Commercial Regions

4.7
employees terminated per 1,000 employees in Commercial Regions

Challenges

We receive feedback from our employees through a semi-annual survey called the Pulse. In the most recent survey, 76% of employees answered 'no' to this question: "Is there anything that stops you from speaking up and expressing your opinion at work?" We strive to ensure that 100% of our employees feel that they and others can and should feel free to express their opinions. We recognise that encouraging and supporting our employees to speak up is a key part of embedding an ethical business culture. We believe that embedding an ethical business culture is not a once-and-done activity; rather, it must continue to be reinforced and encouraged.

Highlights

Supporting employees to make the right decisions
Our Values@Work app – launched in 2017 – is intended to offer employees easy access to practical policy information. The app empowers employees to get the information they need to make the best decisions in line with our company Values, expected behaviours, and key policy principles and commitments. This year, the app was expanded to 28 countries and beta-testing is happening in another 28 countries. The app currently reaches more than 4,000 field-based employees.

Continuous learning for employees
We recognise that the ongoing evolution of our workforce, our industry and our society influences how we should work. In 2018, for the first time, a two-day virtual learning conference was held and streamed live for all employees on the Global Sustainability team. The 17 sessions included guest speakers and employee panels on the topics of resilience, diversity, digital savvy and creative thinking.

Stakeholder dialogue

"If you are going to be in the health sector, you need to operate at a higher moral code."

External stakeholder, UK/Europe

Stakeholder dialogue

"Sustainability covers many things, but fundamentally it comes down to doing the right thing (not the easy thing). The right thing for employees, patients, the planet, the communities we work in, etc."

Employee

Ethical business culture – bioethics

One of our company Values is to do the right thing – and we apply that to how we consider the range of ethical issues that arise from biological and medical science, including the use of human biological samples (HBS), the use of animals in research, and the conduct and transparency of clinical trials.

Our Bioethics Advisory Group (BAG) brings together relevant subject matter experts to oversee these bioethical issues. The BAG carries out horizon-scanning to anticipate bioethical trends and issues, provides subject-matter expert advice in response to investor enquiries, and oversees the Bioethics Policy and its supporting global standards. These activities communicate the importance of human and animal concerns across the business. Our Chief Medical Officer serves as the owner of the global Bioethics Policy and sponsor of the BAG.

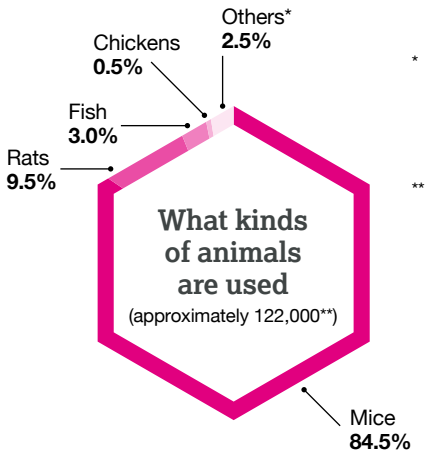
Human biological samples

Our HBS Governance Team oversees our collection, storage, use and disposal of HBS in R&D, including human foetal tissue (hFT) and human embryonic stem cells (hESC). This team also approves or rejects proposals for experiments using hFT and hESC, as described in the HBS Standard. Additionally, the HBS Governance Team is accountable for investigation and resolution of major incidents involving the use of HBS in R&D.

Animals in science

At AstraZeneca, we embrace a 'Culture of Care', in which we work to high standards of animal welfare and constantly look for ways to improve how we use animals in science. Our Chief Veterinary Officer leads the Council for Science and Animal Welfare (C-SAW), the expert decision-making group for animal welfare and compliance, with a particular focus on the 3Rs (replacement, reduction and refinement), openness about our use of animals and initiatives to promote a Culture of Care. C-SAW oversees issues relating to the use of animals in science, ensuring our governance and oversight mechanisms are robust, and that we continually improve laboratory animal science and welfare. We share lessons and innovations within the company and with our external partners, working in a spirit of openness and transparency around responsible animal use. For more on our approach and governance, see the Ethical business culture section.

Learn more about how our pre-clinical animal studies tests are run in accordance with the 3Rs framework.



* Dogs, guinea pigs, primates, ferrets, rabbits, pigs, hamsters, cotton rats, sheep

** 2018 figure includes some animals used only for breeding

Sustainability in action

Reducing use of horseshoe crabs in testing

Endotoxins are bacterial substances that are found everywhere but can cause fevers and be fatal to humans if injected into the body. Pharmaceutical products must therefore be tested to ensure safety.

To test for the presence of endotoxins, biopharmaceutical companies use horseshoe crab blood, which is very sensitive to endotoxins from bacteria. In the medical research process, an estimated 12% of horseshoe crabs die, which is a concern because certain populations are declining. Fossil records indicate horseshoe crabs have been around for 450 million years, but Atlantic horseshoe crabs are currently classified as a vulnerable species, meaning they are likely to become endangered unless the circumstances that threaten their survival are improved.

We recognise the importance of biodiversity and species survival, so we are investing in technology to reduce the amount of crab blood we use in our operations labs by 95%.

litres to millilitres

In 2018, we installed this technology at two sites, which will see a reduction in annual lysate (crab blood reagent) consumption from approximately 7.5 litres to just a few hundred millilitres.

Ethical business culture – bioethics
continued

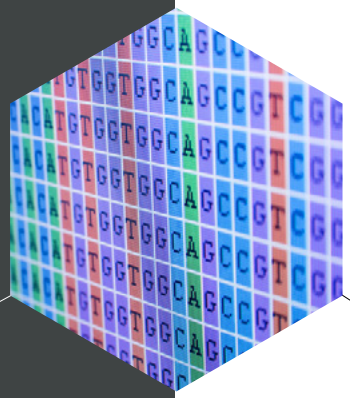
Sustainability in action

C-SAW Award winners summary

We reward our scientists and animal care staff for exceptional commitment to the 3Rs. We achieve this through the C-SAW Global 3Rs Awards, a competitive and highly visible awards programme. Highlights from 2018 include:

- **Predicting in vivo outcome with microphysiological systems and mathematical modelling**
  Complex in vitro models have become increasingly important in recent years, making progress towards the reduction and replacement of animals in science. This winning entry showed how these non-animal systems can be used to identify cause and effect mechanisms not possible in animal models, a breakthrough that has the potential to impact the design of animal studies in the future.
- **Target validation in zebrafish larvae reduces the usage of mice**
  The genomics initiative team in Gothenburg, Sweden, discovered a way to use zebrafish larvae to significantly reduce the use of mice in labs. The use of zebrafish larvae has enabled the team to screen for potentially important gene characteristics for renal disease, such as heart oedema and kidney cysts. The team uses the larvae to understand their relevance in a biological complex system before initiating any studies in higher species. Using zebrafish larvae is also faster, which could have a positive impact on our resources and getting medicines to patients.
- **Alternative study design and analysis of syngeneic tumour models**
  This is an innovative approach to experimental design and analysis that allows the stepwise enrolment of animals on to a study in 'batches', still achieving the necessary statistical power but with up to 40% fewer animals involved.

3 winners
out of 28 employee entries encourage the 3Rs for continuing improvements in animal welfare



Challenges

The ever-increasing pace of scientific and technological developments brings challenges as well as opportunities. We scan the horizon for innovations in science, anticipating and addressing new bioethical questions, moving forward with confidence.

Highlights

Human biological samples
In 2018, an additional research proposal that includes use of cells from hFT was approved, resulting in three projects using hFT that have progressed as of 31 December. An additional three projects using hESC were approved in 2018, resulting in 9 projects using 13 different hESC lines or derived cells having been approved to date. In 2018, the HBS Governance Team also considered 6 policy-based positions and 10 specific governance case decisions.

Nagoya Protocol
AstraZeneca supports the principles of the Nagoya Protocol to protect and value biodiversity. The Protocol is an international agreement to ensure fair reward is given to the country of origin that supplies the biological resources used in R&D. It regulates access to biological materials and ensures that communities that live where the resources are sourced receive their fair share of benefits.

Our Nagoya Protocol Governance Team supports scientists to carry out due diligence on non-human (i.e. plant, animal, bacterial, viral and fungal) genetic resources to establish the requirement for 'prior informed consent' and 'mutually agreed terms' with the country of origin. In addition, it conducts internal training and awareness, supports projects with subject-matter advice, and exchanges with external stakeholders to avoid unintended consequences to our business.

Assessing bio-piracy risk in AstraZeneca products
Brazil's decision to backdate access and benefit-sharing legislation for non-human genetic resources exposed our products from 2000 onwards to immediate risk of non-compliance with our sustainability standards and Brazilian law. We found 82 products originated from natural sources, but none were genetic resources in the scope of the Brazilian legislation and the Nagoya Protocol. The primary reason for the natural products falling out of scope was a ubiquitous source impeding the country's ability to claim sovereign rights.

Inclusion and diversity

By fostering an inclusive workforce and workplace, we are doing the right thing, driving innovation and contributing to a culture of equality within our business and across our industry.

At AstraZeneca, we know employees are able to work better in environments where they feel safe and empowered. We also recognise that diverse and inclusive teams outperform homogeneous, less inclusive teams by 50%.[39] Inclusion and diversity of thought leads to increased employee engagement and productivity, and ultimately increase our ability to innovate and our bottom line. By supporting equality, we are also addressing some of the barriers in healthcare, where economic inequality creates challenges related to affordability of medicines, proximity to healthcare providers and the ability to take time off work for treatment. Globally, inequality has increased since the 1980s, creating macro-level instability and uncertainty for both society and business. We want to do our part to reverse these trends, which is good for our business and good for the world.

Our definition

Company efforts to ensure that the workforce, at all levels, reflects the diversity of the populations in which we operate, as well as different backgrounds, cultures and experiences. This involves going beyond non-discrimination to promoting equality and inclusive behaviour in the workplace and communities where the company operates.

Our approach

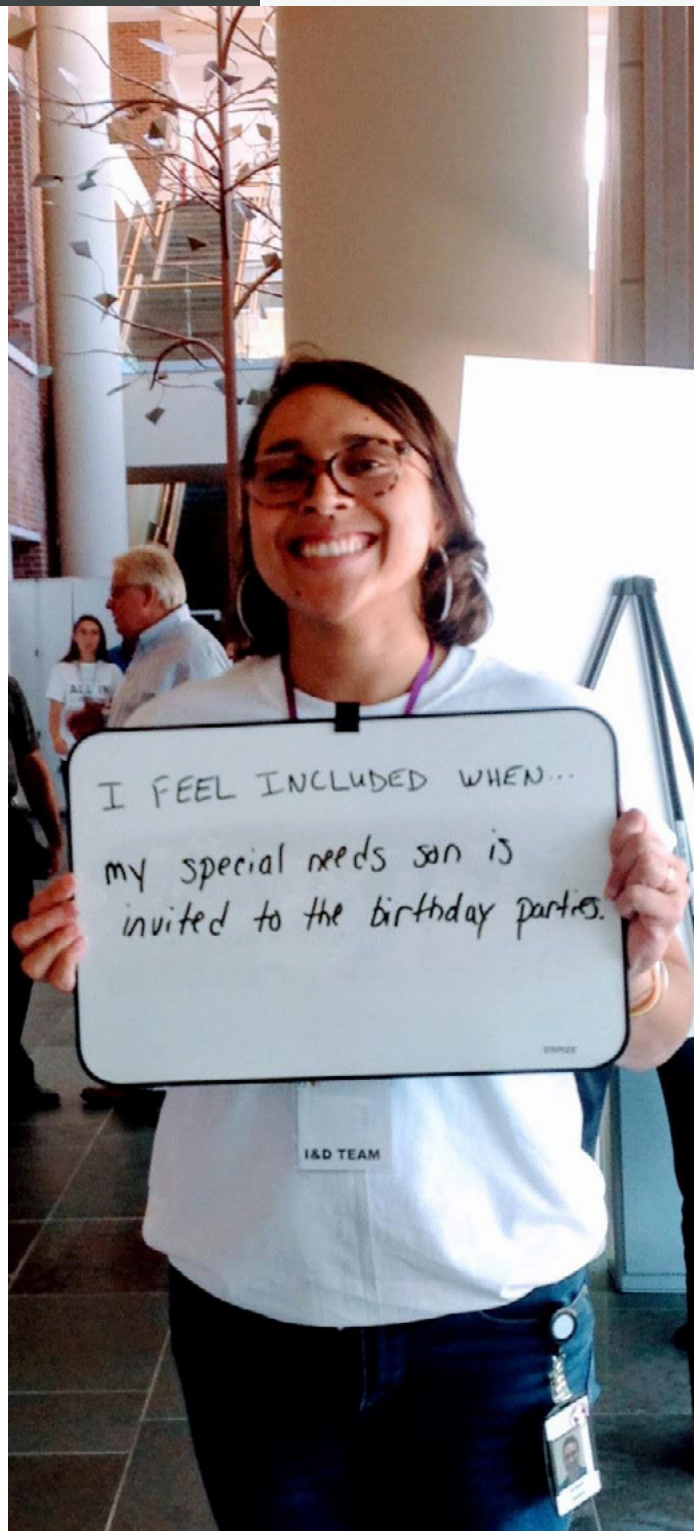
We see inclusion and diversity as a business imperative as well as a leadership capability. Our people make our business innovative, and we strive to recognise and value the uniqueness of each individual. We aim to create an inclusive workplace and a workforce that reflects our communities, delivers diversity of thought, incorporates cultural understanding and ultimately stimulates an atmosphere where our employees feel respected and empowered.

Our Code of Ethics emphasises our company Values and guides employee conduct. Our Global Standard for Inclusion and Diversity sets out how we foster an inclusive and diverse workforce. It describes the principles of our commitment and provides a framework to ensure we deliver these principles consistently worldwide.

We want people to feel comfortable speaking up – either to report unwelcome attention or behaviour, or to recognise the value of colleagues when they share their different perspectives and ideas. We have multiple channels available for reporting. Allegations are taken very seriously and handled in a manner that is sensitive to the confidentiality and security of those making a report and will be subject to global oversight. In 2018, we established Inclusion Councils across the enterprise that are responsible for developing a long-term strategy, sharing best practice, raising visibility of areas needing focus and increasing engagement. We also published new global standards on anti-sexual harassment and anti-bullying.

In addition to the two diversity metrics tracked internally, to increase female and Emerging Market origin leaders, on a biannual basis we provide the Senior Executive Team (SET) and Board with a comprehensive overview of the AstraZeneca workforce, covering a wide range of metrics, including trends around gender diversity, leadership, ethnic diversity and age profile. We also give the SET a quarterly summary of key workforce metrics, including gender diversity and leadership ethnic diversity. We also survey our employees to get their perspectives and feedback on how inclusive our culture is and we ask them what we could do to encourage more employees to speak up.

When it comes to leadership roles, we focus on identifying talented people from underrepresented groups, including women and ethnic minorities, to build sustainable succession-planning programmes. We are also making progress by transforming our company into a community for dialogue and feedback.



Inclusion and diversity
continued

Sustainability in action

More employees involved in resource groups

We have reinvigorated our employee resource groups (ERGs) by increasing their visibility, aligning them to business priorities and supporting them with structure and funding. We have created a steering committee, aligning ERGs to leadership sponsors. Each ERG has grown exponentially over the past year and continues to drive employee engagement, which is contributing to an increase in our employee survey scores, as well as retention. ERGs in the US and UK include:

- Network of Women (NOW)
- African American ERG
- Asian ERG
- Military Support ERG
- Middle Eastern ERG
- Healthcare Professional ERG
- Working Parent ERG
- Hispanic ERG
- LGBTQ+ ERG (PRIDE)
- AZInspire to engage and develop early talent.

Inclusion Conference and Expo

The Inclusion Conference and Expo took place in the US and was created to celebrate the diversity of all our employees and the role inclusion plays in driving a culture of high performance and innovation. The two-day experience included workshops on unconscious bias, and a keynote speaker who discussed the importance of equality, belonging and bringing your authentic self to work. This conference received praise for being the most impactful development opportunity employees had experienced in years. It also inspired field employees to establish inclusion change agents to assist in embedding inclusion into the fabric of the organisation. Lastly, we created an internal social media campaign with the hashtag #ALLinonINclusion, which initiated company-wide engagement and global reach.

Image left:
Colleagues from AstraZeneca march with the Proud Science Alliance at Pride in London.

New actions

- Chairman Leif Johansson signed a pledge with fellow members of the European Round Table of Industrialists to call for accountability and strategic action around inclusion and diversity

> "Living out this pledge will guide each of us at AstraZeneca to embrace people who are different across every dimension of backgrounds, physical characteristics, life experiences and personalities."
> **Leif Johansson**

- Reaffirmed zero-tolerance stance and encouraged employees to speak up in an open letter from the CEO, Executive Vice-President (EVP) of Human Resources and EVP of Sustainability, in light of the world's #metoo and #timesup campaigns to speak up about sexual harassment
- Established a US Inclusion Council responsible for developing a long-term strategy and increasing engagement across the company
- Published new global standards on anti-sexual harassment and anti-bullying
- Launched a new development programme for women called 'Your Future. Your Way.'
- Improved the inclusivity of our Equal Employment Opportunity Commission statement by adding Gender Identity as a new category
- Included Inclusion and Diversity as a recognition category in the global CEO Awards, the company's most prestigious employee award programme.

Inclusion and diversity
continued

Outcomes

19.4%
Leadership with a country of origin of an Emerging Market or Japan in roles that report to our SET

50.1%
of total workforce are women

44.6%
women in management: Career Level F and above

42%
women representation on Board of Directors

Challenges

The global nature of our company can make inclusion efforts challenging, as our workforce has different perspectives and needs across geographies. By instilling an inclusive and ethical business culture through our five Values, we seek to create a global AstraZeneca culture that overcomes barriers and embeds inclusion into every aspect of our business.

Highlights

- UK Gender Pay Gap Report
- **2018 FTSE 100 Women on Executive Committees and Direct Reports:** We have gone from 9th to 7th place – with 39% for women representation at SET and one level below SET, compared to 36% in 2017
- Included on the Forbes **Best Employers For Diversity** list for 2019, ranking 216th out of 500
- **Paradigm for Parity coalition**: AstraZeneca is a signatory to the commitment to address the gender gap in corporate leadership. AstraZeneca is currently above the benchmark for 13 out of 14 measures.
- Selected for the **2019 Bloomberg Gender-Equality Index** (GEI), which distinguishes companies committed to transparency in gender reporting and advancing women's equality. We are currently the only large biopharmaceutical company on the GEI.

Stakeholder dialogue

"[Inclusion] personally motivates me to do better in everything. And I feel included when the opportunity is given to us to contribute."

Employee

Stakeholder dialogue

"This should be a top issue, and it is big right now everywhere. A lot of Fortune 500 companies are taking a stand, but not a lot of pharma companies are doing so. People are watching. In pharma, there is only diversity advertising. How about diverse sales reps?"

External stakeholder, US

Talent and workforce evolution

As an innovation-based company, the continual development of our workforce is imperative for attraction and retention.

We understand that employment and workplaces are changing in light of technological advances in automation and shifting worker expectations. These trends are disrupting the nature of jobs, roles and business operations. We strive to prepare for and adapt to these changes by leading the way in responsible employment practices that enable people to reach their full potential. This makes business sense, as the future of our company depends on our people.

Our definition

Company efforts to foster a lifelong learning organisation, form the best teams, facilitate agile ways of working, upskill and re-skill current employees, and engage and prepare all employees for digitalisation and automation.

Our approach

We aim to make AstraZeneca the employer of choice in the pharmaceutical industry and attract top talent across all industries. We want to ensure our employees are prepared and empowered to face changes in technology, and we strive to provide the work environment and opportunities they need to thrive. Our learning and development initiatives provide our employees with opportunities to achieve their full potential. We invest in the ongoing development of our workforce through professional and technical training, and we enhance this through leadership, mentorship and job-rotation programmes across the organisation. We believe our investments support our business and society more broadly, as we develop the workforce of tomorrow to deliver medicines for patients.

To enhance recruiting, we are developing strategic workforce plans to ensure we can attract the critical capabilities required to deliver our long-term strategic priorities. These plans are underpinned by predictive analytics, meaning workforce decisions are data-driven. We also use workforce analytics to ensure that we manage our global workforce optimally. In addition, we have implemented a significant number of automation initiatives to allow our workforce to spend a higher proportion of their time on higher-value activity. We have also implemented a talent scout model to enhance our ability to attract key talent into senior roles. This has been successful, demonstrating our ability to hire best-in-class critical capability at a reduced cost. This has been supported by an enhanced employee referral scheme, which has become an increasingly important source of hire.

We are committed to hiring and promoting talent ethically and in compliance with applicable laws. Our Code of Ethics and its supporting standards are designed to help protect against discrimination on any grounds (including disability). Our Code covers recruitment and selection, performance management, career development and promotion, transfer, training, retraining (including retraining, if needed, for people who have become disabled) and reward.

Our approach is governed by the Executive Vice President of Human Resources, who reports to the CEO. On a biannual basis the Senior Executive Team (SET) and Board are provided with a comprehensive overview of the AstraZeneca workforce, covering a wide range of metrics and measures. The SET is also provided with a quarterly summary of key workforce metrics.

Sustainability in action

Programmes to engage emerging talent

We strive to attract emerging talent by investing in internships and recruitment opportunities globally. For example, we conduct a global programme to hire recent graduates for pharmaceutical technology and development, procurement, quality, engineering, IT, supply chain, and biometrics and information sciences functions. We also have a graduate programme for R&D, which complements our established Innovative Medicines and Early Development (IMED) post-doctorate programme for researcher recruitment. Additionally, we offer a 12-week internship opportunity for business school students to contribute to key initiatives in our oncology therapeutic area.

Talent and workforce evolution continued

Sustainability in action

Research hub for sustainable production inaugurated

In January 2018, AstraZeneca Södertälje's site inaugurated the Södertälje Science Park and the new campus for the KTH Royal Institute of Technology. The new arena will host 1,200 students and researchers in the engineering sciences and more specifically in sustainable production. The science park is a prime location for sparking innovations, as it is a physical location and meeting point to facilitate close collaborations between companies, academia and society. Business needs will be closely linked with education, research and development projects. Projects will take place between companies, students, researchers and entrepreneurs, which will build a strong local competence centre.

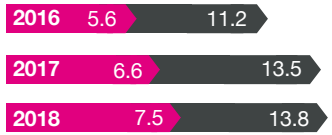
Our production units in Södertälje are very important for AstraZeneca's supply of medicines to patients around the world. What they do should influence other parts of our global production network.

Passion for people development

Following the successful launch in 2017 of 'Leading People', a social online learning platform aimed at managers, in 2018 'Leading Self' was rolled out across the organisation, aimed at employees below manager level. Over 5,400 employees have accessed this innovative, social online learning experience. In 2018, we piloted our middle-manager programme 'Leading Business', connecting 100 managers from all areas and regions of the company to develop their leadership capability. We continue to see a positive impact from these experiences in engagement and retention measures.

Outcomes

Promotion rate by performance level (%)



- Overall promotion rate
- High performers (4 and 5) promotion rate

Attrition rates (%)

- Voluntary employee turnover – high performers
- Voluntary employee turnover – total
- Voluntary employee turnover – recent hires

Challenges

Voluntary employee turnover increased slightly in 2018. The voluntary employee turnover rate among our high performers decreased, while the voluntary employee turnover of recent hires increased. We seek to reduce regretted turnover through more effective hiring and induction, exit interviews, risk assessments and retention plans.

Stakeholder dialogue

"The most important element in establishing AstraZeneca as a leader in sustainability involves taking care of our people. Develop them, invest in them, retain them."

Employee

Highlights

Pulse survey results
We invite employees to share feedback in semi-annual Pulse surveys that measure dimensions of AstraZeneca being a great place to work.

84% (down 6)
Employee engagement with sustainability: I understand how I can contribute to AstraZeneca's **sustainability priorities.**

83% (up 1)
AstraZeneca is a **great place to work.**

80% (up 1)
I have **opportunity for development and growth.**

77% (up 2)
Sufficient effort is made to get the **diverse opinions and thinking** of employees.

***Science* Top Employer award**
We were once again voted among the world's top 20 science employers (11th), following a poll conducted by *Science* magazine.

New talent comes on board
In 2018, we hired 13,000 permanent employees. Employees with less than two years' service now represent 33% of our global workforce (up from 20% in 2012). This provides a greater balance in terms of refreshing talent and retaining organisational experience.

Workforce wellbeing and safety

We value our people as the innovators and initiators of life-changing health solutions. We are committed to providing a safe and healthy working environment that enables our employees to develop and perform at their best every day.

At AstraZeneca, we take a holistic approach to workforce wellbeing, considering both physical and mental health dimensions. We strive to ensure that our employees have the resources not only to deal with, but to thrive in challenging situations.

The World Health Organization frames wellbeing as a state in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to her or his community.[40] We believe that the wellbeing and safety of our workforce is fundamental to being a truly sustainable company.

Our definition

Company efforts to create a healthy and safe working environment are conducive to a workforce thriving and maintaining a good work–life balance. This includes efforts to limit safety hazards for employees through proper design, engineering and preventative maintenance, and embedding a safety, health and environment (SHE) culture across the organisation.

Our approach

We use our SHE strategy to create a culture of safety, health and wellbeing and protect life at our sites all over the world. Through our SHE management system, we identify and manage risks to maintain a workplace that is safe and healthy for all staff and visitors. We have created a culture of continuous improvement so that we learn from any incidents. We seek to ensure that our suppliers embrace these same principles.

Our global SHE standards and procedures establish mandatory requirements in key risk areas and support our Code of Ethics, which defines our Values at work and guides our behaviours to deliver life-changing medicines. The elements of the Code of Ethics relating to workforce wellbeing and safety are contained in our 'Our Workforce' global policy, which is applicable to all employees and contingent workers. These are:

- We promote and maintain a safe, healthy, secure work environment
- We use effective SHE management systems to identify and manage risk and maintain strong SHE performance
- We only work with others who embrace SHE standards consistent with ours.

Our initiatives focus on key areas to eliminate workplace accidents and illnesses and optimise workforce wellbeing. We monitor performance centrally to assess progress and identify areas for improvement. We use a dedicated website to communicate information on how incidents can be prevented in the future.

We govern through our Global Sustainability function, with oversight by the Executive Vice President of Sustainability, who reports to our CEO. We use comprehensive assurance programmes, including performance reporting, internal auditing and periodic management review to constantly monitor and manage performance.

Sustainability in action

Employee challenge incorporates holistic health and wellbeing

AstraZeneca employees from 38 countries participated in the 100-day Virgin Pulse Global Challenge (VPGC)® 2018. The programme is a holistic tool to improve general health and wellbeing. VPGC 2018 included an online physical and psychological health risk assessment, nutrition and weight control tracker, heart health assessment, sleep health module and a mental wellbeing module. Additional features for this year included introduction of the Health Hub, which provided health information and tips for healthy living, and step conversions for 50 activities. The metrics below illustrate that this programme was successful in supporting employees to improve their physical, social and mental wellbeing. Based on the total number of steps taken by our workforce, AstraZeneca was ranked 3rd most active company out of 93 healthcare companies and 10th out of all 807 companies who participated in the 2018 Challenge – our best result to date. Of the participants:

66% reported feeling less stressed

40% are more aware of what they eat

67% met the recommended amount of sleep (vs 56% before VPGC).

75%
met the recommendation of 10,000 steps a day (vs 17% before VPGC)

54%
reported concentrating better and feeling more productive

Image above: Challenge team from Guadalajara, Mexico.

Workforce wellbeing and safety
continued

Sustainability in action

SHE Excellence Award winner – UK Macclesfield Campus SHE Improvement Team

The team identified a deteriorating safety performance on campus and took action to address it. A cross-functional team came together to look at the long-term trends and identify areas for improvement. It launched an engaging visual campaign using the concept of 'SHE Starts With Me', encouraging everyone to take personal responsibility. Using a set of 'golden rules', clear expectations were set for all 3,500 people on site. Significant improvements were made in safety performance and the whole campus became engaged and re-energised around the concept. The journey doesn't end there – a three-year programme, including health and wellbeing, is planned to continue the improvements in SHE culture, and the concept has been adopted globally by other manufacturing sites.

Stakeholder dialogue

"A healthy organisation protects life through ensuring safe workspaces, but also recognising and addressing the many factors that go into what makes someone well. And when I feel safe and well, I feel free to do my best work and be my best self."

Employee

Outcomes

26%
reduction in reportable injury rate from 2015 baseline

9%
reduction in vehicle collision rate from 2015 baseline

0
fatalities 2016–2018

65%
of our sites promote our four Essential Health Activities

Reportable injuries
(reportable injury rate per million hours worked)

1.57 2016*	1.48 2017*	1.31 2018

Vehicle collisions
(collisions per million km)

4.66 2016*	4.05 2017*	3.74 2018

*Data restated

Challenges

Many of our employees are based in the field, where the highest risk for significant injury or fatality is driving. We have made significant improvements in driver safety over the last decade. We have a 2025 target to reduce the vehicle collision rate a further 55% from our 2015 baseline. This year we had a global campaign focused on fatigue that raised awareness of the causes and symptoms and provided strategies to avoid fatigue when driving. In 2018, we achieved a 7% reduction in the collision rate compared to 2017. Despite many of our sites achieving our goal for Essential Health Activities, we recognise the value in expanding our actions to include wellbeing for our entire workforce.

Highlights

Ninety-eighth percentile for Occupational Health & Safety score on Dow Jones Sustainability Index. This was an improvement of 15%, compared to 2017 results.

Global safety and health summits
We held three summits during 2018, sponsored by senior leaders and broadcast live, with interaction and engagement from the workforce. The summits covered various safety and wellbeing topics including stress management, office safety, SHE culture and communications.

Promoting healthy activities across sites
65% of our sites, covering 85% of employees, promote our four Essential Health Activities: healthy eating and drinking, physical activity, tobacco cessation and workplace pressure management. This is a 2% increase from the 2015 baseline.

Image left:
Employees across the Company help build the SHE culture.

Responsible supply chain

Our business success depends on a resilient, ethical, sustainable supply chain that supports development and manufacturing.

We interact with an extensive network of more than 51,000 suppliers globally, and we recognise our opportunity to positively influence our suppliers through these partnerships. We seek to harness this power and embed sustainability throughout our supply chain. Our reach gives us the opportunity – and responsibility – to promote practices with our suppliers that are socially and environmentally sustainable. We support suppliers by helping them build their own sustainability capabilities and by holding them to high standards. We believe our collaboration with our suppliers increases business value.

Our definition

Company processes for sourcing external resources, including building robust supplier relationships with considerations of suppliers' environmental and social practices.

Our approach

We aim to work only with suppliers whose values are consistent with our own and who are committed to building trusted, respected and sustainable businesses. Throughout the life of our relationship with each supplier, we seek to ensure that their conduct matches the expectations outlined in our Global Standard Expectations of Third Parties.

We envision a supply chain that delivers commercial benefits to our business and to our partners, while meeting our aspiration for supply chain sustainability – creating a supply chain that is inclusive, resilient and transparent.

Inclusive
Suppliers create value for all employees and people within their local communities.

Resilient
Suppliers' operations are adaptive to climate change and resource scarcity.

Transparent
Sustainability practices across our worldwide supply chain are readily verified

At AstraZeneca, we have a shared responsibility through our procurement and global external sourcing teams to execute our vision. Our Chief Procurement Officer, who reports to the Executive Vice-President of Operations, leads our procurement strategy. We expect every employee and contractor who sources goods and services on behalf of AstraZeneca to follow responsible business processes, which are embedded in our Global Standard for the Procurement of Goods and Services. We give procurement professionals detailed training on responsible procurement, and we make that training available for other employees to access. Through our third-party risk management process (3PRM), we select suppliers to complete required assessments to maintain oversight of our supply chain and where we are spending our money, therefore reducing our risk. In 2018, 12,967 assessments were completed, a 90% completion rate.

We also conducted 45 audits on high-risk suppliers, seeking to ensure that they employ appropriate practices and controls. Of these suppliers, 86% met our expectations and the other 14% are implementing improvement plans to address minor instances of non-compliance. Through our due diligence process, we rejected seven suppliers due to reputational concerns due to high anti-bribery/anti-corruption risk.

Our Vice-President of Global External Sourcing, who also reports to the Executive Vice-President of Operations, manages our responsible sourcing strategy for our critical direct partners in the Active Pharmaceutical Ingredient, Formulation and Packaging, and Device categories. We seek to collaborate most closely with these partners on sustainability opportunities and challenges. Together, these two teams ensure responsible conduct across our supply chain.

Sustainability in action

Supplier Summit and Awards

In December 2018, we hosted a Supplier Summit, the first of its kind in AstraZeneca. This Summit provided an opportunity for two-way dialogue between our Global External Sourcing organisation and critical direct suppliers on strategy, priorities, aspirations and improvement opportunities. A key focus of the event was to develop a shared vision of partnership, and to create the foundation for future transparency, trust and collaboration on which those partnerships depend. Our first-ever Supplier Sustainability Award was launched at the Supplier Summit. We recognised suppliers for their outstanding contributions to improve their sustainability performance.

Image above:
The AstraZeneca team highlighting the importance of sustainability at our Supplier Summit in Amsterdam.

Stakeholder dialogue

"If you make the decision to produce in a certain country in the first place, you must have the right indicators to do business there – you should stay and develop the supplier, address the root cause, make an impact."

External stakeholder, UK

Responsible supply chain
continued

Sustainability in action

Assessing the sustainability of our supply chain

We aim to work only with third parties that have values consistent with our own. To scale our collective impact, we created the Sustainability Partner Guide and Framework to set clear expectations for our critical direct suppliers. This framework provides a common way for our sourcing teams to assess and reward sustainability performance across three categories.

Category 1
Meeting minimum standards on any industry sustainability assessments

Category 2
Setting sustainability goals and targets within your business
Being transparent about performance

Category 3
Increasing sustainability leadership efforts
We are confident that our leading partners will continue to redefine the future of AstraZeneca, pushing the boundaries of what it means to be a sustainable business. This category includes initiatives such as CDP, RE100, and Science Based Targets. It also incentivises sustainable procurement programmes and allows for further flexibility through other efforts that support the UN Sustainable Development Goals.

Partners that do not achieve excellence in at least one category will be rated as 'sustainability learners'. Based on the new framework, AstraZeneca has set a new target for 75% of suppliers to achieve 'Bronze or better' status by 2025.

In 2018, we made several efforts to support supplier scoring in Category 1: Meeting minimum standards on industry sustainability assessments:

- Rolled out the Pharmaceutical Supply Chain Initiative (PSCI) EcoDesk Environmental Sustainability Assessment to our critical direct suppliers over a 90% spend threshold. This assessment replaced a previous AstraZeneca assessment, with the added benefit of being industry-aligned, which improves efficiency of collectively monitoring our performance.
- Expanded our due diligence process to include assessing ethics, labour, human rights, environmental and sustainable procurement practices. In 2017, we piloted EcoVadis, a sustainability evaluator, and in 2018 began assessing our critical direct suppliers. We aim to have all critical direct suppliers scored by the end of 2019.

75%
of suppliers to achieve 'Bronze or better' status by 2025

Outcomes

Increased supplier assessment

82%
spend through 3PRM

74
suppliers have completed the PSCI Environmental Sustainability Assessment

72%
average supplier score on the PSCI Environmental Sustainability Assessment

27%
of our critical direct suppliers are now reporting their energy, waste and water data

Challenges

We need to remain mindful that suppliers have varying resources to contribute to sustainability. While it is our intention to ultimately shift our sourcing decisions to partners with a strong commitment to sustainability, we have to balance these priorities with our commitments to also source from a diverse pool of small businesses through our supplier diversity programmes.

Highlights

CDP Supplier Engagement leader board
Among the top 3% of companies assessed by CDP to be awarded a position on the leader board in recognition of our actions to reduce emissions and lower climate-related risks in the supply chain.

Supplier diversity in the US
In 2018 AstraZeneca US doubled its spend with minority-owned companies and tripled HubZone business spend. We also received external industry awards for supporting women-owned and diverse businesses:

- 2018 Corporate Done Deal Award – highest certified Women's Business Enterprise (WBE) spend in the Pennsylvania-Delaware-New Jersey region
- 2018 Done Deals Corporate Champion Award – highest certified WBE spend in the Washington, DC region.

Image below:
AstraZeneca team members accepting the 2018 Corporate Done Deal Award.

Human rights

We touch the lives of millions of people, from our own employees and patients to our partners and the communities we serve.

We believe it is our responsibility to understand how we are contributing to or hindering the lives of these people, either directly or indirectly. This includes taking action on emerging issues such as data privacy. We strive to enhance the lives of our stakeholders through social, environmental and economic advances. We know that respecting human rights positively impacts human health and wellbeing.

Our definition

Company efforts to uphold rights inherent to all human beings. These rights are all interrelated, as stated in the Universal Declaration of Human Rights. This includes the rights to health, non-discrimination, humane treatment and data privacy.

Our approach

Human rights are an integral part of our policies and procedures. To manage our progress and ensure oversight, we conduct biannual human rights labour reviews in all countries where we have employees. Our Code of Ethics describes our formal mechanisms to file complaints, as well as our due diligence and corrective action process. Our Human Rights Statement describes our approach to respect the rights of all people. We have a whistleblowing policy and affiliated systems and processes to protect employees and allow them to raise concerns.

Annually, we publish a Modern Slavery Statement on our website, describing our commitment to ensuring that we identify and eliminate, to the fullest extent practicable, modern-day slavery and human trafficking from our business. We are also committed to the International Labour Organization (ILO) standards regarding child labour and minimum working age. We intend to prevent human rights issues by taking the proper corrective action as soon as they are identified.

Privacy as a human right

A right to privacy was stated in the Universal Declaration of Human Rights in 1948, but in today's digital society it takes on new meaning. Technology has outpaced some legal frameworks and visibility of long-term consequences, and we recognise the need to act responsibly and safeguard privacy in all its digital forms. As advocates and continual learners, we are members of the International Association of Privacy Professionals, the Data Protection Working Group of the European Federation of Pharmaceutical Industries and Associations, and Data Protection Legal for the biopharmaceutical sector.

See our Data Privacy Standard.

"We are proud to underline our commitment to the United Nations Global Compact's 10 principles on human rights."

Pascal Soriot, Executive Director and CEO

Sustainability in action

Human rights survey

We measure human rights by means of a labour review survey every two years in all 106 countries where we operate. In 2018, we completed our fourth global Human Rights Labour Review, which focuses on the ILO's core themes, including freedom of association and collective bargaining, child labour, discrimination, working hours and wages. Initial results have been encouraging, with final report findings due to be complete in early 2019.

Fair Wage Network assessment

The Fair Wage Network aims to improve wage levels and development mechanisms beyond minimum legal requirements for all industries. It collects available associated data from all countries' economies and logs all locally recognised definitions of a 'living wage.' From this data, the Network distils an average that is refreshed annually. Late in 2018, in efforts to more independently assess our performance in providing a living wage to all employees, AstraZeneca used the Fair Wage Network database to evaluate local living wage performance in all 106 countries where we have an employee presence. The exercise produced excellent results and reassured AstraZeneca's performance in this space.

100%

of countries evaluated with a human rights survey and fair wage assessment

Human rights
continued

Sustainability in action

General Data Protection Regulation

We recognise that the digital landscape is continually evolving and that the personal data individuals generate, and organisations hold, is much broader and more complex than in the past. The General Data Protection Regulation (GDPR) is an EU law on data protection and privacy that has reshaped how companies manage data and consent. To address this reality and ensure our compliance with the new regulation, we delivered a cross-functional GDPR programme that drove the changes necessary to our ways of working, related processes and systems to ensure compliance. A cross-functional steering committee provided oversight and governance to the programme and a workstream structure and GDPR Champions Network (representing each EU market and relevant global functions/ business units) implemented the required activities. A comprehensive suite of communications and training activities was delivered across the business to increase awareness. Additionally, the Global Sustainability function has established an expanded Privacy Forum to support the Data Privacy Office for ongoing advice and guidance for all business functions.

Our GDPR eLearning training has been completed by over 24,000 employees across the EU and global functions, which equates to 99% of the mandated population, and is now part of the on-boarding process for new starters in these areas. The programme launched a 'Clean Up Your Data' campaign in October, focusing on individual accountability for ensuring personal data is retained for no longer than necessary (e.g. administrative documents with personal data stored in email, Box/SPOL, paper, Excel and other personally managed repositories).

See our Data Privacy Standard.

Stakeholder dialogue

"If we had a rights-based approach, then more patients would be diagnosed and would have access. We should advocate universal coverage and health as a human right."

External stakeholder, US

Outcomes

100%
of countries where we operate were evaluated for local living wage performance

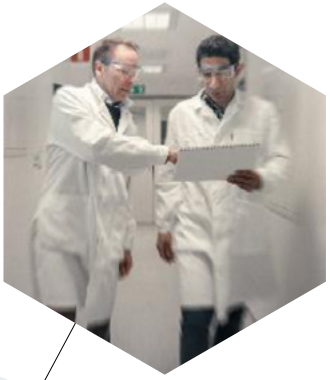
Challenges

As a company with operations in more than 100 countries, our due diligence must remain thorough and applicable to each geography. We set a global standard for human rights, regardless of location.

Highlights

We have been Signatories of the United Nations Global Compact since 2010 and joined as Participants in 2018.

United Nations Global Compact



Notices

Footnotes

1 Scope is 51 APIs for which data is available to calculate safe API discharge limits and based on 2017 manufacture.
2 https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases
3 https://www.mckinsey.com/featured-insights/employment-and-growth/how-advancing-womens-equality-can-add-12-trillion-to-global-growth
4 https://www.weforum.org/projects/closing-the-gender-gap-gender-parity-task-forces
5 https://sdgcompass.org/sdgs/sdg-8/
6 https://www.worldwildlife.org/threats/water-scarcity
7 http://www.worldbank.org/en/news/feature/2013/10/30/global-waste-on-pace-to-triple
8 https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data
9 https://climate.nasa.gov/vital-signs/carbon-dioxide/
10 https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health
11 https://www.who.int/publications/10-year-review/medicines/en/
12 https://www.who.int/global-coordination-mechanism/ncd-themes/ncd-and-youth/en/
13 https://publicpolicy.stanford.edu/news/non-communicable-disease-could-cost-47-trillion-2030
14 https://www.ncbi.nlm.nih.gov/pubmed/22538178
15 https://www.idf.org/e-library/epidemiology-research/diabetes-atlas/134-idf-diabetes-atlas-8th-edition.html
16 The AstraZeneca Healthcare Foundation is a tax-exempt entity organised under section 501(c)(3) of the United States Internal Revenue Code, separate from AstraZeneca Pharmaceuticals.
17 https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death
18 http://www.who.int/sustainable-development/transport/health-risks/air-pollution/en/
19 http://www.who.int/airpollution/events/conference/AP_exposure_and_NCDs_background.pdf?ua=1
20 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5923716/
21 https://unstats.un.org/sdgs/report/2018/goal-07/
22 https://amr-review.org/ O'Neil, 2014.
23 https://mbio.asm.org/content/9/4/e00969-18
24 https://www.amrindustryalliance.org/wp-content/uploads/2018/02/AMR_Industry_Alliance_Manufacturing_Framework.pdf
25 https://www.amrindustryalliance.org/wp-content/uploads/2018/09/AMR_Industry_Alliance_List-of-Predicted-No-Effect-Concentrations-PNECs.pdf
26 https://www.sciencedirect.com/science/article/pii/S0160412017309005
27 https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Life-Sciences-Health-Care/gx--2017-health-care-outlook-infographic.pdf
28 Scope is 51 APIs for which data is available to calculate safe API discharge limits and based on 2017 manufacture.
29 http://www.lancetcountdown.org/
30 https://www.ripublication.com/ijaerspl2018/ijaerv13n1spl_08.pdf
31 https://www.iema.net/assets/uploads/Special%20Reports/iema20ghg20report204.10.10.pdf
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34 https://www.sciencedirect.com/science/article/pii/S0048969718303061
35 https://www.sciencedirect.com/science/article/pii/S0048969718330869
36 https://pubs.acs.org/doi/full/10.1021/acs.est.8b05382
37 http://www.who.int/globalchange/ecosystems/water/en/
38 http://www.euro.who.int/__data/assets/pdf_file/0003/317226/Waste-human-health-Evidence-needs-mtg-report.pdf?ua=1
39 https://www.gartner.com/smarterwithgartner/diversity-and-inclusion-build-high-performance-teams/
40 http://www.who.int/features/factfiles/mental_health/en/

Cautionary statements regarding forward-looking statements

In order, among other things, to utilise the 'safe harbour' provisions of the US Private Securities Litigation Reform Act of 1995 and the UK Companies Act 2006, we are providing the following cautionary statement:

This Sustainability Report contains certain forward-looking statements with respect to the operations, performance and financial condition of the Group. Forward-looking statements are statements relating to the future which are based on information available at the time such statements are made, including information relating to risks and uncertainties. Although we believe that the forward-looking statements in this Sustainability Report are based on reasonable assumptions, the matters discussed in the forward-looking statements may be influenced by factors that could cause actual outcomes and results to be materially different from those expressed or implied by these statements. The forward-looking statements reflect knowledge and information available at the date of the preparation of this Sustainability Report and the Company undertakes no obligation to update these forward-looking statements. We identify the forward-looking statements by using the words 'anticipates', 'believes', 'expects', 'intends', 'aims', 'aspires', 'seeks' and similar expressions in such statements. Important factors that could cause actual results to differ materially from those contained in forward-looking statements, certain of which are beyond our control, include, among other things, those factors identified as risks and challenges.

AstraZeneca

AstraZeneca PLC
1 Francis Crick Avenue
Cambridge Biomedical Campus
Cambridge CB2 0AA, UK

T: +44 (0)20 3749 5000

Online updates

We welcome you to visit us online at www.astrazeneca.com/sustainability for:

- **ongoing sustainability updates**
- **data sheet summary**
- **infographics**
- **expanded discussions**

Learn more

Our 2018 Annual Report further explains how sustainability is integrated across our business model and into risk management.

Share your ideas

Send us feedback at sustainability@astrazeneca.com

Follow us