

Two capsules are shown lying on a light-colored surface. The foreground capsule is orange with a white cap, and the background capsule is also orange with a white cap. The text is overlaid on the foreground capsule.

# **MEDICINES MONITOR**

**2017 EDITION**



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MONITOR**  
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## PREFACE

'Sustainable health care', 'Medicines of tomorrow' and 'A better life'. These three are the central themes within our industry association for Dutch pharmaceutical companies. We have structured this brochure along those lines. In our annual Medicines Monitor, formerly called Pharma Facts, you will find the relevant recent key figures. Although the clear infographics are mainly self-explanatory, here follows a brief introduction.

Concerning the theme 'Sustainable health care', the increase of the number of medicines used in the Netherlands during the past ten years stands out, from a good six billion to over eight billion doses a year. Yet annual medicine turnover has remained at a reasonably constant level over the last decade: at around five billion euros. This means we achieve more with the same amount of money. Still it remains one of our most important challenges to monitor the cost of medicines sharply.

'Medicines of tomorrow' highlights a different topic. It shows that over twenty types of cancer are being treated with medicines that have been developed in the course of the last five years. More than seven thousand medicines are under development, of which over 1,800 for cancer. Many of these are new 'personalised medicines'. It is interesting that also in the Netherlands, 600 applications for clinical research are submitted every year, approximately two thirds of those applications are filed by pharmaceutical companies. Innovation is clearly very much on the agenda, and this is good news for numerous patients and their families.

Life expectancy in the Netherlands is still on the rise. This is one of the main focuses of 'A better life'. Currently Dutch men reach an average age of eighty years and women live a few years longer. Around the year 2040 they will even live to be ninety. Medicines make a key contribution to this development. However, alertness is still required. Though it is true that people live longer, they suffer from various chronic diseases increasingly. This calls for an adequate cooperation between health care providers, in order to encourage the correct use of medicines while maintaining manageable costs.

Finally it is interesting to look at the financial revenues of medicines. It is well known that they can prolong life and improve the quality of it. But they also save society hundreds of millions of euros every year. Think of extra labour participation and less sick leave. The infographics in this digital brochure show the relevant figures.

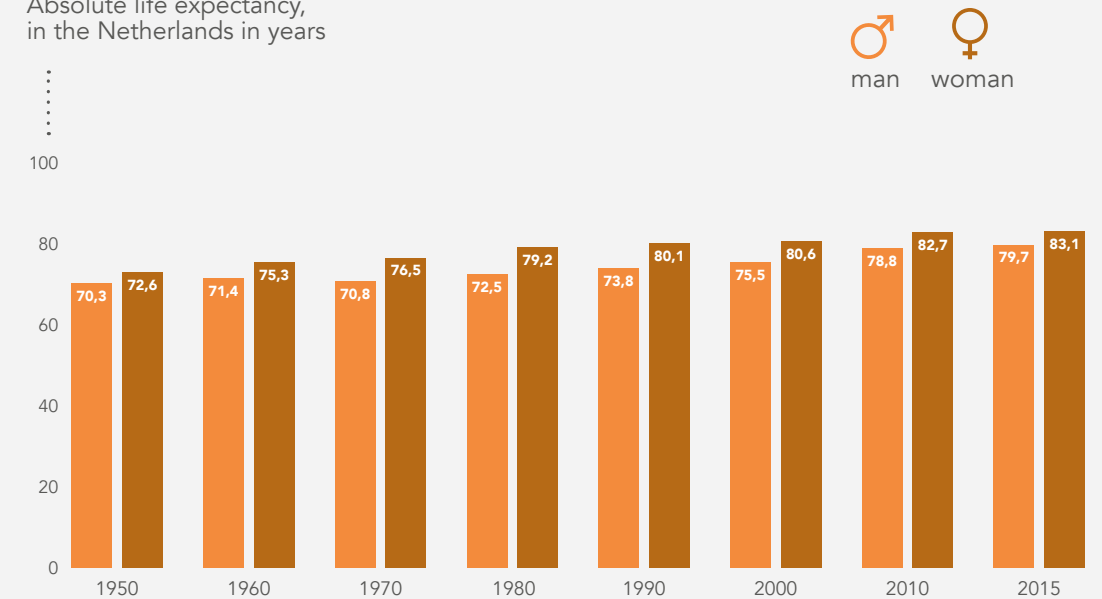
Those who would like to join in the public debate on the future of medicines, are very welcome to do so. Sooner or later, almost every Dutch person will need medicines, so this is a subject that concerns us all. As for every discussion, it is advisable to base opinions on facts as much as possible. This Medicines Monitor provides you with ample starting points.

**Gerard Schouw**

*Director general Association Innovative Medicines*

## MEDICINES PROLONG OUR LIVES

Absolute life expectancy,  
in the Netherlands in years



Source: Centraal Bureau voor de Statistiek (Statistics Netherlands), 2016

Because of their continuous search for new medicines, pharmaceutical companies have contributed considerably to the lengthening of life expectancy of the Dutch population.

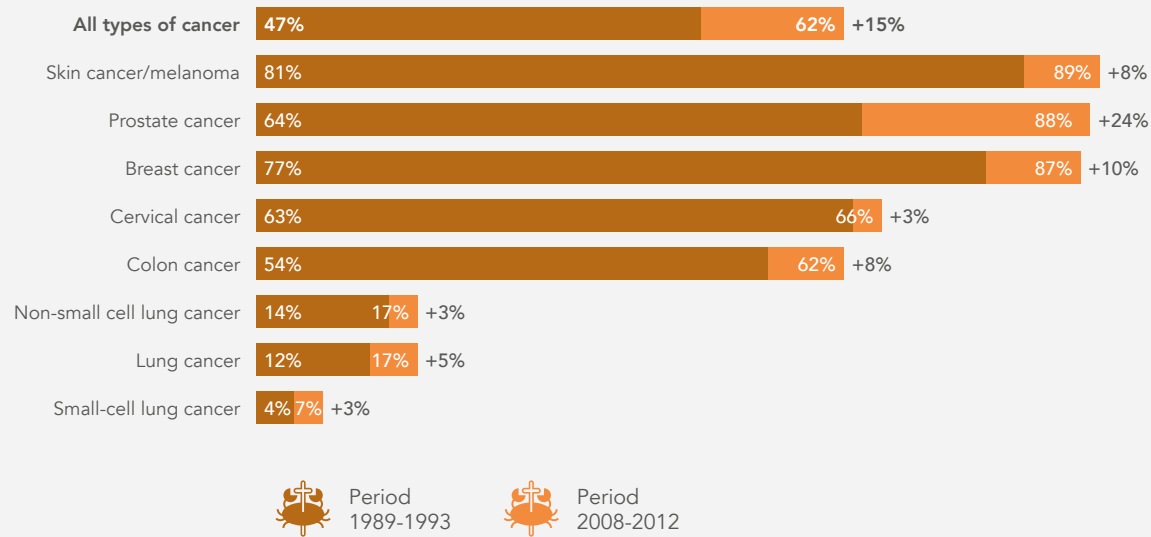
## A BETTER LIFE

Medicines are indispensable for the daily life of a huge number of people. The proper deployment of the right medicine enables them to live a longer and healthier life. It gives them back their freedom, allows them to return to work sooner and helps them to ease their pain. There is also a growing interest in preventive medicines, because of which diseases do not even have a chance to occur.

Innovative medicines for cancer have radically changed the lives of millions of people in Europe. Two in three patients diagnosed with cancer, stay alive for at least five years longer thanks to these medicines. The quality of life improves. Also because sometimes there is no more need for chemotherapy, a treatment that often causes serious side effects. The introduction of 'personalised medicines' – tailor-made medicines – even offers us the perspective that instead of being the equivalent of a death sentence, cancer will become a chronic condition.

## INCREASED CANCER SURVIVAL RATES

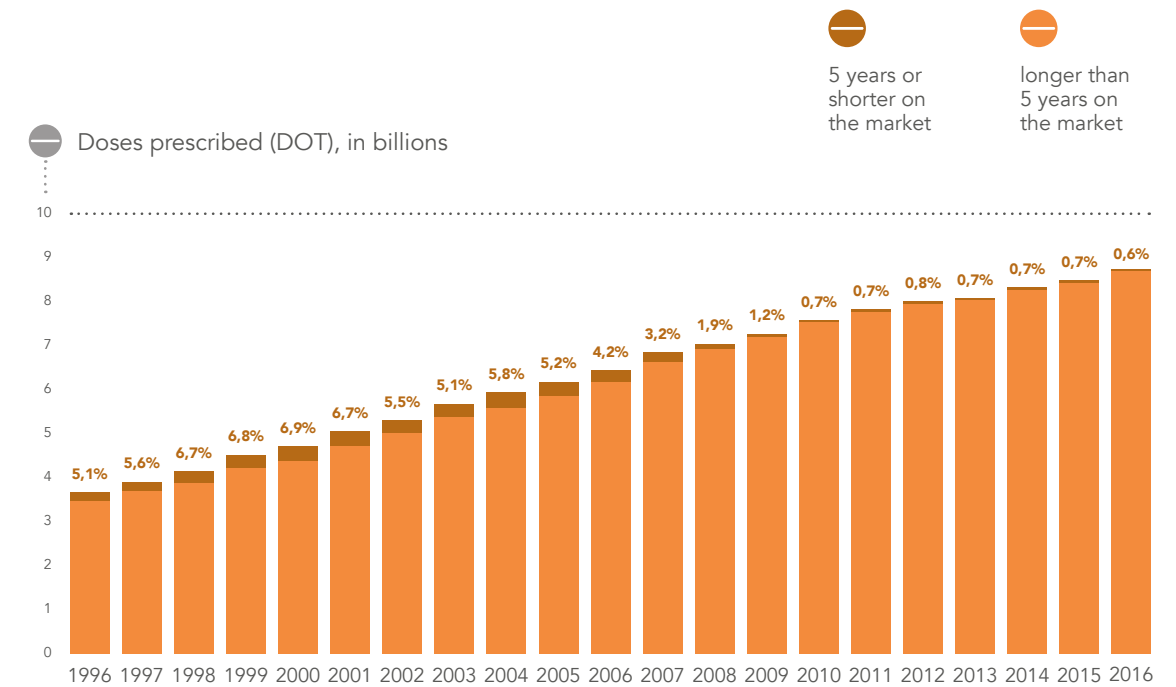
Percentages of increase in five-year survival rates of various types of cancer 1989-1993 compared to 2008-2012



Source: Centraal Bureau voor de Statistiek (Statistics Netherlands), 2016

Major progress is being made in fighting cancer. It is expected that cancer will increasingly be considered a chronic disease, that can be controlled with medicines and treatment.

## NEWEST MEDICINES PRESCRIBED RELATIVELY INFREQUENTLY

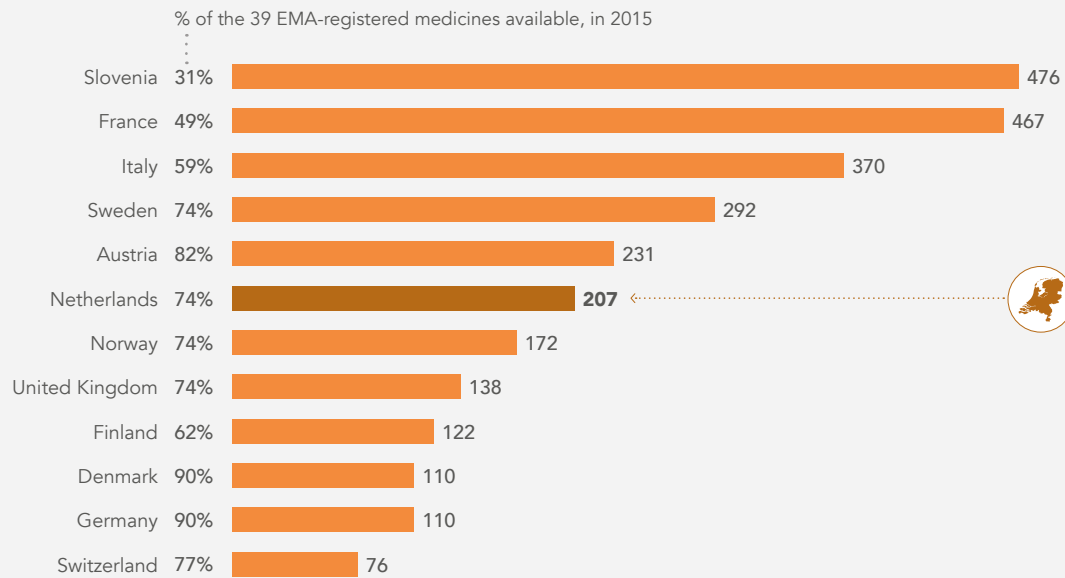


Source: Farminform, 2017

Dutch doctors take a very careful approach to the prescription of medicines that have recently been brought onto the market. As a result, Dutch patients will have to wait longer before being able to profit from the latest medical discoveries. In other EU-countries, doctors tend to opt for a new branded medicine more easily.

## FROM MARKETING AUTHORISATION TO AVAILABILITY FOR THE PATIENT

Average time in days between marketing authorisation and availability for the patient.



Source: EFPIA, Patient W.A.I.T. Indicator, 2016

The average period of time needed in the Netherlands for a medicine to become available for the patient, is 207 days, as from the moment of marketing authorisation. On average, this should take 90 days at most.



1 in 6 Dutch is 65+

### POLYPHARMACY IN ELDERLY PEOPLE

Nearly one million elderly people take more than 5 types of medicines every day. This increases the risk of side effects. Close cooperation between health care workers and involvement of the patient are essential in encouraging the correct use of medicine.

**16.000**

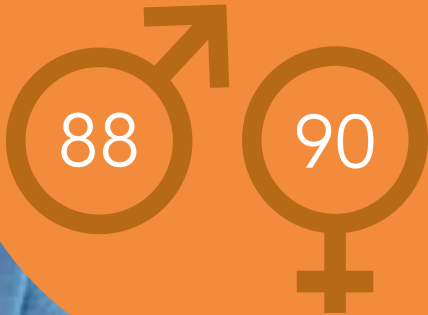
elderly people end up in hospital as a result of erroneous use every year.

Source: RIVM Polyfarmacie bij kwetsbare ouderen (Polypharmacy in vulnerable elderly people), 2013



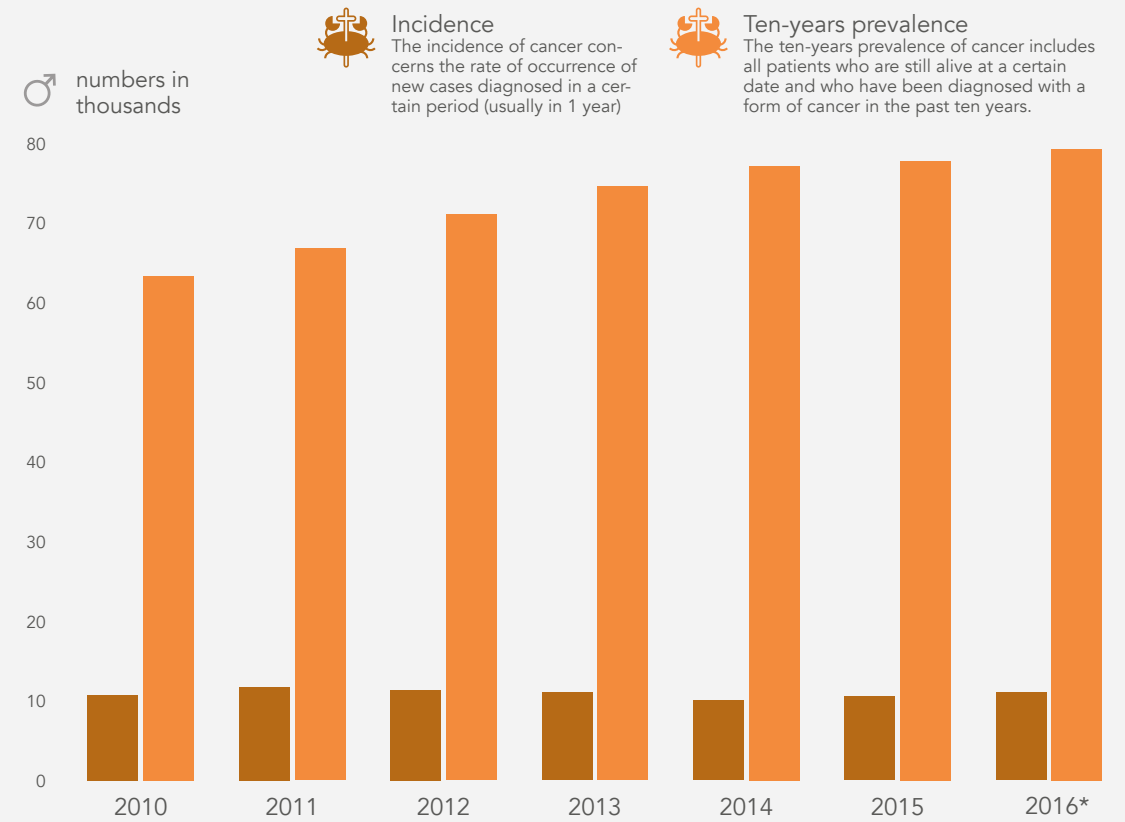
Our life expectancy continues to increase

In 2040 men are expected to reach an average age of 88 years while women will reach the age of 90 on average.  
 Source: IFPMA



## MEN LIVE LONGER WITH PROSTATE CANCER

COMPARED TO THE TOTAL NUMBER OF PATIENTS DIAGNOSED WITH PROSTATE CANCER IN THE PAST 10 YEARS



\* provisional figure  
 Source: www.cijfersoverkanker.nl, 2017

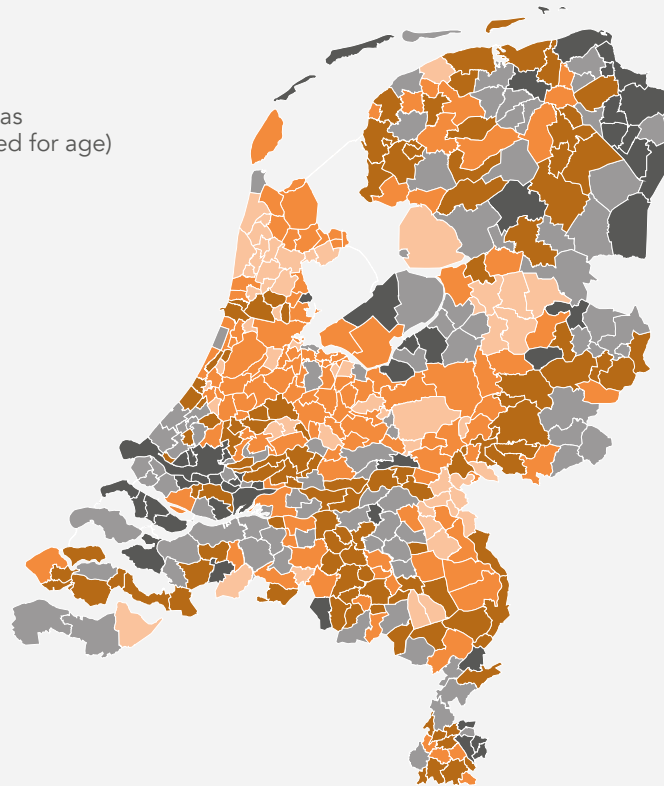
The number of patients diagnosed with prostate cancer remains more or less constant. However, the number of patients surviving after ten years has increased.

# USE OF ANTIBIOTICS IN THE NETHERLANDS IS LOW

## REGIONAL DIFFERENCES IN THE NETHERLANDS

Percentage of the population that was prescribed antibiotics, 2013. (adjusted for age)

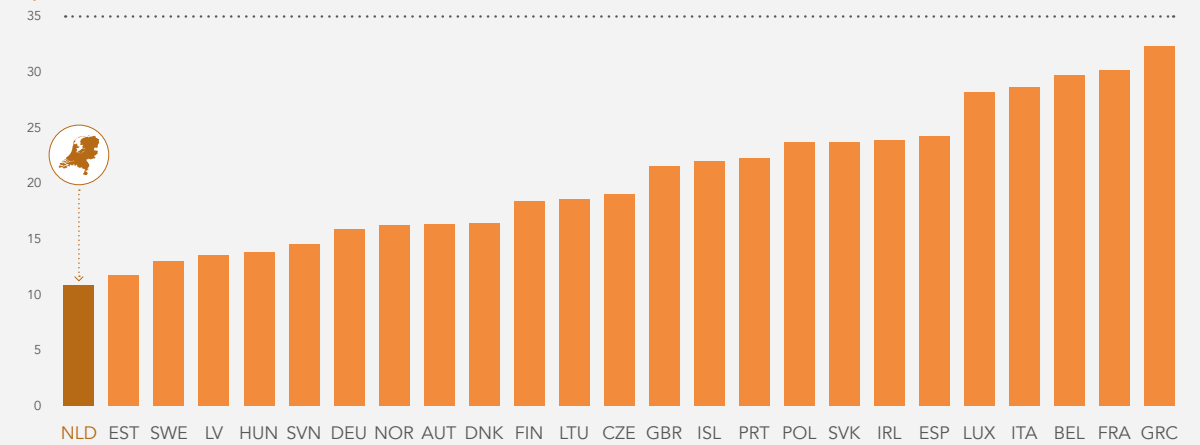
- Less than 19%
- 19 to 21%
- 21 to 23%
- 23 to 25%
- 25% or more



Source: OESO

## WITHIN EUROPE, FEWEST ANTIBIOTICS PRESCRIBED IN THE NETHERLANDS

● Daily doses per 1,000 inhabitants



Source: OESO

The Netherlands leads the way as far as its reserve towards the use of antibiotics is concerned. Yet we clearly see regional differences in the Netherlands. The development of new antibiotics remains vitally important.



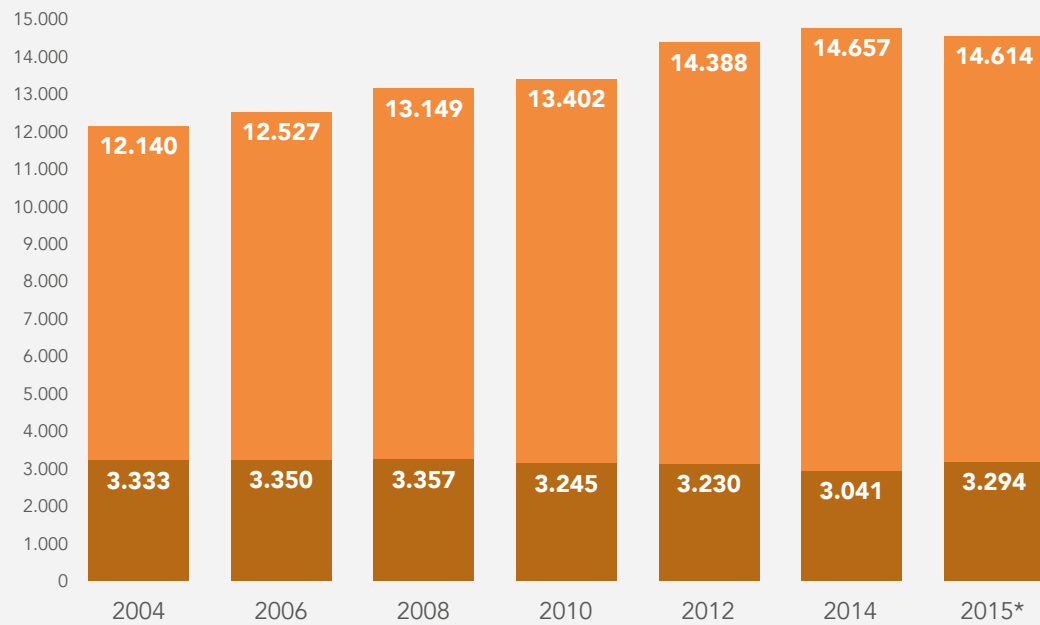
## CHANCES OF BREAST CANCER SURVIVAL ARE IMPROVING



Number of new breast cancer patients in the Netherlands per year



Number of patients who die of breast cancer every year



\* provisional figure

Source: [www.cijfersoverkanker.nl](http://www.cijfersoverkanker.nl) / [www.stateline.nl](http://www.stateline.nl), 2016

The number of new patients diagnosed with breast cancer has continued to grow until 2016. However, the number of patients that die of breast cancer remains almost unchanged. Chances of surviving the disease are improving. Earlier diagnostics, more effective treatments and innovative medicines all contribute to this.



## SUSTAINABLE HEALTH CARE

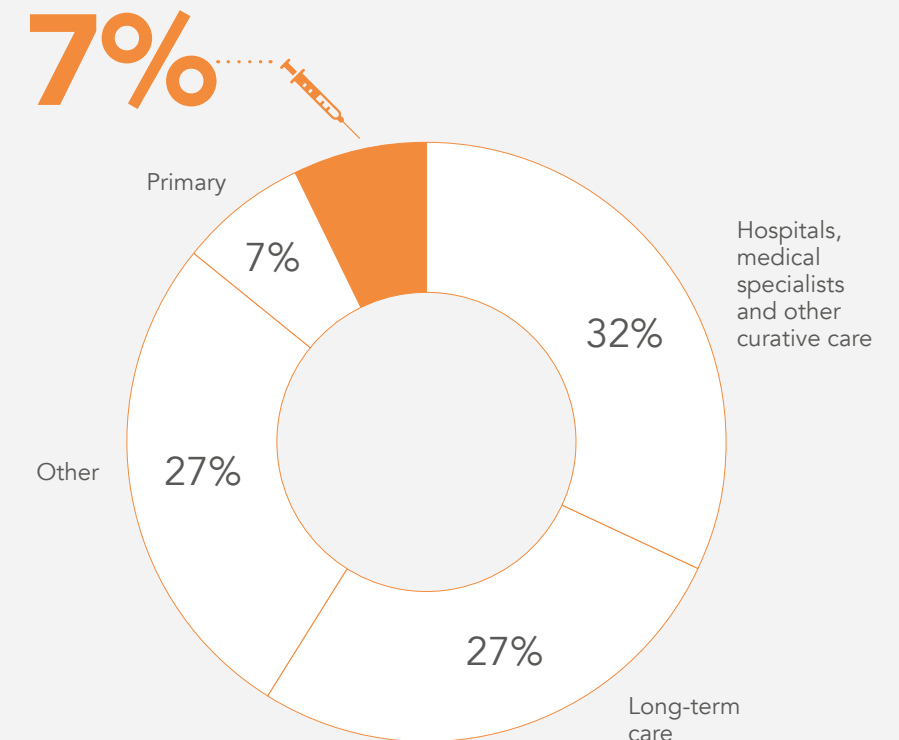
We have been spending approximately the same amount of money on medicines for years in the Netherlands. Less than 10 percent of our total health care budget has been spent on medicines, around 5 billion euro every year. Due to the fact that our population is ageing budgets are under pressure. New technologies provide us with ever-growing opportunities. Beneficial as this may be for the patient, it will increase the cost of our health care. But it can also lead to savings, for example by means of e-health applications at home.

In the field of medicines, we see an increase in 'personalised treatments', through which patients receive real tailor-made care. This type of medicine is often far more effective than the traditional medicines. Furthermore, it can reduce side effects dramatically. The patient profits enormously. But there is a price tag. Particularly because the medicines involved are very complex and entail a complicated and vulnerable production process, mostly for a relatively small patient population.

We all want patients to have and continue to have access to the best medicine available. A medicine that also has been proven to be safe and effective. To achieve this a lot of money is needed. It easily takes 1 to 2 billion euro to develop a new medicine. At the same time, we want our health care to remain affordable. We have no use for new medicines if we don't have the money to pay for them.

Cooperation between pharmaceutical manufacturers and other health care parties is indispensable in the effort to ensure better health care that is lasting and affordable. This is what we subscribe to.

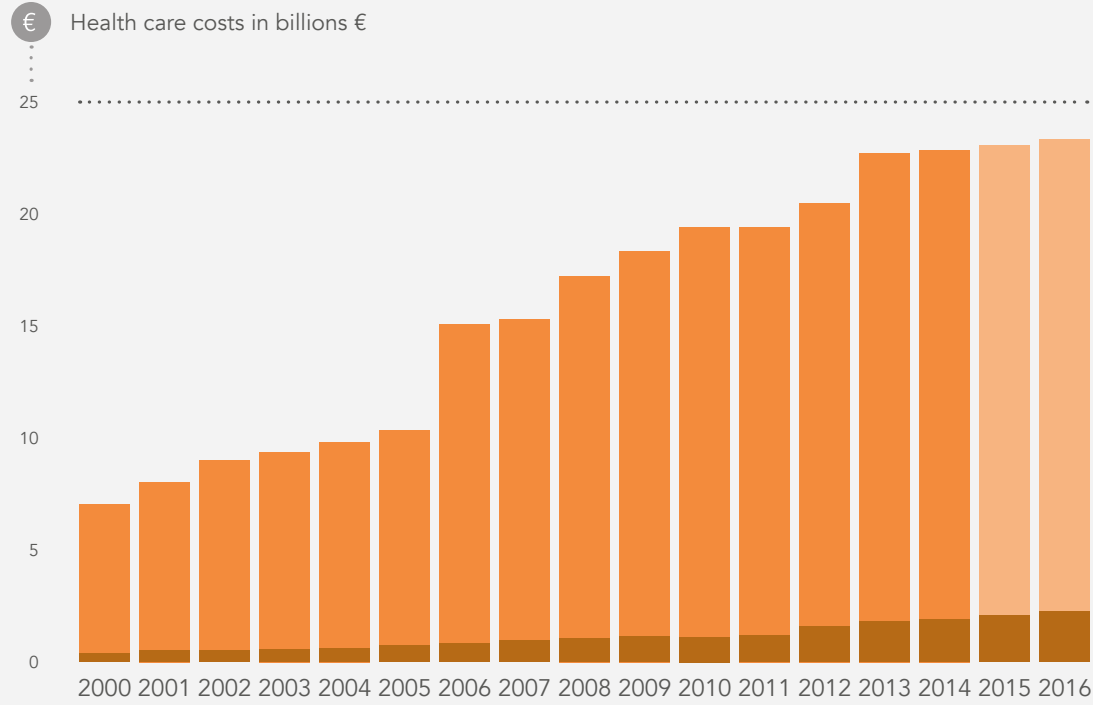
## 7% OF ALL EXPECTED PUBLIC HEALTH EXPENDITURE IS SPENT ON EXTRAMURAL MEDICINES



Source: Dutch National Budget VWS (Ministry of Health, Welfare and Sport) for 2017, Prinsjesdag (Dutch Budget day), 2016

In 2017, we expect to spend 73.5 billion euro on public health. Of this total, 4.8 billion euro (7%) is spent on medicines prescribed by general practitioners (extramural medicines).

## MEDICINE COSTS IN HOSPITAL BUDGET ARE LIMITED



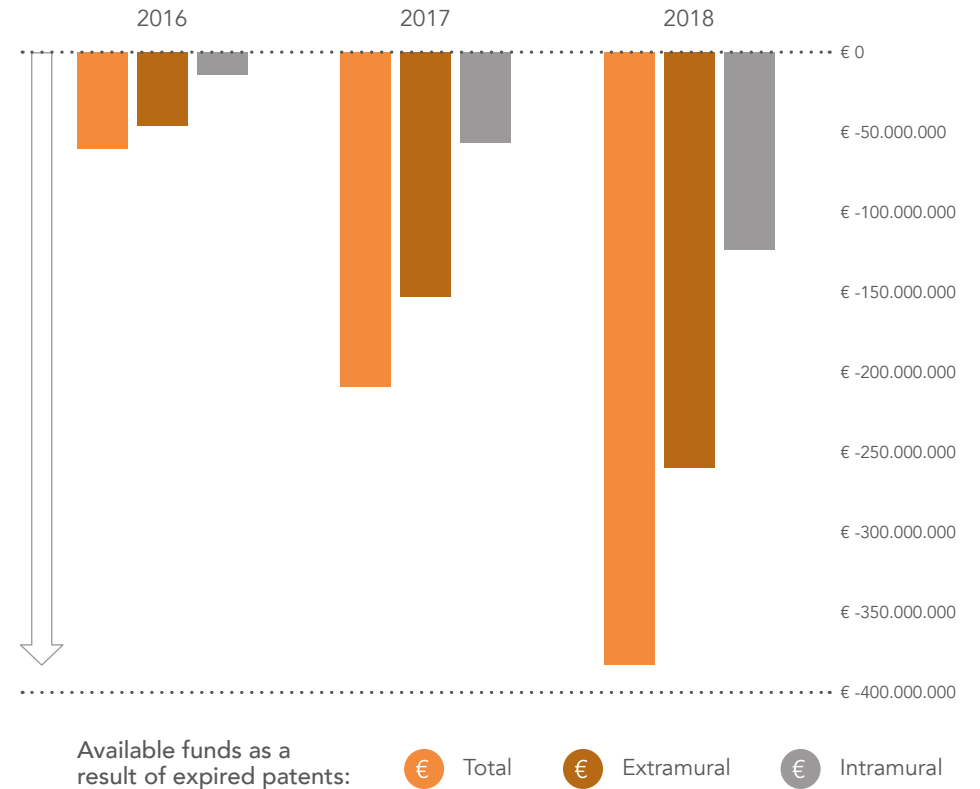
2014 and 2015 Health care Insurance Act costs, provisional figures CBS (Statistics Netherlands) / 2016 Health care Insurance Act costs from the Rijksbegroting (Dutch National budget) 2017

Source: CBS (Statistics Netherlands) 2016; Rijksbegroting (Dutch National Budget) 2016; Farminform 2017; IMS (Market prognosis 2015-2019, Netherlands)

- € Prescription medicines
- € Health care Insurance Act: hospitals and medical specialists

In 2015 costs of medicines in hospitals amounted to over 2 billion euro. The total hospital budget is more than 23 billion euro.

## FUNDS AVAILABLE DUE TO PATENT EXPIRATION



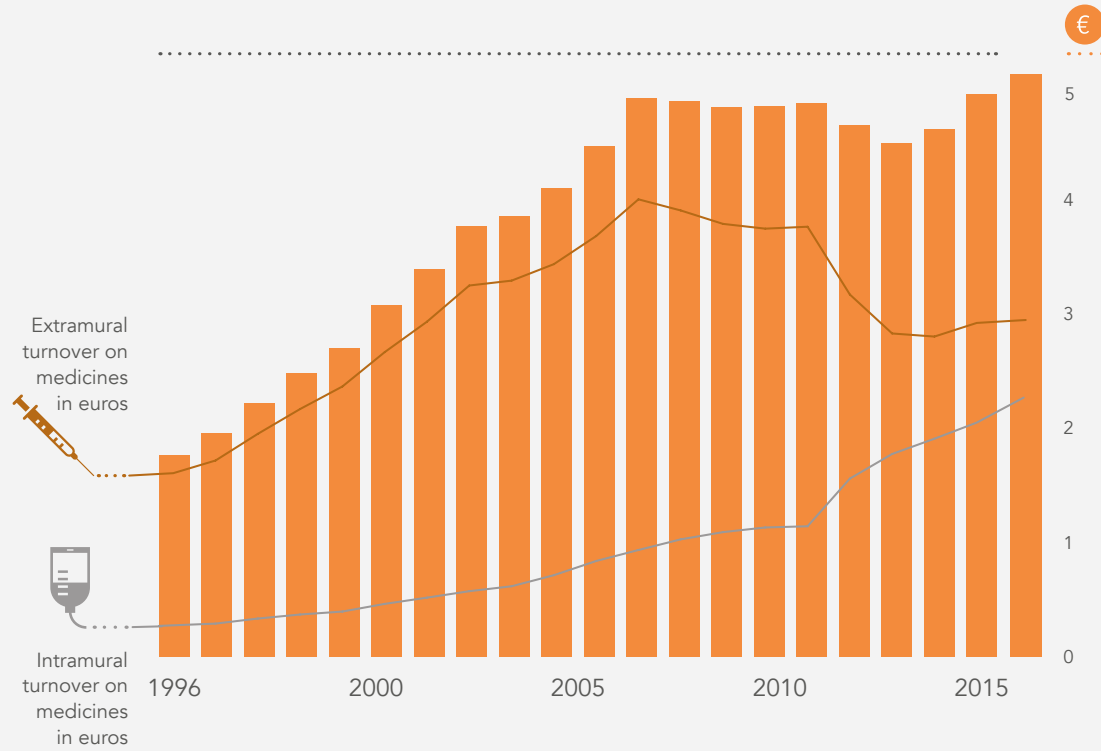
Sources: Life Cycle database – IMS Health, April 2015; IMS market segmentation database NL, April 2015; Farminform AIP turnover MAT December 2014. Based on calculations Association Innovative Medicines.

With the patents that have expired in 2016 and those that will expire in 2017 and 2018, hundreds of millions of euros can be saved as a result of growing competition. This money can be used to pay for the development of new, innovative medicines.

## TOTAL TURNOVER ON MEDICINES REMAINS CONSTANT

Total turnover on medicines in billions of euros

Amounts are based on pharmacy purchase prices. The actual market price is the result of negotiations between health care stakeholders.



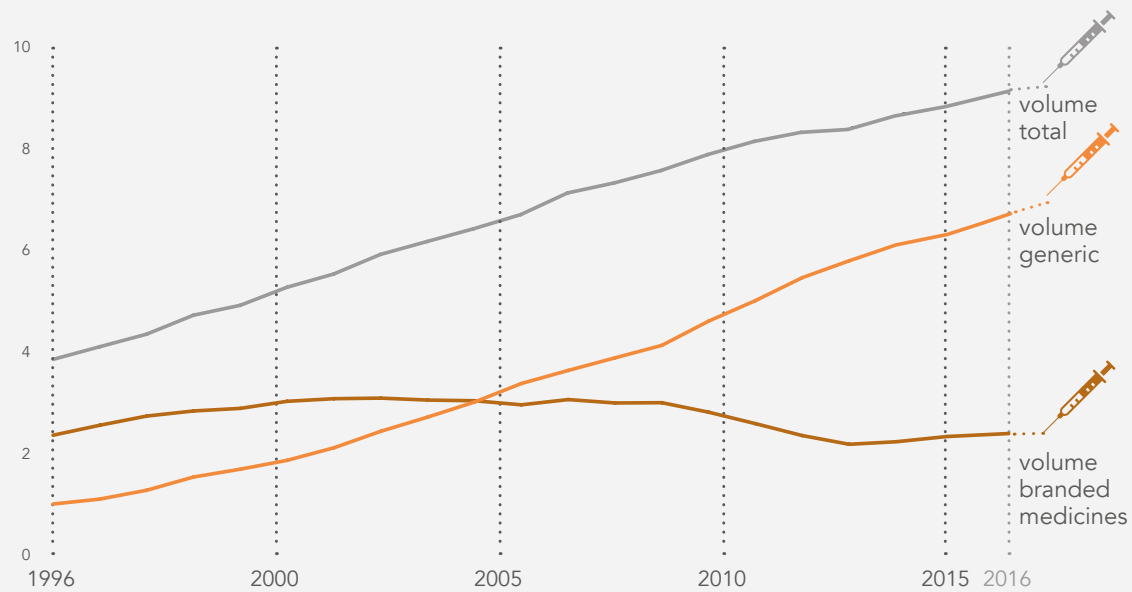
Source: Farminform, 2017

The total turnover on medicines has remained practically constant during the last ten years, around five billion.



## VOLUME MEDICINES IN THE NETHERLANDS INCREASING

Development in billions of standard daily doses

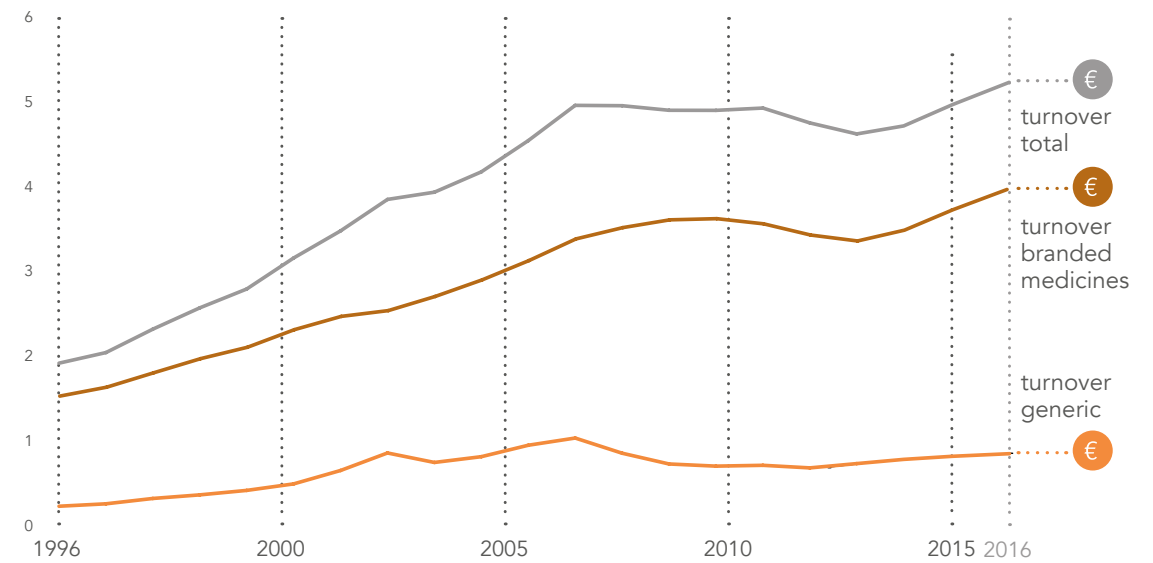


Source: Farminform, 2017

The total number of medicine doses is increasing, up to 9 billion in 2016. This increase is mainly caused by a growing prescription of generics in the Netherlands.

## TURNOVER MEDICINES CONSTANT

Development in billions of euros



Amounts are based on pharmacy purchase prices. The actual market price is the result of negotiations between health care stakeholders.

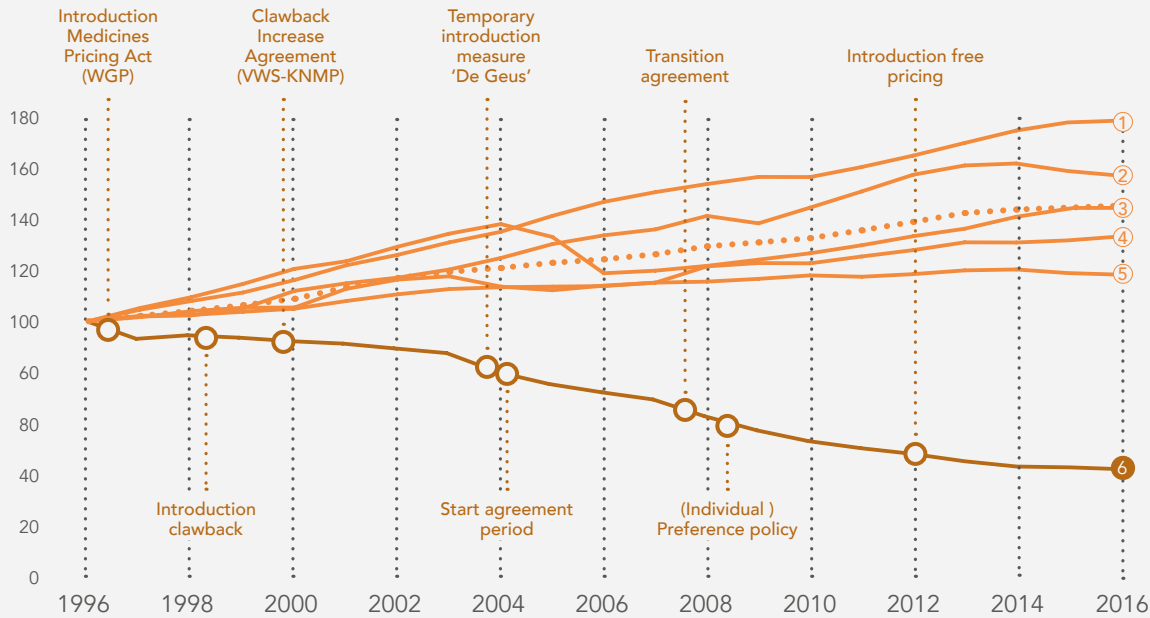
Source: Farminform, 2017

We have been spending around 5 billion euro on medicines for years in the Netherlands. Turnover for generics has increased up to 0.8 billion. Branded medicines show an increase up to 4 billion.

## DECREASE OF AVERAGE MEDICINE PRICE

Consumer price index compared to the price index for prescription medicines (1996 = 100)  
 Since 1996, various measures and agreements have contributed to the price decrease of medicines.

1. Housing, water and energy
2. Transportation
3. Total expenditure
4. Education
5. Food
6. Prescription medicines

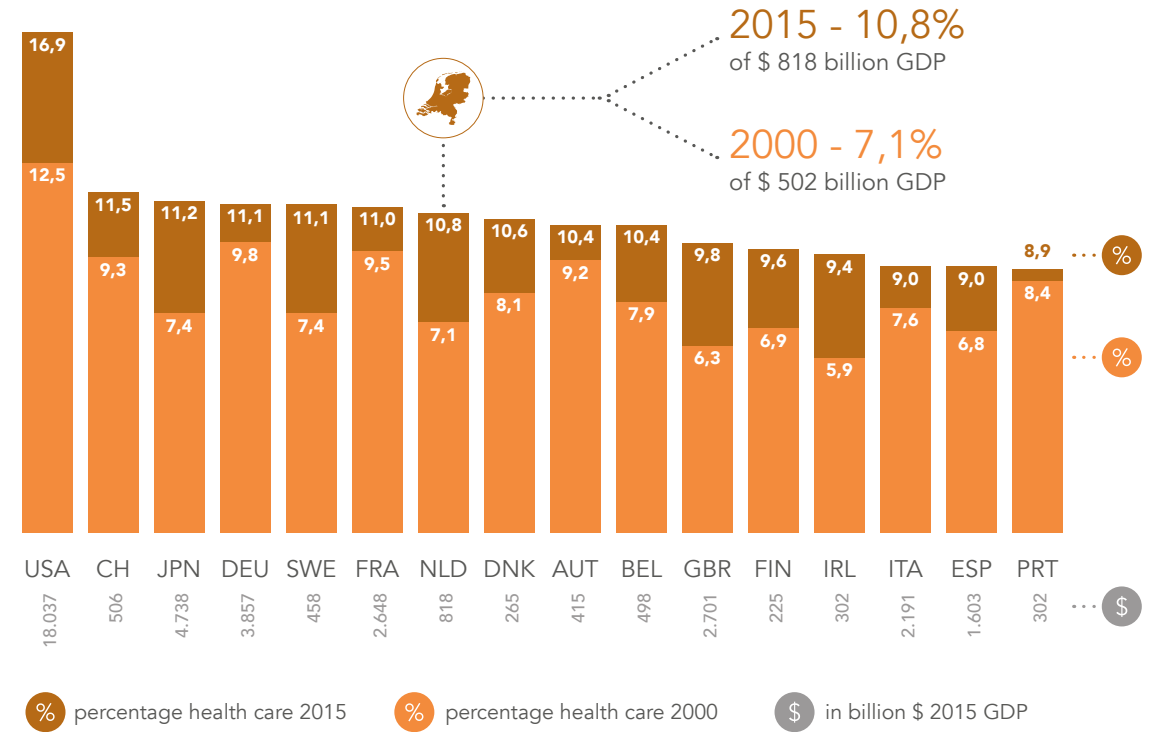


Source: Stichting Farmaceutische Kerngetallen (Foundation for Pharmaceutical Statistics) 2015, Farminform 2016, CBS (Statistics Netherlands) 2016

Compared to other sectors, such as education, transportation and housing, the price index of medicines has decreased considerably in the last 10 years.

## HEALTH CARE COSTS IN THE NETHERLANDS ACCOUNT FOR 10,8% OF TOTAL EXPENDITURE

Total health care expenditure per country as % GDP



OECD 2016

We spend a lot of money on good health care in the Netherlands. In 2015 the amount spent added up to about €5,000 per person. When we compare the costs of health care, we are in 7th position, behind countries like Japan, France, Germany and the US.

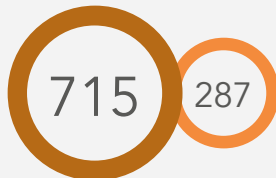
## INNOVATIVE MEDICINES YIELD A LOT OF MONEY

0,6 - 1,6

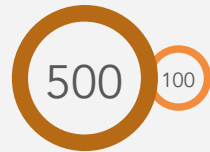
BILLION EURO  
BENEFITS

€ High variant

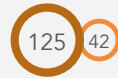
€ Low variant



**DIABETES**  
Extra labour participation and less sick leave thanks to modern diabetes medicines.



**STROKE**  
Stroke-related health care costs decreased thanks to anti-hypertension medication.



**BREAST CANCER**  
Extra labour supply as a result of increased survival of breast cancer thanks to better treatment options.



**DIABETES**  
Saved health care costs as a result of less complications thanks to modern diabetes medicines.



**RHEUMATISM**  
Less absence thanks to biologicals.



**MIGRAINE**  
Less absence thanks to triptans.



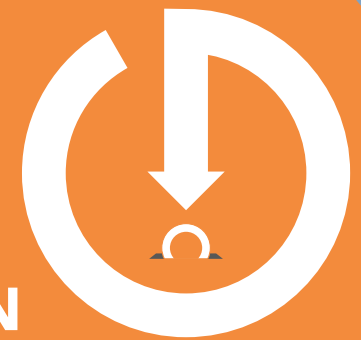
**MULTIPLE SCLEROSIS**  
Lower health care costs, less informal health care and less sick leave as a result of fewer relapses.

Source: Marc Pomp, Arbeidsbaten en uitgespaarde zorgkosten door innovatieve geneesmiddelen (Labour benefits and saved health care costs thanks to innovative medicines), 2015

In addition to the direct benefits such as saved costs, the indirect benefits such as extra labour participation and less sick leave, yield an important social benefit.

Changing the health care system by tearing down partitions will benefit patients and society

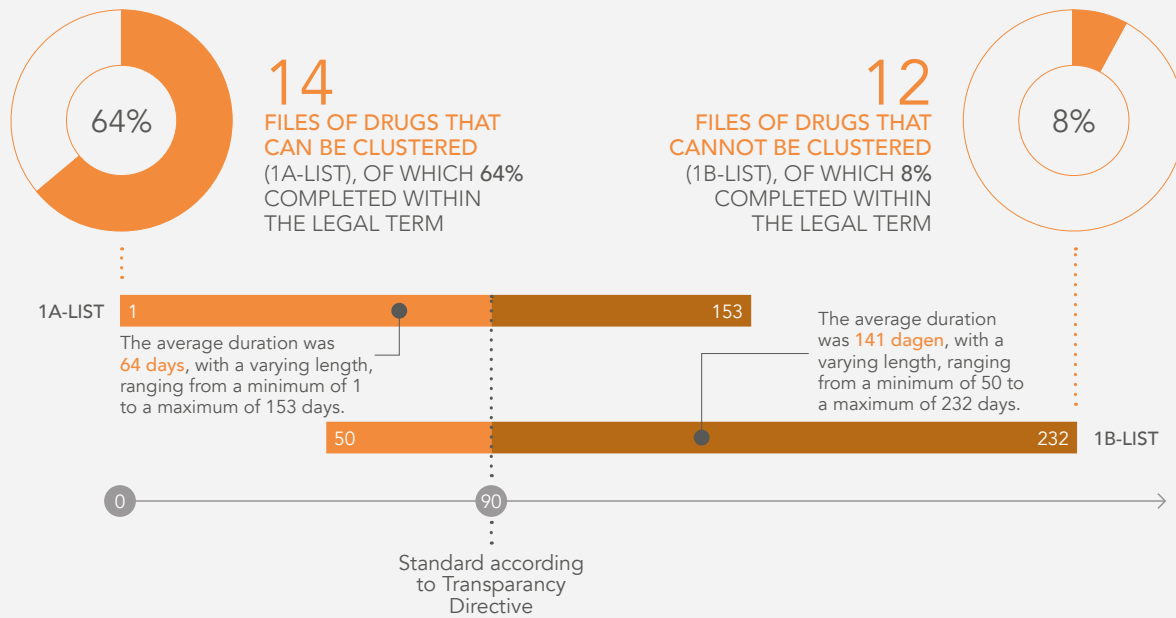
+  
€1,5  
BILLION



With simple methods and by tearing down health care partitions we will be able to save over 1.5 billion euro on health care costs.

Source: SIRM, 2016

## INCLUSION NEW MEDICINES IN BASIC HEALTH INSURANCE PACKAGE



Source: Zorginstituut Nederland (National Health Care Institute), 2016

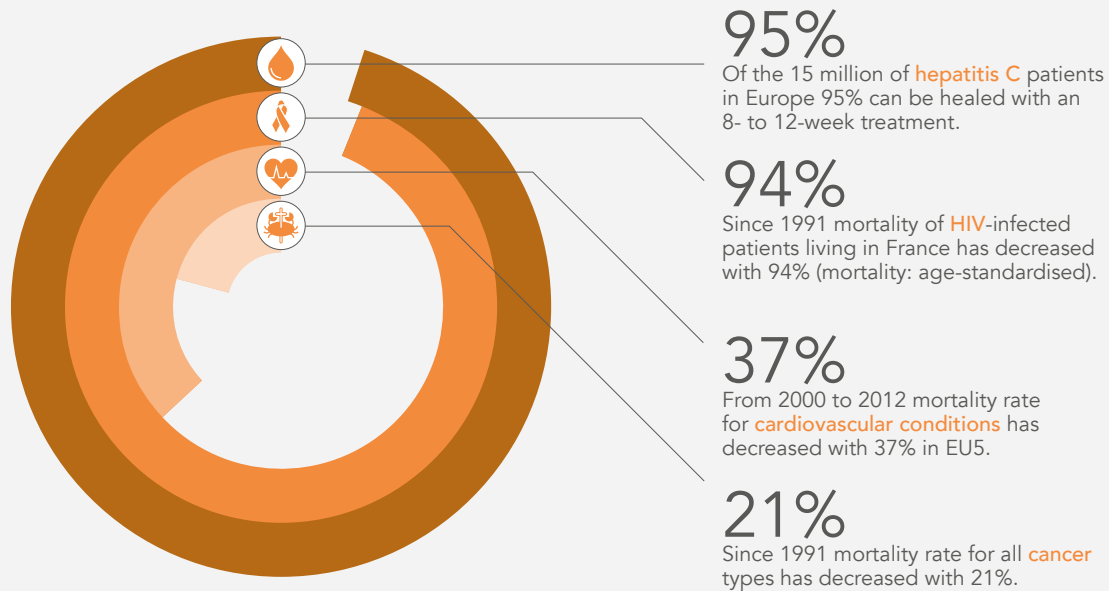
It often takes a long time for new extramural medicines to be included in the basic care package. The reimbursement process sometimes takes up to 232 days, where 90 days is the standard.

## MEDICINES OF TOMORROW

The development of innovative medicines is accelerating at an unprecedented pace. More than 7,000 new medicines are being developed. Such as 'personalised' medicines: very effective drugs, tailor-made for small patient populations. We use more and more biologicals, medicines based on natural or human substances. DNA-diagnostics are used more often. Only a few drops of blood suffice to predict future diseases or, preferably, to prevent them. For the most part, these innovations are developed in laboratories of pharmaceutical companies – breeding ground for the medicines of tomorrow. Not only because of spectacular inventions, but also through meticulous testing of promising drugs for safety and effectiveness. A costly process that requires perseverance. But we are beginning to reap the benefits. For this, cooperation between universities, pharmacists and other health care parties is paramount. The Netherlands has the potential to be among the best in the world in the discovery and development of innovative medicines. That is why we should continue to invest in a thriving research climate.



## MEDICINES ARE AMONG THE MOST POWERFUL FORMS OF CARE IN THE TREATMENT AND CURING OF DISEASES

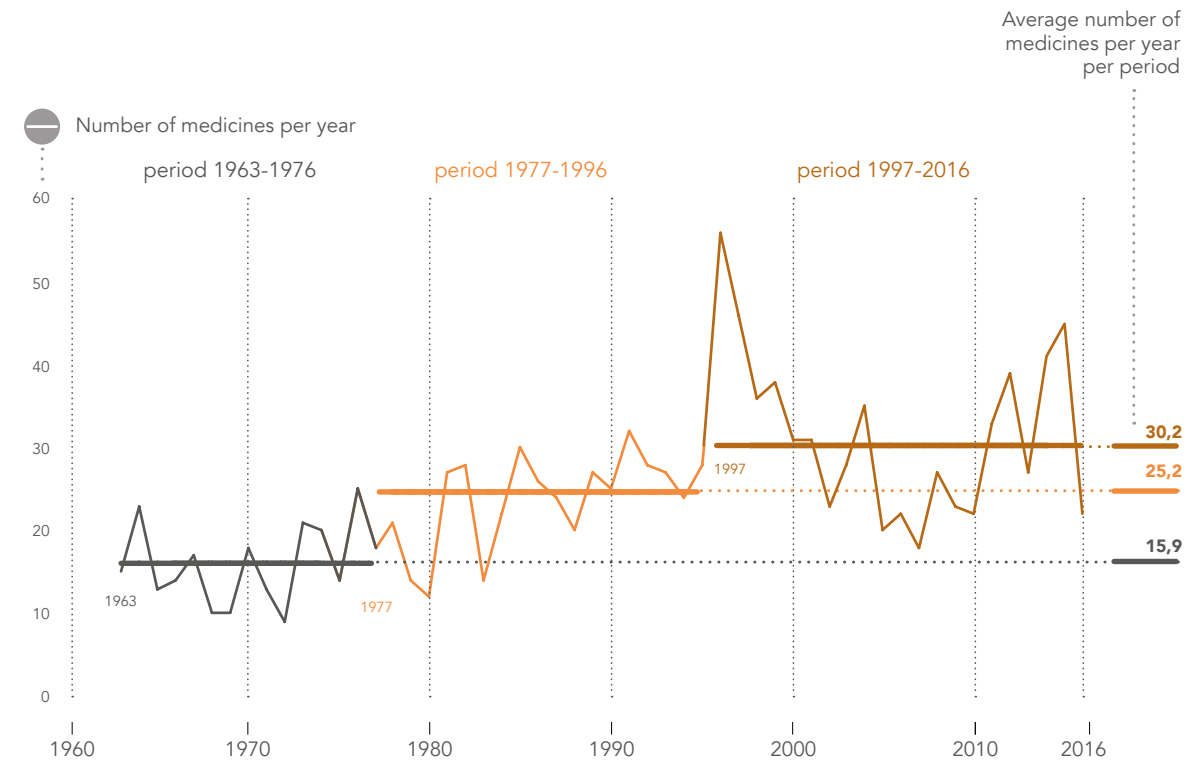


Source: Health Advances analysis

Medicines have a major impact on many diseases. Thanks to medicines, a large number of HIV-infected patients for example enjoy a reasonably good quality of life, and cancer mortality is decreasing.

## MEDICINES WITH NEW ACTIVE INGREDIENT THAT ARE APPROVED BY THE FDA PER YEAR

THAT ARE APPROVED BY THE FDA PER YEAR

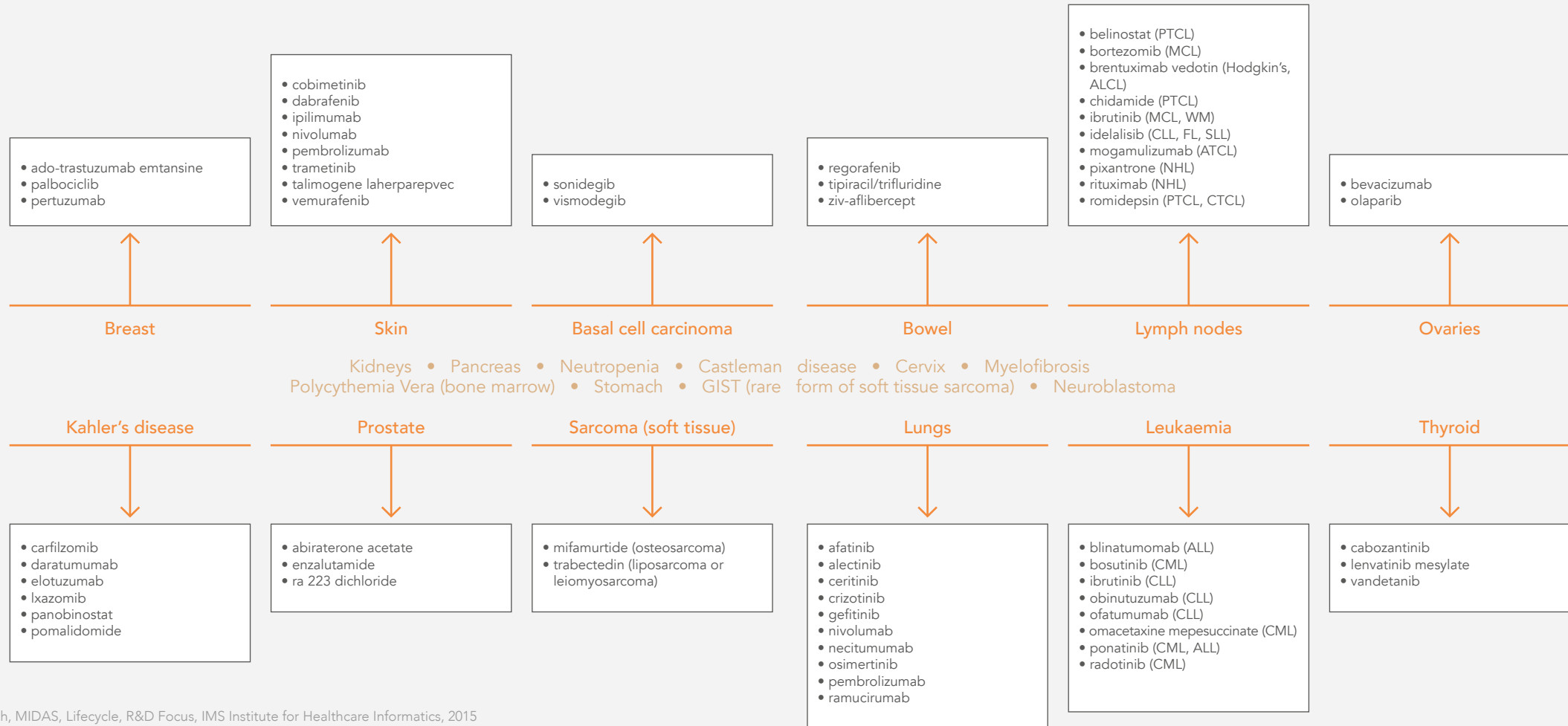


Source: DiMasi, Tufts Center for the Study of Drug Development, Tufts University

FDA = Food and Drug Administration

A growing number of promising medicines with new molecules are being developed.

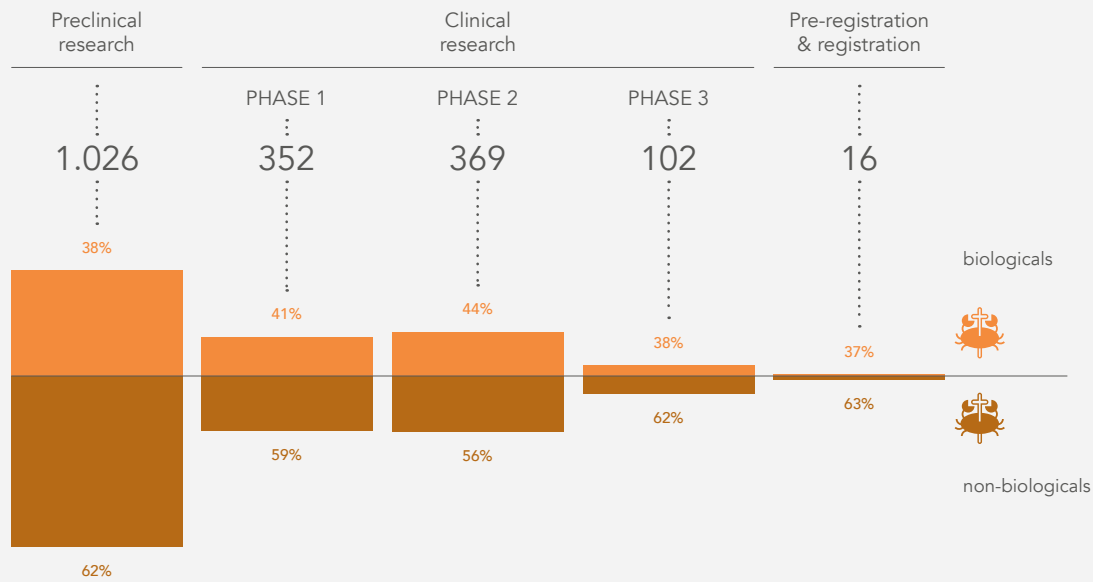
# MANY NEW DRUGS FOR THE TREATMENT OF CANCER



Source: IMS Health, MIDAS, Lifecycle, R&D Focus, IMS Institute for Healthcare Informatics, 2015

Many new drugs have been introduced the past 5 years. New drugs and technologies have completely changed the treatment and curing of cancer.

## OVER 1.800 ONCOLOGICAL MEDICINES ARE BEING DEVELOPED

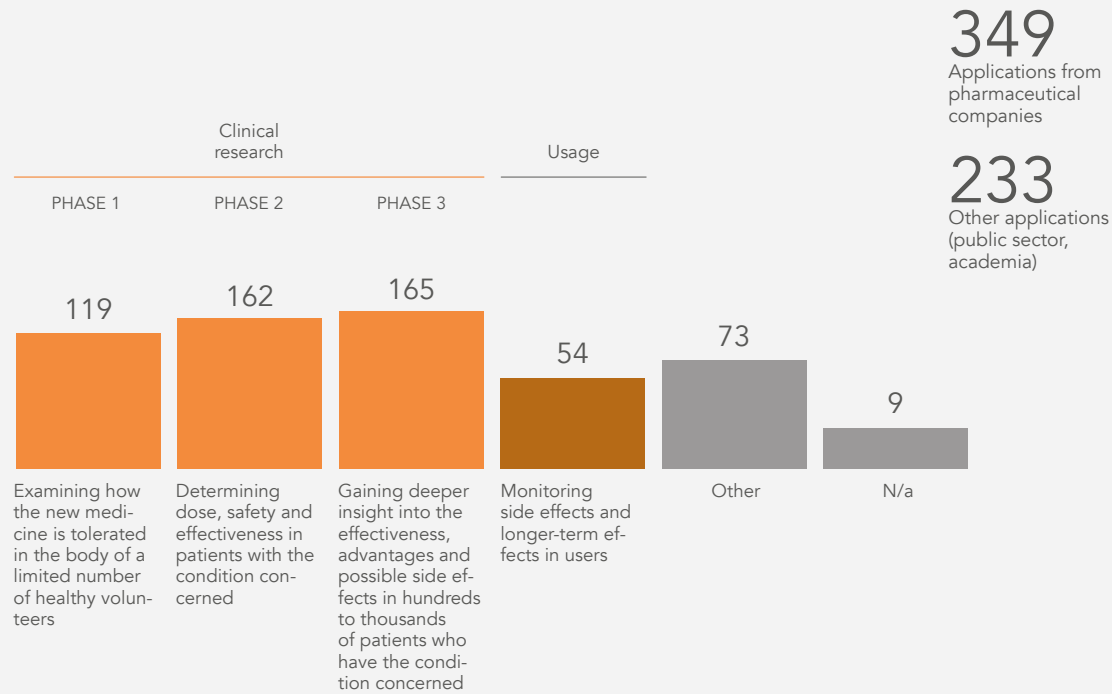


Source: IMS Institute for Healthcare Informatics, 2014

At this moment 7,000 new drugs are being developed, of which 1,800 to treat cancer. Many of these medicines are 'personalised'.



## 600 APPLICATIONS FOR CLINICAL RESEARCH IN THE NETHERLANDS EVERY YEAR

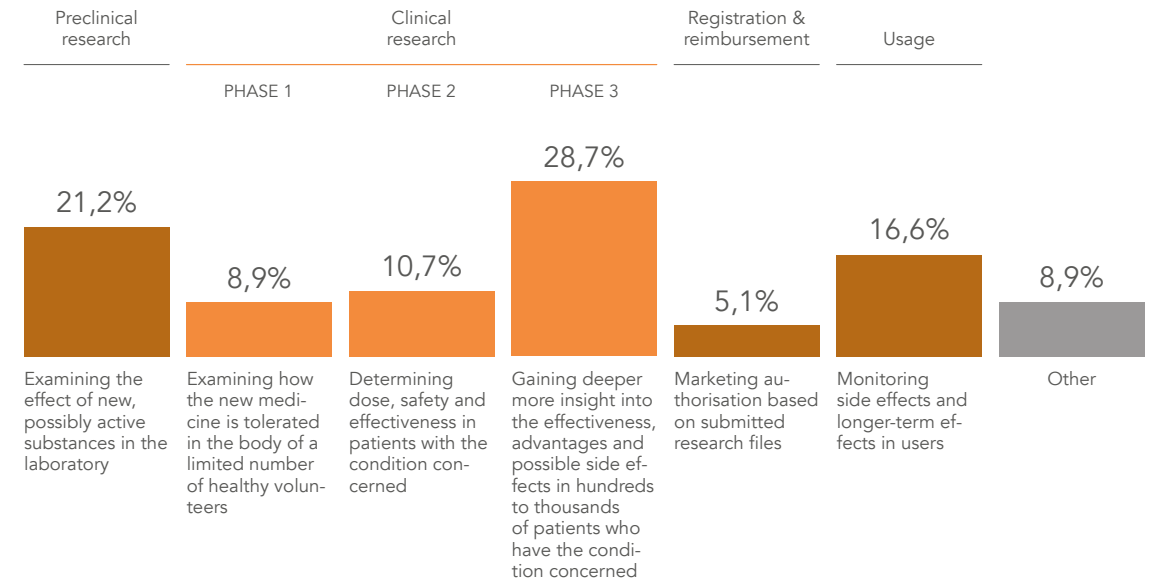


Source: CCMO, 2016

Every year approximately 600 applications for new clinical research are submitted, 349 of which by pharmaceutical companies. Most applications are submitted for phase 3 research.

## BULK OF RESEARCH FUNDS SPENT PER CLINICAL TESTING PHASE

DISTRIBUTION OF INVESTMENTS OVER THE DIFFERENT PHASES OF MEDICINE RESEARCH



Source: EFPIA, 2016

Investments in phase 3 clinical research are highest.

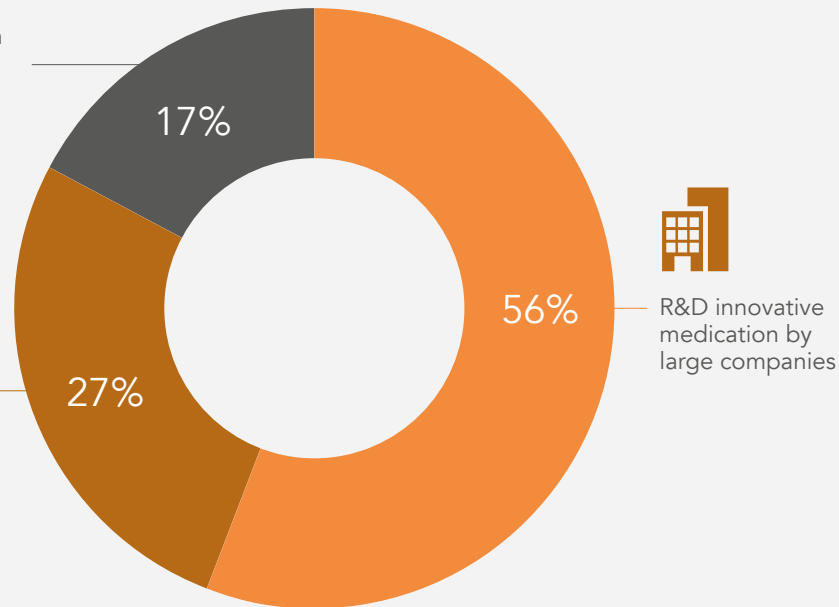
## WHERE DO WE FIND RESEARCH AND DEVELOPMENT (R&D) FOR INNOVATIVE MEDICATION?



R&D innovative medication by academical institutes, public and public-private partnerships



R&D innovative medication by SMEs

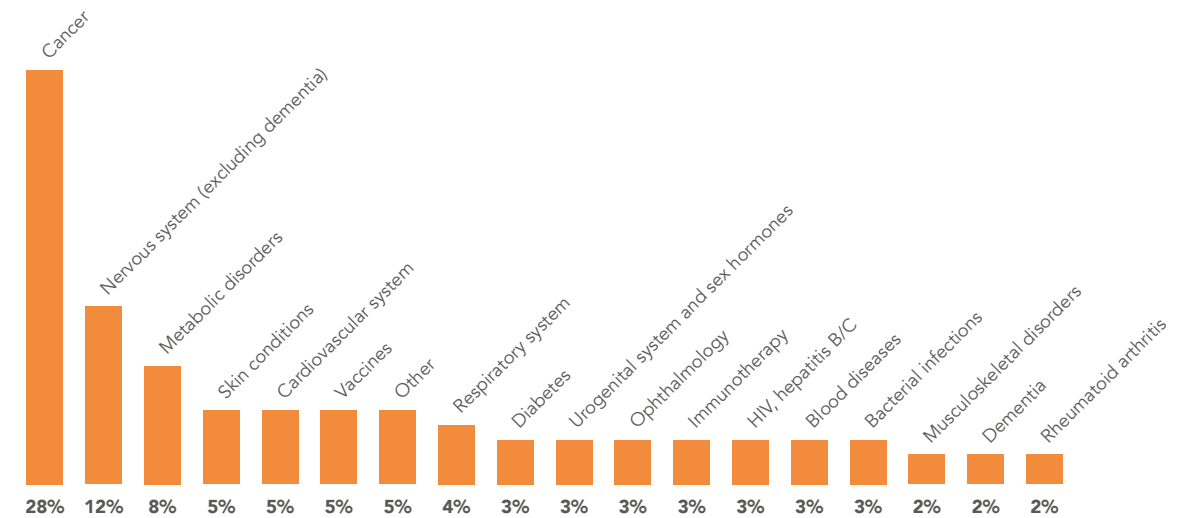


Source: European Medicines Agency, 2014

83 % of the research on new medicines is conducted by pharmaceutical companies.

## MEDICINES OF TOMORROW UNDER DEVELOPMENT

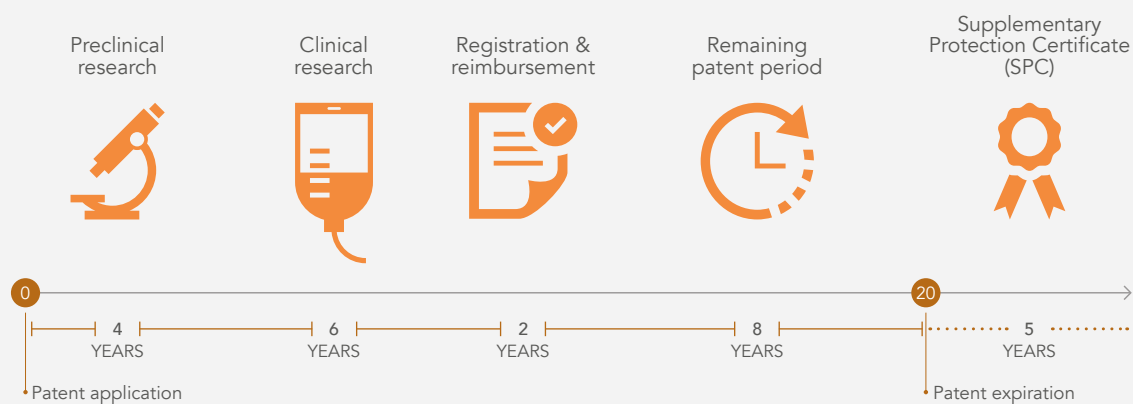
PHASE 1-3 R&D PER DISEASE AREA



Source: OHE from IMS LifeCycle R&D Focus database, 2015

A large number of medicines is under development. Most research is conducted in the field of new cancer medication. In addition, there are many products for metabolic disorders and diseases of the nervous system in the pipeline.

## THE DEVELOPMENT OF A DRUG TAKES 10 YEARS ON AVERAGE



Source: Association Innovative Medicines

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