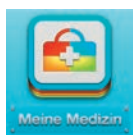


# FACTS & FIGURES 2016

## MEDICINAL PRODUCTS AND HEALTH CARE IN AUSTRIA



# FACTS & FIGURES 2016

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## MEDICINAL PRODUCTS AND HEALTH CARE IN AUSTRIA

## **IMPRINT**

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Please note that numbers have been presented in German format.

### **CURRENCY**

All indicated values are stated in Euros. Sum totals relating to the national economy are generally indicated in millions of Euros. Individual amounts and microeconomic data are generally stated in Euros.

### **REFERENCE PERIODS**

Wherever possible, comparisons are made for the period 1995 through 2014/2015.

### **GENDER NEUTRALITY**

All terms referring to individuals are generic and refer to both genders.

### **LAWS AND TECHNICAL TERMS**

Quotations and technical terms were inserted between parentheses.

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## PHARMIG AT A GLANCE

Pharmig – the association of the Austrian pharmaceutical industry – is a voluntary and party-politically independent representation of interests of the pharmaceutical industry in Austria.

Pharmig represents about 120 member companies with approximately 18,000 employees in total. These companies make up more than 95 per cent of the medicinal product market.

Pharmig and its member companies are committed to secure supply of medicinal products in the health care system to the best effect. Through quality and innovation Pharmig and its member companies ensure both social and medical progress.

The pharmaceutical industry is dedicated to strengthening Austria's role as a pharmaceutical and research location. It constitutes an excellent example for the successful cooperation of economy and science which ultimately aids the further development of our knowledge society.

As a recognised and competent Partner, Pharmig uses its great expertise to support decision makers in the healthcare system and relevant policy areas. In so doing, Pharmig demands fair, reliable and calculable framework conditions for the pharmaceutical industry which support all stake holders and the entire population.

It is the primary aim of the association and of the businesses of the pharmaceutical industry to ensure the best possible supply of medicines for the population of Austria.

**DEAR READER,**

Photo: Photo Simonis

I am delighted to be able to present you with the latest issue of Facts & Figures. As usual, you will find comprehensive information here on healthcare, as well as some innovations:

The Austrian healthcare system is known to be incredibly hospital-oriented. Out of every ten Euro spent on healthcare, almost four Euro are allocated to in-patient treatment. As well as this figure you will also find a list of the hospitals owned by social insurance institutions, the number of hospital beds, and the hospital discharges in an OECD comparison (Chapter 8 “Hospitals in Austria”).

The chapter “Production and Quality Assurance” provides information on the latest status in implementing the European anti-counterfeit guideline, which involves including new security features on all pharmaceutical packaging.

Rare diseases are one of the most researched indication fields of the pharmaceutical industry. The National Action Plan for Rare Diseases (NAP.se), in which Pharmig has cooperated, aims to provide further improvements for patients. More on this in Chapter 3 “Pharmaceutical Research and Development”.

The safety of pharmaceuticals always forms the focus of our actions. More information on pharmacovigilance, the “black triangle” – the labelling of pharmaceuticals that are subject to strict monitoring –, and the costs of drug monitoring can be found in Chapter 5.

The English version “Facts & Figures” is available to download from our website [www.pharmig.at](http://www.pharmig.at), in the Publications section.

I hope you enjoy reading and learning from our new Facts & Figures!

Best wishes,



Dr. Jan Oliver Huber  
General Secretary, Pharmig

# 1 ECONOMIC KEY DATA

## 1.1 SOCIAL EXPENDITURES

The population of Austria in 2014 was 8.543.932. 99% are protected by one of the 22 social insurance institutions (status 2016), in addition to 16 special health care institutions (see page 9). Social expenditures in total amounted to Euro 96.60 billion in 2014.

### SOCIAL EXPENDITURES\* ACC. TO FUNCTION IN 2014

	EURO MILLIONS	PERCENT
<b>Age</b>	<b>42,947.89</b>	<b>44.5</b>
<b>Illness/health care</b>	<b>24,435.67</b>	<b>25.3</b>
of which sickness benefits	673.54	0.7
of which continued payment of wages during illness	2,714.74	2.8
of which in-patient care	11,365.33	11.8
of which out-patient care	8,450.56	8.7
of which prevention of illness/rehabilitation	942.49	1.0
of which other benefits in cash/in kind	289.01	0.3
<b>Family/children</b>	<b>9,193.46</b>	<b>9.5</b>
<b>Surviving dependants</b>	<b>5,990.30</b>	<b>6.2</b>
<b>Invalidity/disability</b>	<b>6,745.50</b>	<b>7.0</b>
<b>Unemployment</b>	<b>5,390.76</b>	<b>5.6</b>
<b>Habitation and social exclusion</b>	<b>1,905.53</b>	<b>2.0</b>
<b>TOTAL</b>	<b>96,609.11</b>	<b>100</b>

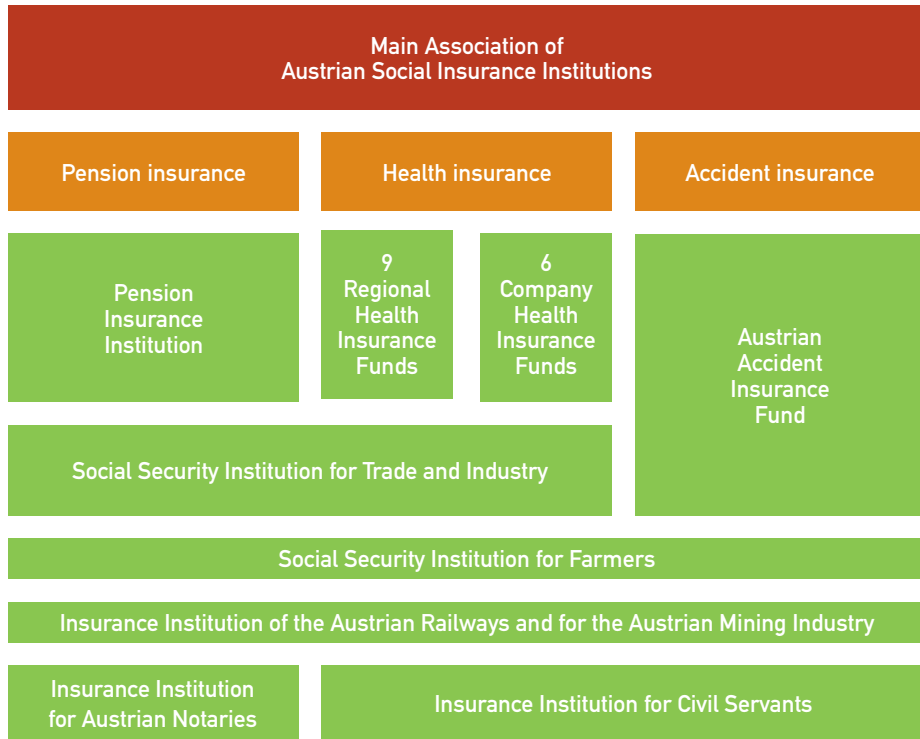
Source: Statistics Austria

\*\* other social benefits: treatments for accidents, benefits in cash from other health care institutions, benefits in kind from welfare/minimum income; data from 2000 onwards can only partially be compared to earlier data.

Social expenditures amounted to Euro 96.6 billion in 2014. 70% of social expenditures consist of retirement benefits and health care services.

## 1.2 THE SOCIAL SECURITY SYSTEM

### THE AUSTRIAN SYSTEM OF SOCIAL SECURITY



Source: HV

The 22 social insurance institutions are coordinated by the Main Association of Austrian Social Insurance Institutions.

- Pension insurance
- Health insurance (“health insurance funds”)
- Accident insurance

Everyone is compulsorily insured with the respective institution for their branch of industry or with their competent Regional Health Insurance Fund. The statutory health insurance system allows for multiple insurance. In addition to the health insurance funds 16 special health care institutions provide health insurance for employees working in regional or municipal administration (see page 9).



## DEVELOPMENT OF PERSONS ENTITLED TO CLAIM AGAINST A HEALTH INSURANCE POLICY BY INSURANCE PROVIDER

ANNUAL AVERAGE 2010/2014

	2010	2014
<b>Total* persons</b>	<b>8,131,341</b>	<b>8,424,406</b>
<b>All insurance providers (insurance ratio**)</b>	<b>8,758,839</b>	<b>9,108,753</b>
Regional health insurance fund – Vienna	1,512,870	1,614,341
Regional health insurance fund – Lower Austria	1,138,826	1,179,774
Regional health insurance fund – Burgenland	191,620	206,162
Regional health insurance fund – Upper Austria	1,165,286	1,203,344
Regional health insurance fund – Styria	899,042	933,961
Regional health insurance fund – Carinthia	419,963	429,423
Regional health insurance fund – Salzburg	439,052	452,535
Regional health insurance fund – Tyrol	551,444	874,779
Regional health insurance fund – Vorarlberg	307,763	316,334
Company health insurance fund Austria Tabak BKK	3,093	2,041
Company health insurance fund Transport companies	19,458	19,648
Mondi	2,852	2,620
Company health insurance fund VABS	12,994	13,073
Company health insurance fund Zeltweg	4,218	4,262
Company health insurance fund Kapfenberg	9,975	9,913
Insurance Institution of Austrian Railways and Mining Industry	247,116	226,964
Insurance Institution for public servants	757,620	789,288
Social Security Institution for Trade and Industry	694,567	764,455
Social Security Institution for Farmers	381,080	365,836

absolute figures

Source: HV

\* Each individual is counted once

\*\* The statistics do not count the number of persons with health insurance but rather the health insurance ratios. Persons with more than one insurance provider are counted once with each insurance provider.

## NUMBER OF EMPLOYEES IN HEALTH INSURANCE INSTITUTIONS

ANNUAL AVERAGE 2014

	Number of staff in total	Administration and invoicing	General medical services	Special institutions*
<b>Total</b>	<b>13.355</b>	<b>7.934</b>	<b>863</b>	<b>4.558</b>
Regional health care insurance funds	10.238	5.793	742	3.703
Company health care insurance funds	166	75	15	76
Insurance Institution of Austrian Railways and Mining Industry	545	285	24	236
Insurance Institution for Public Servants	1.445	880	39	526
Social Security Institution for Trade and Industry	546	511	18	17
Social Security Institution for Farmers	415	390	25	-

absolute figures

Source: HV

\* general out-patient clinics, out-patient dental clinics, other treatment institutions, out-patient clinics for children and teenagers, institutions for prevention and teenagers, as well as rehabilitation centres and sanatoria.

## SPECIAL HEALTH CARE INSTITUTIONS

In Austria the Insurance Institution for Public Servants is the only competent social insurance agency concerning health and accident insurance for civil servants in federal government, and for most civil servants in federal state government and municipal administration. In addition, there may exist further institutions for health care of civil servants in federal state government and municipal government. Therefore there are 16 other special health (and accident) insurance institutions for civil servants in federal state and municipal government, in addition to the Insurance Institution for Public Servants. These special health care institutions are no social insurance agencies and are not part of the Main Association of Austrian Social Insurance Institutions and are not subject to surveillance through authorities.

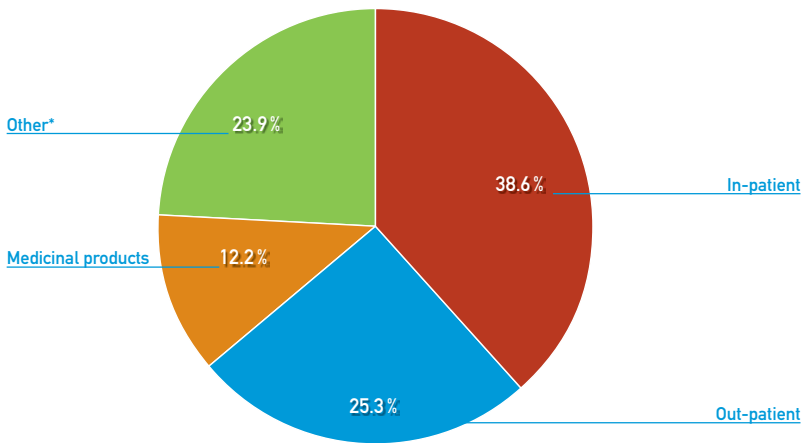
Federal State	Number	Special health care institutions and/or accident insurance institution
Carinthia	1	of civil servants of the city of Villach
Lower Austria	1	of civil servants of the town of Baden
Upper Austria	6	of civil servants of the city of Linz of the towns of Upper Austria of civil servants of the federal state government of Upper Austria of teachers of Upper Austria of civil servants of the magistracy of Steyr of civil servants of the city of Wels
Salzburg	2	of civil servants of the town of Hallein of civil servants of the magistracy of Salzburg
Styria	1	of civil servants of the city of Graz
Tyrol	4	of teachers of Tyrol (on federal state level) of civil servants of the federal state government of Tyrol of civil servants of the municipal governments of Tyrol of civil servants of the city of Innsbruck
Vienna	1	of civil servants of the city of Vienna
<b>Austria</b>	<b>16</b>	

Source: Hofmayer, M.M (2013). Das österreichische Gesundheitssystem. Berlin: Medizinisch Wissenschaftliche Verlagsgesellschaft

## 1.3 HEALTH CARE EXPENDITURES

According to the "System of Health Accounts" (SHA), health expenditure consists of running health costs and investments in the healthcare sector.

In 2014, health expenditures in Austria amounted to some EUR 36.3 billion, which corresponds to a share in GDP of 11 %.



Source: calculated by the Institute of Pharmaco-economic Research (IPF) with reference to the following data: IMS, Austrian statistics, HV

\* med. products; equipment; insurance benefits; emergency medical services; public health services; investments; training and education in health care, etc.

The largest proportion of 38.6% was spent on in-patient care. At the same time, expenditure on out-patient care made up 25.3% and expenditure on medicinal products 12.2%.

Expenditure on medicinal products includes consumption in pharmacies and hospitals, incl. VAT. The proportion between expenditure on medicinal products and total health expenditures in % is defined as the pharmaceutical ratio.

The pharmaceutical ratio also mirrors the varying significance of the healthcare settings ( in-patient, out-patient, drug therapy) at national level.

## HEALTH CARE FINANCING

	2013		2014	
	EURO MILL.	PERCENT	EURO MILL.	PERCENT
<b>Public health care financing</b>	<b>26,174</b>	<b>74.5</b>	<b>27,117</b>	<b>74.8</b>
In-patient care*	11,346	32.3	11,803	32.6
Out-patient care	6,168	17.6	6,373	17.6
Long-term care at home**	2,393	6.8	2,341	6.5
Ambulance and emergency medical services	346	1.0	359	1.0
Pharmaceutical products, medical equipment	3,324	9.5	3,530	9.7
Prevention and public health services	484	1.4	513	1.4
Health care administration: State incl, social insurance	708	2.0	723	2.0
Public investments	1,405	4.0	1,475	4.0
<b>Private health care financing</b>	<b>8,960</b>	<b>25.5</b>	<b>9,136</b>	<b>25.2</b>
In-patient care*	2,125	6.0	2,194	6.1
Out-patient care	2,710	7.7	2,787	7.7
Pharmaceutical products, medical equipment	2,100	6.0	2,134	5.9
Health care administration private insurance	516	1.5	522	1.4
Investments (private)	1,000	2.8	983	2.7
Non-profit private organisations***	457	1.3	460	1.3
Services provided by company physicians	53	0.2	55	0.2
<b>TOTAL</b>	<b>35,134</b>	<b>100</b>	<b>36,253</b>	<b>100</b>

Source: Statistics Austria

\* Includes in-patient health care services in nursing homes.

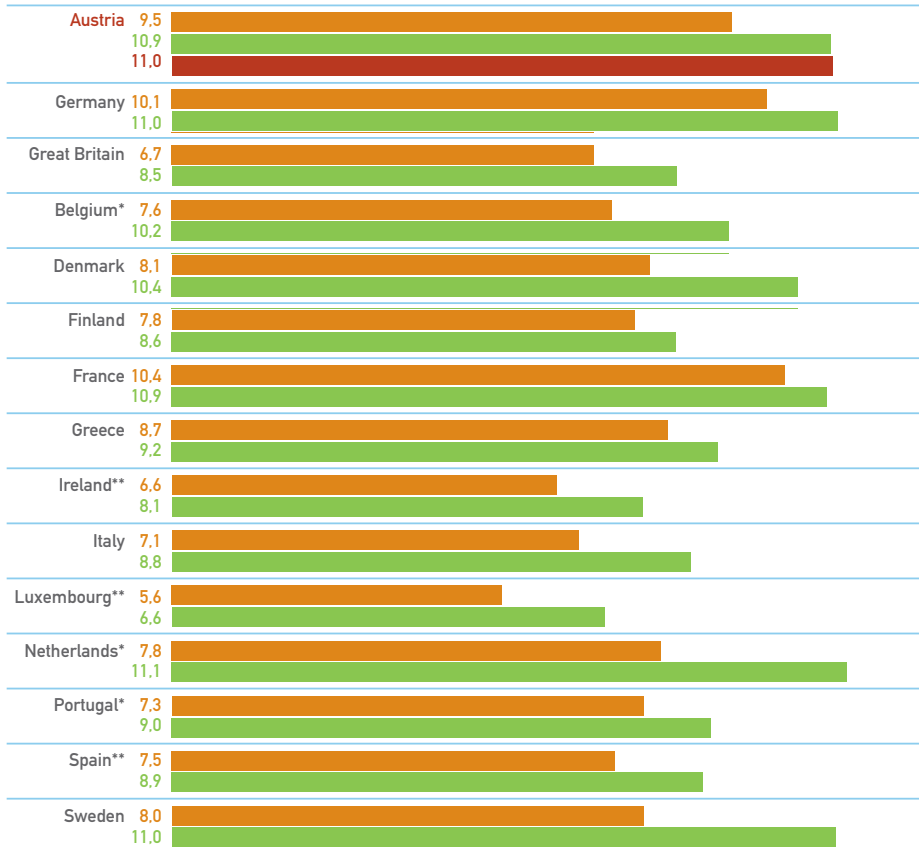
\*\* Public spending for long-term care at home also includes federal and provincial nursing allowances.

\*\*\* Includes expenditures of non-profit private organisations and other health-related services.

When broken down into public and private expenditure on health care, we see that more than three quarters of the expenditure was funded by public funds. In the period between 1990 and 2014, expenditure on health care rose on average by 5% each year.

## COMPARATIVE HEALTH CARE EXPENDITURES

### HEALTH CARE EXPENDITURE IN % OF GDP



Source: Statistics Austria, OECD

1995 2013 2014

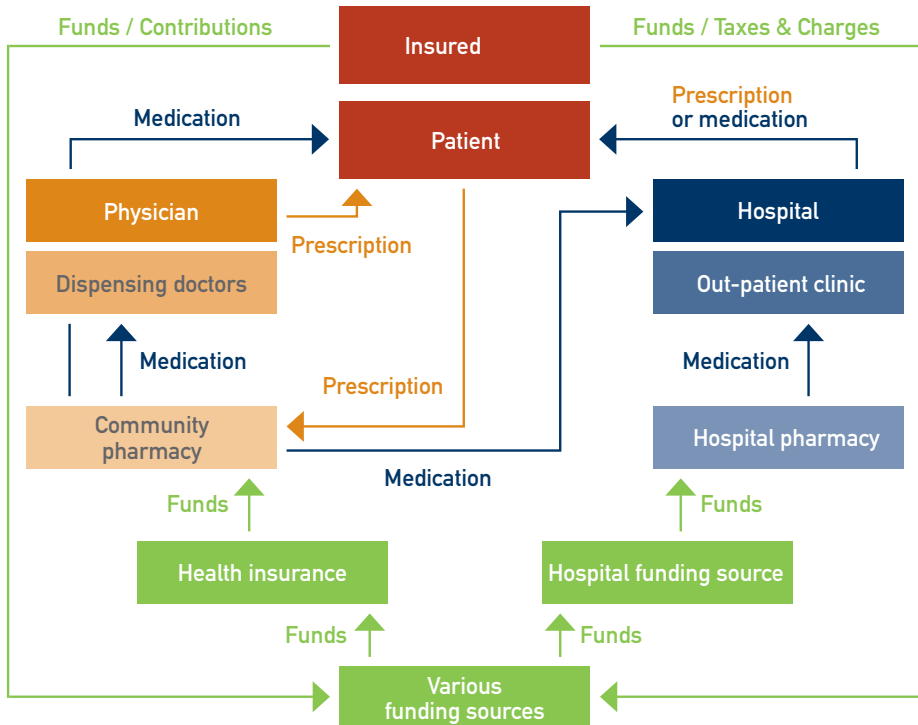
\* Differences in methodology

\*\* 2012

Due to national differences in the health care systems, however, and in view of varying data availability in the individual countries, international comparisons can only be indicative. When making a comparison of expenditure on health care at an international level, it should be remembered that SHA has not yet been implemented in all the countries shown (Greece, Ireland and Italy).

## 1.4 STRUCTURE OF THE HEALTH CARE SYSTEM

### STRUCTURE OF AUSTRIA'S HEALTH CARE SYSTEM



Patients have four different levels of health care providers at their disposal:

- Physicians (general practitioners and specialists), dispensing or non-dispensing
- Hospitals and out-patient wards
- Community pharmacies
- Other medical/therapeutic services

## 1.5 EMPLOYEES IN THE HEALTH CARE SYSTEM 2014

As per December 31, 2014, Austria's 8.5 million inhabitants were supplied by 1,328 public pharmacies (with 28 branches), 46 hospital pharmacies and 866 dispensing doctors (who dispense medicines directly to patients).

	NUMBER
<b>Practicing physicians</b>	<b>48,019</b>
General practioners	14,130
of whom solely employed physicians	6,026
Medical specialists	22,643
of whom solely employed physicians	10,815
Dentists	4,893
of whom solely employed physicians	578
Physicians in training	6,353
of whom solely employed physicians	6,353
<b>Pharmacy employees</b>	<b>16,114</b>
Pharmacists, employed or self-employed	5,647
Qualified staff	6,689
Other employees	3,778
<b>Medical experts in hospitals</b>	<b>113,398</b>
Physicians	24,099
Nursing staff	89,299

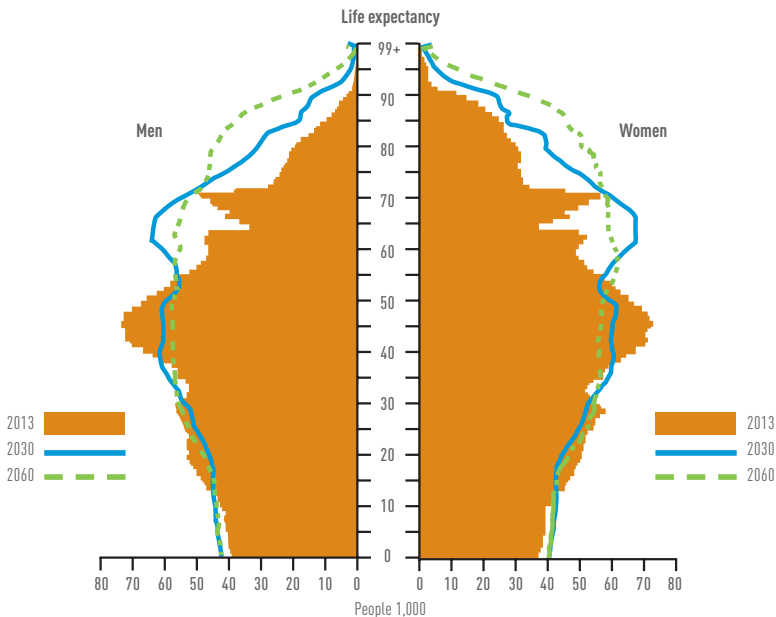
Source: Statistics Austria, Austrian Chamber of Pharmacists

In total about 178,000 people are employed in the healthcare sector.

## 2 POPULATION STRUCTURE AND DEMOGRAPHIC TRENDS

### 2.1 POPULATION STRUCTURE

#### POPULATION PYRAMID 2013, 2030 AND 2060



Source: Statistics Austria

Statistics Austria forecasts strong population growth until 2060 and a further shift in the age structure towards higher ages. Since 1995, life expectancy for men has risen by 22% and that of women by 19%. This equates to additional 13 years. According to the forecast, Austria is set to have a population of 9.4 million in 2050.

In 2014, there were markedly more women aged 70 and older than men, and this gap continues to grow with increasing age.



## SHARE OF AGE GROUPS IN TOTAL POPULATION IN %

		ANZAHL
0 – 9	9,4	806.732
10 – 19	10,3	879.357
20 – 29	13,0	1.110.952
30 – 39	13,1	1.122.679
40 – 49	15,5	1.328.364
50 – 59	14,7	1.252.763
60 – 69	10,5	893.837
70 – 79	8,4	720.872
80 – 89	4,2	357.709
90+	0,8	70.667
		<b>GESAMT 8.543.932</b>

in percent

Source: Statistics Austria, 2014

In 2014, persons aged over 60 made up 24% of the total population. According to the forecasts of Statistics Austria, this share is expected to rise to 37% by 2030.

## 2.2 THE NEED FOR MEDICINAL PRODUCTS BY AGE GROUP

## THE NEED FOR MEDICINAL PRODUCTS IN % (NATIONAL HEALTH INSURANCE PATIENTS, BY NO. OF PACKAGES)

0 – 9	1,9
10 – 19	1,8
20 – 29	3,2
30 – 39	5,0
40 – 49	8,8
50 – 59	15,4
60 – 69	19,5
70 – 79	23,6
80 – 89	16,1
90+	4,2
Unbekannt	0,5

in percent

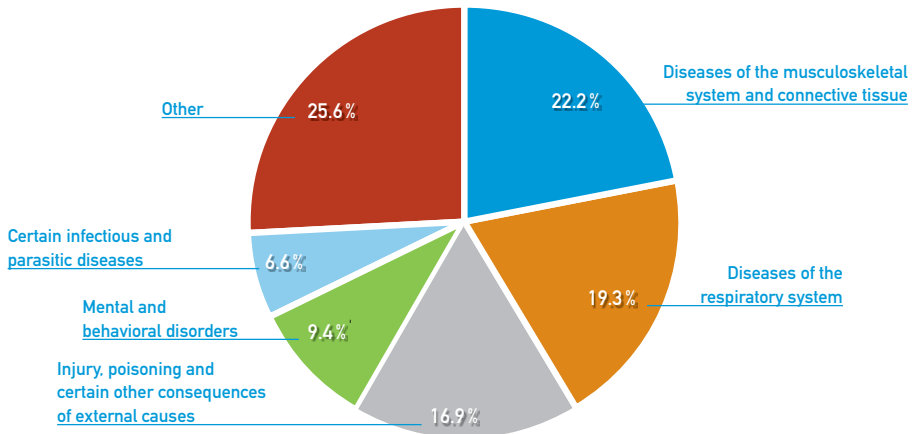
Source: Austrian Chamber of Pharmacists, 2014

There will also be an increase in the need for medicinal products in the course of the demographic transition. The demand for medicinal products increases considerably from the age of 60.

## 2.3 FREQUENT CAUSES OF ILLNESS

### ILLNESS GROUPS AS PERCENTAGE OF SICK LEAVE DAYS

SURVEY GROUP: BLUE COLLAR AND WHITE COLLAR



Source: HV, 2014

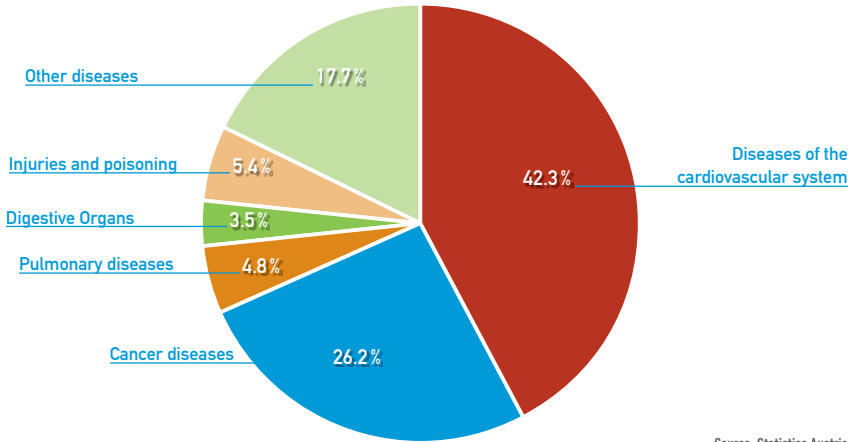
\* Illness groups as percentage of sick leave days have been first monitored in 2012, therefore reference to earlier data is not possible.

The 3,770,278 cases of illnesses causing absence from work and the 38,793,698 days of employee absence in 2014 show that illnesses of the musculoskeletal system and of the respiratory system are the main causes for notifications of sickness.

Diseases of the musculoskeletal system together with diseases of the respiratory system represent the cause for approximately 42 % of the notifications of illness.

## 2.4 MORTALITY

### MORTALITY BY CAUSES OF DEATH



Source: Statistics Austria, 2014

Together, cardiac diseases, cardiovascular diseases and cancer cause 7 of 10 deaths.

Considering the growth of the population and its continuous ageing mortality has decreased by 18 % over the past decade. In particular, mortality from cardiovascular diseases has been declining.

Classification of ICD 10:

- diseases of the cardiovascular system: heart attack, stroke, hypertension etc.
- malignant neoplasm: cancer diseases (lung, breast, prostata, blood)
- other deseases: nutritional and metabolic deseases (Diabetes Mellitus), Virusinfections (AIDS), psychiatric disorders, nervous system etc.

## CANCER MORTALITY OVERVIEW

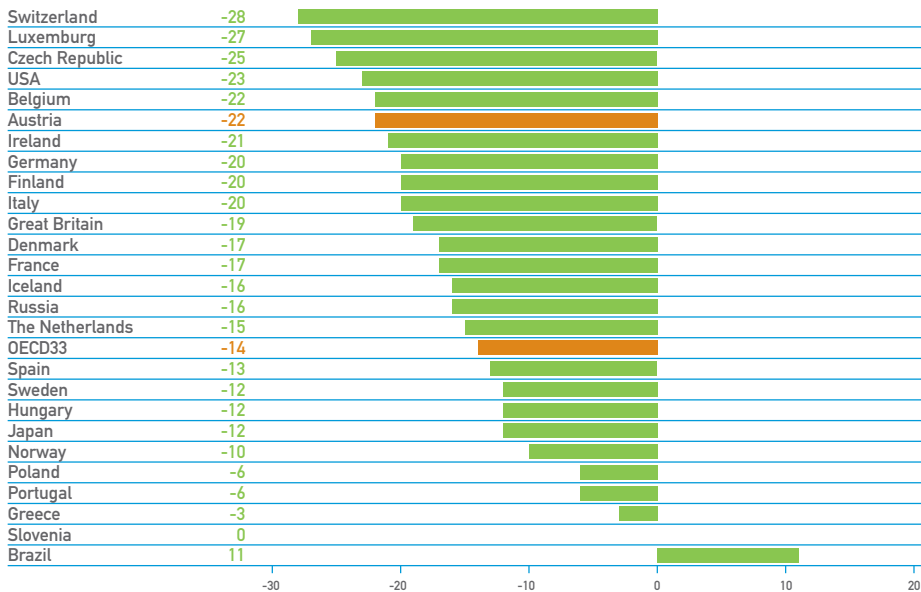
In 2012 there were 14.1 million new cancer cases worldwide, 8.2 million people died of cancer, and 32.6 million people are living with this disease.

Due to the growth in population and increasing life expectancy, the WHO predicts a further rise in new cancer cases. The three most frequent cancers among men affect the lungs, prostate and bowel, while in women they affect the breast, bowel and cervix.

In Austria, 315,025 people were living with cancer in 2012 (53% of which were women and 47% men) – 39,014 people were documented with new cancer cases. This marks a clear increase, compared to 2002 (213,620 people suffering from cancer), which can be attributed to the interaction of the following factors: demographic ageing, a general rise in life expectancy, and the improved survival chances of afflicted persons.

The mortality rate has also decreased significantly: compared to 1990 **cancer mortality in Austria sank by 22%**. The OECD average shows a decline of 15%.

### CHANGE IN CANCER MORTALITY, 1990–2011



in percent

Source: OECD Health Statistics

This development can be attributed to the following factors: greater health consciousness, especially with regard to nutrition, a reduction in damaging environmental influences, better medical care and advances in treatment.

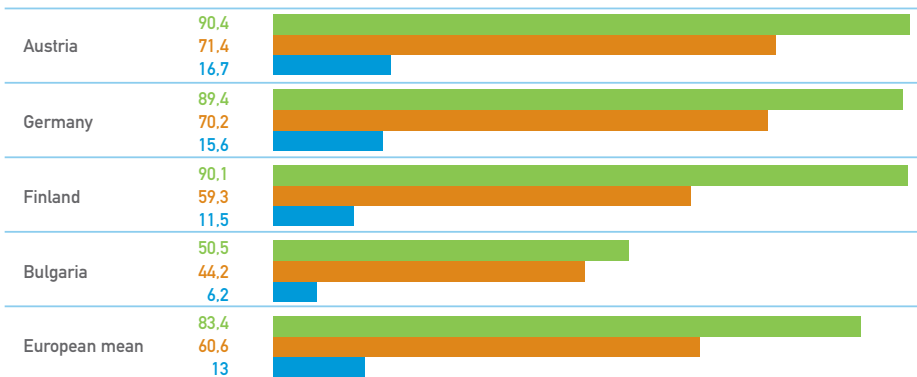
Source: WHO, Globocan International Agency for Research on Cancer, 2012, Statistik Austria Krebsserkrankungen, 2016, OECD Health Statistics, 2013

### CANCER SURVIVAL RATES

In comparison with other European countries Austria is among the Top 5 countries with regard to 5-year cancer survival rates. With regard to three common types of cancer Austria comes top in Europe: namely lung cancer, prostate cancer, and renal cell carcinoma.

Patients are able to take part in clinical trials early on and therefore gain access to innovative active substances which increase the chances of curing the disease. About a third of all clinical trials are conducted in the field of oncology. Therefore oncology is the field which is most intensively researched into in the Austrian pharmaceutical industry. This means that on frequent occasion cancer patients have access to medication with innovative active substances from an early stage (see Chapter 3, page 28).

### 5-YEAR SURVIVAL RATE OF CERTAIN TYPES OF CANCER IN COMPARISON WITH OTHER EUROPEAN COUNTRIES



in per cent

Source: EUROCARE 5-study "Cancer survival in Europe 1999–2007 by country and age" (Lancet Oncol. 2014 Jan; 15(1): 23–34)

Modern treatments of cancer within the last 10 years have helped patients to increase quality of life and gain valuable time of life. Cancer increasingly appears as a chronic disease and nowadays some cancers can be cured. There are also new opportunities in diagnosis and therapy which aid a better treatment of cancer. In addition, those affected can actively take part in work life for a longer period of time. Further important developments in the field of oncology are expected for 2015, with a great number of cancer medications being approved. These include several medications treating malignant melanoma and others treating lung cancer, stomach cancer, ovarian cancer, as well as leukaemia.

Medical advances have been achieved in recent years, particularly in the treatment of breast, skin and lung cancer.

# 3 PHARMACEUTICAL RESEARCH AND DEVELOPMENT

## RESEARCH LOCATION AUSTRIA

According to the “Innovation Union Scoreboard 2015” (IUS) which has been published by the European Commission, Austria is among the group of “Innovation Followers”, its research quota of 3,01% is higher than the EU-28 average of 2,01%. However, the strategy for research, technology and innovation of the Federal government aims at establishing Austria as an “Innovation Leader” which would require an increase in the research quota to 3,76% until 2020. Further efforts will be necessary to achieve this aim.

The greatest part of research expenditures within the last 10 years were incurred by companies, taking up 47,6% on average; on average 34,2% of spending was provided by the public sector and 17,6% from abroad. In particular the domestic pharmaceutical industry in Austria contributes to the added value with research commissions. According to Statistics Austria (data from 2008–2010) the innovation activities of the pharmaceutical industry (93%) are considerably higher in comparison to all other industry sectors (56,5%). The expenditures for innovations in relation to the total turnover of the companies consist of 14% in pharmaceutical products vs. 1,7% in all industry sectors.

In addition to excellent universities, Austria has outstanding and internationally recognised research institutes in the field of Life Science, such as the Research Institute for Molecular Pathology (IMP), the Institute for Molecular Biotechnology (IMBA), or the Research Center for Molecular Medicine (CEMM). Since 2008, there is also Europe’s first “Research Center Pharmaceutical Engineering” (RCPE) located in Graz, whose aim is to optimise product and process development in the pharmaceutical industry. Austria is also the location of the European biobanks research infrastructure which is aimed at connecting existing and future biobanks in Europe in order to facilitate access to biological samples for research. In 2014 the Biobanking and Biomolecular Resources Research Infrastructure – European Research Infrastructure Consortium (BBMRI-ERIC), located in Graz, has become operational.

Source: Statistics Austria, Austrian Research and Technology Report 2014

## 3.1 ACTIVE SUBSTANCES

As soon as a new active substance candidate has been identified, it is developed further on a broad scientific basis. In order to ensure continued economic exploitation, a patent is generally taken out for an active substance after it has been identified. The patented active substance then goes through several stages of clinical research.

The following categorisation of active substances is based only on the primary classification of investigational medicinal products in accordance with the EudraCT form used for the submission of clinical trials without further pharmacological differentiation. **ACTIVE SUBSTANCES OF CHEMICAL ORIGIN**

Chemical substances are natural chemical agents or products obtained through chemical synthesis. Simple chemical medicinal products frequently have a molar mass of no more than 1000 g/mol. They make up the lion's share of the medicinal products approved in recent years.

They include medicinal product groups such as antibiotics, cholesterol-lowering agents (e.g. statins), analgesics (e.g. acetylsalicylic acid) or cytostatics.

■ **GENERICS** (see also 7.5, Generics in the reimbursement market) are copies of originator products that are offered in the market once the patent of the original expires. They may be approved in pertinent marketing authorisation procedure once a patent or data exclusivity no longer applies for the originator products. Only minor bioequivalence studies are needed to prove the efficacy and safety of conventional generics.

### **ACTIVE SUBSTANCES OF BIOLOGICAL OR BIOTECHNOLOGICAL ORIGIN (BIOPHARMACEUTICALS OR BIOLOGICALS)**

Biopharmaceuticals (see also 7.6, Biopharmaceuticals in the reimbursement market) are medicinal products produced in genetically modified organisms using biotechnological procedures. As opposed to traditional chemical active substances, biotechnologically produced active substances are complex, high-molecular and large proteins with a molar mass of several 1000 g/mol, in some cases even up to 500.000 g/mol. Biopharmaceuticals are subdivided into various classes, such as immunomodulators, monoclonal antibodies, enzymes, hormones and vaccines.

- **BIOSIMILARS** are biological medicinal products which are similar to another biological medicinal product (“reference medicinal product”) which has already been approved for use. In order to bring a biosimilar on the market, it must be as similar as possible to the reference medicinal product in terms of its quality, safety, and efficacy. Yet also the biosimilar, just like the reference medicinal product, is to a certain extent naturally variable due to the manufacturing process. The active substance of a biosimilar is essentially the same biological substance as the one of the reference medicinal product. Biosimilars can only be similar to the originator product and cannot be identical due to the complex structure of the molecules which are often very large and due to the individual manufacturing process with specific cell lines for each biological medicinal product. Therefore biosimilars are not the same as generic products: Generic products are identical copies of the originator medicinal product which consist of the same active substances to an equal amount.

Biosimilars adhere to the same regulations of EU-legislation which has determined high standards of quality, safety and efficacy. The authorisation procedure for biosimilars involves a multi-stage clinical testing programme which aims to prove that there is no significant difference in the efficacy and safety compared to the originator product. As a rule, biosimilars are approved for the same indications as the reference medicinal product once the patent for the originator product has expired.

For many illnesses biopharmaceuticals provide new treatment opportunities (these include rheumatic diseases, cancer, diabetes, multiple sclerosis,...). The importance of biopharmaceuticals for the treatment of numerous and, in many cases, life-threatening diseases has increased in previous years. Biosimilars have been in use in the European Union since 2006 in clinical practice. The market share of biosimilars has increased in EU member states and has also increased overall in each product category to different extents depending on market access provisions and pricing mechanisms (see Chapter 7.6).



Photo: Fotolia/Sven Hoppe



## 3.2 CLINICAL RESEARCH

Clinical research means the testing of medication and forms of treatment on people by means of clinical studies. The objective is to prove the effectiveness and tolerability of these forms of treatment and to improve the medical care of future patients. In principle, a distinction is made between clinical trials (intervention studies) and non-intervention studies.

### LEGAL FOUNDATIONS

Every clinical trial in Austria has to be approved by the Federal Office for Safety in Healthcare and needs a positive opinion of the ethics committee. Details on terminological definitions and on the requirements and implementation of clinical trials are set out in the Medicinal Products Act in § 2a and § 28 to § 48.

Within the EU, standardised administrative rules are set out for clinical trials by Regulation 2001/20/EC. However, deviating approaches among different member states in implementing this regulation have led to insufficient harmonisation within the EU. For this reason, the conduction in Europe of multinational clinical trials in particular has proven to be difficult. This should change with the new EU Regulation 536/2014 on clinical trials on medical products for human use, which is due to take effect at the end of 2018. The aim is to standardise and simplify the implementation of clinical trials in Europe by means of a central approval system with standardised applications that will be submitted via a central portal.

### PRECLINICAL STUDIES

Before an active substance can be tested in humans, its safety must be proven in cell models (in-vitro tests) and animal models (in-vivo tests). Some tests can be conducted using cell cultures, but most can only be carried out on the entire organism. The animal experiments needed for this purpose are required by law and, in particular, involve pharmacological studies, as well as studies on toxicity, toxicokinetics and pharmacokinetics.

Preclinical studies are often conducted in suitable animal disease models (e.g. knock-out mice) in order to study the effectiveness of an active substance in vivo. Relevant proof of efficacy can not always be provided and is therefore not mandatory. Only when an active substance concluded positively all preclinical tests it can be used in humans for the first time. This marks the beginning of the development stage called clinical trials.

## CLINICAL TRIALS

Thanks to the willingness of many volunteers, new medication can be developed on an ongoing basis, in order to ease the suffering of many patients and provide hope in cases of severe illness. But by participating in a clinical trial, many patients also receive the opportunity to have early access to innovative and in some cases life-saving medication – often many years before these are available on the market. However, each clinical trial also carries a certain risk. Therefore, every person involved does everything possible in order to keep the risks to participants in a clinical trial to an absolute minimum. For this reason, clinical trials for the development of new medications are carried out with the greatest care and under strict conditions. One essential prerequisite of every clinical trial is that participation is always voluntary and may be ended at any time.



## THE SEQUENCE OF THE INDIVIDUAL CLINICAL PHASES

The relevant information for the marketing authorisation of a medicinal product is collected in phases I and IIIa of the clinical study. Further testing conducted after submission of an application for marketing authorisation or after the authorisation has been awarded (e.g. long-term studies of influencing factors of the course of illnesses or detailed investigations on pharmacokinetics with renal or hepatic insufficiency patients) is implemented in the so-called phase IIIb or phase IV studies.

### ■ PHASE I: TESTING OF PHARMACOKINETICS

In Phase I, the medicinal product is administered for the first time in order to determine its behaviour in a healthy person (so-called “first-in-man” studies). Objective: information regarding tolerability, resorption, elimination and any metabolites. Phase I testing is conducted with a limited number (10 to 50) of healthy persons. Healthy test subjects are preferred because the pharmacokinetics of the substance under examination should not be distorted by pathological conditions. However, if the active agent is expected to have any toxic properties (such as substances used for oncological diseases), only persons with the respective disease are included in Phase I or the trial.

In order to reduce the risks to the study participants to a minimum, especially in Phase I trials, a special EU directive was passed to this end in 2007. It stipulates that every Phase I trial must be based on a thoroughgoing risk analysis, in order to categorise high-risk products and take the necessary measures. It is also essential that a new substance must not be administered to a number of persons simultaneously. Close diagnostic monitoring must be safeguarded for every single study participant, and emergency intensive care must be on stand-by at all times.

#### ■ PHASE II: ASCERTAINING THE DOSAGE

In the next stage, the controlled phase II test, the substance's pharmacodynamic effect is examined. Objective: to ascertain the therapeutic dosage and obtain a biological signal proving the efficacy of the substance. Moreover, the aim is to obtain information regarding tolerability and any interactions. In this phase, the group of test patients with the relevant illness consists of 50 to 200 patients. The studies are generally controlled, i.e. they include a control group and are double-blind studies (neither physician nor patient know whether the active agent or control is administered). This is intended to prevent any influences on treatment results.

#### ■ PHASE III: ESTABLISHING THE THERAPEUTIC EFFICACY

Unlike the previous phases, the test in phase III is carried out on a large group of patients (with the relevant illness). The size of the patient group is determined depending on the indication in order to ensure reliable proof of the effectiveness and to detect any rarely occurring side effects. The duration of treatment of the individual patients in the course of the clinical study depends on the illness; in the case of chronically progressing disorders, the treatment may even last several years. As a rule, these multi-centre studies are conducted in several countries at the same time (multinational) in order to keep the duration of the overall study as short as possible. The phase III studies are controlled and double-blind in nature just like the studies in phase II. Once phase III of the clinical study has been positively concluded, an application can be submitted to the appropriate authorities for authorisation of the medicine.

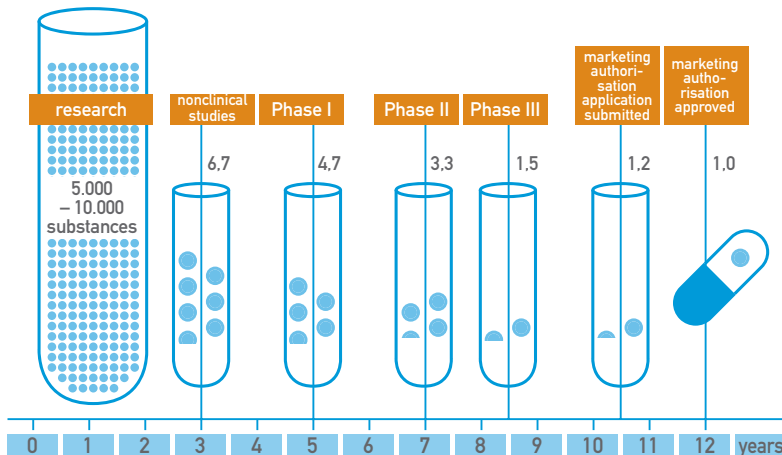
#### ■ PHASE IV: CLINICAL STUDY AFTER AUTHORISATION

In this phase, conducted in the form of a clinical trial, further data is collected after marketing authorisation has been granted. The studies in phase IV are subject to the same conditions as the clinical studies in phases I through III.

## NON-INTERVENTIONAL STUDY (NIS)

A NIS (e.g. Case-control study, Cross-sectional study, Observational study, Analysis of administrative registers) is the systematic examination of an approved medicinal product administered to patients. The type and duration of the administration correspond to the approved summary of product characteristics and patient information leaflet. Therefore no additional diagnostic, therapeutic or strainful measures may be taken. A NIS is suited for proving the efficacy of a medicinal product in practice and for documenting side effects which have not occurred in clinical trials due to limited numbers. Prior to its implementation each NIS has to be reported to the BASG or the Risk Assessment Committee of the Pharmacovigilance (PRAC).

## DEVELOPMENT PHASES OF A MEDICATION



data = number of Substances/ Phase: absolute number

Source: VFA e. V.

## DEVELOPMENT COSTS

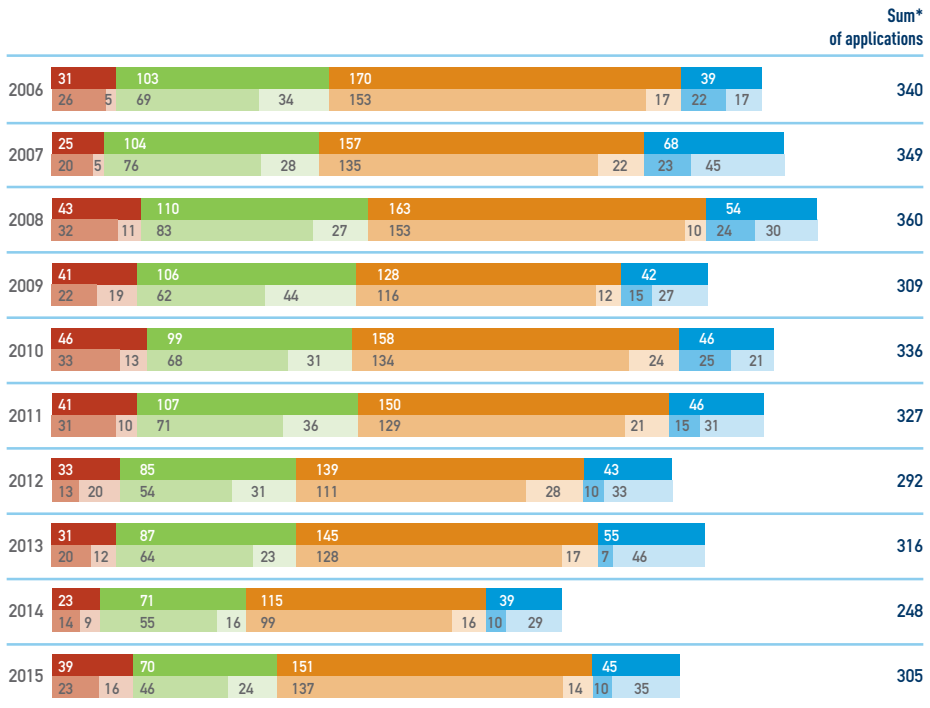
According to recent studies, the average cost of developing a new innovative/original medicinal product is up to Euro 1.5 billion. The reasons for these enormously high costs are the substantially increased documentation and safety requirements for clinical trials, on the one hand, and the need for a greater number of trial participants, on the other.

The development of drugs involves high risks: out of 5,000 to 10,000 initial substances, an average of only one single drug is approved in the end. In many cases, it cannot be determined whether active substances are effective enough and whether their side effects are not too onerous until extremely complex multinational phase III studies have been performed. The costs incurred by the many unsuccessful development projects need to be factored in and borne by the companies as well.

### CLINICAL TRIALS IN AUSTRIA – A STATISTICAL OVERVIEW

In recent years, around 4,400 clinical trials have been applied for annually in the EU/EEA, almost 300 of these in Austria. Overall, applications for clinical trials in Austria have remained constant within the fluctuation range in recent years, with the exception of 2014.

### DISTRIBUTION OF CLINICAL STUDIES IN AUSTRIA ACCORDING THE PHASES



in absolute

Source: BASG

Total share: Phase I (ind., acad.), Phase II (ind., acad.), Phase III (ind., acad.), Phase IV (ind., acad.)

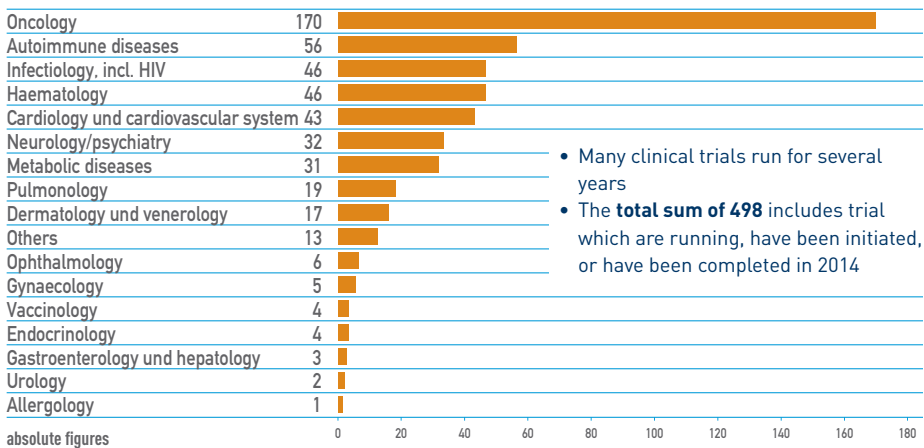
\* Since multi-phase studies (e. g., Phase I/II studies) count twice in this survey, the sum of phases exceeds the indicated sum of applications. The deviations indirectly indicate the number of dual-phase studies.

In the EU an average of around 60 percent of clinical trials are carried out by the pharmaceutical industry (industry sponsored), 40% are implemented by academic researchers (academic sponsored). In Austria this ratio lies at 70 : 30% as an annual average (two thirds of clinical trials are multinational, one third of trials is conducted in Austria only).

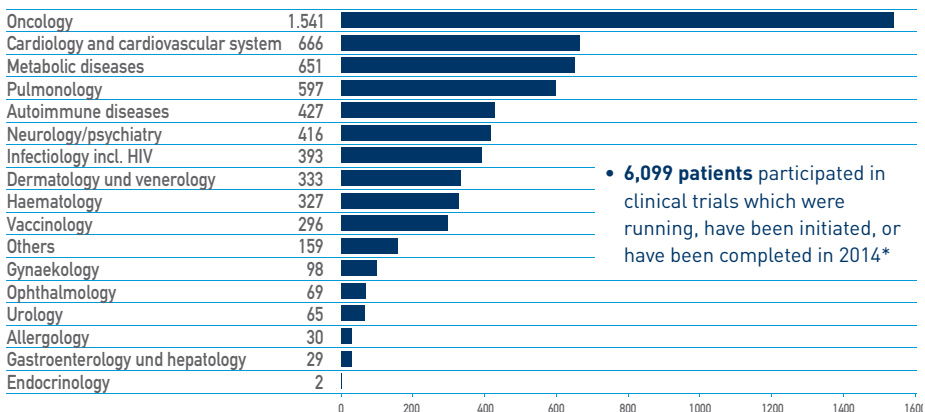
## INDUSTRY SPONSORED CLINICAL RESEARCH IN AUSTRIA 2014

On many occasions clinical trials run for several years after marketing authorisation has been granted. The numbers of ongoing clinical trials per year (incl. clinical trials which are running, which have been initiated and which have been completed) according to the specified indication areas, as well as the number of patients which actively participate in these trials give us an overview of the services of the pharmaceutical industry.

### ONGOING INDUSTRY SPONSORED CLINICAL TRIALS ACCORDING TO INDICATION GROUPS



### PATIENTS IN ONGOING INDUSTRY SPONSORED CLINICAL TRIALS ACCORDING TO INDICATION GROUPS

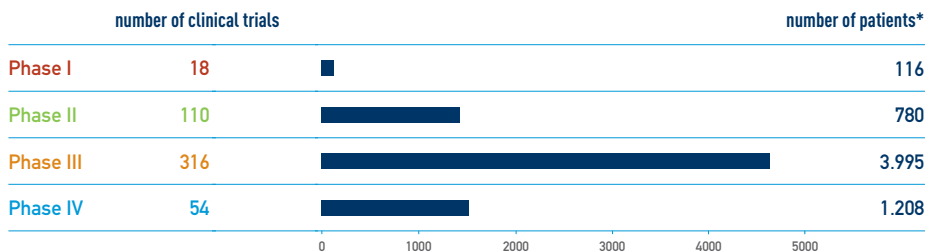


\* patient numbers of 82 % of clinical trials

absolute figures

Source: Pharmig survey of clinical research 2014 among 37 companies which altogether represent 84 % of pharmaceutical sales of all Pharmig member companies

## BREAKDOWN OF PATIENT NUMBERS IN ONGOING INDUSTRY SPONSORED CLINICAL TRIALS ACCORDING TO INDICATION GROUPS



\* patient numbers of 82 % of clinical trials  
absolute figures

Source: Pharmig survey of clinical research 2014 among 37 companies which altogether represent 84 % of pharmaceutical sales of all Pharmig member companies

In addition to the 498 clinical trials, 79 non-interventional studies (NIS = systematic tests of approved medical products on patients) were conducted in 2014, in which 5,531 patients participated\*. Furthermore, with the support of the pharmaceutical industry, 157 “Investigator Initiated Trials”, i. e. academically sponsored clinical trials, were made possible in 2014.

## PAEDIATRIC PHARMACEUTICAL RESEARCH

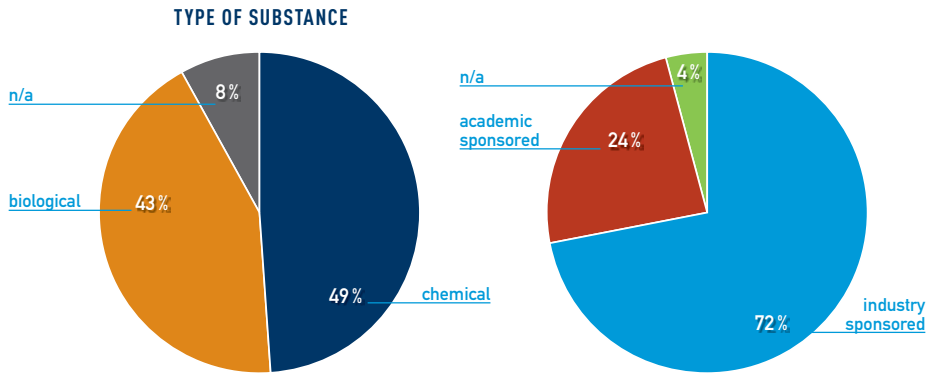
50–90 % of medicinal products conventionally used in paediatrics are not authorised for children because paediatric trials were considered unethical until recently. However, a sufficient supply of children with medicinal products which have been adequately studied and authorized for use in children, is essential and has therefore been required by EU regulation since 2007.

All new marketing authorizations, changes in the indication, form of administration or composition of the medicinal product must be implemented within the framework of a development plan (Paediatric Investigation Plan (PIP)). Clinical trials involving children and adolescents are essential for this purpose.

## EVALUATION OF PHARMACEUTICAL TRIALS INVOLVING CHILDREN AND YOUNG PEOPLE IN AUSTRIA, ANALYSIS ACCORDING TO AUSTRIAN AGENCY FOR HEALTH AND FOOD SAFETY, DATA FOR THE YEARS 2007–2011

- Number of clinical trials registered in Austria within the period 2007–2011: 134\*
- Top areas of specialisation: Haematology/oncology, pulmonology/allergology, neurology
- Majority of these trials (72 %) were sponsored by industry
- With approx. every 2nd study an instance of market approval was already in place

- 43% of the active substances were biopharmaceuticals
- In 18% of the studies rare diseases are under investigation



\* In comparison: In Germany in the period from 2007–2011 approx. 750 clinical trials took place involving children and young people (source: vfa 2011)

## OKIDS – CHILD RESEARCH NETWORK



OKIDS is a public-private partnership acting as a network for promoting pediatric studies in Austria ([www.okids-net.at](http://www.okids-net.at)). It serves as a central contact point for sponsors of all important stakeholders in pediatric research (pharm. ind., university medical centers, coordination centers for clinical studies, specialty departments, etc.). Together with the Federal Ministry of Health and funding from the “joint health care objectives from the pharmaceutical framework contract”, the following 30 companies have been supporting OKIDS since 2013 with 5-year start-up funding:





Since its foundation in May 2013, OKIDS has participated in 44 industry-sponsored AMG studies at the 5 OKIDS locations. In all, OKIDS received 53 applications for pharmaceutical studies with children and adolescents in 27 different paediatric indications (as of end of 2015).

In addition, at its first attempt OKIDS managed to fulfil all of the criteria to be adopted successfully into the best of four categories of the European Network of Paediatric Research at the European Medicines Agency (ENPR-EMA), thus achieving international visibility. <http://enprema.ema.europa.eu/enprema/showall.php>

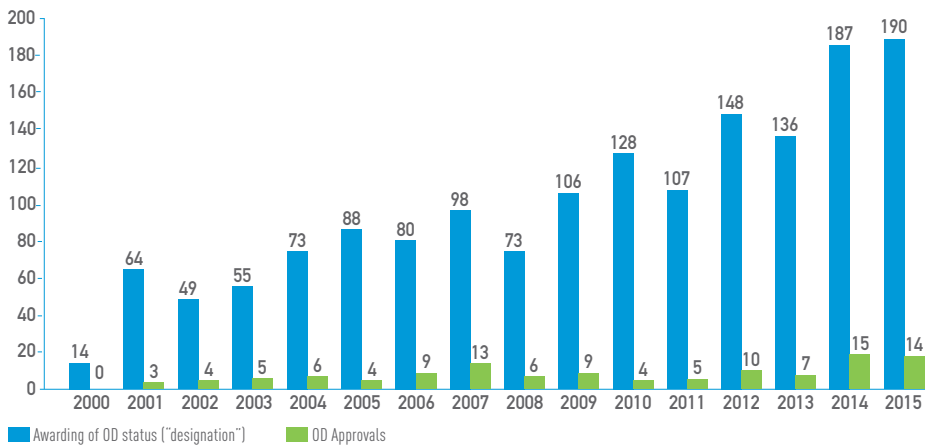
## PHARMACEUTICAL RESEARCH OF RARE DISEASES

Rare diseases are disorders which are life-threatening or chronically debilitating and which affect less than 5 in 10,000 people (in relation to the European average). Of around 30,000 diseases known to this day, 6,000 to 8,000 count as rare diseases and 50% of these affect children. In Austria about 400,000 people (i. e. 6–8% of the population) suffer of rare diseases; within the EU the estimated number of affected people amounts to 30 million.

The European regulation concerning medicinal products for rare diseases (EC) No. 141/2000 has been set down in 2000 in order to promote research and development of medicinal products for rare diseases (so-called orphan drugs) in pharmaceutical companies. Through this regulation the companies are offered with reduced costs of marketing authorisation, as well as exclusive marketing rights for ten years. The orphan drug status must be requested from EMA at any point during the development of such medicinal product before applying for marketing authorisation. The examination of the authorisation application, in the same manner as with other medicinal products, takes place via the centralised procedure of the Committee of Medicinal Products for Human Use.

2127 applications for orphan drug status have been filed from 2000 to 2014. In 1406 cases orphan drug status has been awarded but, so far, only in 100 of these cases marketing authorisation has been granted. The great number of applications (2127) reflects the high level of research work done in this area and it shows that the inducements offered by the regulation are received by the companies. However, the low success rate (100) demonstrates the high entrepreneurial risks for the companies.

## AWARDING OF ORPHAN DRUG STATUS VS. APPROVAL OF ORPHAN DRUGS (2000–2015)



absolute figures

Source: Committee for Orphan Medicinal Products (COMP) meeting report on the review of applications for orphan designation, January 2015

## THE NATIONAL ACTION PLAN FOR RARE DISEASES (NAP.SE)

The NAP.se was published at the end of February 2015 with the objective of improving the life situation of all affected patients and their relatives. It was commissioned by the BMG and written by the NKSE (National Coordination Office for Rare Diseases).

The starting point for the plan was driven by European requirements (e.g. recommendations and guidelines), the national needs survey "Rare Diseases in Austria" (Voigtländer et al 2012), structured exchanges with national experts and current national points of reference such as the framework healthcare objective, the healthcare reform or the children and youth healthcare strategy.

The NAP.se combines plan and strategy, and defines new key thematic focuses that take consideration of both European recommendations and national requirements. A central element is the establishment of centres of expertise and their networking in order to combine knowledge and provide patients with rare diseases with faster and better diagnoses as well as the best possible therapy options. The research and development of new medical products, with the help of networked and combined expertise, is particularly important in the case of rare diseases. It is essential that patient care can continue to be provided near to the home.

The NAP.se and information about the NKSE can be found under the following link:

[http://www.bmg.gv.at/home/Schwerpunkte/Krankheiten/Seltene\\_Erkrankungen\\_in\\_Oesterreich](http://www.bmg.gv.at/home/Schwerpunkte/Krankheiten/Seltene_Erkrankungen_in_Oesterreich)

<http://www.goeg.at/de/Bereich/Koordinationsstelle-NKSE.html>

## TRANSPARENCY OF STUDY DATA

- The U.S. National Institutes of Health keep the largest public register since 1997. They publish study data from all 50 federal US states and from a further 180 countries:  
<https://www.clinicaltrials.gov>
- The European Clinical Trials Register (EudraCT) by the European Medicines Agency (EMA) has made study data from the EU, Iceland, Liechtenstein and Norway publicly accessible since 2011. As of 21 July 2014 also the evaluation report of clinical trials II-IV must be published by the sponsoring party. This must also be carried out retroactively for all trials which have been conducted on the basis of Regulation 2001/20/EC until July 2016 at the latest:  
<https://www.clinicaltrialsregister.eu/>
- Non-Interventional Studies which have been commissioned by authorities and which are conducted in several EU member states, so-called PASS (Post Authorisation Safety Studies), must be reported to the EU PASS register of EMA:  
<http://www.encepp.eu/>
- As of 1 January 2015 full access to clinical trial data in the centralised approval procedure of EMA will be possible, based on the "EMA policy 0070 on publication of clinical data". Upon completion of the first implementation phase, interested parties can access clinical reports by means of a registration process on the EMA website: <http://www.ema.europa.eu/ema/> (Human Regulatory Faculty / Clinical data publication)
- Many companies have voluntarily committed to support the responsible use of clinical trial data and also enable full access to their study data. You can find a compilation of these companies and links to their respective portals in the EFPIA Clinical Trial Data Portal Gateway:  
<http://transparency.efpia.eu/responsible-data-sharing/efpia-clinical-trial-data-portal-gateway>
- In the NIS register of the medical market supervision of AGES (Austrian Agency for Health and Food Safety) you can find information on all NIS which have been reported in Austria:  
<https://forms.ages.at/nis/listNis.do>

## 3.3 PRODUCTION AND QUALITY ASSURANCE

### SCOPE OF PHARMACEUTICAL PRODUCTION

Pharmaceutical production covers the manufacture of the pharmaceutical form of medicinal products (e.g. tablets, capsules, salves, injections, etc.) as well as the production of active pharmaceutical ingredients and the packaging of the final products plus quality assurance.

The manufacture of medicinal products is regulated by national, European and international legislations. Pharmaceutical manufacturers need an authorization by authority which requires dedicated and sufficient space, technical equipment and facilities for quality control. In the European Union a Qualified Person (QP) has to declare that each batch of a medicinal product has been produced and tested according to the specifications and instructions.

### GMP – THE BASIC RULES OF MANUFACTURE

Pharmaceutical production has to be performed in accordance to Good Manufacturing Practice (GMP), which specifies a methodical, hygienic, well documented and controlled manufacture.

GMP covers amongst others the following areas:

- Duty of care
- Training of staff
- Facilities
- Separation of production, packaging and storage area
- Testing
- Labelling
- Hygiene
- Quality of materials
- Rules for internal and external audits
- In process controls
- Validations
- Quality Control
- Complaints and recall

## NATIONAL AND INTERNATIONAL REGULATIONS

GMP defines guidelines for quality assurance of the production processes and surroundings when manufacturing medicinal products and active pharmaceutical ingredients. During pharmaceutical production quality assurance plays a central role, because deviations in quality can have direct influence on the health of the costumers.

Relevant guidelines were compiled for instance by the European Commission, by the Pharmaceutical Inspection Co-Operation Scheme (PIC/S), by the US-American Food and Drug Administration (FDA) as well as globally by the “International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use” (ICH). In Austria GMP is implemented into national legislation mainly by the Medicinal Product Site Regulations (german: „Arzneimittelbetriebsordnung“, AMBO).

Monitoring of the regulations is conducted by the health authorities of the respective countries. The Austrian Federal Office for Safety in Healthcare (BASG) is the responsible enforcement authority for Austria together with the Austrian Medicines and Medical Devices Agency (Medizinmarkaufsicht) from the Austrian Agency for Health and Food Safety (AGES).

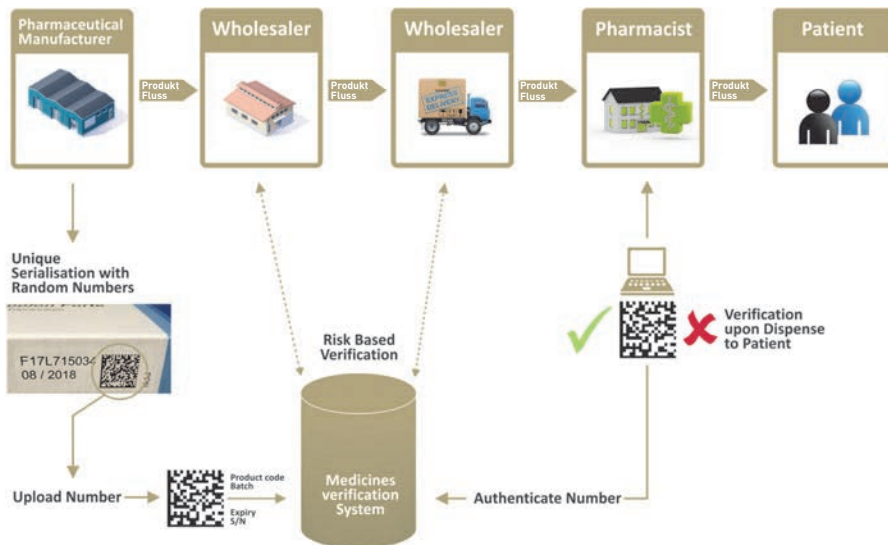
## MEASURES AGAINST FALSIFIED MEDICATION

The revision of the European medicinal products directive of July 2011 “to prevent the entry of falsified medicinal products into the legal supply chain” presented the pharmaceutical industry with numerous changes. By the beginning of 2013 the GMP requirements for active pharmaceutical ingredients were tightened and new rules took effect as of mid-2013 with regard to the import of active ingredients from non-EU countries. In addition, as of mid-March 2016, manufacturers must conduct a risk analysis for all excipients used, to determine the appropriate GMP.

However the greatest change based on this directive will not be implemented until the beginning of 2019: new safety features on all pharmaceutical packaging should make any manipulation of the packaging immediately identifiable and safeguard the traceability of the medication from the manufacturer to the pharmacy. The specific legal requirements at EU-level were published in February 2016.

## CODING AND SERIALISATION OF MEDICINAL PRODUCTS

The detailed legal requirements concerning the traceability of medicinal product packaging are defined at EU-level with the delegated regulation on “detailed rules for the safety features appearing on the packaging of medicinal products for human use”, which was published in the official journal of the EU in February 2016. There will now be a transitional period of three years, after which the regulation shall be applied from 9 February 2019.



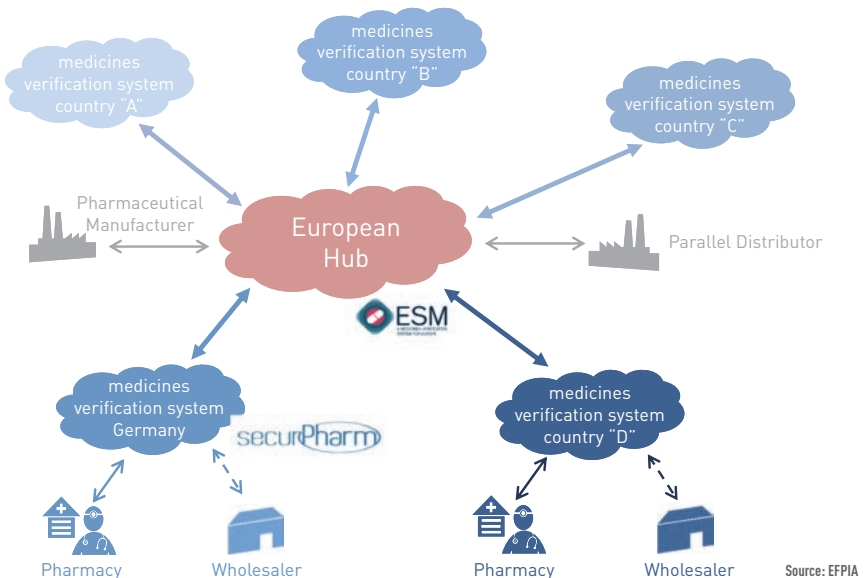
Source: EFPIA

In principle this affects all prescription drugs for human use, exceptions can be found on the “Black & White List” of the regulation. In future, all medicinal product packaging will be fitted with a one-off, randomised serial number, which will be encrypted in a two-dimensional barcode, together with the batch number and expiry date. This shall be applied to the packaging by the pharmaceutical industry and entered into a database. While wholesalers must check the code only in certain, defined cases (e.g. when buying from another wholesaler or in the case of returned goods), the mandatory checking and deactivation of the serial number must be carried out directly when issuing to the patient (mainly in the pharmacy). When repackaging, parallel traders must replace the safety features with equivalent features and create a link to the original package data. A deactivated serial number means that the package has already been issued. If the name serial number reappears at a later time, this indicates a suspicion of falsification.

## THE EUROPEAN SYSTEM OF SERIALISING MEDICINAL PRODUCTS

A data repositories system must be set up for this process. The delegated regulation foresees that system will be set up by the pharmaceutical manufacturers and authorisation holders, with the involvement of the other stakeholders (e.g. wholesalers, parallel traders and pharmacists).

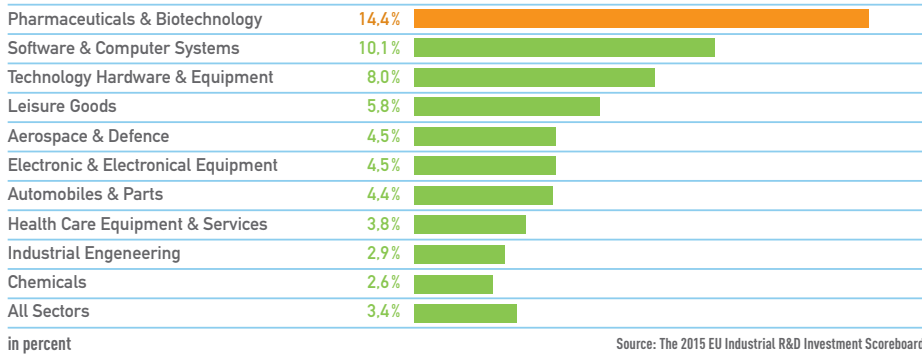
The authorities must be given the opportunity to check and monitor the system. This system, the European Stakeholder Model (ESM), developed by the European associations, foresees that all medicinal products shall be entered by the industry into the so-called “European hub”. There, they are then allocated to each national system. If a package cannot be found in a national system (e.g. in the case of individual imports), the hub serves as a data router and forwards the request to the relevant national system in which the number was stored. In this country the serial number is finally deactivated, i.e. the package is booked out of the system. In this manner, all packaging that can be issued in a number of countries (so-called “multi-country packs”) can be deactivated in all national systems.



When setting up the national repositories the member states have the possibility to develop their own national systems or to revert to a prefabricated system (blueprint system). An example for a national system is the SecurPharm model in Germany. This already began as a pilot in 2013 and will now continue to run until full operation in 2019.

## 3.4 RESEARCH AND DEVELOPMENT – INVESTMENTS

### RESEARCHRATE, BY SECTORS (EUROPE)



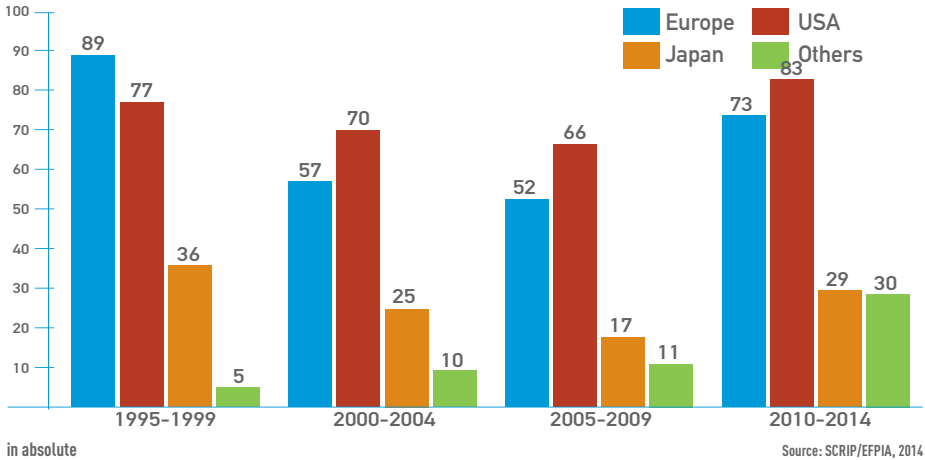
The sector of the pharmaceutical and biotechnological industries is still the leading branch in the area of Research & Development in the EU: 14.4 % of sales were invested in R & D in 2014.

The R&D intensity (= investments in R&D relative to sales) of the pharmaceutical and biotechnological industry is far higher than in other industries, such as the software, hardware, electronics, leisure goods, automobile, aerospace and defence industries, etc. It is above the EU industry average of 3.4 %.



### 3.5 MEDICINAL PRODUCT INNOVATIONS

#### NEW MOLECULAR ENTITIES BY REGION



- In 2015, 88 new medicinal products for human use were approved in Europe\*
- 44 of these contain a new active substance
- The recently approved medicinal products treat cancer, infectious diseases, cardiovascular and inflammatory diseases of the skin, type 2 diabetes, etc.
- It is expected that in 2016, more than 10 new medicinal products will be used expressly for the treatment of patients with rare diseases; including those with hereditary metabolic disorders or muscular disorders.

\* European Commission

Source: European Commission, VFA

#### NUMBER OF INNOVATIONS IN AUSTRIA



From 2010 through 2015, a total of **140 new products** were launched on the market in Austria.\* In 2015, innovations achieved a **share of sales of 10%** on the total pharmacy market; one-quarter of innovations (39 products) are used in cancer treatment.

\* New molecules; products not sold in pharmacies not included.

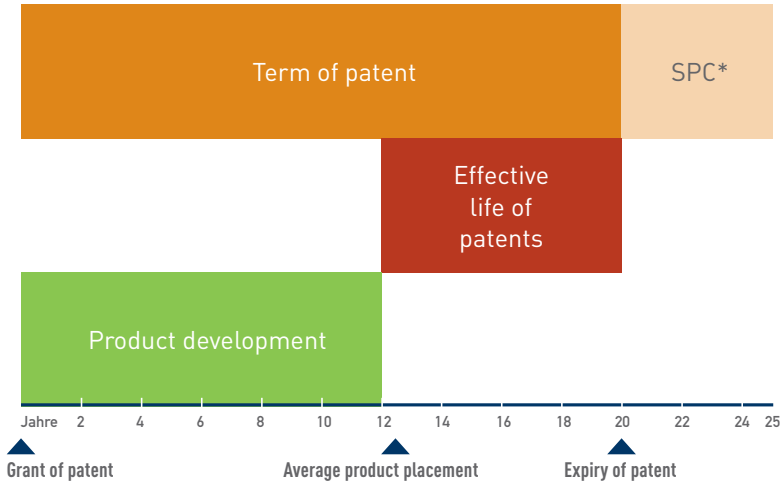
## TIMELINE OF PHARMACEUTICAL DEVELOPMENTS

1848	Chloroform used as an anaesthetic in surgery
1891	First drug against diphtheria, an infection of the respiratory tract that is usually lethal with children: diphtheria antiserum
1899	Acetylsalicylic acid: analgesic, antipyretic and anti-inflammatory
1910	First antibacterial preparation: salvarsan against syphilis
1922	Insulin used to treat diabetes
1927	Active vaccine against tetanus
1944	Penicillin available as drug
1948	First strong anti-inflammatory: nature-identical cortisone
1956	First antidepressant (iproniazid)
1957/58	First cytostatic against leukaemia (chlorambucil) and lung cancer (cyclophosphamide)
1960	First immunosuppressant, azathioprine, made organ transplants possible
1960	First "pill" for contraception
1963	First vaccine against measles
1976	First inflammation-reducing asthma drug (derived from cortisone)
1980	Successful eradication of smallpox through vaccination
1980	First ACE inhibitor for the reduction of blood pressure
1982	First genetically engineered medicinal product in the German and US market: human insulin
1983	First (anti-)hormone therapeutic agent against the reoccurrence of breast cancer
1987	First preparation against HIV / AIDS
1993	First drug to slows down specific forms of multiple sclerosis (MS)
1996	First three-drug combination to delay the outbreak of AIDS in patients infected with HIV for years
1998	First oral drug for the treatment of erectile dysfunction
1999	Cure for hepatitis C based on a combination of drugs (an alpha interferon + a synthetic virustatic)
2000	First antibody therapy against breast cancer metastasis
2001	First specific drug against chronic myelotic leukaemia
2004	First anti-body preparation against intestinal cancer
2005	First drug to cut off tumour blood supply
2006	First vaccine against cervical cancer
2006	First drug for the treatment of morbus pompe, a rare hereditary disease
2007	First drug against liver cancer
2007	drugs with two new active principles against HIV infection
2009	First trifunctional antibody; for the treatment of ascites in patients with EpCAM-positive tumours
2011	Extending the life of patients suffering from melanoma by administering a drug with new mode of action
2011	High chances of recovery in difficult Hepatitis C (subtype 1 viruses) cases through new antiviral drugs (in combination with PEG-alpha interferon and an older antiviral drug)
2011/12	Enhanced life expectancy with metastatic black skin cancer (melanoma) with medications with new active principles
2012	First gene therapy with approval in industrial nations, for the relief of pancreatitis in patients with a deficiency of the lipid metabolism (LPLD)
2013	First vaccine against meningitis caused by meningococcal serogroup B
2013/14	Medications cure multiresistent tuberculosis with three active principles
2013/14	The chances of curing Hepatitis C over 90 % due to new antiviral drugs in combination with other medications

Source: VFA, excerpt – timeline of pharmaceutical developments

(All the information provided refers to the year in which the medicinal product was first marketed internationally.)

### 3.6 DURATION OF PATENT PROTECTION



\* supplementary protection certificate max. 5 years

Source: PHARMIG

Innovative medicinal products (as all other goods) are protected for 20 years under patent law. However, medicinal products must be patented as the intellectual property of the inventor at a comparatively early stage of their development.

From the time a medicinal product is patented until it becomes available to patients, an average of 12 years elapses. This period is necessary for pre-clinical testing and the official marketing authorisation process. Thus, on average, the actual effective life of a patent is less than 8 years.

To extend the patent term, the patent holder (marketing authorisation holder) can apply for additional protection (Supplementary Protection Certificate, SPC) of his invention. The SPC grants an extension of the patent period for up to five years.

On average, effective patent protection is provided for a period of 8 years.

## DATA EXCLUSIVITY

Irrespective of the patent protection, what is known as data exclusivity (data protection) has been uniformly provided for across the EU and has been applicable for all marketing authorisation applications since October 30, 2005. Data exclusivity specifies as of when a reference to the documents of an original product is allowed in an application for generics. Generally, this is not permissible until 8 years after the first-time authorisation in the EU. After expiry of another 2 years (i. e. after 10 years in total), the generic medicinal product may be placed on the market for the first time (“8+2 rule”).

When the marketing authorisation holder of an original product successfully applies for new fields of application within the first 8 years after the first authorisation was awarded, data exclusivity is extended from 10 to 11 years (“8+2+1 rule”).

## PARTICULARITIES IN PATENT PROTECTION AND DATA EXCLUSIVITY

There are several particularities applicable for patent protection and data exclusivity in the EU, which promote the generic industry on the one hand while creating incentives for innovative research in the field of medicinal products on the other.

### ■ ROCHE-BOLAR RULE

In the EU, studies and investigatory work for patent-protected medicinal products may – for the preparation of documents for generics applications for marketing authorisation – be conducted prior to the expiry of the patent protection already.

### ■ PEDIATRIC MEDICINAL PRODUCTS

Since January 2007, the suitability for children of all new medicinal products in the EU must be verified. New, patentprotected medicinal products which are suitable for administration to children (paediatric medicinal products), may assert an additional 6 months of patent protection. Any medicinal products whose patent protection has already expired, may apply for an additional year of data exclusivity – upon submission of new paediatric data within the first 8 years of data exclusivity.

### ■ ORPHAN DRUGS

An orphan drug status may be applied for medicinal products for rare diseases from EMA (European Medicines Agency). Under specific circumstances, orphan drugs enjoy market exclusivity once they have been authorised. This means that the EMA or a national authority may not accept any further application for marketing authorisation in this indication or issue an authorisation in this indication once a first-time marketing authorisation of an orphan drug has been awarded. In specific cases, this market exclusivity is reduced to 6 years.

# 4 MARKETING AUTHORISATION FOR MEDICINAL PRODUCTS

## 4.1 PROCEDURES

Medicinal products may only be put into circulation by the marketing authorisation holder (MAH) after they have been officially “approved” by the authorities. The legal basis for this approval in Austria is the frequently amended law of 1984 relating to the manufacture and distribution of medicines (MPA, Medicinal Products Act).

The authorisation is granted if the applicant can demonstrate that the expected benefits of a medicine exceed the expected side effects. The proof is provided by submitting pharmaceutical, preclinical data as well as clinical data.

There are three different procedures to obtain a marketing authorisation:

### ■ NATIONAL PROCEDURE

The (purely) national authorisation procedure is set forth by the Medicinal Products Act and is only applicable for medicinal products which are to be authorised for Austria. The Austrian Medicines and Medical Devices Agency evaluates the application while the Federal Agency for Safety in Health Care award the marketing authorisation.

### ■ MUTUAL RECOGNITION (MRP)/DECENTRALISED PROCEDURE (DCP)

The authorisation procedure is applicable when the medication is to be approved in more than one EU country. This procedure is based on the principle of mutual recognition of marketing authorisations from the Member States. The mutual recognition procedure should be applied for an authorisation already existing in one of the Member States. The decentralised procedure is only applicable when there is no other corresponding authorisation in one of the Member States.

The applicant is free to choose in which Member State the medicinal product is to be approved. A basic prerequisite is the positive approval of the authorisation application by all Member States involved in the process. Every Member State shall issue a national marketing authorisation once the procedure has been completed.

### ■ CENTRALISED PROCEDURE (EU)

A centralised procedure has been in place since 1995, at the completion of which a European Authorisation is awarded. In a centralised procedure, the authorisation is granted by the EU Commission and is valid in all EU Member States. Authorisation through this procedure is mandatory for biotechnical medicinal products, medicinal

products for novel therapies, certain veterinary drugs, orphan drugs as well as new substances for the following therapeutical indications:

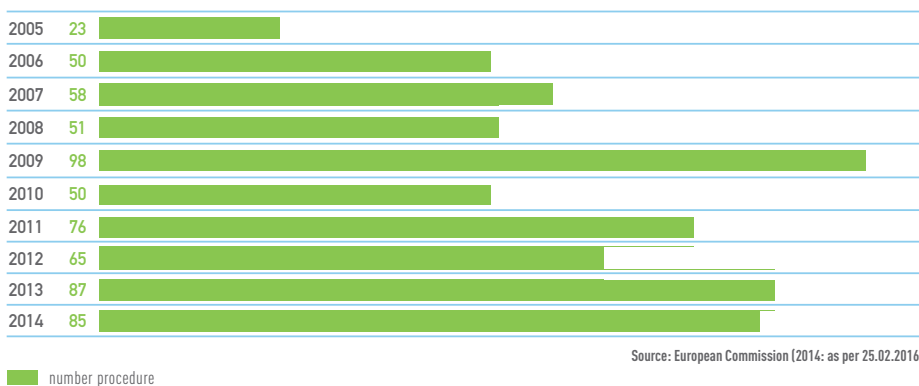
- acquired immunity deficiency syndrome
- cancer
- neurodegenerative diseases
- ndiabetes
- immune mediated disease and other immune diseases
- viral diseases

In this procedure, the evaluation is conducted not by the national authority but by the European Medicines Agency (EMA) headquartered in London. Based on the EMA evaluation, the EU Commission awards an EU authorisation for all Member States.

Until November 2005, a difference was made between the compulsory centralised procedure (for all genetically engineered and biotechnical medicinal products) and the voluntary centralised procedure (for innovative substances). In the voluntary centralised procedure, the applicant was able to choose between the centralised and the mutual recognition procedure.

Since the new EU directive concerning the centralised procedure has taken effect in November 2005, only one compulsory centralised procedure remains applicable for certain medicinal products.

## CENTRALISED PROCEDURE FOR MEDICINAL PRODUCTS IN THE EU



## 4.2 REQUIREMENTS FOR THE MARKETING AUTHORISATION

In the case of innovative products or original preparations, the applicant for authorisation must submit to the authority a complete dossier (documents and study results for pre-clinical and clinical as well as medicinal product data).

For generic medicinal products (me-too products to be placed on the market after the expiry of the patent or after expiry of data exclusivity of the original preparation), the applicant for authorisation must submit only a portion of the pharmaceutical data – applicants for generics are therefore exempted from a large part of the requirements to be met by an original preparation in the authorisation procedure. Instead, the applicant for a generic medicinal product has recourse to the available data of the original preparation. One therefore speaks of a “referring authorisation”. This exemption markedly decreases the term of the marketing authorisation.

In the approval procedure, the following is also established:

- Compulsory wording of the summary of product characteristics (for physicians, pharmacists and other specialists)
- Compulsory wording of the patient information leaflet (for patients and other laymen)
- Tagging (labelling of the outer packaging)
- Prescription status (information on whether the medication requires a prescription or not)
- Distribution channel (e.g. to be sold only at pharmacies, required refrigerated transport, etc.)

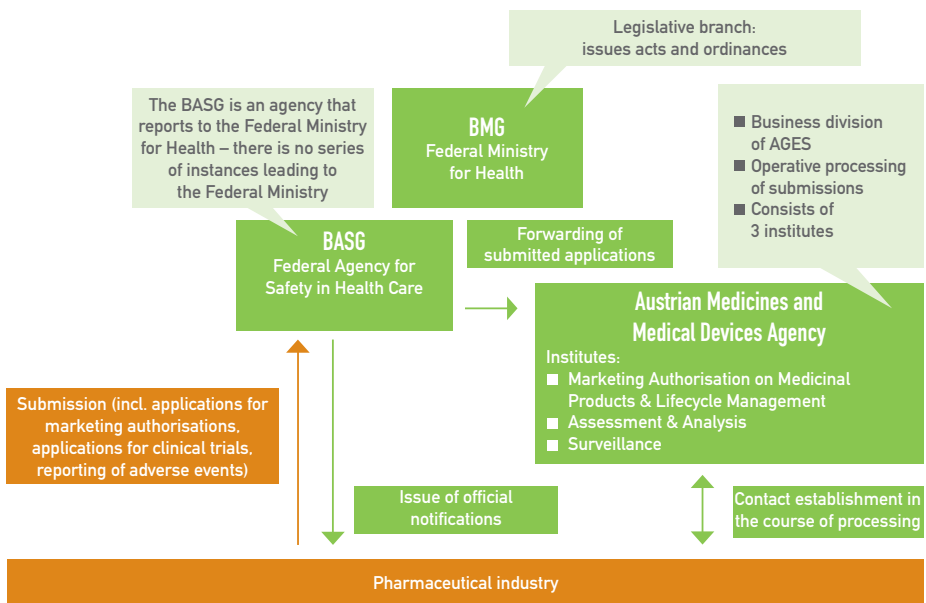
When a pharmaceutical is approved according to the MPA, it is designated as a medicinal product.

### COMPETENT AUTHORITIES IN AUSTRIA

Until the end of 2005, marketing authorisations for medicinal products were granted by the Federal Ministry for Health – starting in January 2006, the Federal Agency for Safety in Health Care (BASG) took on this sovereign responsibility. The operative performance of the pharmaceutical and medicinal product system (incl. authorisation, pharmacovigilance, blood safety, inspection system, clinical test) was also shifted from the responsibility of the Federal Ministry for Health to the Austrian Medicines and Medical Devices Agency. The legal basis for this extensive reorganisation is the Health and Food Safety Act (GESG – Federal Law Gazette I 139/2006).

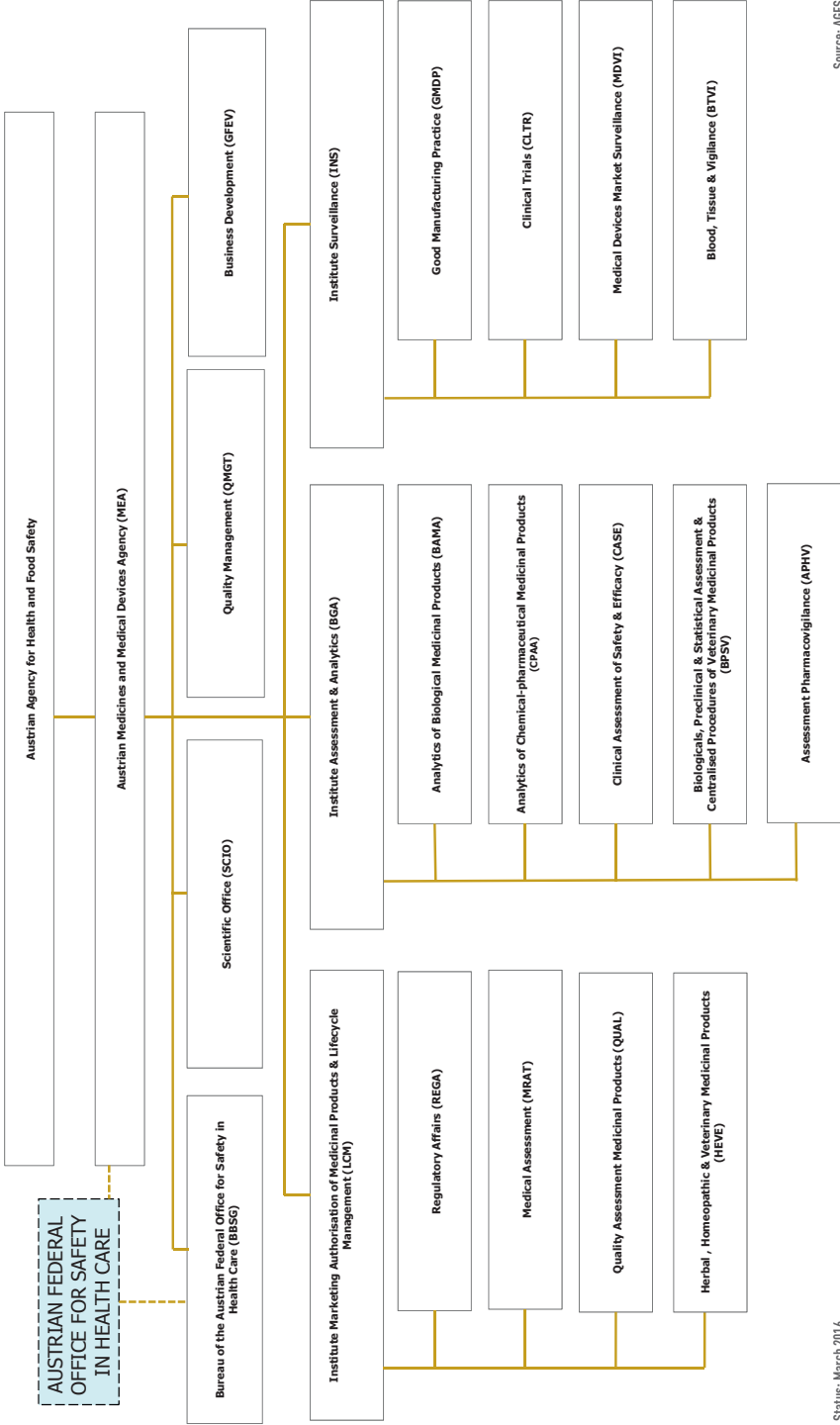
The Austrian Medicines and Medical Devices Agency is one of the 5 business divisions of AGES (Agency for Health and Food Safety) – a private services company owned by the Ministry of Health and the Ministry of Agriculture. The Federal Agency for Safety in Health Care was set up to support the Austrian Medicines and Medical Devices Agency. The Federal Agency for Safety in Health Care (BASG) is a federal agency responsible for the implementation of state-conferred responsibility (e.g. issue of notification). The operational level is represented by the Austrian Medicines and Medical Devices Agency with its 3 institutes (status: 2014).

Drug regulatory affairs were moved to the Austrian Medicines and Medical Devices Agency of AGES to achieve, among other things, faster processing of applications with the goal of more rapid access to pharmaceuticals.





# AUSTRIAN MEDICINES AND MEDICAL DEVICES AGENCY OF AGES – ORGANISATIONAL CHART



Source: AGES

Status: March 2016

## 4.3 NUMBER OF MEDICINAL PRODUCTS

### TOTAL NUMBER OF APPROVED MEDICINAL PRODUCTS FOR HUMAN USE 2014

Medicinal products for human use, total	10.593
Centralised authorisation procedure (EMA)	862
Allergen manufacturing procedure	67
Approved allergens	1
Biological medicinal products	339
Homeopathic medicinal products	629
Medicinal gases	31
Herbal medicinal products	229
Radioactive pharmaceuticals	41
Chemical medicinal products	7.619
Medicinal products that represent a monography of the ÖAB/Ph.Eur*	14
Pharmacy-proprietary medicinal products	761

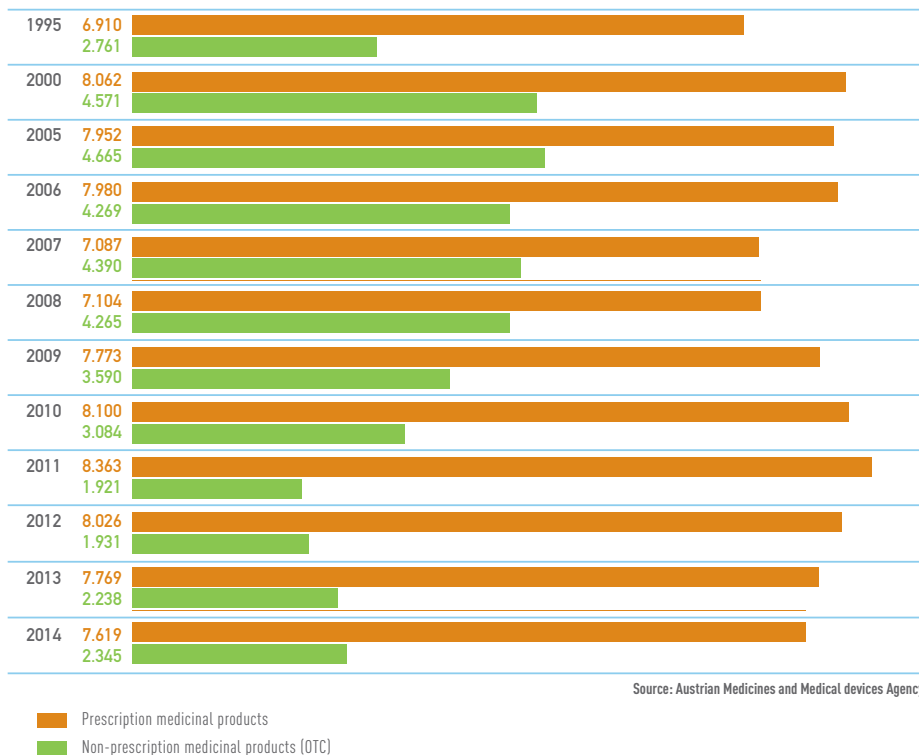
\* § 9c Medicinal Products Act

Source: Austrian Medicines and Medical devices Agency, European Commission

Pharmacy-proprietary medicinal products are manufactured by pharmacies directly; they are approved as non-prescription specialities of a specific pharmacy and may be sold only by the respective pharmacy. Due to a MPA amendment approved pharmacy-proprietary medicinal products have been transferred to the status of registered pharmacy-proprietary medicinal products since September 2009.

## 4.4 PRESCRIPTION STATUS

### PRESCRIPTION STATUS OF MEDICINAL PRODUCTS (MEDICINAL PRODUCTS FOR HUMAN USE EXCLUSIVE OF HOMEOPATHIC MEDICINES)



The prescription status of the medicinal products is determined during the authorisation procedure. The Prescription Act together with the Austria's Prescription Ordinance (Rezeptpflichtverordnung) are the legal basis for this decision.

Around 24 % of the medicinal products for human use approved in Austria (without homeopathic medicines) are available as non-prescription medicinal products in pharmacies.

Approximately 76 % of approvals are prescription medicinal products.

## 5 DRUG MONITORING

Pharmacovigilance is the science of, including the activities related to, the detection, assessment, understanding and prevention of adverse effects or any other medicine-related problem, e. g. abuse, misuse and quality defects.

Underlying objectives of the applicable EU legislation for pharmacovigilance are:

- preventing harm from adverse reactions in humans arising from the use of authorised medicinal products within or outside the terms of marketing authorisation or from occupational exposure; and
- promoting the safe and effective use of medicinal products, in particular through providing timely information about the safety of medicinal products to patients, healthcare professionals and the public.

Pharmacovigilance is therefore an activity contributing to the protection of patients' and public health.

### PHARMACOVIGILANCE SYSTEM

The Pharmacovigilance system is used by the marketing authorisation holder and by Member States to fulfil the tasks and responsibilities listed in Title IX of Directive 2001/83/EC. It is designed to monitor the safety of authorised medicinal products and detect any change to their benefit-risk balance, i. e. the evaluation of the positive therapeutic effects in relation to the risks relating to the quality, safety or efficacy of the medicinal product.

### DRUG MONITORING AFTER APPROVAL

The European regulatory authorities decide on the approval of medicinal products after they have assessed the results of laboratory tests and clinical trials. Only those medicinal products whose benefits are proven to outweigh their risks reach the market. This guarantees that patients have access to the treatment they need, without being exposed to unacceptable side effects. In general, a limited number of patients participate in clinical trials for a defined period under controlled conditions. Under real conditions, a larger and more heterogeneous group of patients will use the medicinal product. They may suffer from various different illnesses, and may also take other medicinal products.

Some less frequent side effects may occur only when a large number of persons use a medicinal product over a long period of time.

It is therefore essential that all medicinal products in circulation must continue to be monitored for safety. Since the beginning of 2011, the additionally monitored medicinal products include newly approved drugs as well as those for which the regulatory authorities require further studies, e.g. on long-term use or rare side effects that were observed during clinical trials.

## THE BLACK TRIANGLE

The European Union has introduced a new label for medicinal products, which will be monitored especially closely. On their package insert, these medicinal products shall carry a black triangle, standing on its apex, together with the following brief sentence:

▼ “This medicinal product is subject to additional monitoring”.

All medicinal products are monitored carefully after their introduction to the EU market. Medicinal products labelled with the black triangle shall be monitored even more closely. This can occur if there is less information available than for other medicinal products, for example because it is a new product on the market. It does not mean that the medicinal product is unsafe.

## COSTS OF DRUG MONITORING

The industry must take considerable steps in order to meet legal obligations regarding drug monitoring. These include the installation of their own pharmacovigilance systems, the reporting of suspected adverse reactions, literature research, signal detection, and the compiling of periodic safety update reports (PSURs). In addition, there must be an ongoing technical connection and provision of information to official databases.

Amendments to the European pharmacovigilance laws in 2012 brought an increasing shift in administrative tasks in the area of drug monitoring from the member states to the European Medicines Agency (EMA). This was accompanied by a large increase in fees. As well as an annual fee for the maintenance of the EMA IT systems, additional five- to six-figure procedure-based fees are charged for PSURs, post-authorisation safety studies and pharmacovigilance-related referrals.

It is estimated that an average pharmaceutical company with a wide range of active ingredients could pay up to 20 million Euro annually in pharmacovigilance fees alone.\*

Since the monitoring of the medicinal products market is part of the general tasks of the EMA and national authorities to ensure public health, the European pharmaceutical associations believe that these authorities should be financed in part by the European Community, as is also stipulated in EU medicinal products legislation.

\* Source: <http://www.biopharminternational.com/extending-scope-pharmacovigilance-comes-price>

# 6 PHARMACEUTICAL INDUSTRY AS AN ECONOMIC FACTOR

## 6.1 PHARMACEUTICAL PRODUCTION IN EUROPE

### PHARMACEUTICAL PRODUCTION IN SELECTED EUROPEAN COUNTRIES

	EURO MILLION	EURO PER INHABITANT	ESTIMATED POPULATION MID-2013
Switzerland***	33.010	4.086	8.078.000
Germany	29.010	351	82.727.00
Italy***	27.461	450	60.990.000
France***	20.507	319	64.291.000
Ireland***	18.896	4.084	4.627.000
Great Britain	18.183	288	63.136.000
Spain***	14.486	309	46.927.000
Denmark***	8.725	1.553	5.619.000
Belgium	8.034	724	11.104.000
Sweden***	6.677	698	9.571.000
Netherlands***	6.180	369	16.759.000
Austria	2.692	318	8.477.000
Finland	1.450	267	5.426.000
Portugal***	1.434	135	10.608.000
Greece	938	84	11.128.000
Norway***	745	148	5.043.000

\*\*\* Estimates

Source: EFPIA, Statistics Austria, 2013

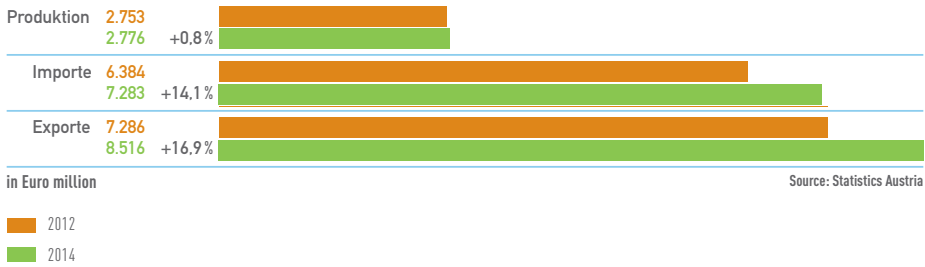
Switzerland is the leader in pharmaceutical production.

In 2013, Switzerland, Germany, Italy and France produced the majority of pharmaceuticals in Europe.

Ireland and Switzerland reported the highest production value per capita. Austria, with 318,- Euro per capita, is far below the mean value of 886,- Euro per capita of the selected European countries.

## 6.2 PHARMACEUTICAL PRODUCTION IN AUSTRIA

### PHARMACEUTICAL PRODUCTION IN AUSTRIA. IMPORTS AND EXPORTS



In the pharmaceutical industry Austria is among the exporting countries. In 2014, the value of medicinal product exports exceeded imports by some 17%.

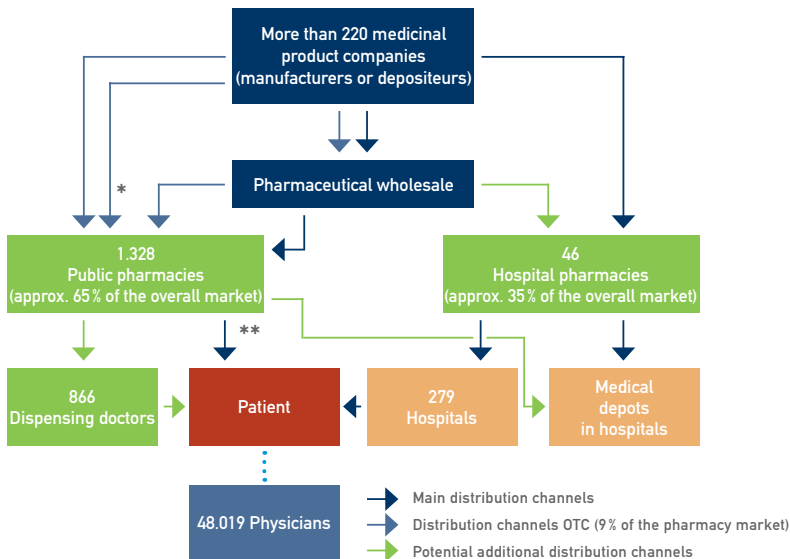
Both production and imports and exports of pharmaceuticals are steadily rising.



## 6.3 PHARMACEUTICAL DISTRIBUTION

### THE AUSTRIAN MEDICINAL PRODUCT DISTRIBUTION SYSTEM

In Austria the medicinal product distribution is covered by the following distribution chain: pharmaceutical companies – pharmaceutical wholesalers – pharmacies – patient



Source: PHARMIG, Statistics Austria, IMS, HV, BMG, 2014

\* **Pharmaceutical logistic companies:** in order to guarantee the supply of medication, the Austrian pharmaceutical companies also employ the services of pharmaceutical logistics companies (shipping companies).

\*\* as of 25 June 2015 also distance-selling for OTC products

About one third of the medicinal products were sold to hospitals, and two thirds to public pharmacies, i. e. the out-patient sector (based on value).



## PARALLEL TRADE

If a medicinal product is not imported or exported by the manufacturer or marketing authorisation holder, respectively, but by a third party which parallel imports/exports the medicinal product by a distribution channel which is not defined by the manufacturer or marketing authorisation holder, we call this parallel trade.

In many EU member states medicinal product prices are directly or indirectly regulated by the respective national government. Therefore it is possible that the prices for a particular medicinal product are different in various countries which makes it attractive for parallel traders to purchase medicinal products in low-price countries and to import them into high-price countries. Due to the EU principle of free movement of goods this parallel trade is legal, however it involves some risks. Manufacturers are not able to calculate the flows of goods wherefore shortages of supply could occur. The law requires that labelling is adapted to the respective national standards wherefore medicinal products are repackaged and a patient information leaflet in the respective national language is inserted. It is not unusual that medicinal products are resold via several intermediaries until they are accessible for the patient on the domestic market. These measures increase the potential that falsified medicinal products enter the legal distribution chain.

For healthcare organisations which resort to these imports cost savings are usually very slight, because the major part of the price difference benefits the parallel trader.

## DISTANCE SELLING

Distance selling, as defined by the Medicinal Products Act (MPA), is the selling of medicinal products that do not require prescription by a public pharmacy through means of distance communication, e. g. via internet trade.

The implementation of the “falsification directive” (2011/62/EU) created a standardised logo for all member states to designate authorised internet pharmacies, leading to the introduction of distance selling, also in Austria.



In the case of orders from an Austrian internet pharmacy, there must be an Austrian flag symbol. Internet pharmacies that operate from other EU countries can also be recognised by their respective flag symbol. Legal internet pharmacies may only sell medicinal products in or to Austria that do not require prescription.

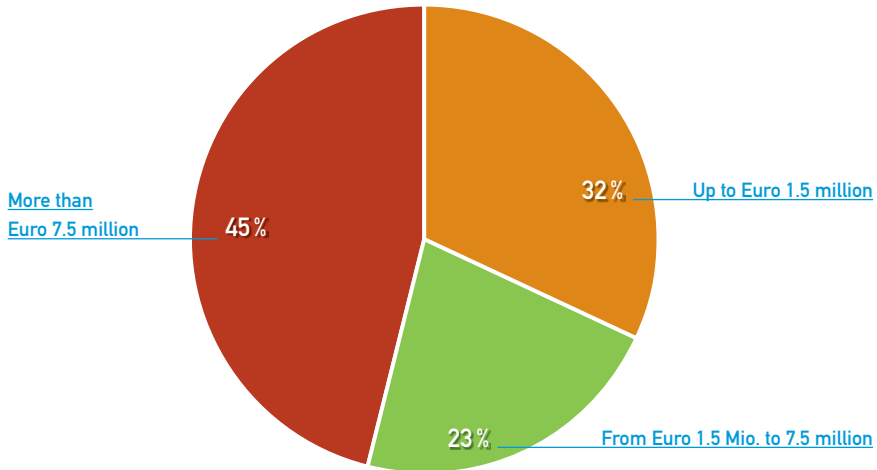
Since 25 June 2015 domestic distance selling is also possible for Austrian pharmacies. The list by the AGES MEA – Austrian Medicines and Medical Devices Agency contains information in all distance selling pharmacies registered in Austria:

<https://versandapotheken.basg.gv.at/>

Legal provisions are set out in the Ordinance on Distance Selling.

## 6.4 COMPANY STRUCTURE

### SIZE OF PHARMACEUTICAL COMPANIES, BY TURNOVER



according to yearly sales of Pharmig members in percent

Source: PHARMIG, 2015

The business volume of the Austrian pharmaceutical companies that either produce medicinal products themselves (manufacturers) or import finished medicinal products (distributors) to Austria varies greatly.

### OVERVIEW OF THE AUSTRIAN PHARMACEUTICAL AND BIOTECH INDUSTRY:

■ Number of companies in the pharmaceutical industry and biotech:	336
■ Number of employees:	26,500
■ Sales:	10.7 billion

\* Includes companies active in the following sectors: Research & development, supply, manufacturing

Source: Life Science Report Austria 2015

# 7 THE PHARMACEUTICAL MARKET

## 7.1 MARKET FACTOR PRICE

### PRICES OF MEDICINES

- **Price ex works (PeW/DAP):**  
Manufacturer/Depositeur → Wholesale
- **Pharmacy purchase price (PPP):**  
Wholesale → Pharmacy
- if reimbursed:
- **Reimbursement price (RP):**  
Pharmacy → health insurance
- if a private purchase:
- **Pharmacy selling price:**  
Pharmacy → Customer

Price-example

€ 10.–
€ 11.25 = PeW + Wholesale charge
RP gross: € 15.20 = PPP + Pharmacy charge (Price exkl. VAT.**)
RP net: € 9.50 = PPP + Pharmacy charge – Prescriptionfee* (Price exkl. VAT.**)
€ 21.20 = PPP + Pharmacy charge + 15 % privatesale charge (inkl. VAT)**)

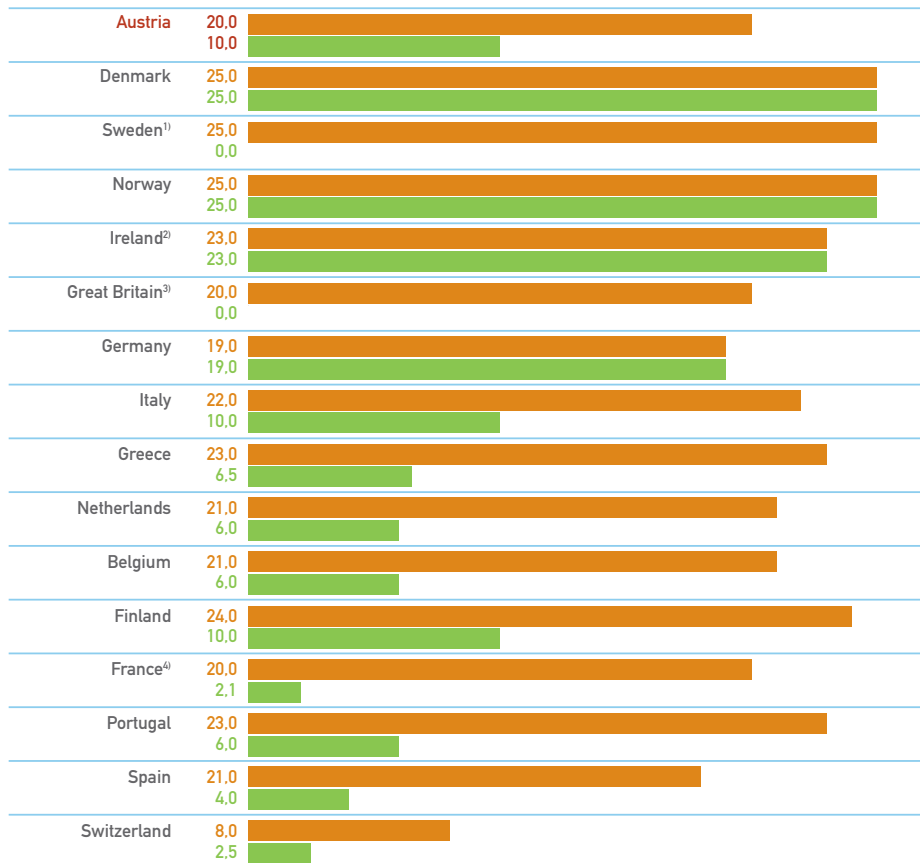
\* Prescriptionfee since 1.1.2016: € 5.70; \*\* VAT. since 1.1.2009: 10 %

Source: PHARMIG

All prices and margins in the pharmaceutical distribution chain are subject to public control by authorities/social insurance.

- Price ex works: this is a price that a wholesaler pays for a medicine (excl. VAT)
- Pharmacy purchase price: this is a price which a pharmacy pays for a medicine, (excl. VAT)
- Pharmacy selling price: this is a price which a costumor pays for a medicine
- Reimbursement price: this is a price which a health insurance pays for medicines, that are reimbursable; the prescription fee for 2016 (since the 1st of January) amounts to € 5.70 per Pack.

## VALUE-ADDED TAX (VAT) IN EUROPE PER 1.1.2016



in percent

Source: European Commission

■ Normal rate   ■ Rate for medicinal products

<sup>1)</sup> Sweden: 0% on prescription, 25% for OTC

<sup>2)</sup> Ireland: 0% for oral form of administration, 23% for all other medicinal products

<sup>3)</sup> Great Britain: 20% for medicinal products purchased by hospitals and OTC preparations, 0% on prescription

<sup>4)</sup> France: 2.1% for medicinal products reimbursed by the health insurance, 5.5% for all others

Since January 1, 2009, a reduced VAT rate of 10% applies to pharmaceuticals in Austria.

### PRICE EX-WORKS (PEW) PER PACK IN THE PHARMACY MARKET

In 2014 the Austrian price ex-works (PeW) per pack pro was 10.59 EUR and therefore 6.7 % below the EU-15 average of 11.35 Euro.

Germany occupied top position with a PeW per pack of 19.57 EUR, followed by Switzerland at 19.56 EUR per medicinal product pack. Poland and Bulgaria have the lowest PeW per pack, and are at the bottom of the European comparison.

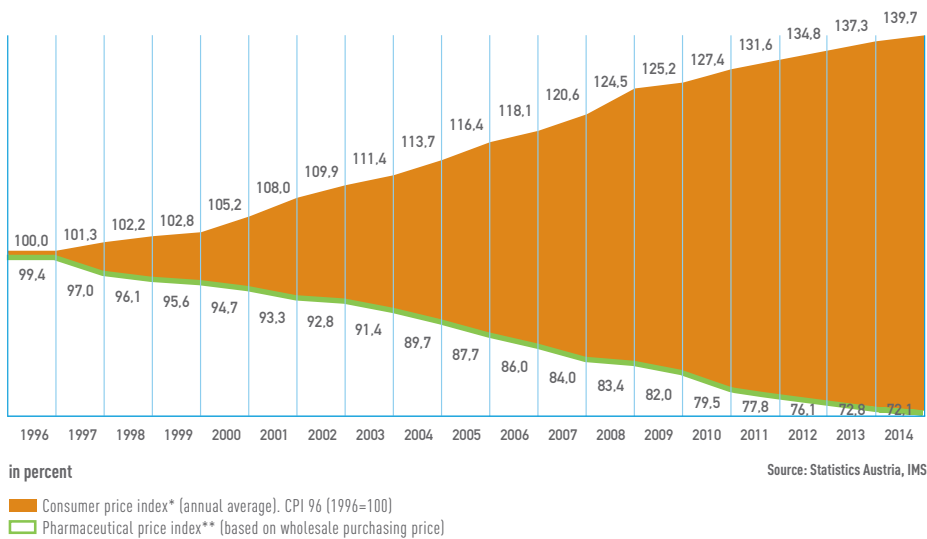
### PRICE COMPARISON PER PACK (FAP), 2014



- - - Arithm. Mean EU-25 incl. CH = 9,09 Euro

— Arithm. Mean EU-15 incl. CH = 11,35 Euro

## PRICE TRENDS (BASED ON WHOLESALE PURCHASING PRICE)



\* The consumer price index (CPI) is the standard index for general pricing trends and inflation in Austria.

\*\* The pharmaceutical price index (based on wholesale purchasing price) is based on IMS calculations and is an element of growth. The pharmaceutical price index incorporates changes in pricing (in per cent) of products which have already been placed on the market in comparison with the previous period, cf. page 57.

Prices for medicinal products already on the Austrian market have decreased annually since 1996: The price for a fictitious package of medicine costing 10 Euro in 1996 is only 7.2 Euro in 2014.

The CPI (consumer price index), however, underwent the exact opposite development.

The divergence between consumer price index and pharmaceutical price index continues year to year. The pharmaceutical price index decreases continuously.

## 7.2 ELEMENTS OF GROWTH

The growth of the medicinal product market is influenced by a number of factors:

### ■ CHANGE IN PRICE

Price changes are changes in the price of a certain product already introduced in the market. Changes in average prices due to new product launches are not covered under this category. The development of medicinal product prices has been an impediment to growth since 1994.

### ■ NEW PRODUCT LAUNCHES

New launches cover new products, provided that they contain new active agents, in the year of the product placement and in the subsequent year. They replace previous forms of therapy or make pharmacotherapy possible for the first time. After the second year following the product launch, the market changes of these products are taken into account under the category structural changes.

### ■ STRUCTURAL EFFECTS

Following factors are relevant:

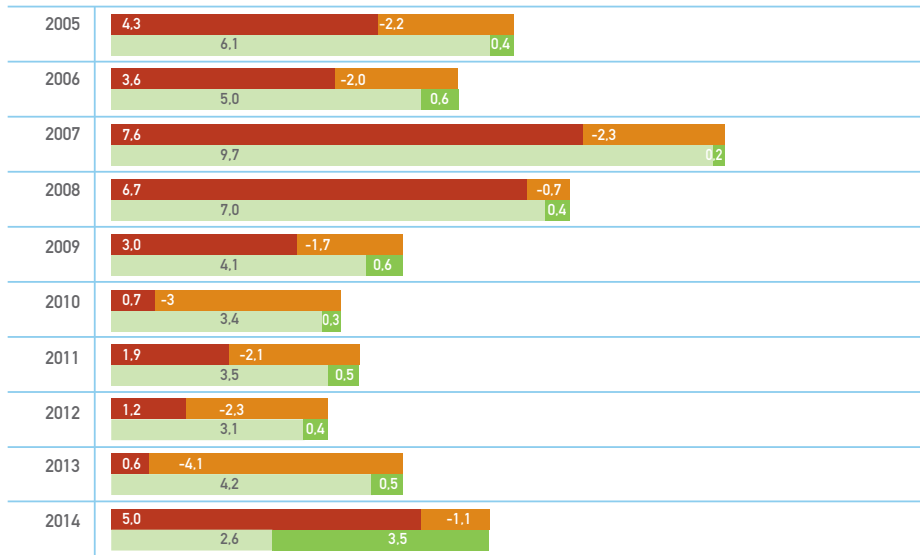
#### **STRUCTURAL CHANGE**

Structural changes include all types of substitution of medicinal products, unless they are covered in the category New Product Launches, attributable to changes in prescribing habits, replacement of previous forms of therapy, etc. Pure increases in quantity are also covered in this category, including increases in demand due to demographic changes.

#### **EXPANDING THE RANGE OF PRODUCTS**

This growth factor includes all extensions of the product range in terms of quantity (product differentiation) of the medicinal products already available on the market for more than two years, e. g. introduction of new pack sizes or forms of administration, etc.

## ELEMENTS OF GROWTH (BASED ON WHOLESALE PURCHASING PRICE)



in percent

Source: IMS

- Total growth
- Price change
- Structural effects
- New launches



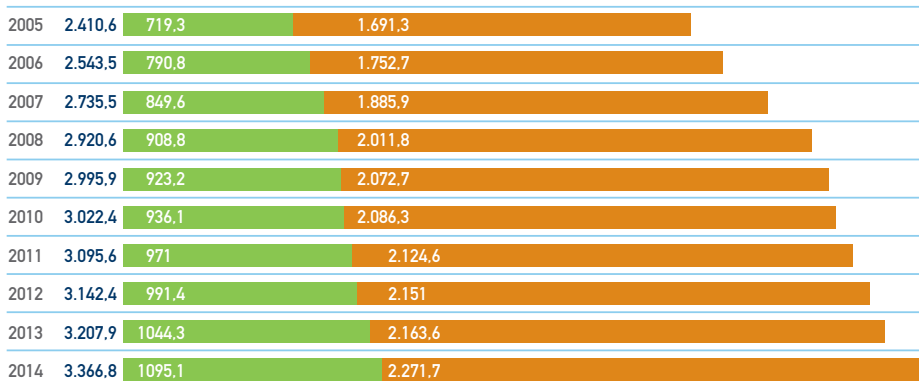
## 7.3 THE HOSPITAL AND PHARMACY MARKET

In 2014, the Austrian medicinal product market reported sales of 3.36 billion euros and a sales volume of 236.9 million packages. This represents a growth rate of 5.0 % in value and a growth rate of 0.1 % in volume.

From the perspective of the manufacturers and distributors the medicinal product market is divided into two segments:

- Hospital market (intramural sector)
- Public pharmacies and dispensing doctors (extramural sector)

### PHARMACEUTICAL SALES (BASED ON WHOLESALE PURCHASING PRICE)



in Euro million

Source: IMS

- Hospitals
- Pharmacies

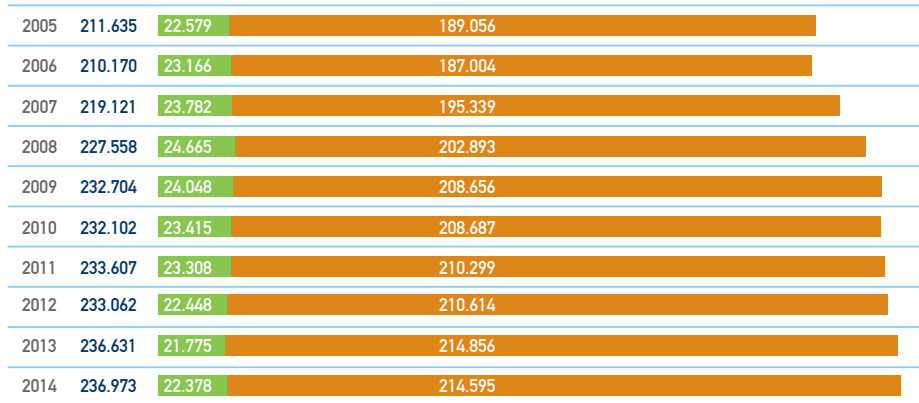
The hospitals sales represent approximately 33 % of the total market.

In the year 2014 the hospital segment increased by 4.9 % in sales and increased by 2.8 % in volume.

All sales data are based on wholesale purchasing price.

In 2014, 236.9 million packages were sold in Austria. Around 10 % of these went to hospitals (hospital pharmacies) and around 90 % to pharmacies in the extramural sector.

## SOLD PACKAGES



in units of 1.000

Source: IMS

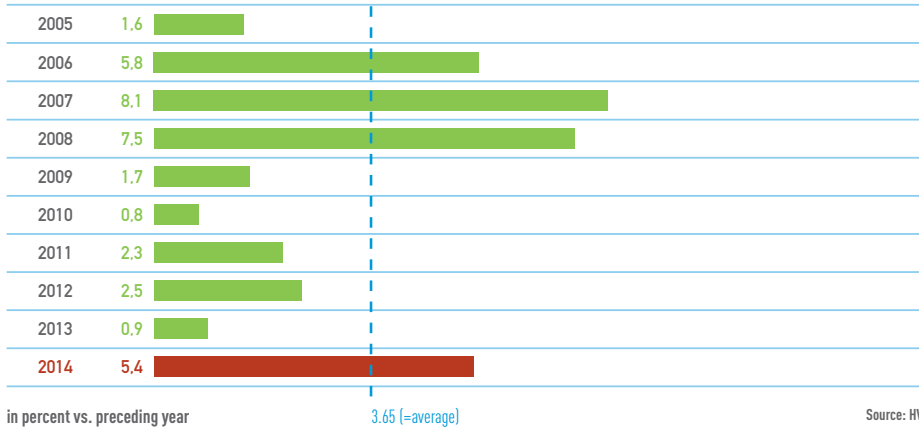
- Hospitals
- Pharmacies

In 2014, the number of sold packages have increased by 0.1 %.

## 7.4 THE REIMBURSEMENT MARKET

The market for reimbursable medicinal products is the market segment that includes medicinal products whose costs are assumed by the individual social insurance institutions.

### CHANGE RATES FOR EXPENDITURES FOR MEDICINAL PRODUCTS\*



\* Expenditure for medicinal products without VAT and before deduction of prescription charges

In 2014, the expenditures of the health insurers for medicinal products increased by 5.4 % compared to the year 2013.

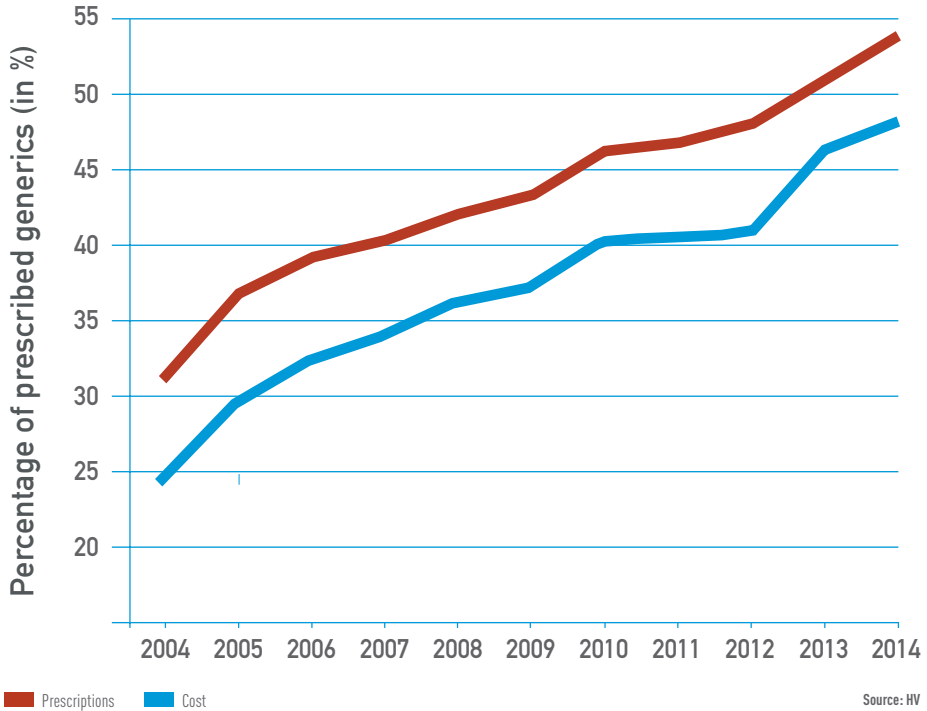
Price ex-works (PeW) per pack in the reimbursement market:

- the domestic price ex-works (PeW) in the reimbursement market is positioned, at 12.34 € per pack in 2014, below the European average (EU-15 average including Switzerland: 12.75 €)
- the health insurance price (incl. 10 % VAT) in Austria's reimbursement market was 17.57 € per pack in 2014, which is also below the European average (EU-15 average incl. Switzerland: 18.75 €)

The management of the health insurance companies and overall spending on therapeutic products can be found in Chapter 9.3

## 7.5 GENERICS IN THE REIMBURSEMENT MARKET

### PRESCRIBED GENERIC PRODUCTS IN THE REIMBURSEMENT MARKET



\* When calculating the percentage of generics, only the product first added to the reimbursement system (initial supplier) and the products added at a later time (generics) are differentiated.

- The percentage of generics in the reimbursement market is about 52% (according to billing records of the health insurance funds for 2014)
- This means that almost every other prescription is for a generic product
- About 47% of costs in the reimbursement market are from generics

The share of generics in Austria's market is growing steadily.

## 7.6 BIOPHARMACEUTICALS IN THE REIMBURSEMENT MARKET

### DEVELOPMENT OF BIOPHARMACEUTICALS

based on Value



based on Volume



in percent vs. preceding year

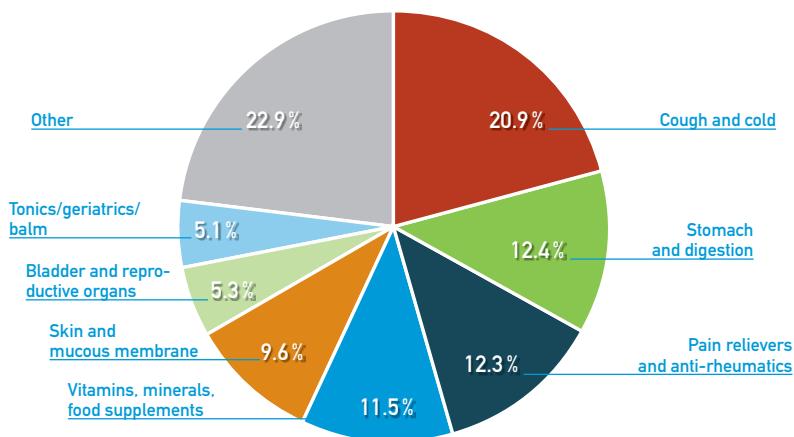
Source: Austrian Chamber of Pharmacists

In 2015 the use of biopharmaceuticals in the health fund market rose 5.3 % in terms of turnover. Volume-wise the market expanded by 2.3 %.

## 7.7 THE SELF-MEDICATION MARKET

In 2015, the OTC market at pharmacy prices (Euro 802.1 million) was divided up as shown below: 6.4% prescribed non-prescription medicinal products, 46.5% self-medication with registered OTC products and 47.1% self-medication with non-registered OTC products.

### INDICATION GROUPS IN SELF-MEDICATION (BASED ON PHARMACY SALES PRICE)

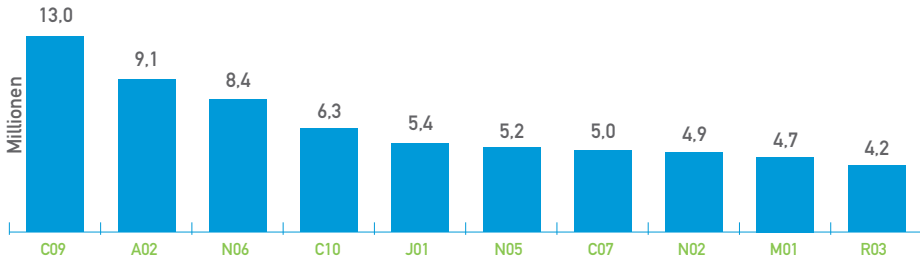


Source: IGEPHA, Basis AVP

The Top 3 cough/cold, stomach/digestion and pain relievers, jointly cover 46% of the self-medication market.

## 7.8 PHARMACEUTICAL CONSUMPTION BY INDICATION GROUP

THE INDICATIONS GROUP WITH THE HIGHEST PRESCRIPTION SHARE WAS TREATMENT SUBGROUP ATC LEVEL 2\*, 2014



- C09** Medicine for treating the renin-angiotensin system (e.g. with high blood pressure, chronic cardiac insufficiency)
- A02** Medicine for the treatment of acid complaints (for neutralising stomach acid, e.g. with heartburn, acid indigestion)
- N06** Psychoanaleptics (treatment of psychological illnesses such as depression, dementia, ADHD)
- C10** Lipid lowering medicine (to counter metabolic disorders, e.g. with high cholesterol levels)
- J01** Antibiotics for systemic use (e.g. penicillin)
- N05** Psycholeptics (for treatment of psychotic illnesses such as psychosis, schizophrenia. Medication for the treatment of sleep and anxiety problems)
- C07** Beta-adrenoreceptor antagonist medication (e.g. for high blood pressure, cardiac insufficiency, angina pectoris)
- N02** Analgetics (pain medication)
- M01** Antiphlogistics & anti-rheumatics (inflammation-inhibiting medication for diseases of the muscles and skeletal system)
- R03** Medication for the treatment of respiratory diseases (e.g. with chronic obstructive pulmonary disease (COPD))

Source: HV

in packs

\* ATC Code: Anatomical Therapeutic Chemical Classification System of the WHO

The most frequently prescribed medications according to the ATC system are: Medicines for the treatment of the renin-angiotensin system (e.g. with high blood pressure), medicine for the treatment of acid complaints (e.g. heartburn) and psychoanaleptics (for the treatment of psychological illnesses, e.g. depression)

## 8 HOSPITALS IN AUSTRIA

In Austria, hospitals totalled 279 at the end of 2014.

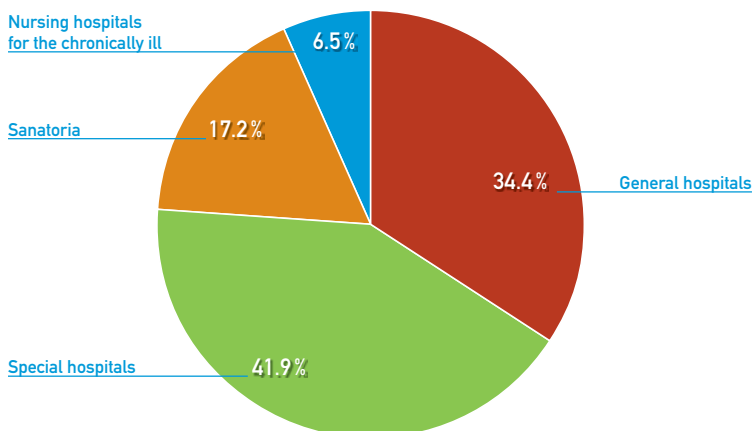
The hospital system is of federal nature, i. e. the jurisdiction is with the provincial governments.

The legal basis for all hospitals is the Federal Hospitals Act (KAKuG). This Act serves as the basis for the 9 provincial acts, which represent implementing statutes.

Hospitals as per § 2 of the Federal Hospitals Act include:

- **GENERAL HOSPITALS:** for persons irrespective of their gender, age or the type of medical care they receive.
- **SPECIAL HOSPITALS:** for the examination and treatment of persons with specific diseases or of persons of a particular age or for certain purposes.
- **HOMES FOR CONVALESCENT:** Persons requiring medical treatment and special care.
- **NURSING HOSPITALS FOR CHRONICALLY ILL:** Persons requiring medical treatment and special care.
- **SANATORIA:** Hospitals with special equipment for special care and accommodation.
- **INDEPENDENT OUT-PATIENT CLINICS:** Independent institutions (e.g. X-ray institutes, dental clinics) for the examination and treatment of persons who do not require in-patient treatment.

### TYPES OF HOSPITALS (WITHOUT INDEPENDENT OUT-PATIENT CLINICS) 2014



Source: Statistics Austria, BMG



## HOSPITALS RUN BY SOCIAL INSURANCE INSTITUTIONS

In 2014 the Austrian social insurance institutions (health, accident and pension insurance institutions) ran a total of 195 own hospitals:

- 120 independent out-patient clinics
- 28 other out-patient clinics/examination centres
- 47 own hospitals for inpatient treatment (= 6,401 beds)

### Independent out-patient clinics

38 general hospitals with 115 out-patient or specialist wards

80 dental out-patient wards

2 centres for out-patient rehabilitation

### Other out-patient clinics

28 other out-patient clinics (to carry out adolescent, convalescent and other medical examinations)

Own hospitals for inpatient treatment	Beds
1 general hospital and 38 out-patient wards	543
7 accident and emergency hospitals	985
27 special hospitals/rehabilitation centres	3,721
7 sanatoria	638
5 convalescence and recovery homes	514

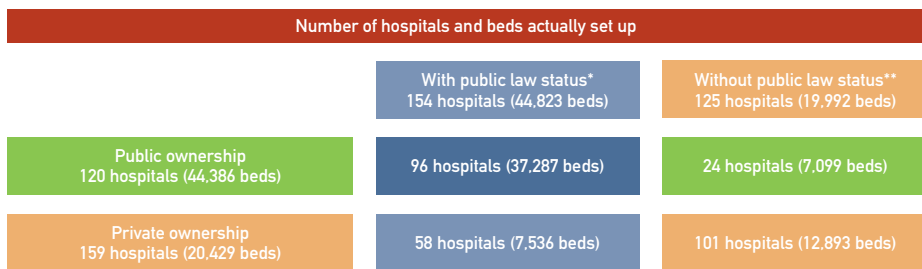
Source: HV, Statistical Handbook Austrian Social Insurance 2015

## 8.1 STRUCTURAL DETAILS OF HOSPITALS

Of these 279 hospitals, 120 (43 %) are hospitals with public status and 159 (57 %) without public status. Hospitals with public status are not to be confused with hospitals of public agencies and institutions (154).

Approximately 55 % of hospitals are run by public agencies and institutions.

### OWNERSHIP/RESPONSIBLE BODIES – PUBLIC LAW STATUS IN 2014

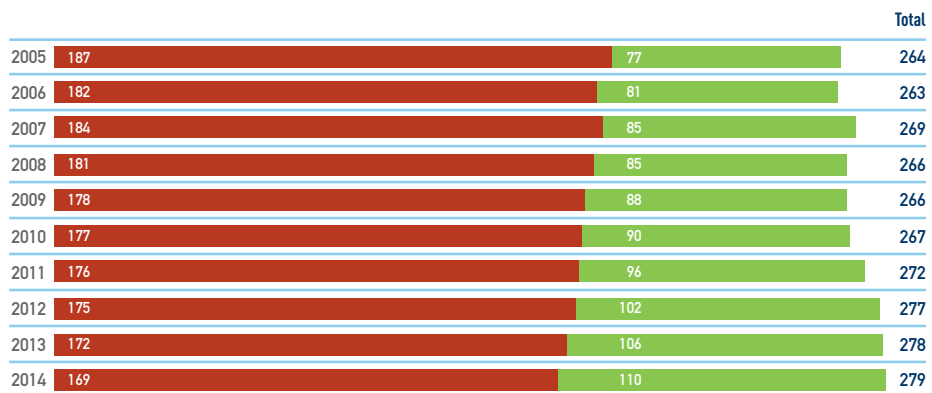


Source: BMG

\* federal government, provincial and municipal hospital companies, social insurance institutions

\*\* religious orders and congregations, private persons, private companies and associations

### DEVELOPMENT OF HOSPITALS ACCORDING TO CARE FUNCTION



■ Acute short-term care (general care and specialist care)

■ Non-acute care (rehabilitation incl. convalescence and prevention and long-term care)

Source: BMG, Annual Hospital Statistics

Over the years the number of hospitals providing acute short-term care has decreased by ca. 10 % (2005: 187 vs. 2014: 169 hospitals).

In comparison, the area of non-acute care has risen by ca. 43 % (2005: 77 vs. 2014: 110 hospitals).

## HOSPITAL CARE IN INTERNATIONAL COMPARISON

### HOSPITAL BED CAPACITY PER 1,000 INHABITANTS, 2013<sup>1</sup>



<sup>1</sup> graphical illustration of selected OECD countries

Source: OECD Health Statistics, 2015

Austria has 60 % more hospital beds per 1,000 inhabitants than the average of the OECD-25 states.

With 7.7 beds per 1,000 inhabitants, Austria is in second place behind Germany in the European OECD country comparison.

Along with the large availability of hospital beds, Austria also has the highest number of hospital treatments per number of inhabitants, compared to other European countries (266 vs. OECD average 155).

### HOSPITAL DISCHARGES PER 1,000 INHABITANTS, 2013<sup>1</sup>



<sup>1</sup> graphical illustration of selected OECD countries

Source: OECD Health at Glance, 2015

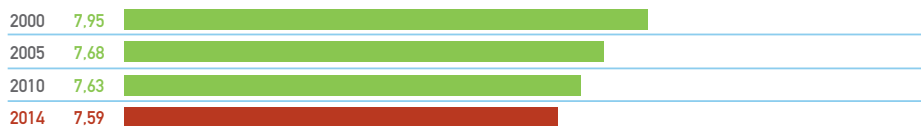
\* not including discharges of healthy new-born babies from hospitals (between 3% and 10% of all discharges).

\*\* including discharges of day-care cases

### DEVELOPMENT OF BED CAPACITY IN AUSTRIA

The overview also indicates the actually set up beds in Austria's hospitals (64,815). In relation to Austria's population, the bed coverage was 7.59 beds per 1.000 inhabitants.

### DEVELOPMENT OF BED CAPACITY IN AUSTRIA PER 1.000 IN HABITANTS



Source: BMG

In 2014, 2.8 million hospitalisations for in-patient treatment were reported in Austrian hospitals. The hospitalisation frequency (=hospital stays per 100 inhabitants) amounted to 33.2% (1991: 23.9%, 2005: 31.8%).

The average duration of hospitalisation in hospitals financed by provincial health funds was 5.36 days in 2014.

## 8.2 HOSPITAL FUNDING

The expenditure of Austrian hospitals operating on the LKF basis (system of performance-oriented hospital financing) amounted to 12.2 billion Euro in 2014. Of these, about 60 % were funded by the Regional Health Fund.

The remainder had to be paid by the hospital operators using other means. Patients also directly contributed to the funding, e. g. through private insurances.

### THE MOST IMPORTANT PAYERS FOR HOSPITALS FINANCED THROUGH THE REGIONAL HEALTH FUND IN 2014

	EURO MILLIONS
<b>Share from regional funds</b>	<b>7,369</b>
Social insurance	4,715*
The federation	1,358
Federal states (VAT-funded)	215
Municipalities (VAT-funded)	151
Funder means	430
<b>Share from hospital funders</b>	<b>3,863</b>
Federal states, municipalities	2,226
Religious orders and others	1,540
Social insurance	97
<b>Share from private parties</b>	<b>1,000</b>
Patients, private insurances	1,000
<b>TOTAL</b>	<b>12,232</b>

Source: calculated by the Institute of Pharmacoeconomic Research (IPF) with reference to the following data: HV, BMG, Austrian Statistics

\* In the Austrian social insurance system the area of hospital care incorporates the following expenses: proportionate money transfers to regional health care funds and the Federal Health Agency for Inpatient Care, payments to the remaining hospitals (funds for private hospitals, emergency hospitals, etc.) and payments for hospitals abroad. It does not include expenses for outpatient care. These expenses are recognised as medical attention and equivalent services (outpatient services in hospitals).

Social insurance contributes a large share of hospital funding. Of EUR 7.4 billion which are financed by regional health insurance funds, 64 % are accounted for by the social insurance system.

## 9 HEALTH INSURANCE INSTITUTIONS AND PHARMACEUTICALS REIMBURSEMENT

A total of 22 social insurance institutions including 19 health insurance institutions protect insured persons paying contributions (6,4 million; status: 2010) from the financial consequences of illness. Membership in these institutions is mandatory for those insured. Every insured person is a member of one of the 19 institutions, depending on their occupation and the location of the employer. There is no choice (except for those who pursue more than one occupation). The individual health insurance funds are managed autonomously to a large extent, but coordinated by the umbrella organisation Main Association of Austrian Social Insurance Institutions. Besides the health insurances there are 16 medical care institutions ("KFA") for employees of several municipal and regional administrations, such as the KFA for the civil servants of the city of Vienna.

The overwhelming majority of services covered by the health insurance schemes are subject to the principle of benefit in kind. The scope of treatment for an illness at the expense of the social insurance provider is defined by law as follows: "It must be sufficient and purposeful, but shall not go beyond what is necessary". (§ 133 ASVG)

### 9.1 THE CODE OF REIMBURSEMENT

Effective January 1, 2005, the previous reimbursement list was replaced by a Code of Reimbursement (Erstattungskodex or EKO). Based on the ASVG (General Act on Social Insurance) a procedural regulation (VO-EKO) governs in detail the process and requirements for the inclusion of a medicinal product in the EKO.

A print version of the whole EKO is published at the beginning of every year, any monthly amendments are published online at [www.avsv.at](http://www.avsv.at).

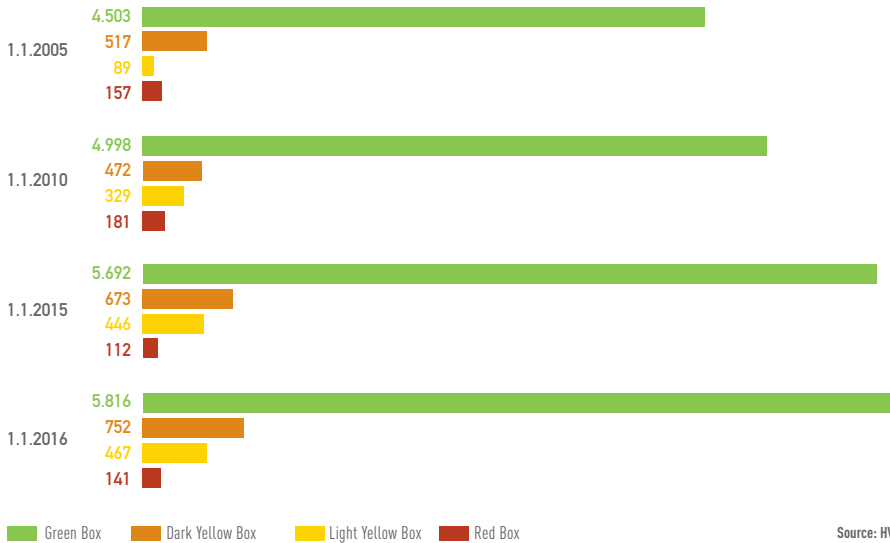
The EKO consists of three groups (also called boxes):

- The **GREEN BOX** comprises medicinal products which are either general dispensable or under specific circumstances in specified amounts. The authorisation of a chief consultant (control physician) belonging to the health insurance is not required if the rules of the Code of Reimbursement are complied with.

- The **YELLOW BOX** includes all those medicinal products which exhibit an essential additional therapeutic benefit for the patient and which are not included in the green area for medical and/or reasons of health economy. The costs are only reimbursed by the health insurance upon presentation of a medical approval by a chief consultant (control physician) of the insurance fund (RE1 = dark yellow box). For specific medicinal products in this box, whose inclusion relates to a specific application, the Main Association provides for a follow-up verification of compliance with the specified application (using the documentation provided by the attending physician) instead of the approval by a chief consultant (control physician; RE2 = light yellow box).
- The **RED BOX** temporarily comprises all medicinal products for which an application for inclusion in the Code of Reimbursement was submitted. The costs are assumed by the health insurance only upon presentation of a medical approval by a chief consultant (control physician) of the insurance fund

All other medicinal products not included in the Code of Reimbursement are only reimbursed in justified cases and upon presentation of the medical approval by a chief consultant (control physician). Specific groups of medicinal products, such as for contraception, must be paid by the patient in all cases.

**NUMBER OF MEDICINAL PRODUCTS IN THE EKO (ACC. TO NATIONAL DRUG CODE)**



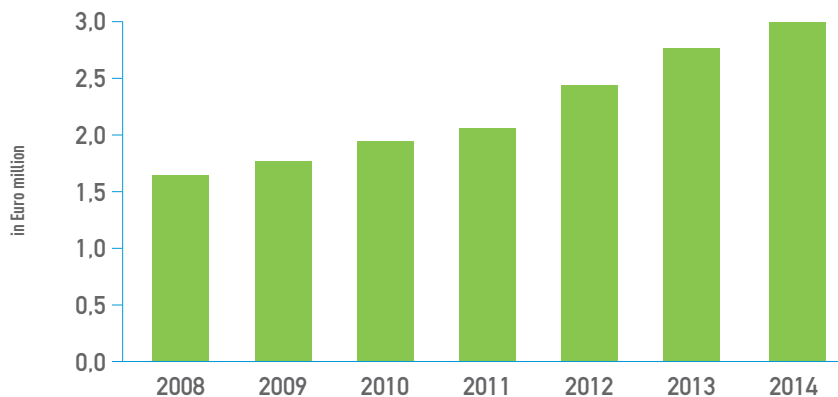
On January 1, 2016, 7176 packages were listed in EKO, compared to 5266 when EKO was introduced.

## ABS (PHARMACEUTICAL APPROVAL SERVICE) AND “OBLIGATION FOR APPROVAL BY CHIEF PHYSICIAN”

Approval for the prescription of medicines (those listed in the dark yellow and red box or not listed in the EKO at all) is carried out through the e-card infrastructure system (ABS medicines approval service). Before the contracted physician may prescribe a patient any medicinal product that requires approval, he must place an electronic request with the chief consultant (control physician) of the health insurance). This process should take no longer than 30 minutes. Only when the contracted physician has received the “okay” from the health insurance, is he permitted to write a prescription.

In 2014, 121 million prescriptions were reimbursed. Of these, 3.1 million applications for approval were accounted for by prescriptions required prior approval, whereby the number of approval applications has risen continuously in recent years.

### DEVELOPMENT OF APPROVAL APPLICATIONS



Source: HV

In 2014 there were 3.1 million applications for approval by a “chief physician”.



## 9.2 FEDERAL ADMINISTRATIVE COURT

Due to the administrative jurisdiction amendment of 2012, since January 01, 2014, the Federal Administrative Court has been responsible for reviewing decisions of the Main Association of Social Insurance Institutions in accordance with § 351 h ff ASVG (before: the Independent Drug Commission "UHK"). Appeals against decisions of the Main Association of Austrian Social Insurance Institutions must be filed within four weeks of the decision on the website [www.sozialversicherung.at](http://www.sozialversicherung.at). The appeal postpones the implementation of the decision.

Federal Administrative Court:

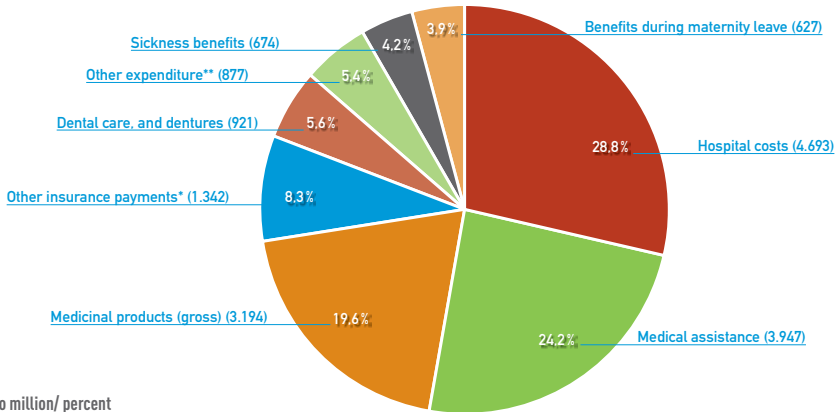
- Jurisdiction according to allocation of responsibilities. Chamber economic matters, legal area: environment matters, referral group: agricultural and health law
- Decision made by senate of 5 (discussion and voting of the senate is not publicly accessible)



- Oral proceeding: upon request or if deemed necessary by the Federal Administrative Court
- The Federal Administrative Court is authorised to
  - decide at the course themselves (as opposed to the UHK, which merely declared decisions invalid) if the requirements are met (§ 28 para 2 of the Law of Administrative Court Proceedings)
  - to nullify the decision by their own resolution – new decision by the Main Association (the Main Association is obliged to the legal opinion of the Federal Administrative Court)
- Representation by a lawyer not obligatory
- The decisions of the Federal Administrative Court are published in the federal legal information system (RIS) at [www.ris.bka.gv.at](http://www.ris.bka.gv.at)
- Since 1.1.2014 there was a procedure under § 351h ff ASVG in the case of 10 medicinal products (status: February 2016)
- Appeals: Higher administrative court and/or constitutional court

## 9.3 BUDGETS OF HEALTH INSURANCE INSTITUTIONS

### BUDGETS OF HEALTH INSURANCE INSTITUTIONS 2014



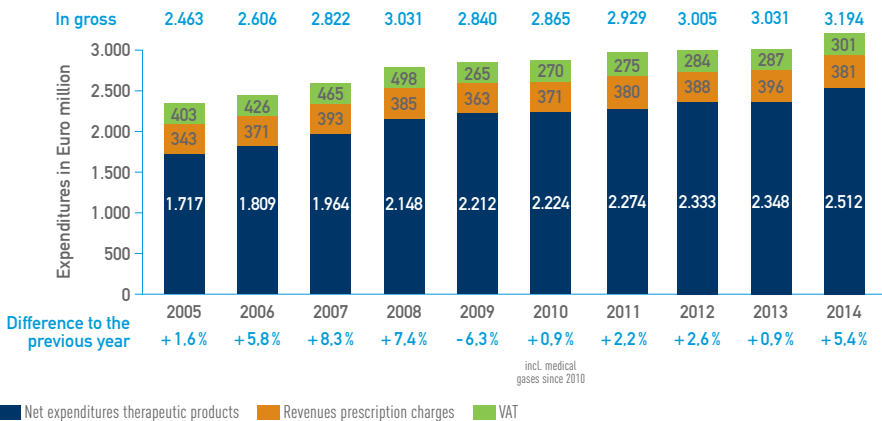
in Euro million/ percent

\* Rehabilitation, Medical Aids, Transport Costs, Disease Prevention, Early Diagnosis, Home Nursing, etc.

\*\* Administration, Remittance of equalisation funds, Capital Consumption, others

The positions for therapeutic products (gross) include 10 % VAT.  
Prescription fees received and individual discounts are not considered.

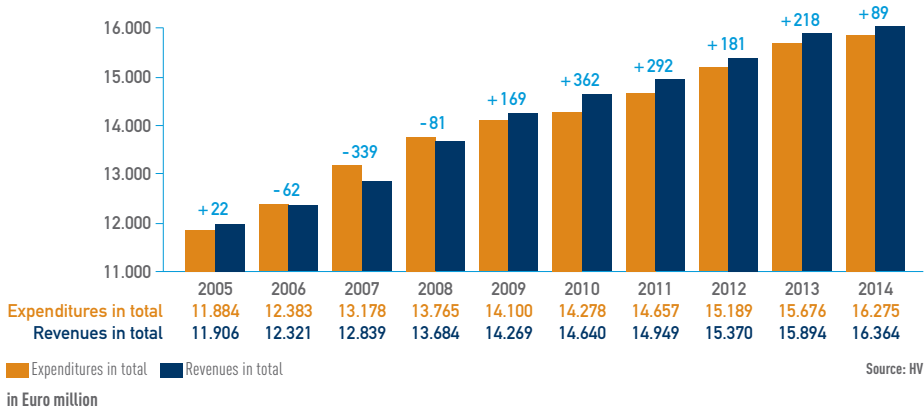
### EXPENDITURES FOR THERAPEUTIC PRODUCTS



in million/percent

Source: HV, Pharmig

## DEVELOPMENT OF THE TOTAL EXPENDITURES/TOTAL REVENUES OF THE HEALTH INSURANCE FUNDS

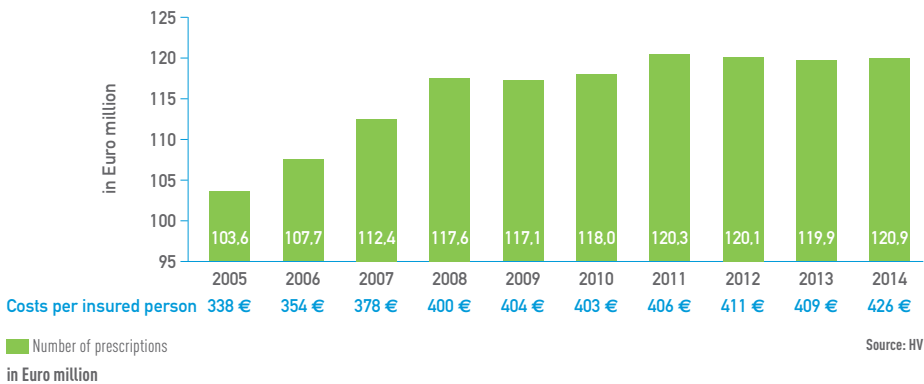


The revenues of social insurance schemes amounted to Euro 16.4 billion (+ 3.0%) in 2014, and their expenditure amounted to Euro 16.3 billion (+ 3.8%). The earnings therefore amounted to EUR 89 million.

## 9.4 PRESCRIPTION TRENDS

In 2014 the number of prescriptions (120,996,215 reimbursed prescriptions) increased by 0,9%.

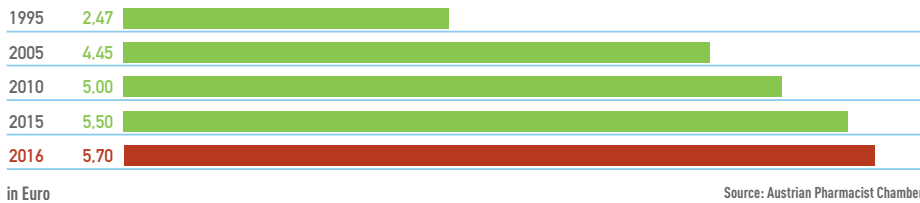
### NUMBER OF REIMBURSED PRESCRIPTIONS INCL. COSTS PER INSURED PERSON



## 9.5 CO-PAYMENT: PRESCRIPTION FEE

There exist numerous co-payments and additional fees which have, as of yet, not been harmonised. All together, in 2014, the health insurance institutions collected approx. 381 million Euro in prescription fees only. The prescription fee per package of a medicine amounts to 5,70 Euros in 2016. Besides a general exemption of the prescription fee granted to persons based on social reasons there is an annual ceiling on prescription fees since January 2008. This ceiling is 2% of the annual net income (excluding special payments such as holiday or Christmas allowance) of the person insured. As soon as this amount is exceeded, the person insured and his co-insured dependants do not have to pay the prescription fees for the rest of the respective calendar year.

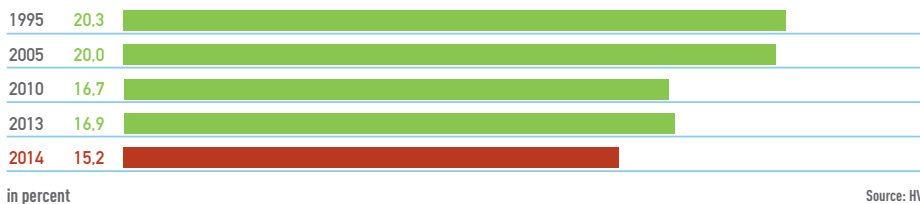
### DEVELOPMENT OF PRESCRIPTION CHARGE



Since 1995 the prescription fee has more than doubled.

When setting the net expenditures of health insurance funds for medicinal products (2,512 million Euros) off against the prescription charge revenue (381 million Euros), a deductible of 15.2% remains which is to be paid for the medicinal product by the patient.

### DEDUCTIBLE FOR MEDICINAL PRODUCTS



## 9.6 PHARMA MASTER AGREEMENT

### PHARMA MASTER AGREEMENT 2018

The Pharma Master Agreement is unique in Europe. The pharmaceutical industry and social health insurers work together on a contractual basis to support the performance capability of the social health insurance institutions, in particular towards patients. For this purpose, with the Pharma Master Agreement 2018 (term 1.1.2016-31.12.2018), pharmaceutical companies and wholesalers shall further make social contributions totalling several millions to the domestic health insurance institutions: 125 million Euro in 2016, and a total of up to 160 million Euro in 2017 and 2018 (depending on the actual increase in spending on medicinal products). During the three-year term, the common healthcare objective will also be continued. An earmarked amount of 6.4 million Euro in total is thus available for projects relating to child health and prevention.

### HEALTH OBJECTIVES COMMITTEE - FUNDING FOCUS & PROJECTS

The joint health objectives agreed upon in the extension of the Pharma Master Agreement entered into by the pharmaceutical industry and the health insurance funds are implemented by a committee with equal representation. After its establishment in the autumn of 2011, the first selected projects focusing on the area of paediatric health were presented at the end of 2012. In late 2013, the committee introduced prevention projects in the areas of addiction and psychosocial health. The funding focus of the projects for 2014 were measures to reinforce health competence in relation to health promotion and prevention. 2015 was dedicated to measures to promote equal health opportunities within the framework of cross-disciplinary cooperation.

The submitted projects are processed professionally and subjected to an evaluation process according to previously defined assessment criteria. The selected projects are intended to act as models for an improved healthcare provision to politicians and other partners in the healthcare system. Previous projects were presented to a wide specialist audience in November 2015 under the title "Celebration for Paediatric Healthcare".

This initiative conducted in partnership between the pharmaceutical industry and social insurance institutions, which is probably unique in Europe, supplements the efforts of state healthcare policies to advance the healthcare system.

More information at [www.pharmig.at](http://www.pharmig.at)



## FUNDED PROJECTS FROM THE JOINT HEALTH OBJECTIVES SET OUT IN THE PHARMA MASTER AGREEMENT

### 2012 FUNDING FOCUS: PAEDIATRIC AND ADOLESCENT HEALTH

No.	Project title	Applicant	Scope
1	Initiation of an Austria-wide premature baby outcome registry	Vienna University Hospital, Paediatric and Adolescent Medicine Dept. Vienna / Vienna Medical School	Federal
2	Mental health is important	Gebietskrankenkasse Vienna	Vienna
3	O.K.ids: A child research network for developing medicinal products for children and adolescents	Austrian Society of Paediatrics	Federal
4	Prescription catalogue, Occupational, speech and physical therapy for children and adolescents	Plattform Kindergesundheit / FGH Kindergesundheit OG	Federal
5	LIA - Linz Intervention program Autism spectrum disorders	Konventionshospital Barmherzige Brüder, Linz	Upper Austria
6	Safe and Empower Young Lives in Austria (SEYLA)	Tiroler Landeskrankenanstalten GmbH	Vienna, OÖ, Styria, Tirol
7	Culturally sensitive caries prevention for children with a migration background (KUKA)	Styria vitalis – Verein zur Gesundheitsförderung und Prävention	Federal
8	Schutzkiste – Prevention of sexual abuse and violence	Verein Kinderhilfswerk	Upper Austria
9	Healthy kindergarten	Steiermärkische Gebietskrankenkasse	Styria
10	GFA (health impact assessment) – all-day school	Institut für Gesundheitsförderung und Prävention / VAEB	Federal
11	Mental health of children and adolescents in Austria - first epidemiological survey	Ludwig Boltzmann Institut Health Promotion Research	Federal
12	Symptoms of carbohydrate intolerance in children and adolescents	Abteilung für Gastroenterologie und Hepatologie / Medizinische Universität Wien	Vienna
13	ACE – AutismCompetenceExchange (im Rahmen eines EU-Projektes)	Dachverband österreichische Autistenhilfe	Vienna, NÖ, Burgenland
14	SVA health check junior – Health checkup for children and adolescents	Sozialversicherung der gewerblichen Wirtschaft	Vienna, Burgenland
15	Developmental and social paediatrics seminar – for health, education and social professionals	Verein zur Förderung d. Kinder- & Jugendgesundheit in Ö.	East, south, west Austria
16	Model project „Frühe Hilfen“ [early help]	Projektverbund: Österr. Liga für Kinder- und Jugendgesundheit, KGKK, NÖGKK, OÖGKK, STGKK, WGKK	Carinthia, NÖ, OÖ, Styria, Vienna

PP = Practice-based project

RP = Research project

## 2013 FUNDING FOCUS: ADDICTION AND PSYCHOSOCIAL HEALTH AS RELATED TO PREVENTION

No.	Project title	Applicant	Scope
1	Understanding addictions of migrants in Austria and implications for prevention	Donau-Universität Krems	Federal
2	Supporting parents of adolescents with eating disorders	Medizinische Universität Wien	Vienna, NÖ, Burgenland
3	Accompanying burnout-prevention program	SVA der gewerblichen Wirtschaft	Vienna
4	Niko-Teen	Supro - Werkstatt für Suchtprophylaxe	Vorarlberg
5	Developing an Austria-wide curriculum in suicide prevention: SUPRA Gatekeeper-Training	MUW, Uniklinik für Psychoanalyse und Psychotherapie	Federal
6	Alcohol addiction prevention in company and industry-wide apprentice training	Sucht- und Drogenkoordination Wien gGmbH	Vienna
7	HIV/HCV risk minimisation in drug-consuming MSM	Aids Hilfe Wien	Vienna
8	Prevalence and care of mental illnesses in Austria	Abt. für Sozialpsychiatrie, Klinik f. Psychiatrie / MUW	Federal
9	Web-based follow-up to prevent recurrence in patients in medical psychiatric rehabilitation	Reha-Kliniken für medizinisch psychiatrische Rehabilitation Klagenfurt und Bad Hall	Federal
10	Intervention in families with a mentally ill parent	pro mente OÖ	Upper Austria
11	“Do it yourself!” – The comprehensive school health promotion project at Tyrolian secondary academic schools and higher vocational schools	Tiroler Gebietskrankenkasse	Tyrol
12	Professional seminar, peer counselling	pro mente Wien	Vienna

PP = Practice-based project

RP = Research project

## 2014 FUNDING FOCUS: MEASURES FOR STRENGTHENING HEALTH COMPETENCE RELATED TO HEALTH PROMOTION AND PREVENTION

No.	Project title	Applicant	Scope
1	Balance in taking care among parents of premature babies	Univ.-prof. Dr. med. univ. Angelika Berger	nationwide
2	Development and pilot testing of a supportive programme for families with child carers	University of Vienna, Institute of Nursing Science	Several federal states
3	No smoking for me and my child	Regional Health Insurance Fund of Lower Austria	nationwide
4	No accidents... from the start! Accident prevention for babies and small children in households	Regional Health Insurance Fund of Upper Austria	Upper Austria
5	And what about me? Strengthening the health competence of parents of children who formerly suffered of cancer	Austrian Support of Children with Cancer	nationwide
6	“KostBar” or the development of the competence of (grand-) parents for healthy nutrition and living	Styria vitalis	nationwide
7	Serious Game-based therapy support for psychosocial comorbidity of obesity in children	ISGinnovationis GmbH	nationwide
8	Family-orientated psychosocial support for palliative patients in paediatrics	Children’s Hospice of Vienna GmbH – MOMO	Vienna

PP = Practice-based project      RP = Research project

## 2015 FUNDING FOCUS: MEASURES FOR PROMOTING EQUAL OPPORTUNITIES IN HEALTHCARE WITHIN THE FRAMEWORK OF INTERSECTIONAL COOPERATIONS

No.	Project title	Applicant	Scope
1	ResilCare, resilience in paediatric care	University of Vienna, Institute of Nursing Science	Many federal states
2	Prevalence and risk factors of lung development	Ludwig Boltzmann Society/LBI COPD	Vienna, NÖ
3	SCHAUKASTEN – sight promotion for infants	Technical University of Vienna / IGW	Vienna, NÖ, Burgenland
4	Resilience factors in traumatised children	Medical University of Vienna, University Hospital for Child and Youth Psychiatry	Vienna
5	Video interaction analysis	Caritas, Archdiocese of Vienna – Emergency Aid	Vienna
6	Anna kisses the frog and Paul tames the monster	Help for Children and Parents Association – Child Protection Centre	Graz und surroundings
7	YOUTH Wirbelkiste	VIVID – Addiction Prevention Styria	Styria
8	Infobox – Young Carers	Austrian Red Cross	Nationwide
9	Suicide and violence prevention – fathers in crisis	Crisis Intervention Centre	Vienna and surroundings
10	Support in implementing the NAP.se	Pro Rare Austria, Alliance for Rare Diseases	Nationwide
11	Epilepsy support for children and adolescents	Epilepsy and Work Association	Many federal states
12	Children as carers	HPE Austria	Vienna
13	Skills training – integral to borderline symptoms	aqua mühle frastanz, soziale Dienste gGmbH	Vorarlberg

PP = Practice-based project      RP = Research project



# 10 HEALTH CARE REFORM 2013–2016

To ensure the long-term financing of the Austrian health care system for the future, the health care reform was decided in the year 2013. In future, all system partners – the federal and regional government as well as the social insurance – shall act cooperatively, holistically and particularly in an impact-oriented manner. This is intended to, on the one hand, ensure better coordination between the parties within the healthcare system (particularly hospitals and private practices) and, on the other hand, eliminate expensive parallel structures. The Controlling Health Targets in partnerships results in four key control areas which are specified in the federal and regional governance agreements:

## HEALTH SERVICES STRUCTURES

In future, the patient is at the centre of the system; patients shall receive care at the “best point of service”. The key goal is to strengthen primary care and relieve hospitals. On 30 June 2014 the federal and the regional governments and the social insurance have agreed on a future concept for the primary care in Austria. In future primary care should be supported in so far as it should be recognised by all patients as first point of contact for health support. This should promote the role of family doctors and general practitioners. The guiding principle of this concept is the working in network. The minimum requirements for a primary care team are general practitioners, qualified healthcare and nursing personell, as well as assistants in surgeries. Additional competence, including the health support of childre, teenagers and the elderly, should be ensured.

## HEALTH SERVICES PROCESSES

A key issue in this area is the implementation of eHealth concepts (particularly ELGA, eMedication, etc.) in order to eliminate dual and multiple diagnostic findings which could be avoided and to ensure the more effective use of medicinal products. On a federal level, the establishment of a joint committee for medicinal products is also envisaged for the intramural and extramural area.

## IMPACT ORIENTATION

This area particularly aims for health promotion and prevention. On 21.3.2014 the Federal Target Control Commission decided on a health promotion strategy, which is intended to provide a valid framework for widely coordinated, target and effectiveness-oriented, quality assured action in partnership for the next 10 years, in the area of health promotion in Austria.

## FINANCIAL OBJECTIVES

In the context of financial governance, the increase of public health expenditures will be gradually aligned with the expected average nominal growth of GDP (currently 3.6% per year) over the period until 2016. This is intended to introduce a sustainable expenditure reduction to achieve savings of 3.4 billion.

## MONITORING

In the context of the health targets strategic aims have been formulated and numerous operational targets and measures have been agreed upon. Monitoring is important in order to achieve the aims of each key control area and in order to transparently present the implementation of measures. So far, two monitoring reports have been published which illustrate to what extent the targets and measures which have been agreed upon in partnership have been achieved. The third monitoring report (1/2015) has now been published, and illustrates how far the targets and measures agreed among the partners have been achieved so far.

## THE DRUG COMMITTEE

In the framework of the target control in partnership the Drug Committee is responsible for generating recommendations for the Federal Target Control Commission regarding the cross-specialty use of medicinal products and the associated costs. The recommendations must target the “best point of service” and take into account medical-therapeutic, health economic and supply aspects and must ensure the best possible quality of services.

The Drug Committee consists of 10 members:

- 3 representatives of social insurance institutions
- 3 representatives of the federal states
- 3 qualified pharmaceutical experts, appointed by the Federal Minister of Health
- 1 representative of the Federal Ministry of Health, who chairs the committee

The Drug Committee:

- takes action upon request by a federal state or the Main Association of Social Insurance Institutions
- takes decisions with a three-quarter majority; these decisions shall be treated as recommendations by the Federal Target Control Commission
- The tasks of the Drug Evaluation Committee in accordance with § 351g ASVG shall remain unaffected by the Drug Committee.

More information on [www.pharmig.at](http://www.pharmig.at)

## OBJECTIVES

- Further extension of high quality health care and ensure sustainability
- Long-term financing
- Intensification of quality assurance and increased transparency
- Encouraging of health promotion and prevention
- Cooperative governance system of federal and provincial governments and social insurance institutions

## TARGET CONTROL AGREEMENT

The first **Federal Target Control Agreement** was concluded on 28 June 2013. Its key contents include:

- New outpatient treatment forms in each federal state
- Reorganisation of primary health care
- Increase of day clinic services
- Uniform quality standards in admission and discharge management, preoperative diagnostics
- Uniform federal quality management systems in the hospital and private practice sectors and coordinated outcome quality measuring
- Uniform diagnosis and service documentation in hospitals and private practice, strengthening of integrated service programs
- Introduction of a telephone as well as web-based service for first contact and consultation services regarding medical questions

The **Provincial Target Control Agreements** deal with the detailed design and implementation measures. The deadline for submission is 30 September 2013. The Provincial Target Control Commission is composed of five representatives of the state and the social insurance each, both organised in representative groups, and one federal representative.

## HEALTH TARGETS

The governance partners commit to the goals and measures associated with the health targets in partnership. A key element is to provide services at the **“Best Point of Service”**. This can be on any care levels in the healthcare system.

The control areas are:

- Health services structures
- Health services processes
- Impact orientation
- Financial goals

## ORGANS



## FEDERAL HEALTH AGENCY

The Federal Health Agency is responsible for ensuring high quality health services.

## FEDERAL HEALTH COMMISSION

### Chair

Federal Minister of Health

### Members (36)

- 9 by federal government upon suggestion by the Fed Min of Health\*
- 9 by social insurance\*
- 9 (1 per state)\*
- 2 by representation of interests of the cities/municipalities\*
- 1 by conference of Bishops and protestant superior church council\*
- 1 by patient representatives\*
- 1 by Austrian Medical Chamber\*
- 1 by Austrian Chamber of Pharmacists\*
- 1 by Federal Minister for Science and Research
- 1 by AUVA
- 1 by representation of interests of hospital

### Voting rights & decisions

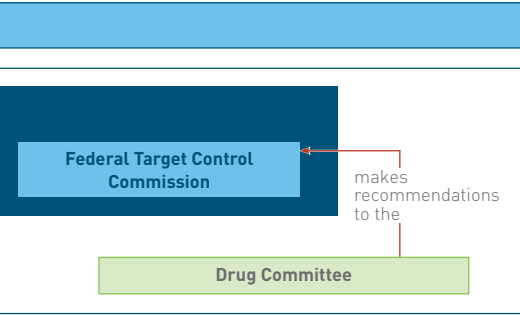
The members marked with \* have voting rights. Decisions are made by the majority of the entire committee and a ¾ majority of the representatives of the federal and state governments and the social insurance (double majority).

### Tasks include

- Continuing the development
- of the system of performance-oriented hospital financing
- of the health objectives for Austria

## FEDERAL HEALTH CONFERENCE

The Federal Health Conference is called in by the Federal Minister. It serves as a consultation organ for the Federal Health Agency.



ity, effective and efficient, freely accessible to all and equal

## HEALTH SERVICES STRUCTURES

- Role distribution for all care levels, focus on outpatient care
  - Adapt service density as required
  - Reduce hospitalisations
- **Specifically:** By 2015, separate, comprehensible service mandates shall be defined, and initial steps implemented by 2016

## HEALTH SERVICES PROCESSES

- Treatment and health services processes incl. medicinal product supply based on patient needs (objective: quality standards and smooth supply with medicinal products)
- Optimise organisational development, cooperation and communication by using modern information and communication technologies (objective: standardisation)

## FEDERAL TARGET CONTROL COMMISSION

**Chair**  
Federal Minister of Health

**Members (12)**

- 4 by federal government, suggested by Federal Minister of Health
- 4 by social insurance
- 4 state representatives

**Voting rights & decisions**  
All members have voting rights. Decisions must be taken unanimously.

**Tasks include**

- Coordination, discussion and specification of all tasks from the Federal Governance Agreement
- Monitoring & sanction mechanism in health care

## IMPACT ORIENTATION

- Increase patients' number of healthy years of life and quality of life
- Ensure treatment quality (routine measurements & transparency)
- Strengthen patient safety and health literacy
- Perform measurements of population satisfaction with the healthcare system

## DRUG COMMITTEE

**Members (10)**

- 3 representatives of the social insurance
- 3 representatives of federal states
- 3 qualified pharmaceutical experts appointed by the Federal Minister of Health
- 1 representative of the Federal Minister of Health, chair

**Tasks include**  
Recommendations for the use of medicinal products (intramural/ extramural) taking into account the "Best Point of Service".

## FINANCIAL OBJECTIVES

- Specification of spending levels for certain time periods
  - Specified methods for procedure to promote transparency and continuity
- **Specifically:** Align the increase in health expenditures to the expected GDP growth. The Public health expenditures should hence be reduced from 26.85 billion to 25.56 billion euro in 2016. Until that time, a cumulative savings amount of 3.43 billion Euro (2.058 billion Euro for the states, 1.37 billion Euro for social insurance) is envisaged.

er of Health where required and consists of national experts.

# 11 PHARMIG CODE OF CONDUCT

The Pharmig Code of Conduct regulates the communication and relationship with laypeople, physicians and other healthcare professionals. Apart from the General Principles, the Code of Conduct sets out rules concerning information on medicinal products, advertisement for medicinal products, information and advertising via the Internet, events, cooperation with healthcare professionals and institutions, as well as patients' organisations, disclosure of Transfers of Value, company employees, clinical trials and violation of the Austrian Medicinal Products Act (MPA).

## TRANSPARENCY CREATES TRUST

Transparency provisions have already been introduced in 2009 in order to support patients' organisations and in 2013 for donations and subsidies for institutions which primarily consist of healthcare professionals. The CoC amendment of 2014 contributes to more transparency in the cooperation with healthcare professionals and institutions. In future, all Transfers of Value by pharmaceutical companies in connection with medicinal products which require prescription must be documented and disclosed. Healthcare professionals and institutions must be designated as benefit recipients.

The duty to disclose applies only to Transfers of Value in connection with:

- Research and development
- Donations and subsidies
- Events
- Services rendered and consulting provided including expenses incurred

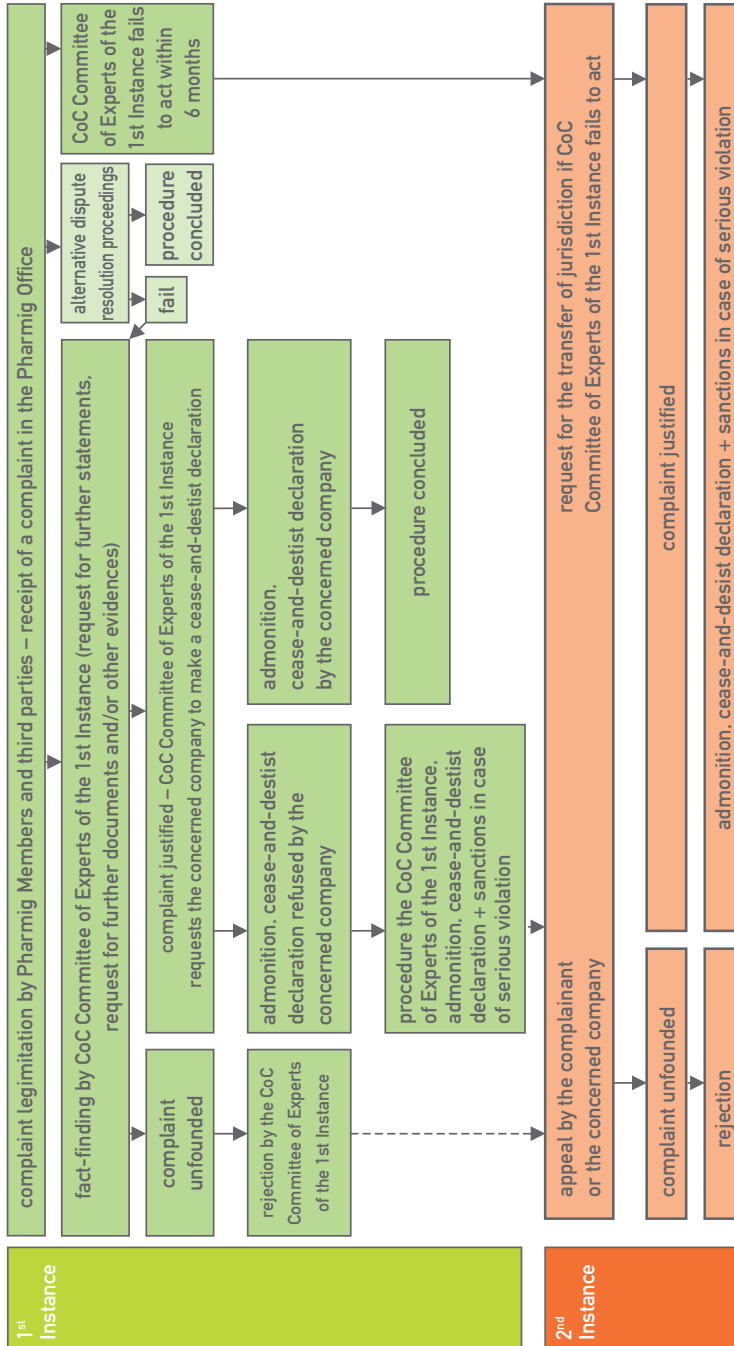
In principle individual disclosure of Transfers of Value which result from these cooperations should be aimed at. For individual disclosure it is necessary to seek consent. All applying data protection provisions must be complied with. In the case that there is no consent, disclosure must be conducted in aggregated form. The data shall be disclosed annually on a publicly accessible homepage, for the first time in 2016 for the year of 2015.

## ETHICAL STANDARDS OF THE PHARMACEUTICAL BRANCH

This voluntary self-regulation through the Pharmig Code of Conduct bears witness to a keen sense of responsibility and the express will of our members to embrace the high ethical standards of our branch. Non-members or third parties are given the opportunity to file complaints against alleged infringements of the Code of Conduct. For this purpose, a written Code of Conduct agreement needs to be signed for the relevant proceedings. Since 2007, complaints can be filed anonymously if they involve infringements of article 7 (events) and article 11 (benefits). In 2015, the additional possibility of a dispute resolution procedure was adopted into the VHC code of procedure.

In 2015 there were 4 new VHC complaints, three of which were anonymous. Furthermore, a complaint from 2014 was resolved. To ensure legal security and to better understand the practical application and design of each individual VHC provision, the results of the procedures carried out and completed since the taking effect of the VHC code of procedures will be published in anonymised form on our website [www.pharmig.at](http://www.pharmig.at).

## FLOWCHART PROCEDURE OF THE COC COMMITTEES OF EXPERTS OF THE 1ST AND 2ND INSTANCE



## 12 LAWS AND REGULATIONS

The table below lists the major laws relating to the development, production, evaluation, marketing authorisation and the distribution of medicinal products. Further information can be downloaded under [www.pharmig.at](http://www.pharmig.at)

LAW	SCOPE OF APPLICABILITY
Medicinal Products Act	definitions, clinical trials, marketing authorisation, manufacture, distribution, advertising, pharmacovigilance, approval of plant and equipment
Austrian Medicine Import Act	Import and distribution of medicinal products
Prescription Act	Prescription status
narcotic Substance Act	narcotics status, charges and placing on the market
Act Against Unfair Competition (UwG)	Advertisement with regard to consumers and competitors
Industrial Code	Right to run a pharmaceutical company
Pharmacopoeia Act	Quality and testing of medicinal products
Price Act	Pricing and (by ordinances) maximum mark-ups (margins)
Health and Food Safety Act	Spin-off of responsibilities and procedures reg. the medicinal product system from the BMG to the Austrian Medicines and Medical devices Agency
Patent Protection Act	Patent protection also of medicinal products
Federal Hospitals Act (KAKuG)	Forms the legal basis for all hospitals and the foundations for the 9 provincial laws, which represent implementation statutes
General Social Insurance Act (ASVG)	Governs the General Social Insurance for persons employed in Austria, incl. the self-employed persons who have an equal standing and the health insurance of retirees from the General Social Insurance. The General Social Insurance comprises health insurance, accident and pension insurance with the exception of specific special insurances.
EU "Human Medicines Community Code" (dir. 2001/83/EC)	definitions, marketing authorisation and procedures, manufacturer and importation, labelling and package leaflet, wholesaling, advertising and information, pharmacovigilance
EU Transparency directive (dir. 89/105/EEC)	procedural provisions, timelines and transparency rules for national decisions regarding reimbursement and prices
Health Governance Act (G-ZG, BGBl I no. 81/2013)	Establishment of a cooperative governance system in accordance with agreements pursuant Art. 15a B-VG
Health telematics act 2012 (BGBl 111/2012, ELGA act)	Legal basis for electronic patient records (ELGA)
Federal Administrative Court Act (BVwGG)	Governs the organisation of the Federal Administrative Court
Administrative Court Procedural Act (VwGVG)	Governs the procedures at the Federal Administrative Court
EU-delegated regulation on safety features (Reg 2016/161)	Governs the technical specifications, modalities of the verification, characteristics of the repository system and derogations for the safety features appearing on the packaging of medicinal products for human use

## NATIONAL REGULATIONS

## SCOPE OF APPLICABILITY

Ordinance on the Retail of Medicinal Products	Definition of pharmacies and drug stores as distribution channels
Narcotic Substances ordinance	Distribution of narcotic-containing medicinal products
Summary of Product Characteristics Ordinance	Structure of the summary of product characteristics
Patient Information Leaflet Ordinance	Structure of the patient information leaflet
Ordinance on the Labelling of Products	Structure of labelling/outer packaging
Pharmacovigilance Ordinance	PV responsibilities of the marketing authorisation holder, notification of side effects and incidents
Ordinance on pharmaceutical representatives	Authorisation and testing of pharmaceutical representative
Ordinance for Companies Producing Medicinal Fee Tariff Ordinance	Products Corporate requirements for pharmaceutical companies Governs the tariffs for activities of the BASG (e. g. marketing authorisations, inspections)
Ordinance on the Authorisation and Control of Medicinal Products	ordinance setting forth the principles of approval of medicinal products by chief consultants and control physicians, follow-up control of prescriptions and documentation principles
Rules of procedure for the publication of the Code of Reimbursement acc. to § 351g ASVG (VO-EKO)	Rules of procedure published by the Main Association of Austrian Social Insurance Institutions
Procedural Cost ordinance pursuant to § 351g Abs. 4 ASVG (VK-VO)	Governs the amount of flat-fee cost rates for applications for a procedure in connection with the EKO
Ordinance on nIS	compulsory registration of nIS before implementing (since 01.09.2010) contains planning, inspection, authorization of non interventional studies; relevant for pharmaceutical companies who plan, implement, inspect/or finance a NIS
ELGA-VO (BGBl II Nr. 505/2013)	Establishment of an appeal office, a service line and a mediator, details on e-medication
Ordinance on Distance Selling	Sales of medicinal products via distance selling

## OTHER LEGAL REGULATIONS

## SCOPE OF APPLICABILITY

Good Clinical Practices	GCP	Guidelines on clinical trials
Good Manufacturing Practices	GMP	Guidelines on the manufacture of medicinal products
Good laboratory Practices	GLP	Guidelines on the evaluation of medicinal products
Good distribution Practices	GdP	Guidelines on logistics for medicinal products
Declaration of Helsinki		duties of the physician (e. g. in clinical trials)
Code of Conduct	CoC	Rules for the information and advertisement policy of pharmaceutical companies, cooperation with members among experts, institutions and patient organisations
EU average prices acc. to ASVG		Governs the procedure of the price commission when determining the EU average price pursuant to § 351c (6) ASVG
Guidelines for the economic prescription of medicinal products and curing aids	RöV	Cost guidelines of the health insurance
Principles of the HEK (Medicinal Product Evaluation Commission)		Includes information on HEK relating to economic evaluation criteria, package sizes, follow-up controls and principles for the verification of deliverability in the red box of the EKO
AGREEMENT in accordance with Art. 15a B-VG Health governance (BGBl I No. 200/2013)		Federal-state agreement on principles of the 2013 health care reform
AGREEMENT in accordance with Art. 15a B-VG with the agreement in accordance with Art. 15a B-VG on the organisation and financing of the Health care system, BGBl I no. 105/2008, modified [missing part] (BGBl I No. 199/2013)		Federal-state agreement on financing of the healthcare system as related to the 2013 health care reform



# 13 ABBREVIATIONS

AGES	Agency for Health and Food Safety
ASVG	General Social Insurance Act
BASG	Federal Agency for Safety in Health Care
BMG	Federal Ministry for Health
CPI	Consumer price index
DCP	decentralised Procedure
EFPIA	European Federation of Pharmaceutical Industries and Associations
EKO	Code of Reimbursement
EMA	European Medicines agency
FAC	Federal Administrative Court
FAP	Price ex works
GDP	Gross domestic product
GESG	Health and Food Safety Act
GMP	Good Manufacturing practice
HEK	Medicinal Products Evaluation Commission
HV	Main Association of Austrian Social Insurance Institutions
ICD10	International classification of diseases and related Health Problems
IGEPHA	The Austrian Self-Medication Industry
IMS	IMS Health
IPF	Institute of Pharmaco-economic Research
LKF	Performance-oriented hospital financing
MAH	Marketing Authorisation Holder
MRP	Mutual Recognition
MPA	Medicinal Product Act
NIS	non-interventional study
OECD	organisation for Economic Cooperation and development
OTC	over The Counter
PV	Pharmacovigilance
R&D	Research & development
SHA	System of health accounts
SPC	Supplementary Protection Certificate
UHK	Independent Medicinal Products Commission
VAT	Value-added Tax
VHC	Pharmig code of conduct
WKÖ	Austrian Federal Economic Chamber

