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For more information, visit: Pfizer.com/valueofmedicines
Follow @Pfizer on Twitter and use the hashtag #valueofmeds
For over 165 years, Pfizer has discovered and developed medicines that have saved and improved the lives of millions of people. By helping to eradicate disease and treating illnesses at every stage of life, medicines have provided enormous value to society. Across disease areas and in all parts of the world, the societal benefits of improving the quality of life from a humanistic and economic perspective is proven every day.
Pfizer’s unwavering commitment to improving health is aligned with global health goals of the international community. In the Blue Section, we show the Value of Medicines in how we deliver on our Corporate Responsibility in the developing world.

**Value of Medicines in Preventing and Treating Disease**

In the Purple Section, we highlight the Value of Medicines in their ability to prevent and treat Communicable and Non-Communicable Diseases (NCDs).

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The advent of pharmaceutical innovation has been a powerful contributor to living longer and better. In the Green Section, we show how vaccines and medicines can save lives, enhance the quality of life, and improve healthcare efficiencies through offsetting healthcare costs.

- **Healthy Aging...** 17
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**Value Drivers**

Leading factors in providing value to human life and to healthcare systems.

- **Improving Life**
- **Preventing Disease**
- **Reducing Costs**
- **Increasing Lifespan**
- **Increased Functioning**

Find these value driver symbols throughout the report to see how medicines are changing lives.

**Pharmaceutical innovations accounted for 73% OF THE TOTAL INCREASE IN LIFE EXPECTANCY between 2000 and 2009.**

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Pharmaceutical innovations accounted for 73% OF THE TOTAL INCREASE IN LIFE EXPECTANCY between 2000 and 2009.

More than 200 million women in developing countries want to delay pregnancy or prevent undesired pregnancy, but are not using any method of contraception.¹

**PFIZER GOAL**
To provide more women in developing countries with access to contraceptive and family planning options.

**ACTION**
Pfizer, along with the Bill & Melinda Gates Foundation and the Children’s Investment Fund Foundation (CIFF), has expanded access to an injectable contraceptive for women most in need in 69 of the world’s poorest countries.

**IMPACT**
- The collaboration is supported by a consortium of public and private sector donors and aid organizations including PATH, the United Kingdom’s Department for International Development (DFID), the United Nations Population Fund (UNFPA), and the United States Agency for International Development (USAID).
- Injectable contraceptives are a widely-used family planning method among women in developing countries², where the lifetime risk of death due to a maternal cause can be as high as 1 in 15.³
Trachoma is the leading infectious cause of blindness. It is endemic in 58 countries and is responsible for the visual impairment of an estimated 2.2 million people, of whom 1.2 million are irreversibly blind. But it can be prevented with effective antibiotic treatment.⁴

**PFIZER GOAL**
To help end the suffering and the cycle of poverty caused by this debilitating disease by partnering with the WHO’s Alliance for the Global Elimination of Blinding Trachoma by the year 2020 (GET2020) and the International Trachoma Initiative (ITI).

**ACTION**
- Pfizer has donated more than 500 million doses of an antibiotic to 33 countries as part of a comprehensive public health strategy to eliminate blinding trachoma and help preserve and restore the health and well-being of affected families worldwide.
- Pfizer and ITI collaborate with government and nongovernmental agencies at the local, national, and international levels to implement the SAFE (Surgery, Antibiotics, Facial Cleanliness, and Environmental Improvements) strategy.

**IMPACT**
- Nine countries have reported reaching their elimination targets with support from governments, NGOs, and industry.
PFIZER GOAL
To save children’s lives and protect people’s health by increasing access to immunization in low-income countries.

ACTION
- Pfizer is investigating vaccine candidates for both communicable and non-communicable diseases, and is expanding access to life saving vaccines.
- Pfizer has committed to supply Gavi, The Vaccine Alliance with up to 740 million doses of a vaccine at a substantially reduced price, through 2025.

IMPACT
- Over 20 million children have access to our pneumococcal conjugate vaccine in 44 developing countries.5
- It is estimated that between 2011 and 2015, 400,000 deaths in children in developing countries were averted due to pneumococcal vaccination.7
VALUE OF VACCINES

- Since the introduction of vaccines, many infectious diseases have virtually become eradicated.
- Vaccinations have prevented 103 million cases of childhood infection, representing approximately 95% of infections that would have occurred since 1924.  
- Immunizations save an estimated 2.5 million lives each year.

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For every $1.00 the U.S. spends on childhood vaccinations, $10.20 is saved in disease treatment costs.

Due in large part to greater access to vaccines and medicines that prevent, cure, and treat illness from infectious and parasitic diseases, the leading cause of death and illness in the developing world is shifting from communicable to non-communicable diseases (NCDs) and chronic conditions.

NCDs and chronic conditions have a significant impact around the world...

- Deaths from NCDs are projected to increase by more than 20% between 2010 and 2020 in Africa, Eastern Mediterranean, and Southeast Asia.\(^\text{10}\)
- NCD-related economic losses between 2011 and 2025 in low- and middle-income countries are forecasted to be 7 trillion dollars.\(^\text{11}\)
- Investing just $1–3 per person per year can dramatically reduce illness and death from NCDs.\(^\text{12}\)

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**Major Growth of Chronic Non-Communicable Disease Burden in Low-Income Countries**

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Deaths from NCDs are projected to increase by more than 20% between 2010 and 2020 in Africa, Eastern Mediterranean, and Southeast Asia.
DISEASE BURDEN
- Cardiovascular diseases (CVDs) are the No. 1 cause of death globally.¹³
- 73.5 million American adults (31.7%) have high LDL*, or “bad” cholesterol.¹⁴
- People with high total cholesterol have approximately twice the risk of heart disease as people with optimal levels.¹⁵
- Atrial fibrillation (AF) is the most common type of irregular heartbeat.¹⁶
- One of the most serious medical concerns for individuals with AF is the increased risk of stroke, which is five times higher in people with AF than in people without AF.¹⁷
- Stroke is a global epidemic affecting more than 15 million people worldwide.¹⁸
- Ischemic stroke (clots) alone will cost the U.S. an astounding $2.2 trillion between 2005 to 2050.¹⁹

Health and Economic Burden of Stroke in the US
- 1 in every 20 deaths
- OR
- 1 death every 4 minutes†
- $53.9 billion total cost in 2010‡

As societies become older, NCDs such as cardiovascular disease, diabetes, and cancer become leading causes of disability, morbidity, and mortality among all regions of the world.

Stroke risk attributable to atrial fibrillation (AF) increases with age.


* High LDL is defined as a prevalence of LDL-C ≥ 130mg/dL, 2012 Age ≥ 20y
VALUE OF MEDICINES

- In one year alone, statins reduced numerous cases of cardiovascular-related complications, and saved thousands of lives.\textsuperscript{20,21}
- From 1987 to 2008, the estimated aggregate social value of statins was estimated to be $1.252 trillion, with a consumer surplus associated with statins estimated to be $947.4 billion.\textsuperscript{20}
- WHO recommends drug therapy for the prevention and control of heart attacks and strokes because it is feasible, high-impact, and affordable, even in low- and middle-income countries.\textsuperscript{22}
- Medicines for atrial fibrillation (AF) such as blood thinners, heart rate, and heart rhythm controllers can help to significantly reduce direct and indirect negative health outcomes, including stroke and costs associated with untreated AF.\textsuperscript{23}

In one year alone, statins reduced numerous cases of cardiovascular-related complications and saved thousands of lives.

- **60,000** HEART ATTACKS REDUCED
- **22,000** STROKES REDUCED
- **40,000** LIVES SAVED

The use of statins correlates to a reduction in healthcare costs:

- **27%** SAVINGS PER PATIENT


Matt Woods was 48 when he suffered a massive heart attack. He had 100 percent blockage in his right coronary artery. Since the heart attack, his cardiologist put him on numerous medications to normalize his cholesterol and triglycerides, prevent his blood from clotting, and keep his blood pressure low. At right, he describes his treatment.

“\textit{These medications have allowed me to keep up the same pace as I had before the heart attack. In fact I would say that I am doing more now than before the heart attack.}”

–Matt Woods
BURDEN OF SMOKING

- Cigarette smoking remains the No. 1 preventable cause of death worldwide and plays a major role in the development of cardiovascular disease (CVD), cancer, and pregnancy complications.24, 25, 26, 27

It’s estimated that 85–90 percent of COPD cases can be linked to cigarette smoking and between 15–20 percent of smokers are likely to develop COPD.


- Six million people die from tobacco each year, which includes secondhand smoke exposure.28
- According to a 2012 study, the direct costs attributable to smoking totaled $34.8 billion across the United Kingdom, Germany, France, and Spain and $104 billion in the Americas.29
- Twenty-four-year-old smokers can expect to incur about $140,000 in supporting their smoking behavior over their lifespans.30

VALUE OF MEDICINES

- In a study of patients with COPD, pharmacological therapy plus counseling was shown to double 12-month abstinence rates versus counseling alone.31
- One year after cessation, a former smoker’s risk of coronary heart disease drops to about half that of a current smoker’s, and after 15 years of abstinence, coronary heart disease risk is equal to those who never smoked.32

33% of all smoking deaths are from cardiovascular disease.

DISEASE BURDEN
- Rheumatoid arthritis (RA) causes premature mortality, disability, and compromised quality of life in the industrialized and developing world.\textsuperscript{13}
- RA affects more than 17.6 million people worldwide, with more than 1.6 million people in the United States and 6.2 million people in Europe.\textsuperscript{34, 35, 36}
- RA can impose a substantial burden of cost on patients with this chronic condition. Recent estimates suggest that the per-patient, direct medical costs for RA can range from $2,000 to $10,000 annually.\textsuperscript{37, 38}

VALUE OF MEDICINES
- Improved treatment options and management strategies have made a significant reduction of disability compared to 20 years ago.\textsuperscript{39}
- RA treatment options have evolved from targeting symptoms to reducing disease activity.
- One study showed that an increase in earlier treatment for RA patients over a five year period could produce significant benefits in terms of productivity for the UK’s National Health Service, estimated at £31 million due to reduced sick leave and lost employment.\textsuperscript{40}

Recent estimates suggest that the per-patient, direct medical costs for RA can range from $2,000 to $10,000 annually.\textsuperscript{37, 38}

Elizabeth Shepley, a mother of two from Shillington, PA was just 25 years old when she was diagnosed. After about three years, she decided to get help.

“It may be out of my control that I have RA, but it is within my control to treat it... and to function, as I deserve to function.”

–Elizabeth Shepley
Jack Whelan is a research analyst living with cancer. He has since become a strong patient advocate and speaks passionately about the value of medicines in treating his rare form of blood cancer.

“If I didn’t have these novel agents, I wouldn’t be here today. My message is a big hearty thank you to all who help bring these treatments to patients like myself.”

—Jack Whelan
80% – 90% of observed survival gains in cancer* are attributable to advances in treatment - including medicines.42

DISEASE BURDEN

- With an estimated 1.7 million new cases each year, breast cancer is the most common cancer among women worldwide. It is also the leading cause of cancer death among women, taking the lives of 560,000 in 2015.\(^4\),\(^45\)
- Metastatic breast cancer patients face a median survival of approximately three years.\(^46\)

HORMONE RECEPTOR POSITIVE (HR+) IS THE MOST COMMON TYPE OF BREAST CANCER, REPRESENTING ABOUT 2 OUT OF 3 BREAST CANCER CASES

VALUE OF MEDICINES

- Improved treatments represented 92% of the increase in the share of life-expectancy gain from 1990 to 2000 for breast cancer.\(^47\)
- The return-on-investment to society from innovations in breast cancer treatment (based on gains in quality-adjusted life years) ranged from 112% to 3,681%, depending on treatment.\(^48\)
- In metastatic breast cancer, the treatment goal is to extend life with the best quality of life possible. This means relieving symptoms (varies by site of metastases) and slowing cancer growth with the fewest side effects.\(^49\),\(^50\)

ALIVE WORLDWIDE WHO HAD BEEN DIAGNOSED WITH BREAST CANCER IN THE PREVIOUS 5 YEARS.

In 2012, there were 6.3 MILLION WOMEN


VALUE OF MEDICINES in Breast Cancer

BREAST CANCER CASES

6.3 MILLION

6.3 MILLION WOMEN

In 2012, there were 6.3 MILLION WOMEN

Hemophilia is a rare hereditary bleeding disorder that, without appropriate treatment, can lead to an increased risk of spontaneous bleeding, especially into joints. In severe cases, joint disease can impede an affected individual's ability to walk and may require wheelchair assistance or orthopedic surgery to repair or replace damaged joints. Bleeds into the central nervous system or other organs can be fatal.\(^5\), \(^6\)

**Disparities in Diagnosis of Hemophilia**

Estimated proportion of affected patients who have received a diagnosis, by country

- **Australia**: 95%
- **United States**: 87%
- **Germany**: 82%
- **China**: 56%
- **India**: 12%
- **Indonesia**: 4%

Source: O'Mahoney B. “Expanding Hemophilia Care in Developing Countries” SEMINARS IN THROMBOSIS AND HEMOSTASIS/VOLUME 31, NUMBER 5 2005.

**Value of Medicines in Hemophilia**

- Approximately 100 years ago, the average life expectancy of a patient with hemophilia was under 10 years.\(^6\), \(^7\)
- Advances in treatment in developed countries have substantially increased the life expectancy of patients, where children born with severe hemophilia are expected to live a normal life span and participate fully in daily activities, with appropriate care and accommodations.\(^8\)
- Still, the scientific community continues to investigate new treatments for hemophilia, such as gene therapy, with the hope of eventually finding a cure.
Research has shown that patients receiving prophylaxis treatment were over three times less likely to have a joint bleed than those treated on demand, and the treatment has been demonstrated to reduce productivity loss.\textsuperscript{59, 60, 61}

\begin{itemize}
\item PATIENTS RECEIVING PROPHYLAXIS ARE $3\times$ LESS LIKELY TO HAVE A JOINT BLEED
\end{itemize}

It has been estimated that prophylaxis treatment results in savings of $8,312--$17,675 per bleeding episode in patients with severe hemophilia.\textsuperscript{62, 63}

Treatment for children with appropriate therapy in countries with GNP less than $2,000 can result in a fivefold (500 percent) increase in survival to adulthood.\textsuperscript{64}

Vaccines and medicines support healthy aging at every stage of life, and are powerful contributors to living longer and healthier.

For infants and children, immunization is one of the most important things parents can do to help protect their children’s health. Adults can help protect their own health by following recommended immunization schedules to help prevent diseases such as pneumococcal and meningococcal diseases.

Today there are more than 430 medicines being developed for 10 leading conditions affecting older Americans.

By 2050, about 2 billion people are expected to be over 60 years old, comprising 22% of the world’s population.

As we age in better health, our functional capacity is greater over our lifetime. Staying above the disability threshold represents an incredible advantage to society, as both health and economic burdens are reduced.

Value of Medicines in Healthy Aging and Offsetting Healthcare Costs

The Value of Medicines in Healthy Aging

OLDER AMERICANS
Medicines in Development

- Acquired Hypothyroidism: 1
- Alzheimer’s Dementia: 67
- Anemia: 27
- Arthritis: 62
- Chronic Kidney Disease: 30
- COPD: 40
- Depression: 27
- Diabetes: 110
- Glaucoma: 19
- Heart Disease: 61


Aging in better health across the life course can reduce disease and disability in older age.

PFIZER GOAL
Reduce the impact of non-communicable diseases among older people in Tanzania, or low- and middle-income countries (LMICs).

ACTION
HelpAge International and Pfizer are partnering to promote active and healthy lifestyles to prevent the burden of NCDs in Tanzania. Many of these diseases can potentially become manageable conditions through innovative initiatives at local and national levels aimed at enhanced prevention, early diagnosis, follow-up, and treatment.

IMPACT
We are helping to create an environment that involves an intergenerational approach to improve health awareness and behaviors among all ages in the communities. The program has the potential to help Tanzania achieve the United Nations’ Sustainable Development Goals target of reducing by one-third, premature deaths from NCDs by 2030.
Medicines are one of the best investments in health care. They can reduce other health care costs by preventing and curing disease, and by maintaining or improving health. These benefits can result in fewer trips to the doctor or hospital, fewer surgeries, or a delayed need for long-term care, each of which can be more costly than medicine.

With an aging global population and growing healthcare costs, we are looking for solutions that can create efficiencies in how we take care of our health.

Medicines in particular have a proven track record for contributing value to society. They have shown to improve health, increase life expectancy, and reduce the needs for other, often more expensive, healthcare interventions.

At Pfizer, we know our purpose. It is to innovate and bring therapies to patients that can improve and extend their lives. Looking ahead, the promise of medicines is to do just that for the most challenging diseases yet; the Value of Medicines will be demonstrated by how those treatments can effectively improve patient outcomes, reduce disease burdens, and show overall positive returns to society.

Here are some examples of how medicines can offset healthcare costs:

### Value of Medicines in Healthy Aging and Offsetting Healthcare Costs

#### Offsetting Health Care Costs

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<tr>
<th>Medicine</th>
<th>Cost Savings</th>
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<td>Diabetes</td>
<td>$1.00 More</td>
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<td>Mental Health</td>
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<td>HIV</td>
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### Over-the-Counter Medicines

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<td>$1.60 Drug Cost Savings</td>
<td>$4.90 Clinician Visit Cost Savings</td>
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