AstraZeneca

Making science accessible

Sustainability Report 2017

About this report

At AstraZeneca, we are united by our desire to push the boundaries of science. We know it's how we will help transform the lives of patients around the world, how we will motivate our people and how we will deliver value to our shareholders. We will do this by putting patients first and considering not only how a medicine can benefit individuals, but also how we can have a positive impact on the world by operating as a sustainable business. We strive to incorporate long-term environmental, social and accountability considerations into our decisions.

The following icons in this report highlight where you can find out more information:

Click to show in more detail

Go online for more information

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This is our third sustainability update, and it describes our progress and challenges from 1 January 2017 to 31 December 2017. The content of this report is based on those sustainability issues deemed material through formal 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 key performance indicators of this Sustainability Report and select information in the 2017 Annual Report. Assurance is in accordance with the International Standard on Assurance Engagements 3000 (ISAE3000), and in accordance with ISAE3410 Assurance Engagements on Greenhouse Gas Statements. For more information, please see the letter of assurance at www.astrazeneca.com/sustainability.

Front cover: AstraZeneca has pioneered the use of circulating tumour DNA (ctDNA) in the diagnosis of cancer. Pieces of DNA break off from a tumour and circulate in the bloodstream, where they can be analysed to give genetic information about a patient's tumour. This allows healthcare professionals to determine the right treatment for the patient using a minimally invasive blood test.

Contents

Sustainability at AstraZeneca

Our sustainability ambition is to make our science accessible by delivering our business strategy in a way that brings wider benefits to society and the planet.

In this section:

About us

We are a global, science-led biopharmaceutical company that focuses on the discovery, development and commercialisation of prescription medicines, primarily for the treatment of diseases in three therapy areas – oncology, cardiovascular and metabolic diseases, and respiratory. We are also selectively active in the areas of autoimmunity, neuroscience and infection. AstraZeneca's innovative medicines are used by millions of patients worldwide.

Our Values

We follow the science
We put patients first
We play to win
We do the right thing
We are entrepreneurial

Our awards

Dow Jones Sustainability Indexes
World and Europe

CDP A LIST 2017 CLIMATE WATER

FTSE4Good

34th
in the Corporate Knights Global 100 Most Sustainable Companies

9th
out of 151 Sustainalytics Outperformer rating

AA
MSCI rating

Our purpose

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

57,000
total suppliers

31
operations sites in 18 countries

$22.5 billion
total revenue

$5.8 billion
R&D spend

Our three strategic research centres


Cambridge, UK (HQ)


Gaithersburg, US


Gothenburg, Sweden

Our three main therapy areas

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

Cardiovascular and metabolic diseases
We are following the science to transform how cardiovascular, renal and metabolic 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.

Leadership statement

Pascal Soriot,
Executive Director and CEO

CEO highlights

2017 was a defining year for AstraZeneca as we continued the successful execution of our strategy of returning to growth. But, for us, this is only part of the story. We want to be valued and trusted by all our stakeholders as a source of great medicines now and in the future. That means delivering sustainable growth and making decisions with the long term in mind.

This way of thinking is embedded into our Purpose and Values. It drives our sustainability priorities, which are intrinsic to our operating model and the way we do business, as well as supporting the delivery of our strategy. It is why we are committed to the United Nations Global Compact and its ten principles.

The 2017 Sustainability Report contains a wealth of information about what we are doing to embed sustainability into AstraZeneca. For my part, I would like to highlight three examples of how we are delivering our science to the benefit of patients, society and the planet.

For the benefit of patients

Counterfeit medicines can fail to provide effective treatment and sometimes cause direct harm to patients. In China, we identified an employee of a chemical processing plant in the city of Wuhan offering an active pharmaceutical ingredient for one of our cancer medicines for sale in an online lung cancer chat room.

Undercover work identified an illegal manufacturing, distribution and sales network, and evidence was submitted to the Public Security Bureau and the China Food and Drug Agency. Twelve people were subsequently arrested in raids and a significant amount of illegally manufactured drug compound and filled capsules was seized. I am proud of the AstraZeneca teams involved who worked tirelessly to follow our Values and do the right thing, thereby mitigating a threat to patients in China and beyond.

For the benefit of society

Forty million people die each year from non-communicable diseases, or NCDs. To help combat them, we develop innovative medicines and work to make them accessible to patients. In addition, we work to prevent NCDs from occurring. Since 2010, we have been running our Young Health Programme (YHP), a global initiative focused on disease prevention, which has been seeking to reduce the burden of NCDs by encouraging young people to adopt healthy habits. The need for such a programme was highlighted in a 2017 study, funded by YHP and published in *The Lancet*, in which Imperial College found a ten-fold increase in obesity levels among youth over the past four decades. We also know that society benefits from our investment in YHP, with a social return on investment of between approximately $6 and $9 for every dollar invested.

For the benefit of the planet

We have put sustainability at the heart of decision-making for our new strategic research and development (R&D) centre in Cambridge, UK, and I believe it will be seen as a symbol of best practice in low energy design. But we are doing far more than this in order to meet our ambitious target of sourcing 100% renewable power by 2025. For example, at another of our strategic R&D centres, in Gothenburg, Sweden, we have installed highly efficient heat pumps with the potential to replace up to 60% of the site's natural gas consumption.

Life-changing medicines

I believe these examples exemplify the way we approach sustainability – with ambition, passion and by following the science. It is the same approach that underpins our Purpose – pushing the boundaries of science to deliver life-changing medicines – and it is one that brings benefits to patients, society and the planet.

> ***"I believe AstraZeneca's commitment to driving ever-more sustainable business practices means that we are well positioned for innovations over the long term. In our industry, this is essential if we wish to continue delivering life-changing medicines to patients."***

Geneviève Berger,
Non-Executive Director of the Board

> ***"As well as launching an impressive five new medicines to patients in 2017, we made significant progress in our sustainability agenda. I'm proud of our sustainability progress, which is receiving external distinction – from our continued top percentile position in the Dow Jones Sustainability Indexes to being placed in the Global 100 Most Sustainable Corporations in the World. We were also one of only 25 companies to be recognised by investor benchmarking organisation CDP, for both our climate change and water stewardship programmes."***

Katarina Ageborg,
Executive Vice President, Sustainability and Chief Compliance Officer

Our sustainability pathway

Making science accessible

As a global biopharmaceutical business, we want to be valued and trusted by our stakeholders as a source of great medicines over the long term. We are committed to operating in a way that recognises the interconnection between business growth, the needs of society and the limitations of our planet. Our sustainability commitments, which are driven by our Purpose and Values, are intrinsic to our business model and support the delivery of our business strategy.

Access to healthcare

We aim to improve access to healthcare around the world by tailoring our programmes to the communities they will serve. In some cases, this means overcoming healthcare barriers such as access and pricing of medicines.

Environmental protection

We reduce environmental impacts on human health and the natural world, using innovative science to find new ways to conserve our natural resources and ensure the environmental safety of our products.

Ethics and transparency

We want to be valued for the medicines we provide and trusted for the way we work. That means demonstrating ethical business practices and a high level of integrity in everything we do.

Underpinning everything we do is our approach to people and business, including human rights, employee development and advocacy. **We call these elements our Sustainability foundations.**

Sustainability integration

Sustainability can be an enabler for our business. We work to integrate sustainability considerations across our functions and business units. It is catalysed by helping our employees around the world understand our sustainability approach and the part they have to play in it. To that end, we undertook the following initiatives:

Employee training
All newly hired employees take an induction module that includes sustainability training. We also piloted Leading People training, which incorporates sustainability education.

Financial reporting
Beginning with the fourth quarter 2017 earnings call, we will report on sustainability-related occurrences by incorporating content within the year to date and quarterly results for investors.

Risk management
We recognise the connection between enterprise risk management and sustainability management. We conducted an assessment to map our sustainability material issues to our existing enterprise risks taxonomy and identified an associated risk for each of the 27 sustainability issues. In 2018, we will explore further integration. More information is available in our 2017 Annual Report.

Code of Ethics
In 2017, we launched a Code of Ethics (the Code), which replaced our Code of Conduct and is mandatory for all employees. The Code is based on our company Values, expected behaviours and key policy principles. It outlines our ethical commitments in simple terms and explains why they matter, empowering employees to make decisions in the best interests of the company and the people we serve, now and in the long term. Sustainability is featured as one of four high-level Global Policies in the new Code.

Our sustainability pathway
continued

Governance

Sustainable governance frames the way we operate. Non-Executive Director Geneviève Berger oversees implementation of sustainability matters on behalf of the Board of Directors.

As of 2017, every member of the Senior Executive Team (SET) is accountable for a specific sustainability target. Our Sustainability Advisory Board (SAB) now comprises five SET members and four external sustainability experts. It met once in 2017 to approve strategic direction, recommend opportunities and provide external insight and feedback.

Throughout the year, we engaged with employees and external stakeholders, including investors, ministries of health, non-governmental organisations (NGOs), patients and suppliers to hear their sustainability concerns and feedback. See more in the stakeholder engagement section.

"Combining membership of external stakeholders and internal SET members is a progressive and transparent approach to engagement. With this direct and open engagement with SET, we are able to better influence AstraZeneca's strategic direction to achieve its sustainability goals."

Pankaj Bhatia, SAB member

External advisers

Pankaj Bhatia
Deputy Director, Climate Program, World Resources Institute

Polly Courtice
Director, University of Cambridge Institute for Sustainability Leadership

José Lopez
Former Executive Vice President for Operations, Nestlé SA

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

SET members

Katarina Ageborg
Executive Vice President, Sustainability and Chief Compliance Officer

Pam Cheng
Executive Vice President, Operations and Information Technology

Fiona Cicconi
Executive Vice President, Human Resources

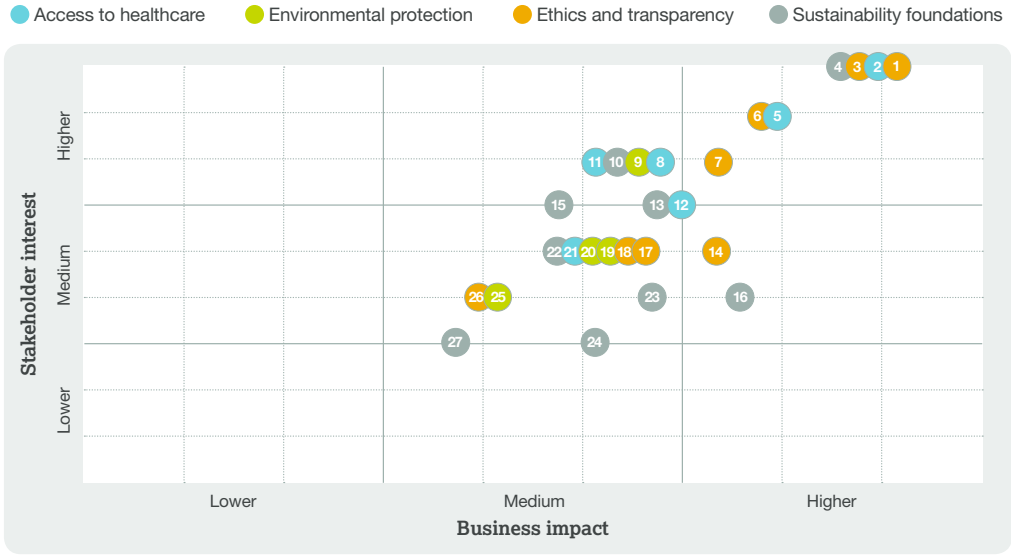
Bahija Jallal
Executive Vice President, MedImmune

Mark Mallon
Executive Vice President, Global Product and Portfolio Strategy, Global Medical Affairs and Corporate Affairs

Strategy development through materiality

In 2016, we worked with an independent think-tank to carry out a sustainability materiality assessment and identify the priorities that would shape our new sustainability strategy. Materiality is the principle of defining the social, environmental and governance issues that matter most to our stakeholders and on which our business can have the most impact. The process identified 27 sustainability issues, which are covered in this report. Details of the process are in the 2016 Sustainability Report.

Our sustainability material issues



1 Ethical sales and marketing
2 Health outcome contribution
3 Anti-bribery and anti-corruption
4 Product safety and quality
5 Product affordability
6 Clinical trial transparency
7 Ethical supply chain management
8 Healthcare reform
9 Pharmaceuticals in the environment
10 Public policy and advocacy
11 Intellectual property
12 Health systems development
13 Compensation
14 Product security controls
15 Fair taxation
16 Employee development and retention
17 Bioethics
18 Patient interaction
19 Resource efficiency
20 Climate change
21 Disease prevention
22 Human rights
23 Workplace health and safety
24 Diversity and inclusion
25 Biodiversity
26 Bioethics: Animals in science
27 Community investment

Our sustainability pathway
continued

Sustainable health

Our material issues, as shaped by company and stakeholder influence, fall within three sustainability priorities and our Sustainability foundations. They define how we're making science accessible.

Internal influencers

Our strategic priorities

Achieve scientific leadership
Return to growth
Be a great place to work

Our Values

We follow the science
We put patients first
We play to win
We do the right thing
We are entrepreneurial

External influencers

Global megatrends

Unmet medical needs

Non-communicable diseases (NCDs) include cardiovascular, metabolic and respiratory diseases and cancers. They are associated with ageing populations and lifestyle factors, and are increasing worldwide.

Expanding and ageing patient populations

The number of people accessing healthcare is increasing, as is healthcare spending, particularly by the elderly.

Political and economic uncertainty

Civil war and political unrest have caused instability around the world, leading to large numbers of refugees fleeing their homes.

Climate change

Clean air, safe drinking water, sufficient food and adequate shelter are all compromised by the impacts of climate change, extreme heat and intensified natural disasters.

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.

Success against the Agenda is measured using the 17 Sustainable Development Goals (SDGs). Businesses, governments, NGOs and communities are helping global society move towards the achievement of 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 are proud of the positive impact we have had on five particular SDGs. We have mapped our progress to the targets of these SDGs, creating a roadmap for how we are contributing.

82
grants given to STEM projects

26,000+
health professionals trained

SDG 3 – Good health and well-being

Ensure healthy lives and promote well-being for all at all ages.

Why it matters

Non-communicable diseases (NCDs) kill 40 million people each year, equivalent to 70% of all deaths globally. This is estimated to cost the global economy $47 trillion by 2030 if the rate of NCDs remains status quo[1].

Target 3.4. Reduce premature mortality from non-communicable diseases

Progress

We've reached nearly 7.2 million people through our access to healthcare programmes.

Our Young Health Programme (YHP) includes advocacy for NCD prevention and has reached more than 2.25 million young people.

Target 3.5. Strengthen prevention and treatment of substance abuse

Progress

Our employee Essential Health Activities campaign is active in 67% (+4%) of sites.

It promotes healthy drinking, tobacco cessation and other healthy habits.

Target 3.6. Halve the number of global deaths and injuries from road traffic accidents

Progress

We achieved a 17% reduction in the reportable injury rate and a 28% reduction in vehicle collision rate from the 2015 baseline.

Target 3.8. Achieve universal health coverage

Progress

We've activated or partnered with over 5,500 healthcare facilities.

Target 3.c. Increase the health workforce in developing countries

Progress

We've trained over 26,000 health professionals.

SDG 4 – Quality education

Ensure inclusive and quality education and promote lifelong learning.

Why it matters

There is significant evidence of a global skills shortage that is particularly acute in the developing world[2].

Target 4.4. Increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment

Progress

82 grants given to projects focused on science, technology, engineering and maths (STEM) education.

1 World Health Organization.
2 PwC, 2012. Infrastructure development in emerging markets: Closing the talent gap.

UN Sustainable Development Goals
continued

SDG 12 – Responsible consumption and production

Ensure sustainable consumption and production patterns.

Why it matters

Currently, 40% of the world's population lives in water-stressed river basins[1]. Each year, nations generate 1.3 billion tonnes of waste, a number that is expected to triple by 2100[2]. Waste includes chemicals that can accumulate in water sources and impact human wealth.

Target 12.2. Achieve the sustainable management and efficient use of natural resources

Progress

Our water footprint was 3.89 million cubic metres (m^3), a 10% reduction, in 2017.

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

Progress

100% of API discharges[7] from AstraZeneca sites demonstrated as safe and >90% of API discharges[7] from globally managed direct suppliers demonstrated as safe.

10%

reduction in water footprint

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

Progress

In 2017, our total waste was 31,222 tonnes, a 2% increase on 2015. We missed our waste reduction target due to increasing activity across our site network.

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

Progress

Our suppliers, making up over 90% of our critical APIs and formulation and packaging spend, are reporting environmental footprint data.

Target 12.7. Promote public procurement practices that are sustainable

Progress

78% of spend assessed through our third-party risk management programme.

SDG 13 – Climate action

Take urgent action to combat climate change and its impacts.

Why it matters

Since 1970, CO_2 emissions have increased by about 90%[3], currently measuring at over 400ppm[4]. Air pollution is a leading cause of lung cancer, chronic obstructive pulmonary disease (COPD), stroke and heart disease[5].

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

Progress

Our 2017 operational carbon footprint progressed our science-based targets and represents a 7% reduction from our 2015 baseline.

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

Progress

Partnerships for climate change include the science-based target initiative and RE100. 63% of our energy is sourced from renewables.

SDG 17 – Partnership for the goals

Revitalize the global partnership for sustainable development.

Why it matters

Nearly 2 billion people have no access to basic medicines[6]. Public–private partnerships have proved to be one of the most visible manifestations of the power of collaboration to improve access.

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

50+

partnerships across our disease prevention and access programmes

Progress

We have over 50 partnerships across our disease prevention and access programmes. 27 countries participated in the Global Diabetes Policy Forum we hosted.

We advocated for adolescent health through research, partnerships and engagement activities in 12 active YHP markets. We are a UN Global Compact signatory.

1 Lisa Guppy, 'Water and Policy'. The United Nations University Institute for Water, Environment and Health (UNU-INWEH) and OECD, 2015. *Principles on Water Governance.*
2 World Bank, 2013.
3 EPA, 2017.
4 NASA, last measurement: November 2017.
5 World Health Organization, Breathe Life 2030.
6 WHO, 2017. Dr Chan, WHO Director-General.
7 Scope is 50 APIs for which data is available to calculate safe API discharge limits and based on 2016 manufacture.

Stakeholder engagement

Through dialogue, we strengthen our connections with stakeholders, understand their perspectives and combine forces to achieve common goals. We use the feedback to inform our sustainability approach, strategy development and risk management.

We use a wide range of channels for stakeholder engagement, including digital and face-to-face dialogue. Through a multi-stakeholder engagement approach, we identify systematic activities to create opportunities for interaction with groups of our stakeholders. All our relationships and engagements, including with patient groups and other healthcare organisations, are based on transparent and shared objectives to improve the lives of patients and comply with local regulations.

Our Global Policy on stakeholder engagement – Our Interactions – guides our approach. You can read more about how stakeholders can raise concerns in the Ethics and transparency section of this report.

Featured engagements

Patients

We publish our patient group relationships on country-level websites, including our R&D centres of excellence in Sweden, the United Kingdom and the United States.

Outcomes for patients

To help patients understand how a medicine might affect them and set expectations for their treatment, we have developed a series of patient-reported outcomes (PROs). These first-hand accounts explain how patients who have previously taken the medicine feel and function. We currently have nine PROs in product labels.

Communities

We aim to make a positive impact on our local communities by keeping them informed of our business activities and plans, and giving them the opportunity to raise any concerns. Our global community investment funds promote healthcare in the community and support science-based education and careers.

Outcomes for communities

We provided over $426 million in community investment sponsorships, partnerships and charitable donations worldwide, including our product donation and Patient Assistance Programmes that make our medicines available free of charge or at reduced prices.

Employees

We invite employees to share feedback in semi-annual Pulse surveys that measure dimensions of AstraZeneca being a great place to work. The latest survey in December 2017 had a 66% response rate.

Outcomes for employees

Of our respondents, 90% are clear on what they need to do in their job to help AstraZeneca achieve its sustainability goals (up 4 points), and 81% would recommend AstraZeneca as a great place to work (up 6 points).

Suppliers

We develop and implement ongoing supplier engagement programmes that reflect areas of specific geographical or supply sector risk, with a focus on any key gaps in third-party understanding.

Outcomes for suppliers

We conducted 6,139 assessments in 2017 and 41 audits on high-risk suppliers, seeking to ensure that they employ appropriate practices and controls. Of our suppliers, 10% met our expectations, with a further 90% implementing improvement plans to address minor instances of non-compliance. Through our due diligence process, we rejected 12 suppliers because of concerns.

Shareholders/investors/analysts

We enter into dialogue with the financial community through a range of media, including year-to-date and quarterly results, announcements and presentations; corporate website and other electronic media; roadshows, investor conferences, and topical and educational investor science webcasts and events; and incoming telephone and email enquiries.

Outcomes for shareholders/investors/analysts

Beginning with the fourth quarter 2017 earnings call, we will report on sustainability-related occurrences by incorporating content within the year-to-date and quarterly results for investors.

Government bodies and regulators

We, along with other biopharmaceutical companies, continue to work openly and transparently with policymakers and regulators to increase access and improve outcomes, and to support an environment that fosters medical and scientific innovation and value.

Outcomes for government bodies and regulators

We partner directly with governments to improve healthcare infrastructure and access to medical treatment, including signing two memoranda of understanding with Vietnam and Indonesia for our Healthy Lung Asia programme. Read more in the Health systems development section.

See more in the Public policy and advocacy section.

Access to healthcare

We aim to improve lives by reducing the burden of non-communicable diseases (NCDs) through expanding disease prevention, infrastructure capacity and affordability.

In this section:

Strategy | Using our science to improve health
Health systems development | Product affordability
Disease prevention | Health outcomes contribution
Healthcare reform | Intellectual property

Strategy

Our access to healthcare strategy is made up of three elements:

Expanding disease prevention, awareness and treatment

Building capacity in areas with limited infrastructure

Improving affordability and access for underserved patients

Healthcare is a universal right and extending access to healthcare is a global goal to which we can significantly contribute. We work with the industry and our partners to remove barriers to access, not build them. Our in-depth understanding of the healthcare systems of emerging countries and healthcare needs of the people who live there has helped us develop our science-based strategy. We create our programmes to best meet the needs of local communities. In some cases, this means overcoming barriers to healthcare, including access and affordability of our medicines.

By educating and empowering people to understand how lifestyle choices affect health, we hope to play a key role in creating a healthier society – for the current and future generations.

We prioritise six sustainability issues identified by our materiality assessment: developing infrastructures for efficient healthcare systems; impacting positive societal health outcomes; supporting long-term solutions for product affordability; addressing NCD prevention; responding to healthcare reforms; and balancing intellectual property rights.

We have described our targets, governance and outcomes for these priorities in this report. We continue to manage other aspects of better access, which span many parts of our company.

Accessing a healthier future

We put patients first. It's how we connect our business growth to positive impact for the world. The mindset of improving access to healthcare means learning the lessons of the past, setting bold goals and embracing systems thinking that can move us to a healthier future.

See additional performance indicators in our data summary online.

Commitment	Target	Progress	Status
Disease prevention Improve health outcomes by addressing the burden of NCDs	Advance disease awareness and prevention within our three therapy areas – oncology, cardiovascular and metabolic diseases, and respiratory – with a specific focus on youth (ages 10–19) through our Young Health Programme (YHP) by 2025	On plan ●●○	**2.25 million youth reached** Over 50,000 peer educators trained through our YHP (cumulative)
	Maintain our YHP in current active markets and expand into three new markets by 2018	On plan ●●○	**Our YHP has reached 21 markets** In 2017, it was active in 10 markets and two new markets were added for a total of 12
Health systems development Explore innovative ways of increasing access to healthcare, tailored to meet patient needs	Improve early diagnosis and access to treatment by reaching 25 million people (cumulative) throughout the world through our portfolio of access programmes* by 2025	On plan ●●○	**7.2 million people reached (cumulative)** • 5.7 million through Healthy Heart Africa • 1.4 million through Phakamisa • 134,000 through Healthy Lung Asia **Over 26,000 physicians, nurses and healthcare volunteers** have been trained through all our programmes
Healthcare reform Drive thought leadership to improve patient care	Collaborate and partner with academia, NGOs, government and industry on efforts to drive policy changes for improved patient outcomes by 2025	On plan ●●○	**109 experts from 27 countries** participated in our Global Diabetes Policy Forum

* Healthy Heart Africa target to reach 10 million people across Africa by 2025, with the remaining 15 million people reached from our portfolio of programmes.

Using our science to improve health

Non-communicable diseases (NCDs) account for seven out of ten deaths, making them the leading cause of death worldwide[1].

Our employees share our ambition to transform the lives of people around the world, regardless of location or economic circumstance. To achieve this, we are continuing to invest in research to find ways of preventing NCD-related burdens. Together we will bring our science to those who need it.

Understanding NCDs

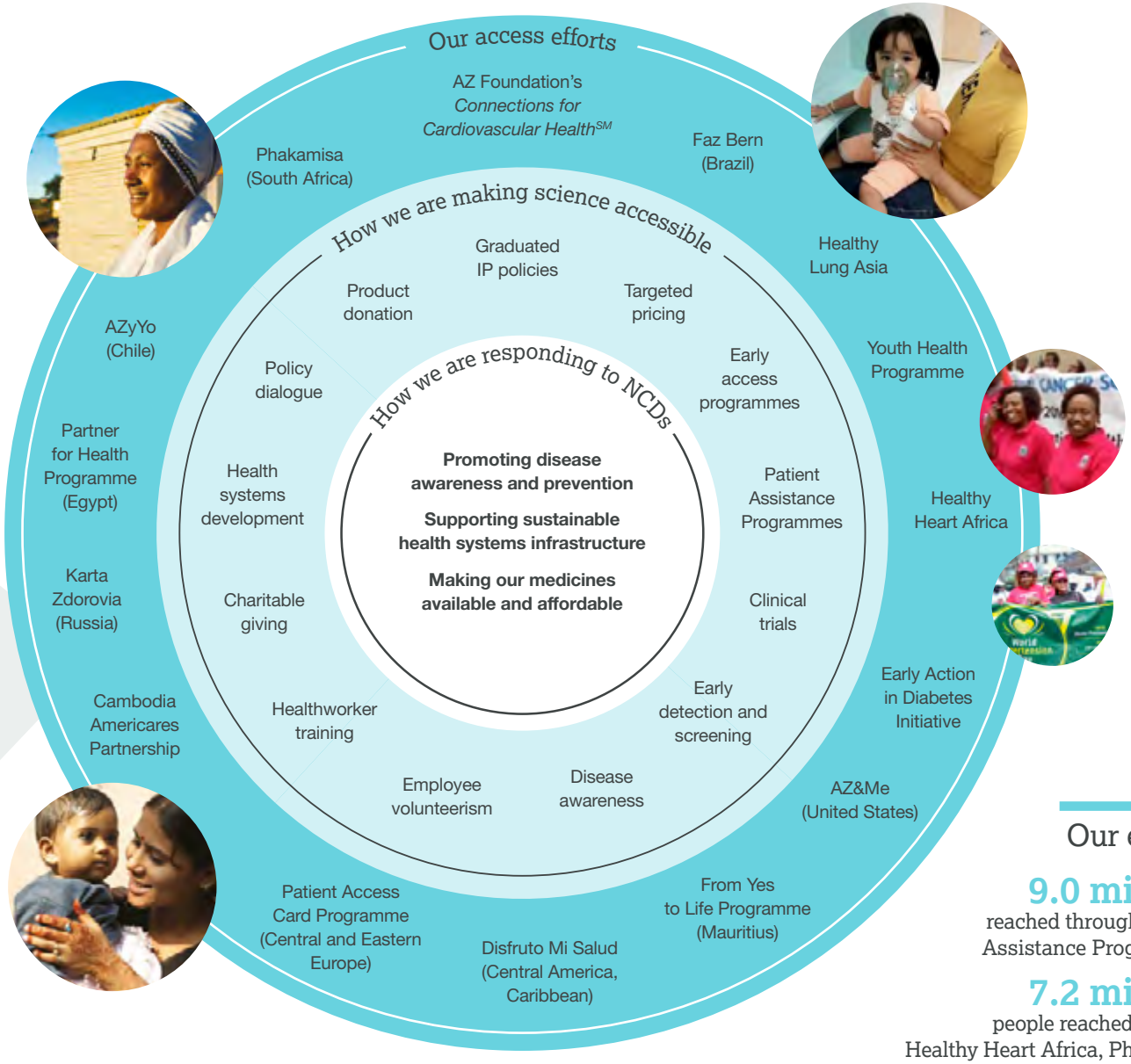
40 million
deaths each year

15 million
premature deaths in people aged 30–69

80% premature deaths
occur in low and middle-income countries

Lifestyle factors that can lead to NCDs

- Tobacco use
- Physical inactivity
- Harmful use of alcohol
- Unhealthy diets



Our efforts

9.0 million
reached through Patient Assistance Programmes

7.2 million
people reached through Healthy Heart Africa, Phakamisa and Healthy Lung Asia

1 World Health Organization. Global status report on non-communicable diseases 2014.

Health systems development

Access to healthcare depends on having a functioning healthcare system and the right allocation of resources to provide complete care for people as part of overall health management. For people in communities with limited healthcare infrastructure, we work with local partners to gain insight into the community. We aim to understand how we can work most effectively and strengthen healthcare frameworks and capabilities while remaining culturally sensitive.

How we manage

How we partner for health

We have teams dedicated to building trusted 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.

2017 update

Addressing a compelling cardiovascular need

Nearly one in three African adults is estimated to have hypertension (high blood pressure), the highest prevalence of any region[1]. Our Healthy Heart Africa (HHA) programme aims to support local health systems in Africa by increasing awareness of the symptoms and risks of hypertension and by offering education, screening and reduced-cost treatment. The programme served 46% more people this year, completing 5.7 million screenings since launch.

At the end of 2017, the HHA programme had trained more than 5,300 health workers and activated 675 health facilities. Through the training programme, we are addressing the specific need for more healthcare workers. The World Health Organization (WHO) estimates the world needs 17 million more health workers, especially in Africa and Southeast Asia.

AstraZeneca employees in the region could apply to join the HHA ambassador programme – a skills-based mentoring initiative that matches employees with a local partner in Kenya to contribute their expertise and experience in delivering the Healthy Heart programme.

We have leveraged the learnings of this social access business model to understand how we could apply the same principles of access expansion to more emerging markets, while creating a more sustainable business model. We have explored innovative ways to train healthcare providers, and are focused on increasing other aspects of infrastructure, such as improved manufacturing capacity and distribution models.

From diagnosis to treatment of respiratory issues

In 2017, we launched the Healthy Lung Asia programme, focused on asthma, chronic obstructive pulmonary disease (COPD) and lung cancer in nine Asian markets. Our objective is to raise the profile of respiratory disease with policymakers and build health-system capacity to support future service to patients.

Key highlights of the programme included:

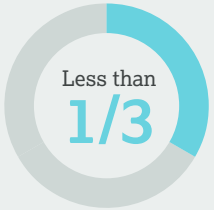
- 14 partnerships and 3 memoranda of understanding developed by our multi-stakeholder task force to increase public awareness and deliver improved care throughout Asia
- Over 134,000 people reached through education, diagnosis or treatment of COPD or asthma
- Over 4,400 primary, secondary or tertiary care physicians trained, in addition to the 1,100 respiratory nurses trained, in COPD and asthma care
- Over 4,900 respiratory centres activated or committed under partnership to provide screenings.

Our nine markets now have strategic plans in place, and have initiated government and stakeholder partnerships to sustain the programme.

The Healthy Lung Asia programme hopes to improve Asia's low diagnosis and treatment statistics:

107+ million
prevalence of asthma in Asia area[2]

155+ million
prevalence of COPD 6.2%, with 19.1% with severe COPD (22 million)



of asthmatics are treated with preventative therapy[3]

Less than 10%
of COPD patients are seeking treatment; the rest are ignoring the symptoms and take OTC medication

1 World Health Organization. Global status report on non-communicable diseases 2014.
2 World Health Organization. The Global Burden of Disease 2004 update.
3 Bachtlar, D. Prevalence of asthma control test (ACT) in the asthma outpatient Persahabatan Hospital Jakarta in May to July 2009 (thesis). Jakarta: Universitas Indonesia; 2010. Indonesian.

Health systems development
continued

Targeting cancer

In South Africa, we brought together different organisations to address breast, prostate and respiratory disease through our Phakamisa programme. We collaborated with South Africa's Foundation for Professional Development on accredited courses and have so far trained 762 healthcare professionals in cancer diagnosis, treatment and care.

In partnership with the Cancer Association of South Africa and the Breast Health Foundation, we have trained 507 Phakamisa 'Navigators' – teams of volunteers and counsellors who go out into the community, raising awareness and supporting patients.

By the end of 2017, our trained Navigators had reached over 1.4 million people, making it possible to identify over 5,300 malignant lumps and refer patients for treatment. In 2017, a monthly average of nearly 900 patients were supported by Phakamisa Navigators in the public health sector.

In 2017, Phakamisa continued expansion and implemented the breast cancer model to support prostate cancer patients. We created an innovative new app for our NGO partners to share and communicate patient screening data, and we worked on online training tools for our primary care volunteers.

Challenge

Each programme requires customisation to meet the local needs of each region. Despite this, we know that we have an opportunity to apply some successful programme elements systematically. We also continue to be challenged with finding NGO partners with the appropriate capacity to help us implement these programmes.

Healthy Heart Africa

Healthy Lung Asia

Select health systems development programmes impact

Healthy Heart Africa
Ethiopia and Kenya

5.7 million
people screened

5,300+
healthcare workers trained

675
health facilities activated

Phakamisa
South Africa

1,200
healthcare workers and volunteers trained

1.4 million
women screened for breast cancer

Healthy Lung Asia
India, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam

Launched in
9 Asian markets

Educated
5,500+
physicians and nurses

Created
4,900+
newly activated or partnering healthcare facilities

Product affordability

AstraZeneca aspires to improve the lives of patients around the world. Delivering medicines to patients is how we generate the income we need to invest in the research and development of new life-saving medicines. We strongly believe everyone is entitled to effective medicines and healthcare services, no matter where they live or what their income. We are working to make our medicines affordable to more people on a commercially and socially sustainable basis.

How we manage

Ensuring the affordability of our medicines

We price our medicines in a way that is designed to ensure the mutual sustainability of the healthcare system and our research-led business model. Our pricing position for our medicines is based on four principles:

Consider their full value for patients, payers and society

- Reflects factors beyond clinical benefit and cost effectiveness to include improvement to life expectancy, future treatment advances and regulatory systems

Ensure the sustainability of both the healthcare system and our research-led business model

- Enable an efficient healthcare system for patients today
- Support long-term solutions to a pipeline of medicines for patients tomorrow

Ensure appropriate patient access to our medicines

- Understand priorities and requirements of other stakeholders in the access process to align solution paths
- We support the development of Medicines Adaptive Pathways to Patients (MAPPs) and early access schemes

Pursue a flexible pricing approach that reflects variation in global healthcare systems

- Appropriate use of managed entry schemes
- Develop patient access programmes
- Investigate innovative approaches, such as payment for outcomes

Using these principles, we have developed a methodology to understand the burden of treatment cost and level of affordability when patients have to pay for their own medicines. We do this through:

- Patient Assistance Programmes tailored to each market that make our medicines available free of charge (see Community Investment section)
- Patient access programmes that coordinate with health systems to deliver medicines at lower out-of-pocket costs for the patient
- Our targeted pricing strategy that considers ability to pay
- Structured product donation programmes
- Mainstream operations.

Our patient affordability programmes focus particularly on emerging markets, where approximately 45% of funding for healthcare is out of pocket.

For those who pay for their own healthcare, we have developed a socio-economic framework that assesses household budgets and the economic impact of medicines, on a country-by-country basis.

2017 update

Flexible assistance

At AstraZeneca, we have offered programmes for discounts and donations for more than 35 years. Here are some 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
- Faz Bem in Brazil
- Patient Access Card in Central and Eastern Europe
- AZ&Me in the United States.

The number of Patient Assistance Programmes in emerging markets has more than doubled since 2013, reaching more than 9 million patients in total by the end of 2017. We are continually adding new programmes, such as our FromYestoLife programme in Mauritius to support breast cancer patients.

Challenge

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

Disease prevention

NCDs are the number one cause of death and disability globally. Yet many can be prevented. NCDs are often caused by lifestyle factors, including smoking, drinking, sedentary lifestyles and poor diet, which can be addressed through health promotion and behaviour change programmes, as well as investment in the social determinants of health[1]. We believe that investment in disease prevention is critical to meeting the targets laid out in the UN Sustainable Development Goal (SDG) 3 – Good health and well-being – and to support the growth of healthy nations. In most cases, NCDs are long-term health problems, putting strain on the public health system and personal finances. They are also increasingly showing up in younger adults. The WHO estimates that NCDs will cost the global economy $47 trillion by 2030 in lost productivity.

How we manage

Educating for health

Our approach to disease prevention is focused on health promotion, advocacy and research. We have several programmes that include disease prevention efforts, including those for our own workforce (see the Workplace health and safety section). Our signature disease prevention platform – our Young Health Programme (YHP) – is focused on NCD prevention among adolescents aged 10–24. With 70% of NCDs linked to behaviours that started in adolescence[2], our programme empowers young people with the knowledge to make choices that can help them become healthy adults.

1 Adolescence: a foundation for future health. *The Lancet* Volume 379, Issue 9826, 28 April–4 May 2012, Pages 1630–1640.

2 www.who.int/nmh/ncd-coordination-mechanism/Policybrief5.2docx.pdf.

3 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.

2017 update

Early intervention with youth

Launched in 2010, AstraZeneca's YHP is a 10-year commitment that has reached 2.25 million young people to date. It combines on-the-ground programmes, research and advocacy to target the four most prevalent risk factors for NCDs: tobacco use, alcohol abuse, lack of exercise and unhealthy eating.

We work with over 30 expert organisations to deliver this programme. Through our advocacy partners, we aim to put NCD prevention with adolescents on the global health agenda. In 2017, we supported presentations in Geneva and New York in line with the World Health Assembly and UN General Assembly meetings. We also participate in the Global Coordinating Mechanism on NCDs and have partnered with NCD Child and Plan International to advocate for the inclusion of children and youth in the outcomes documents leading up to the High-level Meeting on NCDs, scheduled for 2018. With our partners, we have trained over 14,000 young people to share health information with their peers and the community, and more than 12,000 frontline health providers have been trained in adolescent health.

The youth programme has reached 21 markets since it launched and is currently active in 12 markets. In 2017, we made a three-year commitment in Brazil to deliver a programme in two highly vulnerable communities south of Sao Paolo. By 2020, we hope to reach more than 40,000 direct beneficiaries with programming, and more than 700,000 indirect beneficiaries through awareness campaigns.

We conducted research on the impact of our YHP through a social return on investment (SROI) analysis in four markets: Brazil, India, Canada and Romania. SROI valuations are only indicators of value, not precise calculations of it. For the YHP SROI, it was difficult to find data for the valuations and, as such, we are treating the findings as an ongoing learning about our programmes and to identify gaps in data that we can work to fill. Conservative findings showed that the four programmes returned between approximately six to nine times the original financial investment. We look forward to taking what we learned through this SROI forward to inform the ongoing development and evaluation of our programmes.

AstraZeneca HealthCare Foundation

In 1993, we established the AstraZeneca HealthCare Foundation[3], an independent, US-based non-profit organisation to promote public awareness and education of healthcare issues and support organizations through charitable donations. Currently, the Foundation's signature programme, *Connections for Cardiovascular Health*℠ (CCH), helps to improve heart health by providing grants to innovative community-based organisations throughout the United States. Since 2010, nearly $22 million in CCH grants have been awarded to 49 organisations. Over 1.6 million people have been reached and more than 56,000 programme participants have had their progress tracked. In 2017, 10 organisations received nearly $1 million in funding, with a focus on sharing lessons learned; 25% of each grant award is dedicated towards dissemination efforts, including publications, presentations and programme toolkits, to help amplify the impact of the CCH programme.

Challenge

In general, NCDs receive just 1.23% of all our assistance for health in comparison to other major global health areas[2]. With NCD risk factors often being driven by factors that fall outside of the healthcare area, addressing them becomes more complicated. It's important to take a social determinants of health approach and to consider cross-sectoral and inter-sectoral measures to realise change.

Highlight

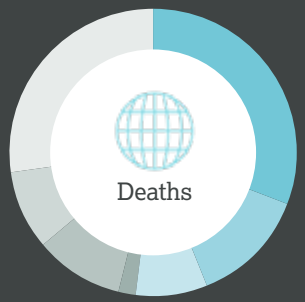
Advocating for change

We offered a scholarship to 20 young people to participate at One Young World, the premier global forum for young leaders aged 18–30.

Health outcomes contribution

We focus on the societal value of our medicines, whether it's breaking down cultural barriers to improve health screening or providing education to empower young people to make better lifestyle choices. According to the WHO, seven out of every ten deaths are due to NCDs. We have a very important role to play to alleviate that heavy burden on society. We are hard at work, with more than 130 projects (as of 31 December 2017) in the pipeline and a core focus on our three main therapy areas – oncology, cardiovascular and metabolic diseases, and respiratory – so that we can treat and ultimately eradicate NCD-related deaths.

Global causes of all deaths[1]



- **Cardiovascular diseases** 31%
- **Cancer** 13%
- **Respiratory diseases** 8%
- **Diabetes** 2%
- **Other NCDs** 10%
- **Injuries** 9%
- **Communicable, maternal, perinatal** 27%

How we manage

Our impact on health outcomes is enhanced by our sustainability mission and driven by our core business: to deliver medicines to patients through innovative science and excellence in development commercialisation.

Our portfolio within our three main therapy areas targets the leading causes of death. We are determined to use our scientific understanding of each disease to improve and save lives.

While disease prevention is the most effective way to reduce healthcare costs, we also look for innovative ways to advance scientific discovery to reduce disease burden. As with our health systems development programmes, we create partnerships for maximum impact.

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.

2017 update

China Commercial Innovation Centre

Our China Commercial Innovation Centre in Wuxi, which opened in 2017, is one example of using our comprehensive approach to deliver healthcare solutions.

This is an open strategic platform jointly initiated with the Wuxi government to promote commercial healthcare innovation and the healthcare Internet of Things (IoT). The centre is the first established by a pharmaceutical company in China. We aim to achieve patient-centric solutions – from diagnostics to treatment to follow-up – by building a collaborative healthcare ecosystem.

We collaborated with cross-sector partners such as diagnostic, device and digital companies to provide an end-to-end disease management solution, integrating diagnosis and treatment that meet patient needs. As one example, we put into practice the IoT to help respiratory patients. The solution provides data collection support through easy maintenance nebulizers, along with education to improve adherence.

1 in 11

adults has diabetes[2]

No.1
cause of death

is cardiovascular diseases[3]

1 in 8

deaths is caused by cancer[4]

1 World Health Organization, Global atlas on cardiovascular disease prevention and control, Geneva, 2011.
2 International Diabetes Federation.
3 WHO.
4 American Cancer Society.

Healthcare reform

Global populations are growing, and with them the levels of NCDs. As a result, healthcare systems around the world are under increasing pressure. Some governments, especially in emerging markets, face challenges coordinating the various components and increasing public awareness, which can impede access. At AstraZeneca, we aim to raise awareness and address health system changes needed to improve outcomes. We seek to achieve this by advocating to build understanding of, and support among, health policymakers and their influencers for policies intended to improve care.

How we advocate

Increased awareness
Identify and articulate issues in a compelling way so that healthcare professionals, health system administrators and patients understand the need for change.
Key initiative: Develop awareness campaigns

Earlier diagnosis
Empower general practitioners and patients with information to help them understand the importance and process for earlier diagnosis.
Key initiative: Increase screening programmes

Improved treatment
Equip clinicians with the information they need to treat patients using a preventive approach.
Key initiative: Expand healthcare worker training

Better management
Help patients and their carers to understand their right to better care, and help them to maintain their treatment plans. ***Key initiatives: Deliver educational information to patients. Create supportive referral frameworks. Advocate for patient support networks***

Improved policy
Ensure that health systems have resources, services and incentives in place to drive improvements in quality care. ***Key initiative: Convince policymakers through fact-based clinical evidence and social return on investment***

How we manage

We advocate for action

Advocacy involves engaging with a broad range of stakeholders on complex issues. It is time-consuming work, but a necessary part of the journey to put patients first. We advocate in policy forums for policy reform and collaborate with advocacy groups to address many challenges facing patients. Learn more in the Public policy and advocacy section.

2017 update

Keeping the world's spotlight on diabetes

In partnership with the International Diabetes Federation, the World Heart Federation and Primary Care Diabetes Europe, we created the Global Diabetes Policy Forum. The forum brings together more than 100 experts from 27 countries to build momentum for tangible policy changes to improve care for people with type 2 diabetes. Now in its third year, the event is part of the multi-year Action in Diabetes initiative, which we inspired and funded. Our common goal is to improve policymaking at a national level to address this worldwide public health concern that contributes to 13% of healthcare spending today and could impact 693 million people by 2045[1].

Canada's 2017 policy roadmap for early action in diabetes is one example of the forum's results. Canada's roadmap has action for prevention, early diagnosis, patient engagement with their control, and early access to personalised interventions. The plan is designed to prevent the development of diabetes in 500,000 people and to improve the lives of 2 million people by 2020.

27
countries participated in our 2017 Global Diabetes Policy Forum

Challenge

As with any advocacy engagement, there are competing stakeholder priorities and demands. Long-term, sustainable reform requires ongoing dialogue. Specific risks include political and economic instability, with frequent changes in government personnel, resulting in a shifting of priorities and resources. In highly regional and devolved healthcare systems, the complexities of interacting with different health authorities at the municipal, state and federal level can also be challenging.

1 IDF Diabetes Atlas, 8th edition, November 2017, www.idf.org/e-library/epidemiology-research/diabetes-atlas.html.

Intellectual property

It can take 10 to 15 years to develop a new medicine, and for each medicine that reaches patients, there are thousands of drug candidates that fail. The ability to obtain patent protection for innovations in research and development (R&D), under a robust intellectual property (IP) protection and enforcement framework, is one of the main incentives for innovation and provides a sustainable framework for the innovative pharmaceutical R&D that produces life-saving medicines. AstraZeneca proactively makes patent information available on its website and considers granting patent licences in certain areas. We have also developed an IP strategy where we do not file patent applications in virtually all current World Bank designated low-income and developing countries, as well as a majority of lower-middle-income countries.

How we manage

Flexible licensing for affordability

Licensing is an important way of allowing access to patent-protected inventions. Our Non-Exclusive Voluntary Licence (NEVL) Public Policy Issue sets out the criteria under which we would grant such a licence. We are flexible and will consider proposals concerning the geographic scope of any NEVL. Currently, AstraZeneca will license any patent rights covering medicines on the Essential Medicines List to low-income, least-developed and lower-middle-income countries. We have published a table that provides patent rights, indicating expiry of those rights.

2017 update

Enabling access for R&D

We continued to limit enforcement and expand access of our IP to low-income and lower-middle-income countries. Unless constrained by contract, AstraZeneca proactively abandons all patent property that does not support a product or an actual or potential pipeline asset. As a result, other research organisations can use what has been learned and inform their own work without having to secure a licence from AstraZeneca. We will license our patent rights in the neglected tropical disease space regardless of country.

AstraZeneca supports the Bolar research exemption (or safe harbour exemption) under which a third party may prepare for and obtain regulatory approval so that a generic product can be available on patent expiry. This is not interpreted to extend to commercial manufacture, importation or stockpiling during the lifetime of a patent.

95%+

The percentage of low-income countries where we do not file patent applications

Environmental protection

We work to reduce environmental impacts on human health and the natural world, using innovative science to find new ways to conserve our natural resources and ensure the environmental safety of our products.

In this section:

Strategy | Climate change | Resource efficiency – energy consumption | Resource efficiency – responsible water Resource efficiency – responsible waste management Pharmaceuticals in the environment | Biodiversity

Strategy

Our scientific approach to environmental sustainability strives to reduce our environmental impact by protecting our air, land and water, reducing our dependence on natural resources and ensuring the environmental safety of our products. We have taken the position of industry leader on the issue of pharmaceuticals in the environment (PIE).

AstraZeneca's Executive Vice President, Sustainability and Chief Compliance Officer is responsible for environmental matters. In 2017, our global Safety, Health and Environment (SHE) Policy was the overarching document for our environmental management system. It applies to all functions and locations and is supported by global standards and procedures that establish mandatory requirements in key risk areas. We monitor and manage performance through comprehensive assurance programmes that include performance reporting, internal auditing and an annual management review.

We've invested $60 million in environmental efficiency innovations over the last three years through our Natural Resources Reduction Governance Group (NRRGG) Fund, and we will continue to invest at a similar level through to 2025 to help us meet our natural resources strategy targets. We use site water stress assessments and natural resource audits to identify opportunities for management and investment.

Our strategy addresses the four environmental sustainability issues identified by our materiality assessment: reducing our greenhouse gas (GHG) emissions to combat climate change; protecting natural resources through energy, waste and water management; leading the way to minimise PIE; and preserving biodiversity. We have described our targets, governance and outcomes for these priorities in this report. We continue to manage other aspects – for example, site risk registers – to ensure our sites comply with regulatory and industry standards at a minimum, while aiming much higher.

Accessing a cleaner future

We've made progress in improving the environmental performance of our value chain since we began a focused effort in 2011, but we still have work to do. Our current targets, set using 2015 baselines, guide us through to 2025. We are building on our prior goals and adjust periodically to strengthen our impact.

See additional performance indicators in our data summary online.

Commitment	Target	Progress	Status
Environmental safety of our products Minimise the environmental impact of our products	Lead the industry to manage pharmaceuticals in the environment (PIE) by 2025	On plan ●●○	**EcoPharmacoVigilance (EPV) programme** to monitor product risks post launch ran through 2017 with no significant risks identified **Co-authored 14 peer-reviewed publications** on PIE **100% of API discharges*** from AstraZeneca sites demonstrated as safe **>90% of API discharges*** from globally managed direct suppliers demonstrated as safe
	Ensure 90% of active pharmaceutical ingredient (API) syntheses meet resource efficiency targets at launch by 2025	On plan ●●○	**50% of API syntheses** (one of two) have met target at launch since the start of the strategy period
	Develop resource efficiency targets for biologic products by 2020	On plan ●●○	In 2017, we participated in a **cross-sector benchmarking** through the ACS GCIPR for a biologic products resource efficiency metric
	Develop a product environmental sustainability index and pilot our approach by 2019	Not yet started ○○○	We have **conducted 14 life-cycle analyses** (LCA) on our products to date **We will start development** of a product environmental sustainability index in 2018

* Scope is 50 APIs for which data is available to calculate safe API discharge limits and based on 2016 manufacture.

Strategy
continued

Commitment	Target	Progress	Status
Protecting natural resources Manage our impact on the environment, across all our activities, with a particular focus on GHG emissions, energy consumption, waste production and water use	**Science-based target** Maintain operational GHG footprint no greater than 2015 levels by 2025 Reduce absolute Scope 1 emissions by 20% against the 2015 baseline Reduce absolute Scope 2 emissions by 95% against the 2015 baseline Reduce all Scope 3 emissions by 25% per million USD of sales in the same timeframe by 2025: • Reduce GHG emissions from waste incineration, business air travel, primary distribution (freight and logistics) and critical direct APIs and formulation and packaging (F&P) suppliers (>90% of category spend, energy only) by 20% by 2025 from 2015 baseline • Reduce GHG emissions per device from patient use of inhaler therapy devices by 2025 from 2015 baseline • Improve primary data collection within Scope 3 value chain GHG accounting by 2020	On plan ●●○	**Operational GHG footprint** totalled 1,658,548 tonnes CO_2e, a reduction of 7% **Reduced by 8%** Scope 1 emissions **Reduced by 48%** Scope 2 emissions **Increased by 6%** Scope 3 emissions intensity: • Reduced by 16% absolute Scope 3 emissions from waste incineration, air travel, distribution and targeted suppliers • Improved by 2% Scope 3 primary data collection
	100% renewable power consumption by 2025 globally with an interim target of 100% renewable power in the EU and US by 2020	On plan ●●○	**63% of our total electricity imports** are sourced from renewable sources
	Reduce energy consumption by 10% against a 2015 baseline by 2025	On plan ●●○	**Energy use was 1,742 GWh**, a reduction of 3%
	Expand our green vehicle fleet by 2025	On plan ●●○	Sweden, home to 2% of our fleet vehicles, plans for all **new company cars to be electric or plug-in hybrids**
	Maintain absolute water use at 2015 baseline levels through to 2025	On plan ●●○	**Water footprint was 3.89 million m^3**, a reduction of 10%
	Reduce waste by 10% below the 2015 baseline by 2025	Lagging ●○○	**Total waste was 31,222 tonnes**, an increase of 2% from 2015. Our target has been missed due to increasing activity across our site network

Strategy
continued

Our management methods

Our approach to environmental management is compatible with ISO14001, and our internal Safety, Health and Environment (SHE) auditors are trained to audit against ISO14001. Two of our largest sites, Gaithersburg and Macclesfield, attained ISO50001 certification, with the latter also ISO14001 certified. Together, these sites account for approximately 20% of our environmental footprint.

Minimising impacts across the life cycle of a medicine

We are committed to ensuring effective environmental management of our products, from pre-launch through to product end-of-life. We work at all stages of a medicine's life cycle – from the design of active pharmaceutical ingredient (API) production and formulation processes, devices and packaging to distribution, patient use and final disposal. We aim to lead our industry in understanding and mitigating the effects of pharmaceuticals in the environment (PIE).

Applying our SHE triggers model helps us identify environmental impacts associated with product development. It ensures we consider these at the earliest possible stage of development for manufacturing processes, products, devices and packaging. It flags potential SHE issues to be investigated and, where possible, designed out of the process. The model gives our scientists risk-assessment tools to ensure the products they are developing have the best possible SHE profile.

Life-cycle analysis

In 2017, we conducted a life-cycle analysis (LCA) study on the use of one of our respiratory drugs and its delivery system, in collaboration with an industry coalition. This study found that using the right medicine in the right way reduces environmental impacts, including:

- 50% reduction in GHG emissions
- 60% reduction in waste production
- 32% reduction in water consumption.

Reductions are across all activities of the care pathway, despite the increases associated with the manufacture, use and disposal of the device itself.

The reduction in environmental impact is primarily due to fewer hospital admissions and associated travel. GHG reductions also resulted from reduced reliever use.

Reducing pills

In 2017, AstraZeneca launched a tablet formulation of one of our cancer medications in the US to provide a reduced pill burden for patients compared to capsules. The outcome of the US and anticipated future approvals has enabled a tablet with a longer shelf life compared to capsules and a dosing regimen with a reduced amount of API. A streamlined LCA of this improved formulation found:

- A GHG reduction of ~90kg CO_2e/patient per year
- A hazardous waste reduction at peak year sales of 471 tonnes per annum.

Packaging redesign reduces environmental footprint

We are conducting several ongoing packaging reduction and recycling pilot projects. In 2017, we successfully transitioned to new, more efficient packaging for an oncology medication in Japan. We changed the blister-style packs from aluminium sheets of 7 tablets to transparent sheets of 14 tablets. This change addressed the preference of patients, pharmacists and doctors to see the tablets in pockets, and resulted in:

- Improved customer satisfaction
- Improved manufacturing efficiency
- Decrease in costs by 40% per sheet
- Reduction in waste of 10%
- Reduction in GHG footprint of 22%.

Strategy
continued

Life cycle of a medicine

Life-cycle stage	What the stage involves	Our approach to managing the impacts	2017 highlights
Active pharmaceutical ingredient (API) production and formulation, e.g. tableting	• Extraction of resources and manufacturing of organic and inorganic commodity chemicals • Use of excipients, additives and solvents • Energy in preparation of starting materials, intermediates and processing • Solvent disposal • Potential release of API to the aquatic environment from manufacturing	• Green chemistry – developing effective manufacturing processes that use fewer and lower environmentally impacting chemicals and fewer natural resources, including energy and water • Investing in the recycling and reuse of solvent wastes • Safe API discharge programme with AstraZeneca and globally managed supplier sites	• Eight environmental assessments of development products completed. The reviews detailed hundreds of chemicals for potential impact on the environment, alongside legislation and green chemistry considerations • Process mass intensity (PMI) – our metric for resource efficiency in API production – showed a 22% decrease across product portfolio • Safe discharge targets achieved for AstraZenca and our suppliers
Device production (where required)	Use of materials for device manufacture (e.g. glass, plastics, metals and electrical components)	Environmental sustainability assessments (ESAs) for the device and packaging in the development stage to facilitate selection of the most sustainable device	• Eight ESAs completed on devices • ESA tool launched
Packaging	Use of materials, including: • Primary packaging (bottle, blister packs, vials, etc) • Secondary packaging (cartons, leaflets, etc) • Tertiary packaging (shipping box, pallet and shrink wrap, etc)	Developing more sustainable packaging solutions that reduce resource consumption and waste, including: • Reducing packaging size and materials used • Switching to materials from recycled or renewable sources • Using materials that can be easily recycled	• Nine ESAs and LCAs completed on packaging • ESA tool launched
Distribution	Transportation	Pursuing more efficient and sustainable modes of transport, such as switching from air to sea	63% of all freight (measured in tonne.km) was by sea in 2017
Patient use	Use by patients of our medicines and devices	• Environmental risk assessments (ERAs) conducted as part of product approval, and environmental risk management plans (ERMPs) in place for each product • Patient communication and education programmes to promote sustainable use of medicines • EcoPharmacoVigilance (EPV) programme to monitor environmental product risks globally	• All ERAs submitted and post-approval queries resolved • Animation launched describing our scientific leadership on PIE • EPV programme successfully delivered with no new environmental product risks identified
Disposal	• Disposal of unused medicines • Energy reclamation from waste	Responsible waste management, including promoting the safe disposal of medicines	• We are a founding member of a US Industry Sharps Working Group, implementing a patient education programme with other stakeholders, and have launched a new website: safeneedledisposal.org • We help raise public awareness of safe disposal through the EU #medsdisposal campaign

Climate change

GHG emissions 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[1]. We aim to minimise GHG emissions along our value chain and adapt to the environmental impacts of climate change.

How we manage

A science-based approach to management

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 Target Initiative. We are on track to achieve our 2025 aims with significant absolute reductions achieved in Scope 1, 2 and priority Scope 3 sources.

Understanding our emissions reduction targets

Scope 1 – GHG emissions at our sites and from our vehicles

Scope 2 – Emissions from imported energy including electricity

Scope 3 – Emissions from our supply chain

Our commitment to source 100% renewable power worldwide by 2025 is guiding our decision-making around energy. We are careful to ensure it does not lead to an increase in energy demand. Our internal procurement guideline ensures any renewable power projects and certificate purchases are in line with our RE100 commitment.

1 The Lancet Countdown, 2017.

2017 update

Green fleet (Scope 1)

Our global and local procurement teams work with commercial markets to optimise safety, sustainability and total cost of ownership into fleet selection decisions; this supports a preference for more fuel-efficient vehicles. All our regional markets delivered fleet efficiency improvements from 2015 through to 2017: 11% in Japan, 5% in North America, 6% in Europe and 9% in International (rest of world).

Sweden, home to 2% of our fleet vehicles, plans for all new company cars to be electric or plug-in hybrids. The target set for the pilot in Gothenburg is to reduce our average carbon dioxide emissions per kilometre (CO_2/km) from 118 grams in 2016 to 60 grams in 2020, which will put us ahead of the 2021 EU vehicle manufacturer target of 95 grams of CO_2/km.

Heating with 100% renewable electricity (Scope 1)

We began using a highly efficient heat pump technology at our Gothenburg site in Sweden. It electrifies some of the site's heat demand and has the potential to replace over 60% of site natural gas consumption. Coupled with the site transitioning to renewable electricity in 2016, the investment will save approximately 2,500 tonnes of CO_2 per year.

Gothenburg heat pumps

Air to sea (Scope 3)

Modal switching in our global operations logistics has delivered large absolute emissions reductions (16% since 2015) and cost savings, achieved in the main through switching from air freight to sea freight wherever possible and accelerating the modal switch post-launch of new products. In 2017, 63% of all freight measured in tonne.km was by sea.

Inhaler products (Scope 3)

Our pressurised metered dose inhalers (pMDIs), typically used for the treatment of respiratory conditions such as asthma, rely on hydrofluoroalkane (HFA) propellants. When released, these gases represent over half of our 2017 operational GHG footprint. While HFAs have no ozone depletion potential and a third or less of the global warming potential than the chlorofluorocarbons (CFCs) they replace, they are still potent GHGs and we have included them in our GHG footprint commitments as we believe we should account for these emissions and find innovative ways to minimise them.

In 2017, we continued to explore practical opportunities to reduce the climate impact of these devices while fulfilling patient needs, such as by substituting the propellant for an alternative with a lower climate impact. Research is ongoing to assess the feasibility of technologies that could potentially lower the impact of our inhaler technologies. We also manufacture a dry powder inhaler (DPI), which uses no propellant and has a lower life-cycle GHG footprint; this is a viable alternative for some patient populations, but not all.

Challenge

We have a bold aspiration to significantly grow sales revenue by 2025 while simultaneously making absolute reductions in our GHG emissions, in line with our science-based targets. To meet this challenge, we must decouple our emissions from our revenue, even though we are locked in to certain production processes as part of product design. The single biggest impact in our extended operational GHG footprint is from pMDI therapy products. The emissions occur during patient use of the devices, which rely on HFA propellants. As more patients benefit from pMDI use and that business grows, so does our environmental footprint; therefore, this will require product innovation alongside our site and fleet efficiency programmes.

Highlight

For the second consecutive year, we scored 100% for the Climate Strategy category of the Dow Jones Sustainability Index.

We are listed on the CDP Climate A List for climate change actions and disclosures for the second year in a row.

CDP A LIST 2017 CLIMATE

Climate change
continued

We have absolute reduction targets for our most controllable emissions sources while recognising there is a much larger footprint we can only influence, and so we measure and report our entire value chain and are developing supplier engagement further.

Our aim

We have set ambitious, science-based GHG reduction targets that support Sustainable Development Goal 13 on Climate Action.

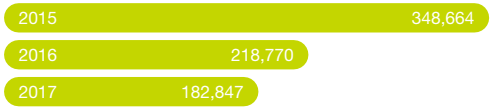
By 2025

- Reduce Scope 1 emissions by 20%
- Reduce Scope 2 emissions by 95%
- Reduce all Scope 3 emissions by 25% per million USD of sales

Our operational GHG footprint

Scope 1 – 8% decrease from 2015 baseline

Scope 2 – 48% decrease from 2015 baseline



Scope 3* – 7% increase from 2015 baseline

* Some Scope 3 data (less than 10%) is one year in arrears.

Our GHG emissions across the value chain

Our total emissions: 6.6 million tCO_2e

Resource efficiency – energy consumption

We focus on reducing the energy we use, while seeking to understand energy use across our entire value chain and the whole life cycle of our products, from raw material extraction to final use and disposal.

How we manage

Avoid, reduce and substitute

There is a clear link between energy consumption and GHG emissions. We manage both in consideration of each other. Using a hierarchical approach[1], we work to avoid demand, then reduce through efficiencies, and finally substitute our supply.

2017 update

On-site solar power

There will always be a residual energy demand required for sites to operate, and through our renewable power commitment RE100, we aim to substitute all our power consumption with certified renewable energy. We utilise a number of approaches to achieving our aims, including matching consumption with certificates, embedding it into our energy agreements, and direct investment at our sites. Since 2016, $5 million has been invested to install solar photovoltaic (PV) systems across seven of our sites in the US, UK, Germany, Australia and China that will generate a combined 4,300 megawatt hours (MWh) of zero emission renewable power (equivalent to 1% of our power consumption). Here are three highlights:

- Our Wuxi site in China installed a 1 MW capacity solar PV rooftop system with annual power generation of 1,000 MWh. The solar panels are estimated to reduce CO_2 emissions by 734 tonnes every year, equalling nearly 4% of the site's total emissions. Innovatively, the site partnered with an external investor responsible for the equipment investment, system operation and management. In exchange, we lease the rooftop site to the partner to offset its power needs. We achieved our CO_2 reduction aims with no capital investment and the site utility cost has decreased due to the lower price of PV power.
- We built a 3,800 solar panel array on our Frederick, Maryland, campus in 2017. It is expected to generate 3,205 MWh per year, equivalent to 3% of site electricity needs and a cost saving of $256,000 annually. Our Natural Resource Reduction Fund helped initiate this project two years ago, in line with its objective to reduce natural resource use.
- Our new carport solar panel array on our Gaithersburg, Maryland, campus will have dual benefits. The carport protects employees from the weather, while its 618 PV panels produce an estimated 252 MWh each year. In 2017, further natural resource efficiency projects will include a combined heat and power (CHP) plant, which will improve the energy efficiency and security of this growing site while reducing operating costs. Combined with 100% certified renewable electricity imports, the site's energy footprint will be more than halved against the 2015 baseline. Additionally, using site-based generation is estimated to displace 680 tonnes of CO_2e of energy supply chain emissions annually.

Wuxi solar project

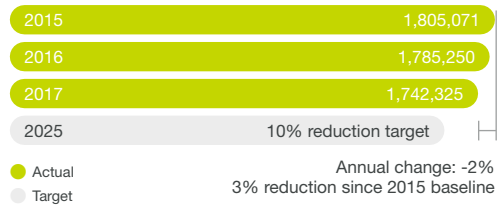
Frederick solar project

Challenge

We encounter bigger energy use reduction opportunities at sites that can benefit from facility and equipment upgrades such as heat pump or lighting improvements. For advanced sites that may benefit from innovation investments, the opportunities have smaller impact and are less systematic.

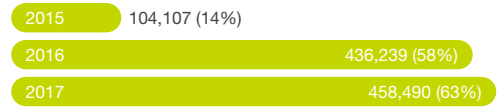
Our biggest opportunity for addressing our energy consumption remains the way our processes are designed. Sustainably designed production processes are key to managing how much energy we use now and in the future.

Energy use 2015–2017 (MWh)



Electricity imported (MWh)

Renewable electricity (imported) use (MWh)



% of imported power from certified renewable sources

On-site renewables – all energy types (MWh)

1 Institute of Environmental Management and Assessment (IEMA) GHG Hierarchy, https://www.iema.net/assets/uploads/Special%20Reports/iema20ghg20report204.10.10.pdf.

Resource efficiency – responsible water

Accessible and high-quality fresh water is a limited and greatly variable resource. An estimated three in ten people do not have access to clean drinking water at home[1]. As the climate changes, reducing rainfall reliability, we need to continue to cut down on our water use and manage our wastewater discharges. We address water impacts from the use of our products in the Pharmaceuticals in the environment section.

How we manage

Managing towards clean, plentiful water supplies

We use a standard methodology, based on the World Resources Institute (WRI) Aqueduct tool, to assess water risk across our site network. We produce water conservation plans for all our major sites and those in water-stressed areas. These plans highlight water risks and mitigation measures. We prioritise water efficiencies in areas of water stress, and in 2017 we conducted a water audit at our production site in Bangalore, India, and sanctioned a rainwater harvesting project at our site in Wuxi, China.

Chemical oxygen demand (COD)

Our 2017 COD was 283 tonnes. We report our total liquid waste emissions using the standard COD parameter, which measures the organic pollution levels. We measure the COD of waste water as it leaves our sites. Both our on-site (26% of wastewater volume) and off-site (74%) wastewater treatment methods are designed to protect our local environments by removing most of the residual COD. High COD loads can reduce the oxygen in water bodies, which could damage aquatic life.

2017 update

Rainwater harvesting at Macclesfield

This project will collect rainwater for use in flush toilets, reducing site water intake by 2,000m³ a year. This project, retrofitted to an existing site, has a long return on investment, but will help us develop knowledge that we can bring to future construction projects early in the design phase when return on investment is expected to be much more rapid.

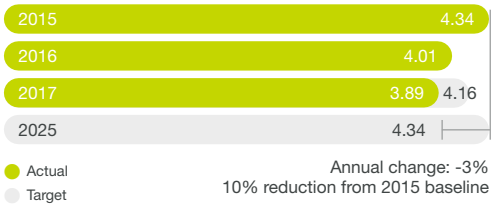
Water audits

We conducted plant-wide water audits at four manufacturing sites in 2017 – Södertälje, Sweden; Bangalore, India; Mount Vernon, US; and Speke, UK. Each audit identified water-saving opportunities. At Södertälje, we approved a $400,000 project to install a closed-loop water cooling system. While the previous system relied on a constant supply of new water, the new system uses a recirculating loop, reducing the need for 33,000m³ of water each year. It is expected to pay for itself in four years. We have a further six water audits scheduled in 2018, including at two of our water-stressed sites (Newark, US, and Shanghai, China).

Challenge

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 2017 we did not see any major threats to water supplies at our sites, we must continue to take all reasonable steps to use water responsibly and ensure adequate supplies for our business, our employees and the communities they live in.

Water use 2015–2017 (million m³)

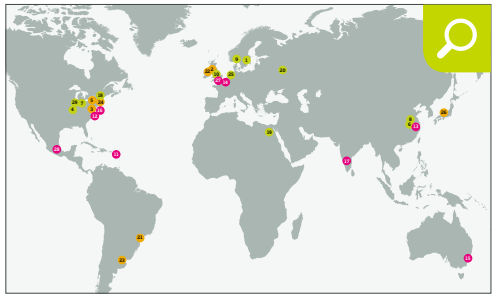


CDP Water 'A'

CDP A LIST 2017 WATER

We are listed on the CDP Water A List for water stewardship actions and disclosures for the second consecutive year.

Latest site water stress assessment



Key:

AstraZeneca water stress rating

High | Medium | Low

1. Sweden Södertälje
2. UK Macclesfield
3. US Gaithersburg
4. US Mount Vernon
5. US Frederick
6. China Wuxi
7. US West Chester
8. China Taizhou
9. Sweden Gothenburg
10. UK Alderley Park
11. Puerto Rico Canóvanas
12. US Newark
13. China Shanghai Zhangjiang
14. France Dunkirk
15. Australia North Ryde
16. US Wilmington
17. India Yelahanka Bangalore
18. US Boston
19. Egypt 6 October City
20. Russia Vorsino
21. Brazil Cotia – São Paulo
22. UK Speke
23. Argentina Buenos Aires
24. US Philadelphia
25. Netherlands Nijmegen
26. Japan Maihara
27. UK Cambridge
28. Mexico Lomas Verdes
29. US Louisville

Sites are listed in order of volume of water used in 2017 (#1 is highest).

1 Progress on drinking water, sanitation and hygiene: 2017 update and Sustainable Development Goal baselines.

Resource efficiency – responsible waste management

Responsible waste management spans waste prevention, recycling, reuse and appropriate end-of-life disposal. We address additional waste mitigation in the Pharmaceuticals in the environment section. We characterise waste as either hazardous (such as chemical) or non-hazardous, as defined by local legislation. Most of our hazardous waste consists of solvent and aqueous streams from our manufacturing activities.

How we manage

Reducing waste – a strategic approach

Waste prevention is our strategic waste priority. We work with colleagues and external specialists to identify opportunities to reduce waste generation and boost recycling rates.

We invest in recycling and reuse of solvent wastes, and we promote responsible end-of-life disposal of our medicines. Our sites align to global packaging standards, introduced in 2016, which improve efficiency by defining standard pack designs and materials.

2017 update

Driving efficiencies – process mass intensity

At AstraZeneca, protecting the environment is embedded within the core deliverables for our process development teams. We have adopted a metric called process mass intensity (PMI) as a measure of our efficiency in using materials. PMI is measured as kg of raw materials used to produce 1kg of final active pharmaceutical ingredient (API). We set a PMI target for all drug molecules to achieve at launch, based on projected peak year sales. PMI has been a fundamental strategic corporate target since 2010 and helps us demonstrate our organisational impact and focus our approach so we can recognise successes in our product pipeline. We have completed a PMI assessment for 47% of our development portfolio in respect of the API synthesis.

Working towards zero landfill waste at Gaithersburg

In 2017, the Gaithersburg campus in Maryland sent only 430kg (0.02%) of its waste to landfill. This was helped by focusing on one of our waste reduction challenges – the number of items from the employee café that could not be recycled. Those items, combined with food waste, made the café a significant waste generator. A new composting programme provides the solution to practically eliminate non-biodegradable café materials. The initiative is projected to divert at least 27 tonnes a year from incinerated waste streams to compost.

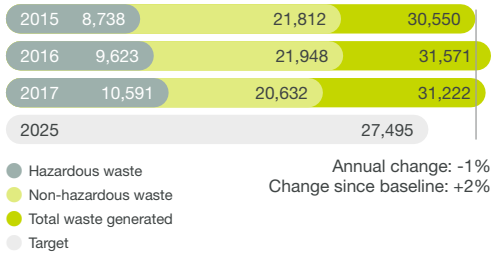
Solvent recovery to reduce hazardous waste

In 2017, we started work on a new facility to recover solvents in one of our medication production processes at Södertälje, Sweden. This process will enable the reuse of toluene, ethyl acetate and methanol, reducing the need for raw materials and minimising the volumes of waste sent for incineration. It is expected to reduce the site's hazardous waste footprint by 342 tonnes (6% of the site's total hazardous waste) and GHG footprint by 900 tonnes from 2019. We are working to quantify the benefits of this project across the full life cycle of the materials.

Challenge

Growing production levels have generated increased waste volumes, specifically hazardous waste. Between 2016 and 2018, our Natural Resources Reduction Governance Group (NRRGG) fund is supporting six projects to reduce the waste generated by our future production by 2,800 tonnes a year (9% of total waste generation). However, as production levels are projected to continue to grow, achieving our total 10% reduction target is a significant challenge. Finding ways to decouple business growth and waste generation is a key focus area. Focusing on efficient API, device and process design is key to boosting resource efficiency and meeting our ambitious waste reduction target.

Total, hazardous and non-hazardous waste since 2015 baseline (tonnes)



Our Gaithersburg campus targets zero landfill waste through composting and procurement choices.

Pharmaceuticals in the environment

As part of our commitment to ensure the environmental safety of our products, we have a strategic priority to effectively manage pharmaceuticals in the environment (PIE). Pharmaceuticals enter the environment through patient use, improper disposal and production. As a result, trace levels are found in rivers, lakes, soils and, occasionally, drinking water. Societal concerns about PIE continue to exist as patient access to medicines and population levels increase, resulting in a potentially greater environmental burden.

How we manage

Managing pharmaceuticals out of the environment

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. AstraZeneca chairs the extended environmental risk assessment (ERA) working group and sits on the governance team of the European Federation of Pharmaceutical Industry Associations (Efpia), Medicines for Europe and the Association of European Self-Medication Industry PIE task force that advocates an eco-pharmaco-stewardship approach.

We set safe discharge concentrations called Environmental Reference Concentrations (ERCs) and Maximum Tolerable Concentrations (MTCs)[1], which apply to the aquatic environments that manufacturing sites discharge into. We are constantly reviewing our methodology and this year we modified the approach to setting protection goals for humans and aligned it with the principles used for setting permitted daily exposure limits used in our manufacturing units to control cross-contamination and ensure patient safety. In 2017, all our worldwide manufacturing sites demonstrated compliance with our ERC and MTC criteria.

To reduce impacts through our supply chain, we set ERC and MTC for, and share our methodology with, our globally managed critical direct suppliers. We provide training and require them to assess and manage emissions associated with the APIs they manufacture or formulate on our behalf. We internally review these supplier assessments annually. In 2017, we completed 82 safe API discharge assessments (2016: 81) involving 40 supplier sites. See the Ethical supply chain management section for details on assessment sites.

Assessing our impacts

We conduct an ERA prior to the approval of a new medicine by generating environmental fate and toxicity data according to international guidance established by the European Medicines Agency (EMA) and the US Food and Drug Administration (FDA). In 2017, we submitted regulatory ERAs for all products that were within scope.

To assess the environmental impact of our products, we develop a lifetime environmental risk management plan (ERMP) for each product. The ERMP:

- Includes regulatory intelligence on legislative and stakeholder concerns
- Identifies a science-based environmental risk assessment based on the drug properties
- Reviews and captures new scientific data or exposure estimates that could significantly impact the ERA
- Documents plans for ERA refinement or risk mitigation.

We 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. We 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.

"AstraZeneca takes the potential environmental impact of its life-changing medicines seriously. We are proud to provide effective industry-wide leadership in the pharmaceuticals in the environment issue through making our environmental risk assessment data transparent, managing our manufacturing discharges to ensure they are safe, conducting ongoing ecopharmacovigilance and PIE research to proactively address emerging issues. Transparency is critical to ensure responsible environmental management and the safety of our planet. We make our environmental science accessible."

Senior Principal Environmental Scientist and SHE Foresight and Research Director

1 Murray-smith et al (2012), 'Managing emissions of active pharmaceutical ingredients from manufacturing facilities: An environmental quality standard approach'. *Integrated Environmental Assessment and Management*, 8: 320-330.

Pharmaceuticals in the environment
continued

Pharmaceuticals in the environment in Europe (approximate numbers)

- **Waste from production** 2%
- **Unused medicines that people don't dispose of properly** 10%
- **Patient use** 88%

2017 update

Intelligent assessment of PIE

Since 2015, we have participated in the Intelligent Assessment of Pharmaceuticals in the Environment (iPiE). It is a €10 million research project between several pharmaceutical companies and the European Commission. The project is part of the Innovative Medicines Initiative and aims to develop screening tools, including animal alternatives, to identify environmental concerns earlier in drug development, and to prioritise older, established medicines that lack data for a definitive environmental risk assessment.

In 2017, we:

- Published an EcoDrug database identifying wildlife species – including fish, insects and plants – that retain drug targets for human medicines and could be vulnerable if exposed to the drug. This tool helps us design a more targeted and relevant ERA and environmental management plans to ensure the environmental safety of our products[1].
- Developed and validated more environmentally relevant biodegradation studies that identify and prioritise potentially persistent compounds, including pharmaceuticals. These new studies reduced the high variability associated with these tests and their high false negative rate due to artificially low microbial concentrations that exclude bacteria capable of degrading the chemical or medicine of interest[2,3].
- Demonstrated that pharmaceuticals present in rivers may be absorbed from the water and metabolised by some animals. River shrimp occupy an important ecological position, helping recycle nutrients within the food web. Our research found that river shrimp can break down pharmaceuticals and further reduce the likelihood of bioaccumulation and biomagnification[4].

Challenge

The challenge of responsible disposal of medicines

Poorly disposed of medicines can have an impact on the environment. We work with various organisations, including authorities and stakeholders across the supply chain, to raise public awareness of the safe disposal of medicines; one such example is the EU meds disposal campaign, #medsdisposal.

AstraZeneca's US business is conducting a pilot pressurised metered dose inhaler (pMDI) collection scheme with a major distributor and innovative recycler. Patients will be given the opportunity to return used pMDIs for recovery and recycling of the plastics and metals they contain. The pilot, conducted over the first six months of 2018, will evaluate the overall success of this approach and will help shape our future device sustainability strategy.

Watch how medicines can get into the environment and how you can help:

1 Verbruggen et al (2017), ECOdrug: A database connecting drugs and conservation of their targets across species. *Nucleic Acid Research*.
2 and 3 Martin et al (2017), 'Environmentally relevant inoculum concentrations improve the reliability of persistent assessments in biodegradation screening tests'. *Environmental Science and Technology* 51(5), pp 3065-3073. Martin et al (2017), 'High Throughput Biodegradation-Screening Test to Prioritize and Evaluate Chemical Biodegradability'. *Environmental Science and Technology* 51(12), pp 7236-7244.
4 Miller et al (2017), 'Uptake, biotransformation and elimination of selected pharmaceuticals in a freshwater invertebrate measured using liquid chromatography tandem mass spectrometry'. *Chemosphere* 183, pp 389-400.

Biodiversity

Maintaining balance in the natural world supports our goal of being a 'great place to work', enhances the wellbeing of local communities, and brings financial, social and environmental benefits to our business. We are committed to managing biodiversity by identifying, implementing and reviewing appropriate local actions to have a positive impact on wildlife. In the Bioethics section, learn about how we follow the Nagoya Protocol to access natural biological resources to help create life-changing medicines.

How we manage

Promoting biodiversity on our sites

We support sustainable ecosystems and encourage wildlife on our sites in line with our global Natural Resources and Biodiversity standard. We follow closely the principles of the Convention on Biological Diversity, and have assessed ways to enhance biodiversity on all our major sites. As a result, 25 sites, including all major fully operating sites over five hectares, are implementing local biodiversity action plans to conserve and enhance native habitats, create and maintain refuges for flora and fauna, and preserve links with the surrounding environment via green corridors of uninterrupted habitat.

2017 update

Wetlands in Boston

The Wildlife Habitat Council (WHC) independently evaluates and accredits our site biodiversity action plans. In 2017, WHC accredited our wetlands protection site at our Boston facility, the second AstraZeneca site to achieve this award. We set out to protect and enrich the site's natural wetland habitat to enhance biodiversity, benefit wetland-dependent wildlife and help maintain water quality in the local watershed.

The AstraZeneca property adjoins the Cat Rock Nature Reserve – 32 hectares of conservation land – and is adjacent to the Cambridge reservoir that provides drinking water to the surrounding areas. Managing the biodiversity in our wetlands ensures a continuous connectivity with the adjoining conservation lands and creates a contiguous unfragmented habitat.

Challenge

AstraZeneca continues to develop best practice on its sites, and through continuous improvement of local unique biodiversity action plans tailored to each setting, we aim to enhance habitats now and for the future. By using independent assessors, we hope to maximise the impact of our work to protect biodiversity on our sites.

Protected wetlands at our Boston site.

CONSERVATION CERTIFICATION
WHC Certified

Ethics and transparency

We want to be valued for not only our medicines but also for the way we work. We aim to lead our industry in demonstrating ethical business practices and applying high levels of integrity to everything we do. We seek to consistently apply high standards of ethical practice and scientific conduct throughout our business and supply chain.

In this section:

Strategy | Patient interaction | Clinical trial transparency Bioethics | Bioethics – animals in science | Ethical sales and marketing | Anti-bribery and anti-corruption controls Ethical supply chain management | Product security controls – illegal trade of medicines

Strategy

At AstraZeneca, we endeavour to operate in a transparent and ethical way and expect the same high standards from our suppliers and partners. Whether it's investing in technological alternatives to animals in science for our research or refusing to tolerate bribery or any other form of corruption, we go above and beyond what is required of us to be an example of how good business is done.

Behaving with the highest level of ethics and transparency is expected of every employee. In 2017, we relaunched our Code of Ethics (the Code) 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, and is further supported by requirements at the global, local and business-unit level, to provide clear guidance and direction to employees in carrying out their daily work.

We prioritise the eight sustainability issues identified by our materiality assessment: setting strong anti-bribery and anti-corruption controls; ensuring ethical sales and marketing; the way we interact with patients; transparency of our clinical trials; our approach to bioethics; bioethics: animals in science; ethically managing our supply chain; and having product security controls to deter counterfeiting. We describe targets, governance and outcomes for each of these priorities in this report.

Accessing an ethical future

We've set new ethics and transparency targets, focused on our day-to-day conduct and the impact we have within our supply chain. These new targets guide us through to 2025. As we build on our progress and embark on new initiatives, we will adjust periodically to hold ourselves accountable to high ethical standards.

See additional performance indicators in our data summary online.

Commitment	Target	Progress	Status
Ethical business conduct Work to high global standards of ethical behaviour in all markets	Maintain 100% of active employees trained on the Code of Ethics through to 2025	On plan ●●○	**100% of active employees** trained in 2017
Supply chain management Work only with suppliers who have ethical standards consistent with our own	Ensure 100% of spend is assessed through our third-party risk management (3PRM) programme by 2025	On plan ●●○	**78% of spend assessed** through our 3PRM programme
Clinical trial transparency Work on continued transparency with our data in clinical trials	Be transparent with all clinical trial data, and document disclosures globally by 2025	On plan ●●○	**34 publicly available trial summaries** (cumulative) **25 research teams** given access to AstraZeneca trial data (cumulative)
Bioethics Apply sound bioethics to all our work	Remain committed to the principles, behaviours and ethical standards that govern our research through to 2025, including: • Being transparent about when, how and why we use animals in research • Using human embryonic stem cells and human foetal tissue (hFT) only when there are no suitable alternatives • Ensuring expectations are met of all our hFT suppliers through rigorous assessments • Sharing our research and use our influence to address antimicrobial resistance and explore new antibacterial agents	On plan ●●○	**Signatory to the Concordat on Openness on Animal Research** in the UK **7 active projects** using human embryotic stem cells **2 active projects** using hFT **40% approval rate** of hFT suppliers

Patient interaction

We work closely with patient organisations and seek to uphold our value of putting patients first in our business activities. We aim to be transparent about the nature and objectives of our patient interactions throughout our research and development (R&D), sales and marketing, and product use and disposal.

How we manage

Information at the heart of patient interaction

We have a team dedicated to patient centricity, helping to improve patient experience and outcomes by building capabilities and providing tools that embed patient insight, patient innovation and patient impact in everything we do. It works with external patient advocates to make sure the patient voice is heard clearly across all parts of the organisation and reflected in all our programmes.

We participate in many public–private partnerships (PPPs) with a patient-centred focus, including:

- C-Path PRO Consortium
- C-Path PRO Consortium Asthma Working Group
- C-Path PRO Consortium Cognition Working Group
- Drug Information Association
- European Patients' Academy on Therapeutic Innovation Project
- IMI PROactive
- Innovative Medicine Initiative
- National Health Council
- The Clinical Trial Transformation Initiative
- The Patient Focused Medicine Development coalition
- TransCelerate BioPharma Inc

2017 update

Patients Like Me (PLM) collaboration

We co-created TrialMark with patients and PLM to measure experience of patients in clinical trials. Patient insight is now a standard part of clinical trial development, with over 2,000 PLM patients having shared their preferences. The TrialMark tool enables us to complete the circle, measuring the patient-centricity of our studies and providing feedback that will enhance future studies for patients.

Patient partnership programme outcomes

During the year, we launched new patient partnership programmes – long-term agreements with expert patients that enable frequent and easy access to the patient voice. The 2017 outcomes include:

- The Asthma patient partnership programme had 83 separate engagements with 12 individual patients and helped us recruit and retain subjects for a pilot study to understand unmet patient medical needs via patient ad boards. We also used the group to prepare for a new product launch by reviewing brand positioning.
- The Ovarian Cancer patient partnership programme had five different projects that enabled co-creation of patient materials that helped medical and clinical study teams launch patient-centric content. We also engaged 52 patients and nurses through five patient and patient/nurse advisory boards in oncology (lung, head and neck, IO nurses, bladder, triple negative breast cancer). These helped develop tactical plans focused on patient/healthcare professional communications, initiation of strong partnerships with oncology nurses and patients, the optimisation of patient recruitment and retention with an at-risk minority population, and design of a patient-centric clinical study.

Challenge

We understand that each patient is a person on his or her own journey. Each person has loved ones and a community that are affected by that journey. We strive to balance the inputs of each individual in ways that can be applicable to the larger group to bring benefits to those who interact with our medicines.

> ***"Looking forward, I'm excited about the potential to deliver innovative patient insight by bringing together patient-generated health data, clinical health records and biological data for the first time."***
>
> *Employee in Medical Patient Excellence*

Clinical trial transparency

We study the effects of potential new medicines in humans using clinical trials. The clinical trial phase is essential in the development of new medicines. At any one time, AstraZeneca may have hundreds of clinical trials underway in various locations around the world. We aim to deliver consistently high standards of ethical practice and scientific conduct in all our trials, wherever they take place. Clinical trial transparency is a key priority. Our dedicated office works to ensure our compliance with clinical trial policies and all legal requirements.

How we manage

Clinical trial consistency and transparency

Our standards are global and apply to all AstraZeneca Group clinical trials, in all locations, whether they are being conducted by us or on our behalf by external contract research organisations. If our policies differ from local regulations, we adopt whichever standard is higher.

We require all AstraZeneca-sponsored studies to include patient engagement practices. Our Standard Operating Procedures and Policies require that all staff involved in clinical trials and all investigators are trained in ICH (International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use) guidelines and local Good Clinical Practice regulations.

424
clinical trials ongoing during 2017

2017 update

Transparency portal launched

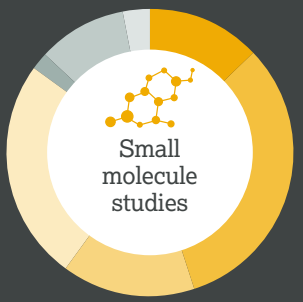
AstraZeneca has committed to providing Trial Result Summary documents in easy to understand language to all study participants and the public for all interventional studies that started after April 2015.

This commitment was strengthened in 2017 by the launch of the TrialSummaries.com portal, where the trial summaries of 34 AstraZeneca studies are published in numerous languages and available for all to access.

This new industry-wide portal, driven by AstraZeneca in collaboration with a vendor partner, is where clinical trial sponsors can post summaries of what happened during a clinical trial in lay language. The posts include explanations of the aims and results of the trials. We developed the portal with input from patients and the portal is the first of its kind.

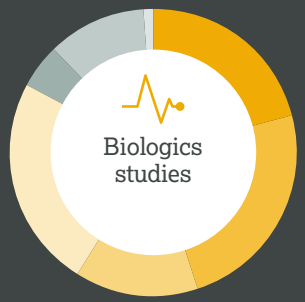
We share our methods and benchmark across the industry through a global collaboration platform: the TransCelerate Clinical Data Transparency Initiative.

Small molecule clinical trials by region



- **Europe** 13%
- **US/Canada** 32%
- **Asia Pacific** 15%
- **Central Eastern Europe** 25%
- **Japan** 2%
- **Latin America** 10%
- **Middle East and Africa** 3%

Biological clinical trials by region



- **Europe** 21%
- **US/Canada** 24%
- **Asia Pacific** 14%
- **Central Eastern Europe** 24%
- **Japan** 5%
- **Latin America** 11%
- **Middle East and Africa** 1%

Challenge

The area of patient engagement is still new in the industry. We believe consistency is a key driver of success. We continue to work with the Centre for Information and Study on Clinical Research Participation (CISCRP), a non-profit organisation, to ensure that we have the best deliveries in place.

Bioethics

Bioethics refers in the broadest sense to the range of ethical issues that arise from the study and practice of biological and medical science. These include the use of human biological samples (HBS), the use of animals in research, and the conduct and transparency of clinical trials. We consider these areas as an integrated whole under our Bioethics Policy, which sets out the principles, behaviours and ethical standards that govern our research and development worldwide. Where appropriate, we use internationally approved standards to achieve high ethical standards. We also constantly review our policies and procedures to ensure good practice and learning.

How we manage

Bioethics Advisory Group

We reconstituted our Bioethics Advisory Group (BAG) in 2017 to bring together currently relevant subject matter experts to monitor and oversee our activities in critical areas of bioethical interest. Our Chief Medical Officer is our BAG sponsor and the owner of the global Bioethics Policy. The BAG has a renewed focus on communicating and networking across the business and embedding values of doing the right thing. It met formally five times in 2017. Our HBS Governance Team oversees our collection, storage, use and disposal of HBS, including human foetal tissue (hFT) and human embryonic stem cells (hESC), in research and development. It also approves or rejects proposals for experiments using hESC and hFT as described in the HBS Standard. Additionally, the Governance Team is accountable for investigation and resolution of any incident involving the use of HBS.

2017 update

Fairness through the 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 research and development. It regulates access to biological materials and ensures that communities that live where the resources are sourced receive their fair share of benefits.

In accordance with the Protocol, we, as users of biological resources, follow due diligence to record our access and use of the resources and keep a record of this for 20 years.

Whenever a scientist wants to use biological resources that are in the scope of the Nagoya Protocol, our internal processes ensure they meet the appropriate requirements. Our dedicated sourcing e-tool helps scientists establish whether the resource they want to use is in scope and provides guidance. Our procurement team helps research teams contact appropriate suppliers, our business development team oversees the process for benefits sharing, and our Nagoya governance team guides our scientists through the process. In 2017, there were no compliance incidents relating to the Nagoya Protocol.

Challenge

As therapies evolve from theoretical to reality, the boundaries and standards for bioethics must keep pace. We scan the horizon for innovations in science that could introduce new ethical dilemmas that must be resolved before moving ahead. Our forward-looking approach is designed to proactively address developing ethical considerations to support sound evidence-based policy formulation.

View our training video on the value of the Nagoya Protocol:

Bioethics
continued

The increasing resistance of infectious diseases to antibiotics is an urgent global issue. We have previously invested in research and development in infection, and we stand with our colleagues across the industry, health leaders, patients, physicians and governments around the world to come together with a multi-stakeholder approach to tackle the global threat that antimicrobial resistance (AMR) poses to society and the barriers that prevent new antibiotics coming to the market.

How we manage

Preserving antibiotic effectiveness

We signed the Davos Declaration on Combating Antimicrobial Resistance along with over 100 other companies. The Declaration is a collective call on governments to commit to the investment needed to support the development of new antibiotic technologies.

While we sold our antibiotics business in 2016, we continue to support innovation of antimicrobial drugs through existing internal assets and collaborations with external partners. We remain committed to continuing to share our research and use our influence to contribute to addressing this global challenge.

2017 update

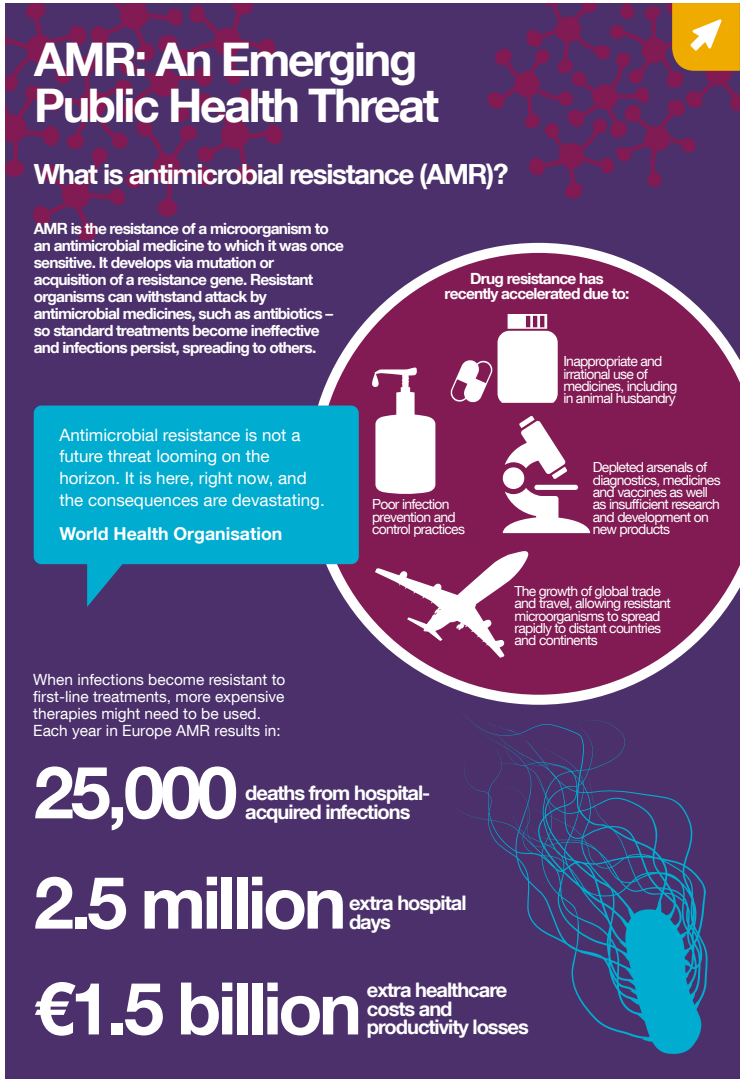
The environmental dimension of antimicrobial resistance (AMR)

To tackle the environmental aspects of the threat posed by AMR and our public commitments to the AMR roadmap, we are co-funding research that aims to develop and validate new regulatory protection goals for AMR development in the environment. These projects will establish approaches to define safe environmental levels for antibiotics entering the environment through drug production and patient use. In 2017, AstraZeneca and an academic partner reviewed the protection goals for antibiotic risk assessment and effluent management. We published a paper to advocate a holistic approach to risk management that includes environmental and clinically relevant data[1].

Challenge

"Antimicrobial resistance is a complex problem that affects all of society and is driven by many interconnected factors. Single, isolated interventions have limited impact. Coordinated action is required to minimize the emergence and spread of antimicrobial resistance."

World Health Organization



JPIAMR Workshop: Environmental Dimensions of AMR

AMR Industry Alliance: Tracking Progress to Address AMR

1 Le Page et al (2017), 'Integrating human and environmental health in antibiotic risk assessment: A critical analysis of protection goals, species sensitivity and antimicrobial resistance'. *Environment International*.

Bioethics – animals in science

The use of animals in science remains a small but vital part of the process of developing new life-saving and life-improving medicines. Animal studies are crucial in understanding fundamental biological processes, and are required by regulators before new medicines can be tested in human clinical trials. Using animals in science remains a challenging issue for many people, and we respect their concerns. Achieving high standards in animal care and welfare is the right thing to do ethically, as well as being essential for reliable research outcomes. Ensuring animals are well cared for and that their behavioural needs are met helps to lower stress levels, reduce variation and produce better quality data from fewer animals. For all these reasons, the welfare of the animals we use in research is paramount.

How we manage

Implementing and sharing high standards

Under the leadership of our Chief Veterinary Officer, our Council for Science and Animal Welfare (C-SAW) is the expert decision-making group accountable for animal welfare and compliance across the AstraZeneca Group of companies. C-SAW oversees all issues relating to the use of animals in science, ensuring our governance and oversight mechanisms are robust, and allowing us to drive continuing improvement in laboratory animal science and welfare.

We embrace a 'Culture of Care' in which we work to high standards of animal welfare and constantly look for ways to improve. We provide mandatory training, ongoing competency assessments and continuing professional development opportunities, such as certifications and qualifications, for employees involved in our animal research. We share learning and innovation within the company and with our external partners, working in a spirit of openness and transparency around responsible animal use.

Our Bioethics Policy states that all research involving animals must be carefully considered and justified, that the principles of the 3Rs (Replacement, Refinement and Reduction) be applied and that the welfare of the animals we use is a top priority. Our requirements apply globally across all our internal animal research, to third parties who conduct research on our behalf, and to the breeders and suppliers of animals for use in such studies.

To support comparable animal care standards around the globe, all our animal work must be:

- Compliant with the laws or regulations where the work takes place
- Consistent with the principles of the 8th edition of the *Guide for the Care and Use of Laboratory Animals* (Institute for Laboratory Animal Research) – the internationally respected good practice guidelines for animal care
- Conducted in facilities accredited by the Association for the Assessment and Accreditation of Laboratory Animal Care International (AAALAC International) wherever possible.

We are transparent about our use of animals in research and proud to have been a signatory to the Concordat on Openness on Animal Research in the UK since 2014. Although the Concordat is a UK initiative, we welcome and engage in open and constructive dialogue with stakeholders worldwide who have a legitimate interest in our use of animals in research.

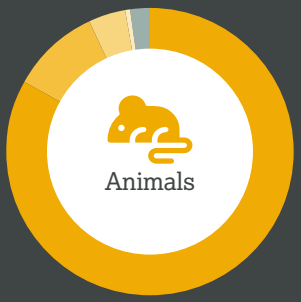
2017 update

AstraZeneca continues to be one of the few pharmaceutical companies that consistently seeks to reward its scientists and animal care staff for exceptional commitment and delivery of work supporting the 3Rs. We achieve this through the C-SAW Global 3Rs Awards, a competitive and highly visible awards scheme. Our winners in 2017 were:

- A group working at a frontier of precision medicine, where a novel experimental design for mouse studies used the population response of individual animals, achieving a significant reduction in the numbers of animals needed compared to traditional studies
- A team adopting a new approach to cell culturing techniques prior to patient-derived xenograft (PDX) studies in mice, with the potential for very large reductions in the numbers of animals needed in PDX studies
- A collaborative project with an external partner to redesign a type of regulatory animal study, allowing smaller numbers of animals to be used while preserving scientific integrity and regulatory acceptance.

In 2017, animals were used 160,160 times (2016: 219,102); over 97% were mice, rats or fish. The total number of animals we use will continue to vary because use depends on a number of factors, including the amount of pre-clinical research we are doing, the complexity of the diseases under investigation and regulatory requirements. We believe that without our active commitment to the 3Rs, our animal use would be much greater.

What kinds of animals are used



- **Mice** 83.3%
- **Rats** 9.8%
- **Fish** 4.3%
- **Chickens** 0.6%
- **Others (dogs, ferrets, primates, guinea pigs, rabbits, pigs, cotton rats, hamsters, sheep)** 2%

Bioethics – animals in science
continued

"It is great that AstraZeneca continues to champion the 3Rs across its drug discovery pipeline. I am proud to be involved in the judging of the annual 3Rs competition, but the job of selecting winners gets tougher each year. Many of the applications describe important impacts on animal numbers and welfare, while others set out future 3Rs opportunities. Congratulations to all applicants – it is impossible not to be impressed by the company-wide commitment to the 3Rs."

Guest judge Dr Vicky Robinson CBE, Chief Executive of the National Centre for the Replacement, Refinement and Reduction of Animals in Research

Challenge

In recent years there have been reports in the scientific literature raising concerns about the difficulty of reproducing some published animal studies. Our response to this sector-wide issue is to build on the strong track record we have with our good statistical practice, or GSP, approach, and to expand our training and processes to include the ARRIVE (Animal Research: Reporting of In Vivo Experiments) guidelines. In 2018, C-SAW will focus on further improvements in experimental design, statistical analysis of results and effective reporting of animal studies.

Our 3Rs (Replacement, Refinement and Reduction) process in action

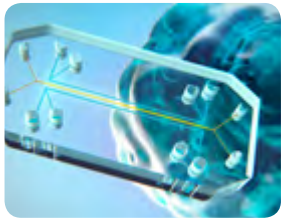
Pre-clinical animal studies ensure safety for clinical trials with patients and provide scientific benefit for future discoveries. Animals are only used after applying the 3Rs and are always valued for their contribution to medical progress. Under the leadership of our Chief Veterinary Officer, our Council for Science and Animal Welfare (C-SAW) oversees animal welfare and compliance.

1 → 2 → 3 → 4 → 5

Hypothesis formed and evaluated against past results

Great care is taken to share all information generated from animal studies in a clear and well-defined way.

Benefit
Avoids unnecessary repetition of studies. Makes best use of existing data and knowledge.



Study evaluated for alternatives

Team considers if the scientific objectives could be achieved without using animals. Examples include organ-on-a-chip technology and computer models.

Benefit
Only studies with no suitable alternative are conducted, replacing the use of animals wherever possible.

Study evaluated for animal use

When animal studies are needed, project teams must weigh the costs to the animals against the benefit to patients.

Benefit
The most appropriate species and fewest number of animals able to provide patient benefit are used, reducing the number of animals needed.

Ethics and regulatory review

Studies are scrutinised by ethical review bodies made up of veterinarians, scientists and members of the community. In some countries, animal studies also require regulatory approval.

Benefit
Our standards are applied globally, refining the care and use of animals – whether the work is conducted in our own facilities or by external partners.

Study conducted

Proper animal welfare is the right thing to do ethically and also essential for reliable research outcomes as stress can impact results.

Benefit
Animal welfare is optimised throughout the process and during the study.

Image credit: Understanding animal research

Ethical sales and marketing

Effective sales and marketing are key to the sustainable growth of our business and to improving access to healthcare for people around the world. Accessing new markets, working with healthcare professionals and advocating for our medicines are all part of that and must be done ethically.

How we manage

Ensuring ethics through oversight

When we work with suppliers, distributors and partners on the sales and marketing of our products, we carry out rigorous risk assessments and due diligence to ensure they are reputable. We actively engage with these organisations to maintain oversight of their activities performed on our behalf, and make sure they are operating to high standards of ethical practice that are consistent with our own.

Our Global Sustainability and Compliance function is led by the Executive Vice President, Sustainability and Chief Compliance Officer, and our compliance programme is delivered by dedicated compliance professionals who advise on and monitor adherence to our Code of Ethics (the Code) and supporting requirements. These professionals also support our line managers locally in ensuring that their staff meet our high ethical standards.

Our Code is at the core of our compliance programme. It has been translated into approximately 40 languages and provides clear direction as to how our commitment to honesty and integrity is to be realised through consistent actions across all areas of the business.

Compliance with the Code is mandatory and every employee receives annual training on it, which they are required to complete.

We use a team of around 300 specially trained individuals to review our promotional materials and activities to see they meet our requirements. We updated our training materials in 2017 and included monthly live video sessions.

2017 update

Culture of speaking up

We work to build a culture where employees feel comfortable reporting violations to their local Human Resources, Legal or Compliance partners, as outlined in the Code of Ethics. The Code also contains information on how to report possible violations through our Helpline, which includes the AZethics telephone lines, the AZethics website and the Global Compliance email and postal addresses. The website is available in 38 languages and the phone lines are operable in 123 countries; both are managed by an independent third party on the company's behalf. The Helpline is available to both employees and to external parties to report any concerns. Reports can be made anonymously where desired and where permitted by local law. Anyone who raises a potential breach in good faith is fully supported by management and is not subject to retaliation.

The majority of cases come to our attention through management and self-reporting, which can be seen as an indication that employees are comfortable in raising their concerns with line managers or local Human Resources, Legal or Compliance. In addition, in 2017 there were 359 reports of alleged compliance breaches or other ethical concerns made through the Helpline, including reports made by any anonymous route that could be considered whistleblowing.

In 2017, there were 1,431 instances, most of them minor, of non-compliance with our Code of Ethics or supporting requirements in our Commercial Regions, including instances by employees and third parties (2016: 1,729). We removed a total of 176 employees and third parties from their roles as a result of these breaches (a single breach may involve more than one person). We also formally warned 477 others and provided further guidance or coaching on our policies to 1,157 more. The most serious breaches were raised with the Audit Committee of AstraZeneca's Board of Directors.

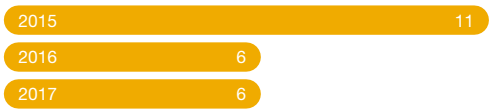
Values@Work app

Creating policies is the first step in shaping behaviours, making them accessible is the next major step. We sought to improve the reach to our employees based in the field, outside of an office setting, by developing the Values@Work app. This mobile application is intended to increase the likelihood that an employee will learn the policies and reference the documentation when needed. Values@Work is customised for certain regions to show locally relevant content in addition to the Code of Ethics, global policies and supporting global requirements. It also includes methods to report a concern. Using the app's keyword search function simplifies finding the applicable policy.

Challenge

We recognise that there is no correct target number for reported compliance breaches, as reports can be an indication of employees and stakeholders willing to speak up. Even where an investigation identifies no actual misconduct, we use the results to determine whether enhancements can be made to existing policies and controls.

Confirmed breaches of external sales and marketing codes or regulations



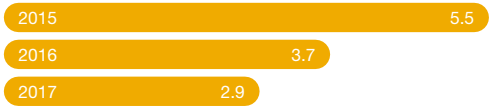
Per thousand employees in our Commercial Regions

Concerns reported through the AZethics Helpline

Instances of non-compliance with the Code of Ethics or its supporting requirements

Corrective actions taken

Employees terminated or otherwise removed from role



Anti-bribery and anti-corruption controls

AstraZeneca refuses to tolerate bribery or any other forms of corruption, even if we lose business as a result. This commitment is communicated in our Code of Ethics, which applies to all employees worldwide.

How we manage

A steadfast commitment

Anti-bribery and anti-corruption are key elements of our policies, with principles and requirements underpinning the steadfast commitment in our Code of Ethics that we do not tolerate bribery or any other form of corruption. This commitment was conveyed in the 2017 annual Code training, and is reinforced through anti-bribery/anti-corruption training materials made available to employees and relevant third parties.

The 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 regarding 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.

We are also an active member of Aclegal, a global industry working group addressing anti-bribery, anti-corruption and anti-money laundering compliance issues within the life sciences sector. Aclegal's work includes regular benchmarking and sharing of best practices. Through our active participation in this and other industry associations, we keep pace with and are firmly committed to taking the necessary internal steps to ensure alignment with current international codes and standards.

2017 update

AstraZeneca Values Week

At sites across the globe, we reinforced our commitment to ethical behaviour by hosting an AstraZeneca Values Week, to build upon compliance-focused weeks held in past years. Each day featured a different Value for which we emphasised how to put the Value in action and take accountability, including for anti-bribery and anti-corruption efforts. We used internal social media, email, videos and office screens to share tools and messages about our Values. Conversations between senior leaders and employees created learning opportunities.

Challenge

Bribery and corruption remains a business risk as we launch new medicines in markets across the globe and enter into partnerships and collaborations. When working with third parties, we are committed to working with only those who embrace high standards of ethical behaviour consistent with our own. Bribery and corruption risk is a focus of our third-party risk management process, as well as our business development due diligence procedures. It is also a focus of our monitoring and audit programmes. The Global Compliance function monitors a range of commercial activities associated with bribery and corruption risk, and the majority of marketing company audits include anti-bribery/anti-corruption work programmes.

Middle East results for Values Week

589	208	508	20,122
Participants	Posts	Photos	Interactions

100%

active employees trained on our Code of Ethics

Selfie photo from our Values Week.

Ethical supply chain management

Our future success depends on building and maintaining a strong and sustainable supply chain that supports our manufacture and sales of new medicines and upholds our high ethical standards. Monitoring and improving performance across the 57,000 suppliers we use around the world protects our business and, more importantly, the patients who use our medicines. We are dedicated to meeting high ethical standards across all our procurement activities and decisions worldwide. We expect our third parties to meet these standards, as set out in our Global Standard Expectations of Third Parties. Our Global Standard incorporates our Code of Ethics and key international standards, such as those published by the International Labour Organization (ILO).

How we manage

High standards throughout our supply chain

To achieve our goals, conduct innovative research and market our products, we work with suppliers and third parties all over the world. We carefully select third parties to work with based on their ability to meet a business need, which includes doing business the right way. We provide support and training to those who want to do better. This also spreads a commitment to human rights, health and safety, environmental sustainability, and diversity to a wider number of businesses across the globe.

Our Chief Procurement Officer, reporting to the Executive Vice President of Operations, leads our procurement strategy. Every employee and contractor who sources goods and services on behalf of AstraZeneca is expected to follow responsible business processes, which are embedded into our newly updated Global Standard for the Procurement of Goods and Services. All our procurement professionals receive detailed training on responsible procurement and the training is available for all employees to access.

Through analysis, we select suppliers to complete a required assessment. In 2017, 6,139 assessments were completed, a 95% completion rate. We maintain oversight of our supply chain and where we are spending our money.

See our supply chain graphic for details on our supplier profiles on the next page.

2017 update

In 2017, we acted to integrate sustainability considerations into supply chain management. We updated our Global Standard for the Procurement of Goods and Services to improve the clarity of due diligence responsibilities and approvals. We held masterclass training on the value of sustainability during our Global Procurement conference, which is also recorded for distribution to all procurement employees. We continue to emphasise sustainability and ethics within our Procurement 2025 strategy.

We also set annual targets that reduce our environmental footprint. For example, we partnered with a supplier to help select cars for our global fleet that will reduce our CO_2 emissions and meet safety needs. We leveraged supplier knowledge to support policy development and manage transition from internal combustion engines to future electric vehicle fleets and alternative mobility solutions. The supplier helped with the business cases to adopt new safety technologies such as autonomous emergency braking (AEB) systems on all new cars in Europe, the US and Japan. In 2017, we:

- Reduced collision rates by 24% for AEB users since 2015
- Shifted our fleet to greener vehicles in Sweden (read more in the Climate change section).

19% reduction
in global fleet emissions since 2015

Challenge

Increasing complexity of legislation and expectations of business is driving a need to provide education not only across the breadth of our organisation but also into our global supply base.

Third-party risk management assessments process:

1. **Initial filter**
   Initial assessment of activity, geography and value to assess the overall business risk.
2. **Risk assessment**
   If a potential risk is identified, we undertake a more detailed assessment of activities conducted.
3. **Due diligence**
   If questions persist, third parties are asked to provide evidence around their policies and processes, and, in some cases, to take appropriate action to mitigate risk. We've expanded due diligence to include EcoVadis.
4. **Extended due diligence**
   Where required, extended due diligence is performed. This can include a detailed audit conducted by a certified third party or by a specially trained AstraZeneca auditor.
   - **Risk deemed acceptable**
     The assessment defaults to our controls process, ensuring appropriate conditions and due diligence steps are implemented.
   - **No material risks identified**
     The assessment defaults to our controls process, ensuring appropriate conditions and due diligence steps are implemented.

Ethical supply chain management
continued

How we manage our supply chain

We extend our influence by demanding high standards of our **57,000** suppliers around the world.

<1%
Critical direct suppliers
provide active pharmaceutical ingredients, formulation, packaging and devices.

How we manage them:

3%
Non-critical direct suppliers
provide common commodities used for manufacturing operations.

How we manage them:

97%
Indirect suppliers
provide goods and services across a range of activities used for general business purposes. Include office suppliers, travel, IT equipment, etc.

How we manage them:

Third-party risk management (3PRM) assessments

Initial assessment of activity, geography and value to assess the overall business risk

- 26,352 supplier assessments completed since 2015
- 78% of our spend is assessed through the 3PRM process, an increase of 28% since 2016

Where necessary, we conduct extended due diligence

- 41 high risk audits
- 4% of suppliers had improvement plans
- 12 suppliers failed to meet required standards and were discontinued

We are increasing sustainability criteria
In 2017, we signed a partnership with EcoVadis to expand our due diligence process, including asking about:

- Ethics
- Labour
- Human rights practices
- Environmental performance
- Sustainable procurement practices.

An EcoVadis pilot programme has completed 18 assessments.

Quality audits

We conduct ongoing quality audits to ensure our suppliers have the proper controls in place.

- 477 internal quality audits of AstraZeneca suppliers in 2017

Environmental assessments

We collect energy, water and waste data from a portion of our Critical direct suppliers to measure impacts. These suppliers make up over 90% of our spend and 5% of our total operational GHG footprint.

Product security controls – illegal trade of medicines

The illegal trade in pharmaceutical products is widely recognised by industry, non-governmental organisations (NGOs) and governmental authorities to be increasing. Tackling counterfeiting is one aspect of product security and protecting our patients from unsafe or ineffective medicines. There is a risk to public health when illegally traded products enter the supply chain. Counterfeits, for example, can fail to provide effective treatment and sometimes cause direct harm.

How we manage

Global cooperation

We aim to protect patients from the dangers of illegally traded medicines by working with partners around the world to disrupt such activity and deter criminals from illegally trading medicines. Our Global Product Security Strategy is focused on:

- Securing our products and supply chains
- Investigating cases of illegal trade
- Collaborating with stakeholders.

The illegal trade in medicines is a global issue that requires global solutions. Through strong partnerships and good education, we can disrupt criminal activities that threaten the wellbeing of patients. We work closely with the Pharmaceutical Security Institute to identify cases of illegal trade and coordinate investigations. We work with industry trade associations and non-profit organisations, including the Alliance for Safe Online Pharmacies – Europe (ASOP-EU) to raise awareness of the threat of counterfeit medicines.

2017 update

Removing counterfeits from the market

In 2017, we discovered an offer for an AstraZeneca-branded compound in an online cancer chat room. We tested the compound and confirmed it was not authentic.

Several months of undercover work and hours of surveillance identified an established illegal manufacturing, distribution and sales network. We submitted evidence to the police and health authority who acknowledged the potential threat to patient safety and agreed to detain the criminal gang. This resulted in simultaneous raids across several locations. Authorities arrested 12 people and seized more than 8.5kg of the illegally manufactured compound and more than 1,500 filled capsules, worth approximately $2.3 million on the black market. The annual turnover of the illegal sales of this compound by the criminal syndicate is estimated to be more than $81 million. The investigation has reduced threats to patients by disrupting the illegal supply chain.

In 2017, our investigations led to 40 raids and the seizure of counterfeit and illegal AstraZeneca products worth $6.9 million and 60 associated arrests.

Challenge

We urge patients and healthcare professionals to be alert to the possibility of illegally traded medicines. Anyone who is concerned that their AstraZeneca medicine may not be genuine can contact their doctor (physician), pharmacist (or other healthcare professional) or health authority. Patients can also contact AstraZeneca through our website or in the country where they are based.

Patients can protect themselves from illegally traded medicines by obtaining their medicines only from licensed and regulated outlets and by avoiding unregulated sources on the internet. Patients should be vigilant when examining their medicines, paying attention to altered or unsealed packaging or changes in the product packaging.

Fight the Fakes is a website designed to raise awareness among patients, healthcare professionals and regulators.

Sustainability foundations

We strive to be a great place to work and a good corporate citizen. We are dedicated to creating an inclusive, open and trusting organisation that embraces the skills, knowledge and unique abilities of every individual. We invest in our employees' wellbeing and their professional development, while encouraging them to use their skills and experience for the benefit of local communities.

In this section:

Strategy | Human rights | Workplace health and safety
Employee development and retention | Compensation | Fair taxation
Diversity and inclusion | Product safety and quality | Patient safety
Community investment | Public policy and advocacy

Strategy

People are the key to AstraZeneca's success. Without our committed, highly skilled and ambitious workforce, our company wouldn't enjoy the success that it does in transforming the lives of patients around the world. We work hard to recruit and retain the very best talent and pride ourselves on being an attractive and ethical employer.

Our sustainable foundations reflect our Values and abiding commitment to people: our staff, patients, suppliers and communities. This long-standing commitment is reflected across the nine foundational sustainability issues we reaffirmed in our 2016 materiality assessment:

- Diversity and inclusion
- Respecting human rights
- Delivering workplace health and safety
- Fostering employee development and retention
- Product safety and quality
- Interact with and disclose public policy and advocacy efforts
- Investing in our communities
- Meeting fair taxation expectations
- Providing fair compensation.

Accessing a sustainable future

Everyone should have the ability to achieve their full potential. This belief is why we have added new targets that focus on our people. We have built on our workplace health and safety targets, focusing on the impact we have on people and our communities. As we embark on new initiatives, make progress and understand its impact, we will adjust the targets to remain ambitious.

See additional performance indicators in our data summary online.

Commitment	Target	Progress	Status
Workplace health and safety Promote the safety, health and wellbeing of all our people worldwide	**Workforce safety:** 75% reduction in total injury rate from 2015 baseline by 2025	On plan ●●○	**17% reduction** in injury rate
	Driver safety: 55% reduction in collisions per million kilometres driven by 2025	On plan ●●○	**28% reduction** in collision rate
	Healthy workforce: 80% of sites/marketing companies have all four Essential Health Activities in place by 2025: Healthy eating and drinking, tobacco cessation, physical fitness and workplace pressure management	On plan ●●○	**67% of sites** promote the four Essential Health Activities
Diversity and inclusion Ensure diversity, in its broadest sense, is reflected in our leadership and people strategies	Ensure that we are recognised by our employees as an inclusive workplace, with increased management opportunities for women and minorities	On plan ●●○	**44.4% of women in senior roles,** achieving our 2017 target of 43.5%
Employee development Build a robust talent pipeline to support our future growth	Build a strong learning and development culture by 2025 – promoting growth opportunities at all levels of our organisation and ensuring a strong leadership pipeline	On plan ●●○	**78% of employees** feel there is opportunity for growth and development **88%** of senior vacancies filled internally
	Ensure AstraZeneca has a highly engaged workforce and is viewed as a leader in attracting top talent by 2025	On plan ●●○	**81% of employees** feel that AstraZeneca is a great place to work
Human rights Continue to develop and embed a consistent approach to human rights across our worldwide activities	Improve the AstraZeneca global biannual human rights survey by using Fair Wage Network data to more robustly assess our performance against local living wage data by 2020	Not yet started ○○○	**Joined the Fair Wage Network** in late 2017 **100% compliance** with our human rights review in 2016
Community investment Create community and business impact through a portfolio of innovative partnerships	Implement a global grants programme by 2018	Not yet started ○○○	**919 local grants** were distributed in 2017

Human rights

We interact with a wide range of people, from our own employees and patients to our partners and the communities we serve. We reinforce our commitment to human rights across our own operations and throughout our value chain, ensuring people are treated with dignity and respect and are free from discrimination or harassment. Our efforts often go beyond legal requirements. Our recently released Human Rights Statement describes our multifaceted approach to respect the rights of all people – our employees, our patients and all the individuals we impact across our supply chain and our greater community.

How we manage

Making human rights central to how we operate

We have been members of the United Nations Global Compact since 2010 and support its ten principles. Human rights are an integral element of our policies and procedures. To manage our progress and 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. We have a whistleblowing policy and affiliated systems and processes in place for employees to raise concerns, and protecting whistleblowers is inherent. Annually, we publish a Modern Slavery Statement on our website, astrazeneca.com, describing our commitment to ensuring that we identify and eliminate to the fullest extent practicable modern-day slavery or human trafficking from our business. We also support 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 identified.

2017 update

Late in 2017, AstraZeneca adopted the Fair Wage Network approach to determining applicable local living wage in the 106 countries where we have an employee presence. Fair Wage collects all available associated data from all countries' economies and log all locally recognised definitions of a 'living wage'. From this data, the Network distils a mean average that is refreshed annually.

From an external perspective, the data will be used to inform AstraZeneca strategy with our third-party suppliers. Internally, we will incorporate the data into our biannual human rights labour review to be further assured of our global position from a living wage perspective and to identify and close gaps as required. This survey, based on the ILO core conventions, was developed in partnership with the Danish Institute to measure labour categories. Survey categories include: General Terms of Employment; Wages and Benefits; Hours and Rest Periods; Freedom of Expression and Collective Bargaining; and Non-discrimination and Harassment. In 2017, the Human Resources leads in all countries where we operate completed the survey.

Challenge

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.

Human rights actions

- Signatory of the UN Global Compact
- Member of the Fair Wage Network
- Published a Human Rights Statement
- Review operations with our biannual human rights survey
- Commitment to Living Wage Foundation UK
- Release annual Modern Slavery Statement

Survey results include:

100%

of employees can exercise employee rights and report suspected violations without fear of retaliation, discipline or termination. They are supported by the AstraZeneca global compliance framework and anonymous ethics point hotline

Workplace health and safety

A safe and healthy work environment is a fundamental right of our employees and suppliers. Everyone who comes to work for us should expect to go home unharmed at the end of every working day. We manage risks and learn from incidents to constantly update our safety and health advice, and we hold ourselves to high standards through the application of ambitious targets.

How we manage

A culture of safety, health and wellbeing

Our Safety, Health and Environment (SHE) strategy is the tool we use to create a culture of safety, health and wellbeing and protect life in 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 that learns from incidents and promotes continuous improvement, and we make sure that our suppliers embrace the same principles.

We manage governance through our Compliance Department, with oversight by our Chief Compliance Officer and Executive Vice President of Sustainability, who reports to our CEO. Our global Safety, Health and Environment (SHE) Policy is the overarching document for our workplace health and safety management system. It applies to all functions and locations and is supported by global standards and procedures that establish mandatory requirements in key risk areas. We use comprehensive assurance programmes, including performance reporting, internal auditing and an annual management review to constantly monitor and manage performance.

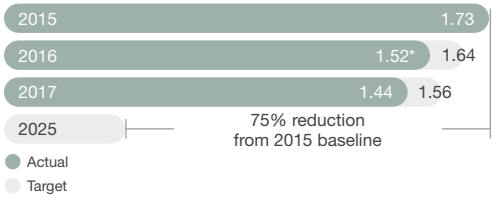
Our initiatives focus on key areas to eliminate workplace accidents and illnesses. We monitor performance centrally to assess progress and identify areas of attention. We use a dedicated website to communicate information on how incidents can be prevented in the future.

2017 update

17%

reduction in reportable injury rate since 2015

Reportable injury rate per million hours worked



* Amendments occurred resulting in revision of 2016 data.

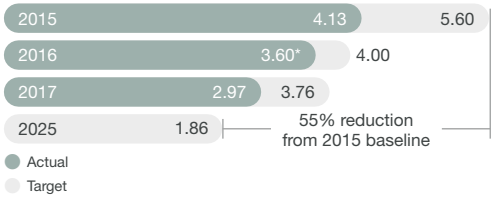
28%

reduction in collision rate since 2015

0

driving fatalities in 2017
(2015 – 1, 2016 – 0)

Collisions per million km



* Amendments occurred resulting in revision of 2016 data.

Excellence awards

In 2017, our West Chester site in the US received a coveted AstraZeneca Safety Health and Environment Excellence award for its highly effective behavioural safety programme. Site employees chose the programme name S.W.A.T. (Safely Working at All Times). The programme includes raising awareness, rapid safety assessments, safety campaigns, a safety social media tool and learning from incidents. A team of technicians with a passion for safety keep the momentum going across the site. The incident rate reduced by 83% from 2016 levels and the site achieved 1 million hours without a lost time injury.

Another award winner in the safety category was the Packing and Logistics engineering project at our Macclesfield site in the UK. The project is a $112 million capital investment involving demolition of old facilities and construction of a high bay warehouse and the refurbishment of an existing facility. A One Team safety culture was adopted, including a detailed project safety plan, safety incentives and the adoption of industry best practice, which has resulted in 500,000 hours and two years injury free.

Challenge

Driving is our highest risk area for significant injury and fatality, and therefore despite already reducing collisions by 55% over a seven-year period, we are targeting a further 55% reduction from our 2015 baseline by 2025. In 2017, we launched a campaign to improve driver safety in our Commercial function, which has the highest number of collisions. We encouraged managers to use a toolkit to discuss speeding with their employees, one of the top three risk areas. Since launch, the collision rate has reduced to 2.97 collisions per million kilometres from 3.60 at the beginning of the year.

Our four Essential Health Activities:

67%

of sites promote healthy eating and drinking, physical activity, tobacco cessation and workplace pressure management (+4% from 2015 baseline)

Employee development and retention

We aim to make AstraZeneca the employer of choice in the pharmaceutical industry and attract top talent from across all industries. As an innovation-based company, the continual development of our workforce is imperative. We invest in the ongoing development of our employees to ensure they reach their full potential through a wide range of professional and technical training, supported by leadership, mentorship and job rotation programmes across the organisation. We identify individuals from all levels of the organisation who have the potential to lead the company, and plan personalised development plans to ensure their accelerated development.

How we manage

Building a workforce for the future

To help deliver our strategic priorities, we are identifying and recruiting emerging talent, as well as investing in internships and recruitment opportunities globally. For example, we conduct a global programme to hire recent graduates for our pharmaceutical technical development, procurement, quality, engineering, IT, supply chain, and biometrics and information sciences functions. We also have a graduate programme for our IMED Biotech Unit, which complements our established 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.

We are building strategic workforce plans across the business to help us identify the capabilities we will need in the future. To support this, we have developed a structured approach to identify individuals with key skills, capabilities and potential, with the emphasis on the identification of credible successors for business-critical roles. Additionally, we track performance against development items through our regular employee surveys.

2017 update

Engaging employees

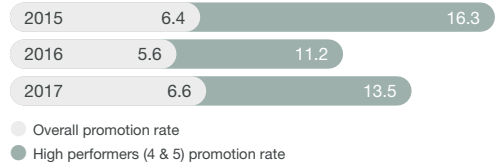
We encourage employees to take ownership of their own development and encourage leaders to spend time supporting their employees' development. To support this, we have implemented a global platform to increase the visibility and accessibility of job opportunities and in 2017 received over 18,500 applications from internal candidates through this platform.

As part of our ambition to transform the learning culture in AstraZeneca, we have implemented a best practice cloud-based global learning management system that provides a platform to ensure development opportunities are available to all employees. In 2017, we launched Leading People, a social online learning platform, with over 4,000 managers enrolling on the course. We saw a significant increase in the score for a number of key Pulse survey questions in this group, in particular those around engagement and personal development. Leading People was recognised externally at the Learning Technology Awards 2017 with a Gold award for Best Learning Platform Implementation and Silver for Best Use of Social and Collaborative Technologies. We also launched a pilot for over 200 employees for the related programme Leading Self, which will be rolled out to all employees globally in 2018. In addition to these programmes, we have used this technology platform to deliver training modules on diversity and inclusion, and sustainability.

Employee opinion surveys help us measure employee satisfaction and engagement, as well as our progress towards being a great place to work. Our most recent survey, carried out in December 2017, showed an improvement compared to the survey at the start of the year in scores for all 11 items common to both surveys. Importantly, we saw good progress in employee understanding and belief in our company strategy, perception of AstraZeneca as a great place to work and questions related to personal development. Despite progress in the latest survey, there remains further opportunity for improvement around leadership communication.

High levels of hiring, our increasingly diverse geographic footprint and the reshaping of a large part of the workforce in the UK and US have shifted our workforce towards a younger age profile, which positions us well for the future. Hiring over recent years also means that employees with less than two years' service now represent 31% of our global workforce (up from 20% in 2012), which provides a greater balance in terms of refreshing talent and retaining organisational experience.

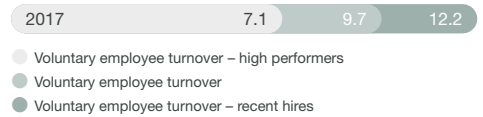
Promotion rate by performance (%)



Challenge

In 2017, we saw an increase in hiring to support our strategic objectives. Our data indicates that these recent hires are performing strongly, although in some areas of the business retention of this population is challenging. Voluntary employee turnover remained stable at 9.7% in 2017. The voluntary employee turnover rate among our high performers increased to 7.1% (from 6.1% in 2016), while the voluntary employee turnover of recent hires decreased to 12.2% (from 12.7% in 2016). We seek to reduce regretted turnover through more effective hiring and induction, exit interviews, risk assessments and retention plans.

Attrition rates (%)



Compensation

Remuneration for all roles within the organisation is benchmarked against that for comparable roles in similar organisations and in the employees' local market to ensure the company is paying fairly at all levels. Executive Directors' remuneration is benchmarked against a global pharmaceutical peer group and the FTSE30. We engage with employees annually for feedback on a wide range of matters, including pay.

How we manage

Our Remuneration Committee decides employee remuneration arrangements, including setting remuneration policy. This includes the remuneration (including pension rights and compensation payments) of Executive Directors and other senior executives as defined in the Remuneration Policy for Executive Directors located in the Annual Report.

The Remuneration Committee reviews Group remuneration data annually, including ratios of average pay to senior executive pay, bonus data, and gender and geographical data in relation to base salaries and variable compensation.

2017 update

Continuing our emphasis on high performance, in 2017 our high performers were promoted at three times the rate of the wider employee population. We require every employee to have high-quality objectives, aligned to our strategy, which we monitor closely. Managers are accountable for working with their employees to develop individual and team performance targets, and for ensuring employees understand how they contribute to our overall business objectives. Through increased investment in technology, we have also extended our global annual salary and incentive review process to cover 87% of the population (60% in 2016).

We encourage participation in various employee share plans, some of which are described in the Directors' Remuneration Report in the Annual Report and in the Financial Statements Notes. Our salary and bonus budgets are distributed in line with our principles, allowing us to clearly differentiate reward according to performance.

Challenge

To attract the best talent in the market and mitigate any internal retention risk, we regularly review our compensation strategy to ensure it remains competitive.

Fair taxation

Our business activities around the world incur a substantial amount and variety of business and employment taxes. We comply with all tax laws in the countries in which we do business and are committed to transparent and constructive relationships with all relevant tax authorities. The taxes we pay and collect represent a significant contribution to the countries and societies in which we operate.

How we manage

How we pay our fair share

We manage tax risks and tax costs consistent with applicable regulatory requirements and for shareholders' best long-term interests, considering operational, economic and reputational factors. We have established and maintain a robust tax policy and related policies and compliance controls to ensure the integrity of our tax returns, and timely and accurate tax payments in all countries in which we operate. This includes ensuring that our tax professionals and staff have the necessary training to manage our tax position appropriately. Performance is monitored via quarterly reporting to the Chief Financial Officer and Board of Directors' Audit Committee.

2017 update

As rated by the RobecoSAM Dow Jones Sustainability Index assessment, we improved our Tax Strategy score by more than 60% and nearly doubled the industry average score.

78
AstraZeneca score
(+30 points vs 2016)

93
AstraZeneca percentile
(+9 vs 2016)

> ***"We support initiatives to increase public trust and transparency in national and international tax regimes, and we engage with our stakeholders to build understanding and clarity of business tax consequences wherever we operate."***
>
> *AstraZeneca Tax Policy Excerpt*

Challenge

Tax risk can arise from unclear laws and regulations as well as differences in interpretation. As is common for many multinationals, our most significant source of uncertainty arises where two or more governments adopt different interpretations in relation to pricing inter-company cross-border transactions. For example, the transfer pricing of goods and services between affiliated members of the AstraZeneca Group of companies resulting in the same income being taxed in two or more territories.

Diversity and inclusion

As a global company, we strive to create an inclusive culture in which difference is recognised and valued. To foster innovation, we seek to harness different perspectives, talents and ideas, as well as ensuring that our employees reflect the diversity of the communities in which we operate.

How we manage

An inclusive culture

We expect everyone at AstraZeneca to observe the highest standards of integrity and honesty and to act with care, diligence and fairness. Our Code of Ethics emphasises our company Values and guides employee conduct. Our policies and procedures help protect against discrimination on any grounds and cover recruitment and selection, performance management, career development and promotion, transfer, training, retraining (including, if needed, for people who have become disabled) and reward.

2017 update

Commitment to diversity and inclusion

As part of our commitment to diversity and inclusion we have implemented numerous initiatives across the globe, such as unconscious bias training, the formation of various employee resource groups (such as an LGBT network) and in some parts of the business, the creation of a People Manager objective to ensure all recruitment includes diverse applicant slates and diverse interview panels.

Our commitments include a goal to increase the presence of women on our leadership teams. Women comprise 50.1% of our global workforce, and there are currently five women on our Board (42%). Below Board level, the representation of women in senior roles (i.e. roles at Career Level F or above that constitute the six highest bands of our employee population) increased to 44.4% in 2017 (from 43.2% in 2016), which exceeded our scorecard target of 43.5% for this measure and compares favourably to external benchmarks. Women are also currently promoted at a higher rate than men across all levels of seniority, positively impacting the gender balance. Our progress has been recognised externally with Bahija Jallal (Executive Vice President, MedImmune) being named 2017 Woman of the Year by the Healthcare Businesswomen's Association. In 2017, we extended our 'Women as Leaders' experience to support the accelerated development of high potential women in AstraZeneca. In addition, we have developed women's networks in most countries, held a women's summit in the UK, US and Sweden, and continued to support mentoring relationships, for example, by introducing mentoring by senior females for emerging talent in Operations.

15th in the FTSE 100 Ranking for Women on Boards[1]

9th in the FTSE 100 Ranking for Women on Executive Committees and Direct Reports[1]

Diversity metrics are monitored closely and reported to the Senior Executive Team (SET) on a regular basis. In 2017, we added two new diversity-related questions to our employee opinion survey, the results of which indicate we perform positively when compared to our peers.

50% of workforce are women

Women in senior roles (%)
(the six highest bands of our employee population)

Women on SET and one level below SET (%)

Women
Men

Challenge

Despite recent progress, our senior leader country of origin diversity does not yet reflect our geographic footprint. Leadership diversity is critical in creating a culture of innovation, adaptability and inspiring talent, especially from our emerging markets. In 2017, 13.4% of leadership roles that report to our senior leadership team have a country of origin that is an emerging market or Japan (an increase from 5% in 2012, but below our 2017 target of 16%).

Leadership geographic diversity (%)

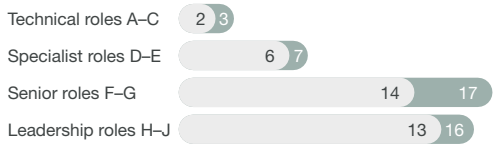
AZ geographic footprint

Leadership country of origin

Emerging markets and Japan
Established markets

100% score for the Labour Practice Indicators category, which includes diversity and inclusion measures, in the Dow Jones Sustainability Index

Promotion rate by gender (%)



Men
Women

1 2017 Hampton-Alexander Review

Product safety and quality

Product quality is core to our commitment to patient safety. Our Patient Safety Quality System applies throughout the whole life cycle of *all* our products. It is designed to help us drive continuous improvement and strengthen links between pharmaceutical development and manufacturing activities. It also meets our requirements for Good Pharmacovigilance Practice and Good Regulatory Practice. It applies to all investigational and commercial products, large and small molecules, and includes our medical devices.

How we manage

Safe and effective medicines through quality

Our quality system meets the requirements of the internationally adopted pharmaceutical quality system, ICHQ10. We comply with international standards for Good Manufacturing Practice (GMP) and are regularly assessed by health authorities across the globe. We monitor the performance of our quality system globally against defined quality requirements and our operations senior leadership regularly reviews summaries of these monitoring activities. Our central dedicated team manages any reported issues that may affect product on the market and takes appropriate action. We have established oversight programmes in Global Quality Audit across our operations, marketing companies and suppliers. We embed quality into Lean and Six Sigma improvement programmes, linking problem-solving techniques across the improvement and quality landscapes.

2017 update

Inspections

All GMP inspections have been successful for commercial products, and there have been no regulatory warning letters or critical observations, despite an increase in the number of inspections (57 inspections in 2017 vs 33 in 2016). A single Complete Response Letter was received from the US Food and Drug Administration (FDA) for the development product Lokelma, and improvement actions have been taken at our Coppell facility in Texas to address the issues raised.

To give patients even more confidence in our products, we are in the process of applying serial numbers. This will make them easier to identify if recalled and will help us in the fight against the illegal trade in medicines. We have already implemented serial numbers across multiple countries and will apply them to all products globally by 2020.

Challenge

Our suppliers are diverse geographically and functionally, but we hold them all to the same high standards as we apply to our own operations. To make it easier to manage our suppliers and ensure they are meeting our standards, we are creating a central, global supplier management function.

Patient safety

We put patients first. Patient centricity is reflected in our everyday actions and our global outcomes. Pharmacovigilance is the science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other drug-related problems. It is our responsibility to our patients and it is paramount.

For all our medicines – in development as well as on the market – we have objective and rigorous systems in place for detecting and rapidly evaluating possible adverse drug effects. Each medicine has a dedicated safety team, which includes a responsible global safety physician and one or more pharmacovigilance scientists.

Our refined safety signal management system

To further our commitment to patient safety excellence, in 2017 we developed an upgraded safety signal management platform to provide risk oversight for all our products. Safety signals are generally the first signs of potential adverse effects arising from the use of drugs. Our goal is to achieve comprehensive awareness of the signals and provide intelligent analysis of their impact, with appropriate and timely action to minimise any adverse consequences to the patient.

The enhanced signal detection and evaluation capabilities will feature:

- Smarter signal detection algorithms to filter out false alarms and improve prioritisation
- Streamlined signal evaluation activities using upgraded analysis tools
- Enhanced procedural compliance and system performance oversight.

This one-stop-shop tool presents data from our internal safety database called Sapphire, from external safety databases such as the FDA's AERS system and the WHO's VigiBase system, as well as abstracts from biomedical literature with more than 30 million records taken from peer-reviewed journals and scientific meetings. All credible safety risks detected are rigorously assessed by our team of more than 200 safety physicians and safety scientists who, between them, assess thousands of outputs from our surveillance systems over the course of a typical year.

Community investment

Wherever we work in the world, we aim to make a positive impact on our local communities. Our workforce can be a force for good, and we encourage and support our employees in taking up volunteering opportunities. We target our global community investment towards supporting science-based education and mentorship, strengthening healthcare in local communities, responding to disaster relief efforts, providing product donations and encouraging employee volunteerism. We also support programmes that improve access to healthcare; read more here.

How we manage

Community support

In 2017, we gave more than $25 million in Community Investment Contributions to more than 900 non-profit organisations in 61 countries around the world. In addition, we donated more than $401 million of medicines in connection with Patient Assistance Programmes around the world, the largest of which is our AZ&Me programme in the US.

We are a member of the London Benchmarking Group, a global standard for measuring, benchmarking and reporting on corporate community investment, and we use their definitions and valuation approach to categorise our investments.

2017 update

Strengthening healthcare in local communities

- A winner of the AstraZeneca Health and Science Innovation Challenge in the US, Growing Great has launched multiple programmes aimed at involving Spanish-speaking parents in decisions that affect their children's health and education. 'Aprendemos en el jardin/Learning in the garden' supports inner-city families in growing and eating their own vegetables by creating school garden boxes where produce can be planted and used for STEM lessons and healthy snacks.
- As a founding partner of the Advanced Coronary Treatment Foundation in Canada, in 2017 our support empowered 346,000 young people in 1,800 high schools across the country with lifesaving CPR training and heart health knowledge; more than 3.9 million youth have been reached to date.
- In Sweden, we support local sports clubs that engage children and young people in physical activity to increase their health and mental wellbeing.

Science-based education and mentorship

- As a founding supporter of Career Ready in the UK, the programme has grown to establish 44 STEM centres; achieve a 40% ratio of female student involvement; mentor almost 1,400 students; and engage 130 employee volunteers.
- AstraZeneca mentors joined the BioVenture weekend in Cambridge, UK, to support young entrepreneurs and help them take their innovative ideas from academia into commercial research.
- Our US market supported FirstHand, a programme that provides Philadelphia's curious minds with access to the knowledge and resources of the University City Science Center. Through a true workplace-connected learning experience, students from under-resourced schools and under-represented communities learn to use design-thinking principles to develop experiments, test hypotheses and work towards final projects.

Red Cross volunteers walk through a northern Ugandan refugee camp.

Disaster relief

- We provided funding to support the deployment of the British Red Cross's mass sanitation unit to northern Uganda, where it provided sanitation and hygiene services and health information to more than 19,000 refugees.
- We donated medicines worth more than $4 million (US Wholesale Acquisition Cost Value) in response to disasters and humanitarian needs all over the world and across all AstraZeneca therapy areas: oncology; cardiovascular and metabolic diseases; respiratory; and other disease areas (autoimmunity, infection, neuroscience and gastroenterology).
- We responded to appeals from the British Red Cross and its affiliates with funding and product donations to support the South Asian floods and the Atlantic hurricane season.

Above image credit: Tommy Trenchard/Panos/IFRC

Community investment
continued

Assisting programmes

- Cambodia Breast Cancer Initiative: The partnership between AstraZeneca, AmeriCares and Sihanouk Centre of Hope (SHCH) Hospital in Phnom Pen, Cambodia, reached its 10-year milestone in 2017. Its aim is to strengthen existing treatment services while expanding in scale to reach additional patients. AstraZeneca provides free medicine to post-menopausal breast cancer patients in the Centre of HOPE's treatment cohort. In 2017, the programme held community education sessions and distributed instructive brochures, teaching more than 8,000 women about the importance of early detection and prompt care-seeking. Also in the past year, more than 700 women have been evaluated and screened for breast cancer, 576 patients have received ongoing treatment follow-ups for breast cancer, and 370 patients have been given anti-hormonal therapy.

- Patient Assistance Programme in the US: For those patients without insurance and who can't afford their medications, AstraZeneca has a Patient Assistance Programme that provides medications at no cost for eligible patients. Over the past 10 years, the AZ&Me programme has provided prescription savings to more than 4.5 million patients in the United States and Puerto Rico.

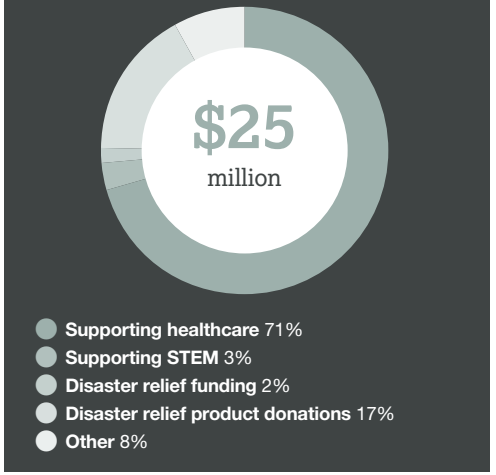
Demonstrating our science at the Cambridge Science Festival 2017.

Employee volunteerism and giving

- We encourage our employees to volunteer and support their efforts with at least one day of leave for volunteerism. In 2017, our employees volunteered over 29,000 hours on community projects in countries around the world.
- Germany's AlleZusammen-Tag (Volunteer Day) engaged 90 employees in 12 projects across the city of Hamburg to support their charitable partner, basis & woge, an organisation that provides services and support for street-involved youth.
- From July to September, employees from Malaysia, Taiwan, Singapore, Thailand, Vietnam and India engaged in volunteer activities that focused on educating young people about the risk factors related to NCDs.
- Canadian employees spent 4,492 hours volunteering with non-profits and grass-roots sports organisations, and gave $50,685 dollars through their Volunteer Investment Program.
- In the UK, we offer a Give As You Earn programme that allows local employees to manage their own charitable giving fund. In 2017, more than 550 employees made almost 6,000 donations to UK charities for a total of more than £390,000 in charitable funding.

Charitable giving by type

(excludes donations of over $401 million of medicines in connection with Patient Assistance Programmes)



Challenge

We have a decentralised approach to our community investment activities, which allows AstraZeneca markets to fund projects that are locally relevant and culturally appropriate while adhering to our global focus areas as outlined in our Global Standard on Contributions. Sometimes, this decentralisation makes data collection challenging. It also means that resourcing and activity levels can differ significantly across markets. As a result, the grant application and engagement process of applicants and grant recipients can vary. To address this challenge, we are exploring ways to improve the management of community investment globally, including how technology can play a role.

Public policy and advocacy

Our efforts in public policy and advocacy cover multiple aspects of importance to our patients and our business. As a biopharmaceutical company, we have a voice to advocate for actions and systems that strengthen public health, including environmental and medical advances.

How we manage

We follow the science

Following the science means advocating for science-based pathways on behalf of patients. We manage public policy and advocacy locally to address local and global issues. Our global policy – Our Interactions – guides our approach.

2017 update

We engage in public policy and advocacy activities across a range of issues, including:

Antimicrobial resistance

In 2017, we co-funded research on regulatory protection goals for antimicrobial resistance – an area where there is still much to do but in which we believe following science will play a vital role in developing science-based policy and regulation.

Inclusion of adolescents in the global non-communicable disease (NCD) agenda

In line with our global commitment to adolescent health, made through The Young Health Programme (YHP), we advocate for the inclusion of youth in ongoing global health dialogue on NCDs. Youth are seldom represented in these fora, yet they have a unique set of healthcare needs. YHP is represented on the Global Coordinating Mechanism for NCDs and works in partnership with Plan International, NCD Child and Rise Up Together (Public Health Institute) to call for the inclusion of youth in policy, programming and global discourse. In 2017, YHP joined a consortium of organisations to publish a global policy paper on adolescents and NCDs that will be used to guide dialogue towards the High-level Meeting on NCDs, planned for 2018. In 2017, we invested more than $1 million in these advocacy efforts through YHP.

Pharmaceuticals in the environment

We invested around $500K in research specifically related to pharmaceuticals in the environment (PIE), collaborating with leading universities and academic scientists and helping to leverage around $5 million per annum.

We also took an industry leadership approach to the issue of active pharmaceutical ingredients (APIs) in water-stressed areas with less developed wastewater treatment infrastructure. Since regulatory guidance on the requirement to conduct an environmental risk assessment (ERA) is currently limited to North America and Europe, we reviewed ERA frameworks in emerging markets. This review highlighted significantly different wastewater patterns in many of these markets. We are currently exploring the key outcomes of this review to advocate for changes.

Circular economy

We support development of the circular economy, which will benefit as global participation grows. Our recent position on publishing the EFPIA White Paper on Circular Economy defines an industry response to the principles underpinning the circular economy and proposals for legislation.

Animal research

We became a signatory of The Concordat on Openness on Animal Research in 2014. Now in its third full year, we have again contributed to the Concordat's annual report in 2017.

Political contributions

In the EU, AstraZeneca did not make any political donations or expenditure in 2017. In the US, corporate political contributions are subject to both federal and state laws and regulations. We did not make any corporate donations at the federal level and all contributions were made only where allowed by US federal and state law (see chart below and our Political Contributions webpage for details).

US political contributions*

* Contributions supported national political organisations, state-level political party committees and campaign committees of various state candidates.

Through the Young Health Programme we advocate for the inclusion of youth in the global health dialogue.

Notices

Learn more
Our 2017 Annual Report further explains how sustainability is integrated across our business model and into risk management.

Online updates
We welcome you to visit us online at www.astrazeneca.com/sustainability for ongoing sustainability updates.

Share your ideas
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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.

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