

Estonia



Pharmaceutical Assistant's and Technician's **Work Placements**

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Education and Culture DG

Lifelong Learning Programme

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Pharmaceutical Assistant's and Technician's Work Placements in Estonia

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1 Introduction

Dear Student

◆ This information package is designed to give you an overall view of vocational education and work in the pharmaceutical sector in Estonia, together with some useful background information related to legislation on and dispensing of pharmaceuticals. We hope that the package will help you in preparing for your period of practical training in our country. On reading this material package you may find both differences and similarities in pharmaceutical work in comparison to your country. However, due to your position as a foreign student at your placement address your duties may be limited to those you would be allowed to carry out in your own country.

From a learning viewpoint it might be beneficial for you to go through both your own country's material package and that of your destination country and to compare the two.

In Chapter 2 you will find a general description of our country's education system and more information on how pharmaceutical training is provided in our country.

Chapter 3 gives an overview of the structure of the pharmaceutical sector and how it is organised.

Chapter 4 defines how pharmaceutical professions are defined and their core expectations. This chapter focuses on the services that are available for foreign students as placement opportunities in our country. The sub-chapters also include descriptions of daily work which are intended to assist you in defining the work you will encounter during your practical training period. These “snap shot” descriptions have been written by students during their practical training periods.

Chapter 5 describes the most relevant legislation governing the pharmaceutical sector in Estonia.

Chapter 6 has some links to help you with search for more detailed information.

Chapter 7 describes some specific terms and acronyms.

We hope you will find this information package useful and we wish you every success with your practical training period in our country!

Welcome to Estonia!

◆ We are very glad that you have chosen Estonia for your exchange months/year. We hope to fulfil your expectations and make it a pleasant and profitable experience for you.

Estonia is located in the north-eastern part of East Europe, bordered by Finland, Latvia and Russia. The Republic of Estonia was liberated from Soviet Union and therefore “reborne” in 1991. Since then, a lot has happened in our country. Changes done in many different fields keep surprising even the people from developed countries. However, it is easier to carry them out because of the smallness of Estonia. We are proud of our flexibility and speed in management. In medicine, for example, we have digital registration and -prescription simplifying everyday life.

This handbook helps you to prepare for your months or year as an exchange student. It gives you the necessary preliminary information to cope in both apprenticeship and everyday life. The handbook gives you an overview of the working process of pharmacies as well as the systems of education, healthcare and social welfare.

The handbook includes a lot of information. Follow the table of contents to get an idea how to prepare yourself for the exchange period.

We hope that you will enjoy your stay and believe this handbook to be very helpful to cope with both, your learning process and everyday life.

2 Educational System

2.1. Estonian Educational System

◆ There is **unitary general educational system** in Estonia, which means that in all educational levels the studies take place based on unitary curricula, not depending on the language used in teaching. In a pre-school institution children get basic education, which creates necessary preconditions performing well in everyday life and school. There are preparatory groups opened in schools or pre-school institutions for children, who do not go to kindergarten. The participation in these is voluntary. Compulsory education begins at the age of 7.

Basic education is the minimum of compulsory general education. Acquisition of basic education can take place partially in primary school (1.–6. grade), elementary school (1.–9. grade), or gymnasium, which has classes of elementary school.

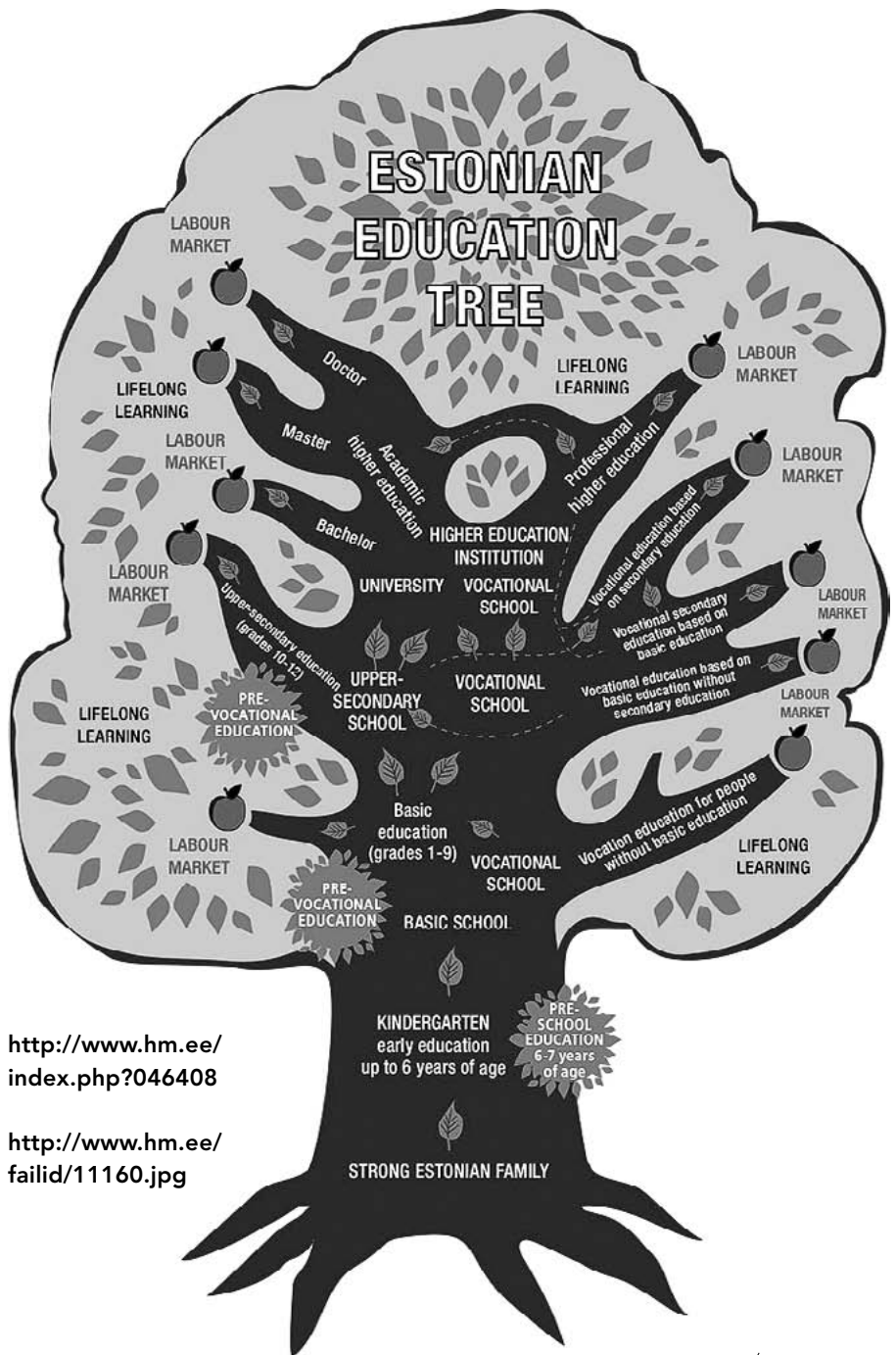
It is possible to acquire **basic education** based on 3 national curricula: the national curriculum of elementary school and gymnasium, the simplified curriculum of basic education and national curriculum of contriving. The condition of graduating elementary school is passing the curriculum and successful performing of 3 exams – Estonian language and literature (or Estonian as a second language),

mathematics and one of student's own choice. There are several options how to continue the road of education: acquire basic secondary education in gymnasium, vocational secondary education in vocational school, or just a profession.

Basic secondary education can be acquired in gymnasiums based on national curriculum. During the studies it is possible to acquire also a profession taught in vocational schools in optional subjects. At the end of the three-year-studies students perform 5 graduation exams, including at least 3 national exams with unified questions. Acquisition of basic secondary education gives a right to continue studies to get either higher education or vocational education.

It is possible to continue studies in **gymnasium** after graduating elementary school. The gymnasium education does not give preparation to enter the labour market, which is why the studies after gymnasium are being continued in a university or institution of vocational education. Passing vocational studies gives good knowledge and skills to perform well in labour market, as well as suits good for a youngster with a practical mind. Finally, it is possible to go straight to work and acquire basic education in adults' high school,

ESTONIAN EDUCATION TREE



<http://www.hm.ee/index.php?046408>

<http://www.hm.ee/failid/11160.jpg>

if necessary. Considering this option, one must still bear in mind that getting basic education while working at the same time requires a lot of will, power and time.

The system of **higher education** is based on directives of European Union and the laws related to higher education. Higher education is divided into studies of Bachelor's, Master's – and Doctor's degree. Professional higher education is also offered (applied higher education), which equals to Bachelor's degree. The presumption of entering university is a document of proof of finishing gymnasium or vocational secondary school. Every school has established its own criteria of accepting students (results of national exams, average grade, interviews, tests, etc.) Schools can be either owned by the state or private.

Professional higher education studies last 3...4.5 years, **Bachelor's studies** 3...4 years. After these it is possible to enter **Master's studies**. It takes 1...2 years to acquire Master's degree (so altogether 5 years including Bachelor's degree) and this gives the right to apply for the **Doctor's studies**.

Integrated Bachelor's and Master's program includes the basic as well as specialised studies. This version is used in the studies of doctors, dentists, veterinarians, pharmacists, also in architecture, civilian engineering and class teacher studies. Generally the studies last 5 years, in doctors' case 6 years (accordingly either doctor's, dentist's or veterinarian's degree is received). It is also possible to continue with Doctor's degree program from here.

2.2. Pharmaceutical Education

◆ **Assistant pharmacist** is a professional who knows medicines and the work of pharmacy. He/ she is engaged in a pharmacy dispensing drugs and medicines to clients. He/ she may work in the wholesale pharmaceutical companies as well. The work in this profession requires precision, accuracy and good communication skills. Studies last 3 years for professional specialty, which include 25 weeks of practical training in pharmacies. The students

will learn in higher education institution and training is based on the internationally accredited curriculum. The assistant pharmacist's professional qualification is based on a final examination covering the core subjects of specialty. Assistant pharmacist's profession requires a good knowledge in chemistry and mathematics. In the first academic year the basic knowledge of human body structure and related processes, microbiology, botany, genetics and

chemical substances are acquired. These knowledges are bases for the experience of medicinal plants and their use. In the second and third year of studies the pharmaceutical chemistry, pharmacology and pharmacognosis, modern medicinal products, their use

and the treatment effect are acquired. Also, knowledges of the practical skills training, pharmaceutical and pharmacy organization and the legislation teaching are acquired. The diploma of assistant pharmacist's enable to go to work to other countries.

2.3. Curriculum Content

Learning outcomes of the curriculum

Upon completion of the curriculum of an assistant pharmacist:

- 1) knows medicines, their composition and thereof the technologies of extemporaneous manufacturing of drugs, is capable of sensory evaluation of the quality of medicines as well as evaluation, routine physical and chemical methods;
- 2) is able to explain the effects and side effects and adverse reactions and the use of medicines and herbs for the treatment and prevention of diseases;
- 3) is competent to deal with the ordering, receiving, preparation and dispensing of drugs in the pharmacy, is familiar with pharmaceutical legislation;
- 4) is cognizant with the main professional problems concerning the work of a assistant pharmacist and can make suggestions to solve them;
- 5) is able to use their knowledge in their professional work, within their competence, the expertise of other specialties and, where appropriate, consults with representatives of other fields;
- 6) is capable to explain orally and in writing specialty related problems in Estonian and English, using specialized information technology tools and communication techniques;
- 7) values cultural differences, is tolerant and respects differences between people, their work is guided by the principles of professional ethics;
- 8) is able to use competently professional sources of information and support materials to solve problems arising at work, understands the need for lifelong learning and keeps abreast of professional developments;
- 9) possesses the basics of management, entrepreneurship and necessity of teamwork to work as an assistant pharmacist.

Basic subjects are History of Pharmacy, Pharmaceutical Chemistry, Pharmaceutical Technology, Pharmacognosy, Biopharmacy, Pharmacology, Phytotherapy, Natural Products, Pharmacotherapy, Pharmaceutical Commodity Expertise, Organizing of Pharmacy, Social Pharmacy, Veterinary Pharmacy, Toxicology, Research Methods.

Supporting subjects are Anorganic Chemistry, Organic Chemistry, Analytical Chemistry, Biochemistry, Botany, Anatomy and Physiology, Pathology, Microbiology and A- and Antiseptics, Genetics, Latin,

Occupational Health and Public Health, Legislation, Management, Client Service.

General subjects are Philosophy and Sociology, Psychology, First Aid, Andragogy, Computer Training, Russian/Estonian, English.

Optional subjects are Ethics, Nutrition, Ergonomics

Practical training contains of Introductory Practice in a Pharmacy, Assistance in a Pharmacy, Regulation of Pharmacy, Pre-diploma Practice.

<http://ttk.ee/?id=29029>

3. Structure of Pharmaceutical Sector in Estonia

3.1. Health Care System

◆ In Estonia, the area of medicines and different processes of them is regulated by **State Agency of Medicines**, which is on administrative territory of the Ministry of Social Affairs. All the laws and orders related to medicines are validated by the Minister of Social Affairs.

Compensating system of medicines.

Only medical products included in the Health Insurance Fund's list of medical products and registered in Estonia shall be compensated for. Medical products shall be compensated for according

to the reference prices and price agreements in case they exist; in other cases the refund will be based on the product's retail price. Medical products will be compensated for on the basis of the diagnosis. Bigger discounts – especially 100% and 90% are for children under 4 and insured persons over 63 years old. Discount 50% will be applied on all patients with health insurance.

<http://www.haigekassa.ee/eng/service/medicinal-products>

3.2. Specific Details in Estonia

◆ The production, retail- and wholesale of medicines in Estonia **has been divided into several areas.**

Wholesale companies are binding links between the producers and retail sellers of medicines. Several larger wholesale companies deal with medicines, natural products, health products, cosmetics, products of dentistry, etc. A lot of them deal with more specific products, though, doing so-called niche-marketing (the medicines and natural products they sell are often limited to products used in one specific medical area or products of one specific producer of medicines).

The availability of medicines is guaranteed by supply chain: producer > wholesale firm > pharmacy.

The **supply of medicines in Estonia** is organised by medicine producers, who need additional services from wholesale companies to guarantee their products correspond to local standards for marketing. Therefore they are interested in one or a few permanent wholesale partners, who sell medicines to as large part of Estonia as possible.

Wholesale service is considered as storing, transporting to pharmacies, managing and developing the ordering/

selling system of medicines in inspected circumstances. Bigger wholesale companies have full equipment for independent wholesale action (warehouse, logistics, ordering/selling system), as well as their own retail channels – chains of pharmacies as independent juridical instances.

Turnover of medicines forms about 85% of the whole turnover of wholesale firms. Wholesale companies of medicines usually deal with other pharmacy- and hospital-related products, which have unlimited extra charge.

Retail sale of medicines in Estonia is handled by private sector, but the licence for pharmacy is not given out for the owners of one for production or wholesale. In Estonia, limits apply to establishing pharmacies, which regulate the density of them, taking into account either the closeness to one another in a city or considering the amount of people living in one place outside the city.

Bigger pharmacies are part of so-called **chains** and are bound to wholesale through ownership (~40%) or

partnership (~80%). Small pharmacies, often in country areas, are usually owned by pharmacists. Wholesale and retail companies belonging to the same group have a possibility to cut back from expenses and increase the profit. Being part of the chain of pharmacies helps to move the profitline towards a smaller turnover – it is possible to save up to 70% when dividing expenses among larger amount of pharmacies (expenses of managing, services which are bought, including accounting, IT-services, etc.).

Extra charge is different in retail- and wholesale. It is possible for a pharmacy to make extra benefit by setting high extra charges to products that have not limited extra charge fare (e.g. cosmetics, hygiene products, food additives), as well as advertising sales (e.g. commercial flyers, setting certain products to visible places for a client). Today the **compulsory preparing of medicines** is a non-profit activity for pharmacies, as a rule (to prepare medicines, a pharmacy must fulfil several stimulations, validated by the orders of the Minister of Social Affairs, the most expensive of which are the demands for special rooms; also the limitations to extra charges for self-prepared medicines are valid).

The changes in the number of pharmacies in previous years are reflected in the table below.

	2007	2008	2009	2010	2011	2012
Retail pharmacies	523	509	496	486	477	469
Hospital pharmacies	29	29	28	26	26	24
Veterinary pharmacies	10	8	7	7	7	5

<http://www.sam.ee/apteegistatistika>

The average count of pharmacies by data of 02.01.2008 was 1 pharmacy per 2567 people (including main pharmacies as well as branches).

There are much less residents per one pharmacy in Estonia, **compared to the Nordic Countries**, while compared to Latvia and Lithuania the level is quite the same. It has been possible to have enough pharmacies to assure good availability of medicines, considering the whole cash amount of extra charges for medicines right now; that means, the whole number of pharmacies in Estonia is enough (or even a little too much!). The count of pharmacies does not characterise much the **geographical availability of medicines** – although there are a lot of pharmacies even in the countryside, the distance from one another is long as well.

Due to the problem of establishing and maintaining pharmacies in the country areas, other countries have taken different kind of action already for availability of medicines – e.g. certain selection of medicines is available in stores and gas stations, hospital pharmacies, family practitioners etc. In Estonia, this option is not allowed right now.

Ideally, there should be at least one pharmacist or assistant pharmacist working in each pharmacy. The proportion between assistant

pharmacists and pharmacists is currently 878:1285 (registry of Health Board by 8th Feb 2013. <http://mveeb.sm.ee/Apteekrid/?>).

As the **assistant pharmacists in Estonia** have versatile education and good preparation, they mostly are quite independent and can make adequate decisions working alone (or even managing a branch pharmacy). A pharmacist does not control or give orders to an assistant pharmacist, instead, they often work together on the same level, fulfilling the same assignments. Besides, the salary of an assistant pharmacist is approximately 25% less than pharmacist's. Every employee in a pharmacy gets 28 vacation days a year. Derived from legal acts, the expenses related to health control of each worker in the pharmacy will be paid as well.

The **longest distances** between pharmacies in Estonia (the geodesic distance) is about 30 km, which is quite the same as the centres of family practitioners. Meanwhile, the latter are less dependent on shopping centres, for example, and therefore spread more equally on the whole country as pharmacies.

4. Definition of Profession

◆ **Assistant pharmacist is a specialist**, who knows medicines and the work in pharmacy and handles the making and issuing of medicines, the medicine-related counselling of clients in pharmacy. The work in this field requires accuracy, quality of being correct and good social skills. An assistant pharmacist can also work in companies handling whole sale of medicines or clinical studies, representations of pharmaceutical companies or enterprises of medicine industry. According to the registry of Health Institution's data of February 8, 2013 there are 878 assistant pharmacists and 1285 pharmacists working in Estonia.

It is possible to begin **the studies** of assistant pharmacist after graduating from high school or gymnasium. The time of studies is 3 years, 25 weeks of which includes the practical studies in pharmacies. The goal of the curriculum is to train specialists, who know medicines, the making process of them, other medical products and health products. Passing the internationally accredited curriculum, the student acquires professional higher education. To receive a diploma (and a qualification of assistant pharmacist's profession) a final exam including basic subjects of the profession has to be performed.

The studying program of assistant pharmacist's profession requires good knowledge of sciences. **Curriculum** consists of 8 module. In the first year basic knowledge of construction and function of human organism, microbiology, botany, genetics, chemical subjects and related processes to them is acquired. It is a base of knowing medicines and herbs and the use of them. Latin as a language of that speciality is learned.

In second and third year of studies special knowledge of pharmaceutical chemistry, pharmacognosy, pharmacology and pharmacotherapy; also the knowledge of contemporary medical preparation, the effect and using of these to treat illnesses; skills to prepare medicines, is acquired. Also the knowledge of work in pharmacies and regulation of the field of pharmacy, the legal acts regulating this field, is acquired.

The aim of the module of **chemistry** is to form a base of knowledge in chemistry necessary for professional work, give an overview of chemical processes in human organism and the relations of them to the functions of organism, explain the relations between chemical constructions of medicines and their pharmacological impact.

Herb treatment (pharmacognosy, phytotherapy) gives necessary knowledge of basics of herb treatment and the use of herbs, introduces the preparations made of them for strengthening organism, treating and prophylaxis of illnesses.

Basic knowledge of construction of human organism, systems of organs and their functions, pathological variations in functioning of organs, also including hereditary diseases – that is what **human studies** is for.

Knowledge of effects and mechanical functions in human organism, the use of these for treating and prophylaxis of illnesses, cumulative effect of medicines, but also the possible toxic effect on the functions of organism by other effectual subjects is acquired after passing a module of **effect of medicines on organism** (pharmacology and pharmacotherapy).

In a module of **preparing and issuing of medicines** a future assistant pharmacist gets concrete professional knowledge of medicines, real work in pharmacies and regulation of the field of pharmacy in Estonia. Skills to prepare prescription medicines and how to work with prescriptions are also acquired. The knowledge is carried out during the professional practice, including all aspects of pharmaceutical work, in a pharmacy. Also, social skills to communicate with clients are learned.

In a module of **professional development** the students get an introduction to the studies necessary for professional development, through the classics of medicines and organisational behaviour.

Methodology of research and development introduces the basics of evidential-based research work to the students.

Basics of health care gives the knowledge of the basics of pharmaceutical care, assuring the lasting of health, developing the ability to manage and prevention of work-related illnesses.

21% of assistant pharmacist's curriculum consists of practice.

Practice in pharmacy will be in the second (13 ETC) and the third (25 ETC) year of studying. The evaluation of pharmacy practice will be grounded on practice report. The aim of practice in future workplaces is to have good skills in preparing medicines, improving digital prescriptions and having good communicating skills.

Expert opinion to Study Circle of assistant pharmacist in Tallinn Health Care College may see here:

http://ttk.ee/public/parecer_estonia.pdf

4.1. Retail Pharmacy

◆ A **pharmacy** in Estonia is an institution, where highly educated pharmacists and assistant pharmacists work.

In the 4th quarter of 2011 there were **297 active retail pharmacies** and 170 active branch pharmacies. In that period there were 766 pharmacists and 583 assistant pharmacists working in detail pharmacies.

A **manager** is responsible for the whole system to function, who is a highly educated pharmacist with at least 3 years of working experience. The rest of the workplaces in Estonia are filled by **pharmacists** (graduated from university) or **assistant pharmacists** (who have professional higher education). Their job assignments and responsibility areas do not differ much and definitely depends on a pharmacy, personal qualities and work experience.

The pharmacies are supplied with medicines and other medical products by **wholesale companies** daily. The goods are taken in, checked their accordance to the documents and stored according to the requirements about preserving – either cupboards, drawers, shelves in both sales areas and storage room(s). In addition, there are special rooms – in assistant room the medicines are being prepared ex tempore and laundry room is for preparing the containers for the next usages.

Ex tempore medicines are being prepared and tested (organoleptically, using physical-chemical methods) in a pharmacy according to the prescription by a doctor. Medical centres and other institutions rendering health care service can order the preparing of these medicines. Nowadays the ex tempore products are mostly salves, solutions, mixtures and powders. These are prepared in bigger pharmacies, as the ingredients have to be bought in larger amounts they are not cheap and have expiry dates. Whether the preparing process is being handled by one or more persons is arranged in a certain pharmacy, usually by the manager.

The rooms' accordance to the requirements is tested daily in all the rooms containing medicines, fixing the readings of temperature and humidity, to fulfil the requirements for preserving medicines. There are usually two refrigerators in a pharmacy for preserving medicines, with two different temperatures (cool and cold).

A pharmacy is also a place where people can bring their **expired medicines**. As pharmacies have to destroy their own expired products anyway, it does not cost much to include the medicines from outside as well.

Pharmacies as business corporations are mostly **bunched together** after the re-independence of Estonia.

There are four big chains functioning: Apotheka, Apteek 1, Südameapteek and Euroapteek.

In Estonia the pharmacists wear **exchange shoes** at work (for hygiene and changeable climate). Exchange students should also bring clothes to work – either a gown or a jacket, plus trousers or skirt, because the suitable

size might not be available. Both clothes and footwear should be white/light and are not being worn outside of the pharmacy. The same thing applies the other way round – outerwear should not be worn in laundry-, storage- and preparation rooms. Every employee in a pharmacy should wear a name tag with name and position on it (an Exchange student should wear one of “trainee”).



The entry to retail pharmacy in the centre of Tallinn

Photo: Kristi Paurson

The sale area in one of the biggest retail pharmacies in Tallinn

Photo: Kristi Paurson



4.2. Hospital Pharmacy

◆ A hospital pharmacy is a **structural unit of a hospital** or some other health care institution, which does not serve clients directly, but supplies the structural units of a hospital with medicines and medical requisites. Also, the **public procurements** are also carried out and expenses and limits being followed in a hospital pharmacy.

A position of a retail seller does not exist in a hospital pharmacy, its task is to communicate with different departments and fulfil their orders. Manager's duty here as well is to coordinate the work, but in this case, between the board of the hospital and pharmacists and assistant pharmacists working in a pharmacy.

As a rule, a hospital has a form of medicines – a list, which is confirmed to use in that specific hospital, to optimise and rationalise the use of medicines. A **clinical pharmacist's** everyday work consists of looking through the applications of medicines outside the form, as well as taking part of the work of committee of medicines, the task of which is composing, adjusting and annual examining of the form. One of the tasks of the pharmacists is also working in different groups (e.g. solving and preventing pain cure related problems daily in the group of pain and counselling doctors and nurses in the same subject),

as well as elaborating instructions on pharmacotherapy or working in different multi-disciplinary groups.

In a hospital pharmacy **medicine-related instruction materials and regulations** are being compiled and informational work is being done – educating doctors, nurses and patients. The task of a pharmacist is to supervise the handling of medicines in different departments. A hospital pharmacist takes active part in registering the side effects of medicines, along with the doctors. In several hospitals the pharmacists are included into teams of clinical medical research, being responsible of everything related to the medicine.

The preparing of medicines in a pharmacy includes the preparing process of extemporal medicines (including finding a suitable treatment for a patient) and preparing medicines for taking in aseptic conditions – dissolving cytostatics, biological medicines and antibiotics and making pain pumps and -cassettes. Elaborating new medicines and prescriptions is also being done. Medicines prepared ex tempore in series are being analysed both for quality and quantity. The preparing process is documented by the assistant pharmacist in charge of preparation and released for using by a pharmacist.

In addition, the workers in a hospital pharmacy instruct students, educate their own employees and take part in clinical researches.

The pharmacists who are working in **hospital pharmacies is merged** by Estonian Society of Hospital Pharmacists, the aim on which is

to increase the professional skills of the members and offer collective activities.

In the second quarter of 2011 there were **23 hospital pharmacies**, plus 1 branch pharmacy. At that time 70 pharmacists and 35 assistant pharmacists were working there.

Apartment of aseptic medicines in Tartu University Hospital's Pharmacy. Assistant pharmacist is measuring solution.

Photo: Mari Kand



Tartu University Hospital's Pharmacy storage room. Assistant pharmacist is completing the orders of hospital's departments.

Photo: Mari Kand

4.3. Pharmaceutical Industry

◆ **The producers of medicines have licences for it** (or parts of medicines). The process includes sterilizing, quality control, packing and labelling. It is accompanied by material supply, admission, preservation and release. The licence to produce medicines should be of total or partial production, including making the active ingredient and producing medicines for clinical research and partial production actions.

All of the legislation in European Union is being followed, e.g. Good Manufacturing Practice (GMP), Guide to Good Manufacturing Practice etc.

The main producers of medicines in Estonia are Grindeks, Nycomed, Vitale-XD, Galenos and Kevelt. 100% natural products, following their own unique recipes, are being prepared by Vipis, Elulill and Galenos. Several (ecological) companies deal with growing and packing of herbs, the biggest of which are Elujõud OÜ and Kubja Ürditalu.

Grindeks

It is the eldest institution dealing with the production of medicines in Estonia (former Tallinna Farmaatsiatehas). The shop-floor of clay has modern equipment, 12 different versions of salves, creams and gels are produced there, which are being marketed in 18 countries.

Nycomed

Nycomed is established in 1992 as a united enterprise on Denmark and Estonia, located in South-Estonia. The production is various, including most groups of medicines and therefore they are one of the leading producers.

Kevelt

Their priority is elaborating medicines, including biological medicines to restrain cancer cells. In addition to medicines they produce pure biochemicals for scientific research and cryopreparations (cold solutions of stem cells and blood cells of umbilical cords) and solutions of lung flushing.

Vitale-XD

It deals with elaborating and preparing of effective quality medicines. The company has the most modern of equipments to produce pills in Estonia and exports most of its production.

Galenos

It is specialised on the production of high quality medicines, which are mostly sold in pharmacies. Completed production is an extract of herbs in alcohol – galenic preparations.

Vipis

It is a small enterprise working since 1997, based on modern technology, yet using pure raw products. There are different forms of medications, but the head subject used in aerosols is

environment friendly. The products are prepared without using artificial extras or preservatives and are also sold in Latvia and Lithuania.

Elulill

It is established in 2009 and deals with the production, importing and wholesale of unique and 100% natural food additives.

Ointment and salve department in Tallinn Pharmacy Factory

Photo: Andres Treial



Elujõud OÜ

It deals with growing, packing and sales of medicines – mostly “ecologically pure”-signed teas. About two tons of herbs are sold a year.

Kubja Ürditalu

It is a company specialised in growing and gathering (from the wild) herbs. Several mixtures of teas are being made, which are preserved in air resistible packages, where they keep their scent and effectiveness.

Ointment “Capsicam” for joint and muscular pain

Photo: Andres Treial



4.4. Wholesale Company

◆ Import, supply, storage, preservation, transport and export for **wholesale** (mostly to retail- and hospital pharmacies) of medicines are considered as wholesale of medicines. The clients of a wholesale company are pharmacies, hospital pharmacies and other whole sellers of medicines. In whole sale of medicines, proportional extra charge is applied. Only medicines that are registered and have licence to sell are allowed to being imported to Estonia.

The wholesale of medicines in Estonia is handled by several larger and smaller (with certain speciality) companies. The biggest of them are Magnum AS and Tamro Eesti OÜ. Importing to Estonia from outside of the European Economic Area the handling process of medicines is allowed only to a holder of a licence to produce medicines.

No special education is required in the whole sale enterprises, but **it is a bonus to have one in pharmacy**. Traditionally, at least the leading positions in sales and buying, warehouse manager etc. are filled by pharmacists and assistant pharmacists.

A wholesale company is lead by the **chief executive office, marketing manager** is in charge of purchase and sales processes. CEO is responsible for the whole company to function,

reporting to the board of a company and coordinating all activities in a company. He/she does not necessarily have to have a special education, but it is considered a good tone in evolved countries that a pharmacist is working in this position. Marketing manager is responsible for the purchase and sales processes in general, preparing offers to public procurement, taking part in the process of putting the budget together, leading the work of sales representatives (product specialists) and employing new people.

Purchase manager is in charge of organising the work of the purchase department, reports to the State Agency of Medicines, is responsible for the handling processes of narcotic products, follows the availability on products in a warehouse, orders medicines from the specific suppliers that he/she is in charge of, forms the whole sale prices of ordered products, informs the sales department about upcoming discount campaigns, puts together reports for suppliers and keeps an eye on expiry dates of the products.

Sales manager leads the work of the sales department, visits clients, signs contracts and keeps good relations with them, compiles the action plan for sales, solves the clients' problems, follows the fulfilment of contracts and prepares for the clients' visits.

Warehouse manager is in charge of the work in a warehouse, follows the process of taking back the products returned by the clients and forming credit notes, is responsible for the right preservation of medicines. The **pharmacist in charge** follows the certificates of incoming medicines, fills in for the warehouse manager, if necessary, handles the process of taking in the merchandise and takes part in it if needed. A **warehouse pharmacist** keeps track of narcotic and psychotropic medicines, is responsible for labelling and marking of the products and takes in the merchandise, if necessary.

In order to the better functioning of the sales process there might also be a position of a **sales specialist** in a wholesale company. The person in that position contacts the clients according to the calling schedule, inserts and

sends the orders to the warehouse, forwards special offers to the clients, gives information about the expected time of arrival of medicines, informs the purchase department about products in sale and informs the sales manager about applications of buying medicines with one-time licence.

The assignments of a **sales representative** are keeping good client relations, visiting clients, presenting specific products to them, signing contracts, following the fulfilment of them and preparing for the clients' visits.

Buying assistant is in charge of timely ordering of medicines, keeps good relations with the supplier assigned to him/her, gives information about products arrived to phone sale and different sales campaigns and inserts product information into a program.

4.5. Week of Exchange Students

◆ **Ana Rita Silva (Portugal):** a week in a pharmacy of Tallinn Children's hospital was quite stress-free, because it was a small pharmacy with only 5 employees. As I was the first to arrive there, everything seemed to be different from what I had experienced in Portugal, but I got used to it quickly. Although only one of the pharmacists spoke English, the communication and understanding one another was easy.

First of all I learned all about the placement of products. In the end I was trusted with fulfilling the orders of different departments and despite a lot of products being labelled only in Estonian and therefore it took time to find them, I managed it all thanks to dictionary and local employees. I also prepared medicines, for example, it was physically quite hard to prepare a salve for burning wounds. I am very grateful to the workers of

the pharmacy for a warm welcome, patience and all their help.

◆ **Daniela Filipa de Silva (Portugal):**

I worked in a pharmacy of North-Estonian Regional hospital. It is very big, has a lot of functions and special modern ideal conditions. You enter every door, including the internal ones, with a personal magnetic card. Orders are taken in by a pharmacist, who prints them out and divides the assignments between corresponding units. Fulfilment of orders is classic, the original order and a copy of it are signed in the end and archived. Medicines are not divided alphabetically as in Portugal, but by the active ingredient of the (e.g. the heart medicines belong to section C). Preparation process takes place in special rooms that have all the necessary equipment. To enter, you have to dress accordingly and disinfect yourself. In addition, you have to wear a mask when preparing toxic substances. Preparations have labels in different colours, e.g., yellow labels on the ones for external use, green labels on the ones for internal use and pink labels for the ones containing alcohol. Some examples of what I prepared: Sterisept Forte 2%, solutions of hydrogen peroxide and formalin, 3% camphor oil, anaesthetic mixture for mouth mucosa, haemorrhoid salve etc. The preparations were tested chemically to guarantee their effectiveness and safety. It was a quite enriched experience, where I learned a lot and what I really enjoyed.

◆ **Cátia Martins (Portugal):** I saw three hospital pharmacies as an exchange student, but the most various processes of work I experienced in a pharmacy of Children's hospital. The mission of a first day was to open all the drawers and doors and examine their content. Observing process helped to soften the verbal barrier. The work in a hospital pharmacy is quite routine, because the same processes occur every day – only the preparations change. The first task each day, fulfilment of orders, lasted till the break at noon. Constant examination was necessary: whether it is the right preparation, amount, number of doses and packages, as well as price and expiry date. What helped to ease the process was presenting the original and copied documents and comparing them. Lab hours were my favourite – I felt just like home there. I want to thank everyone, who helped me during that memorable week.

5. National Legislation

◆ In Estonia the work of pharmacies and other enterprises handling medicines is regulated by the State Agency of Medicines, which is controlled by the **Ministry of Social Affairs**. The duties of the Ministry of Social Affairs are putting together and carrying out the solutions to the social problems of the state, health protection and medical aid of the people, managing employment, labour market, work environment, social security, insurance and welfare, equal treatment of men and women, developing it and coordinating all activity related to it. Its jurisdiction includes the State Agency of Medicines, the Agency of Social Security, Health Board and Work Inspection.

The aim of the work of the State Agency of Medicines is to ensure that the medicines used by both, people and animals in Estonia, are proven of high quality and safe and that the rights of participants in clinical researches are guaranteed.

The **Medicinal Products Act** (admitted 16.12.2004) regulates handling, prescribing, giving out the licences to sell, clinical researches, commercial, supervision and liability of medicines. Its aim is to assure safety, quality and effectiveness of medicines used in Estonia and to promote the use of them.

Medicines that are allowed to be sold in Estonia:

1. Must have a licence of the State Agency of Medicines or European Commission and released to issue in the European economic area.
2. Should have a one-time licence to import and sell, released by the State Agency of Medicines.
3. Should be prepared in a pharmacy according to requirements of the current law or legal acts related to it.

When **handling narcotic and psychotropic substances** (the list is validated by the order of Minister of Social Affairs) special laws and legal acts have to be followed.

Minister of Social Affairs has confirmed all documents concerning wholesale, services in a pharmacy, retail sale and preparation process of medicines. The requirements on health protection, prescribing and releasing of medicines in a pharmacy are also fixed. There are also orders that regulate the quality of medicines and to insure their safety to the environment while transporting and preserving.

The branches of **the licence to handle medicines** are production and wholesale of medicines and pharmacy service. The latter is divided into licences for general, hospital and veterinary pharmacies (the main order of registry of licences to handle

medicines, admitted 17.02.2011, nr 27.).

The Minister of Social Affairs validates **the regulations of producing medicines**, taking into account the practice of producing medicines valid in the European Union (admitted 04.04.2005, nr 55) including the requirements for rooms, establishment, technical equipment, personnel and organisation of work.

For marketing medicines in Estonia the medicines must have a licence for it, valid in Estonia or European Union. The conditions for applying for a

licence, the process and receiving it are validated by the orders of the Minister of Social Affairs.

To indicate services in a pharmacy, a pharmacist and assistant pharmacist should be registered in a national registry of pharmacists and assistant pharmacists of **Health Board**.

Applicants receive a note from the Health Board in case of approval.

Prescriptions are released by doctors and also midwives at limited extent. Pharmacists do not have a right to do so. Doctors, nurses and midwives are not allowed to sell medicines though.

5.1. Structure of State Agency of Medicines

◆ State Agency of medicines is a governmental body under the Ministry of Social Affairs. Its main responsibility is the protection and promotion of public and animal health, through the supervision of medicines for human and veterinary use.

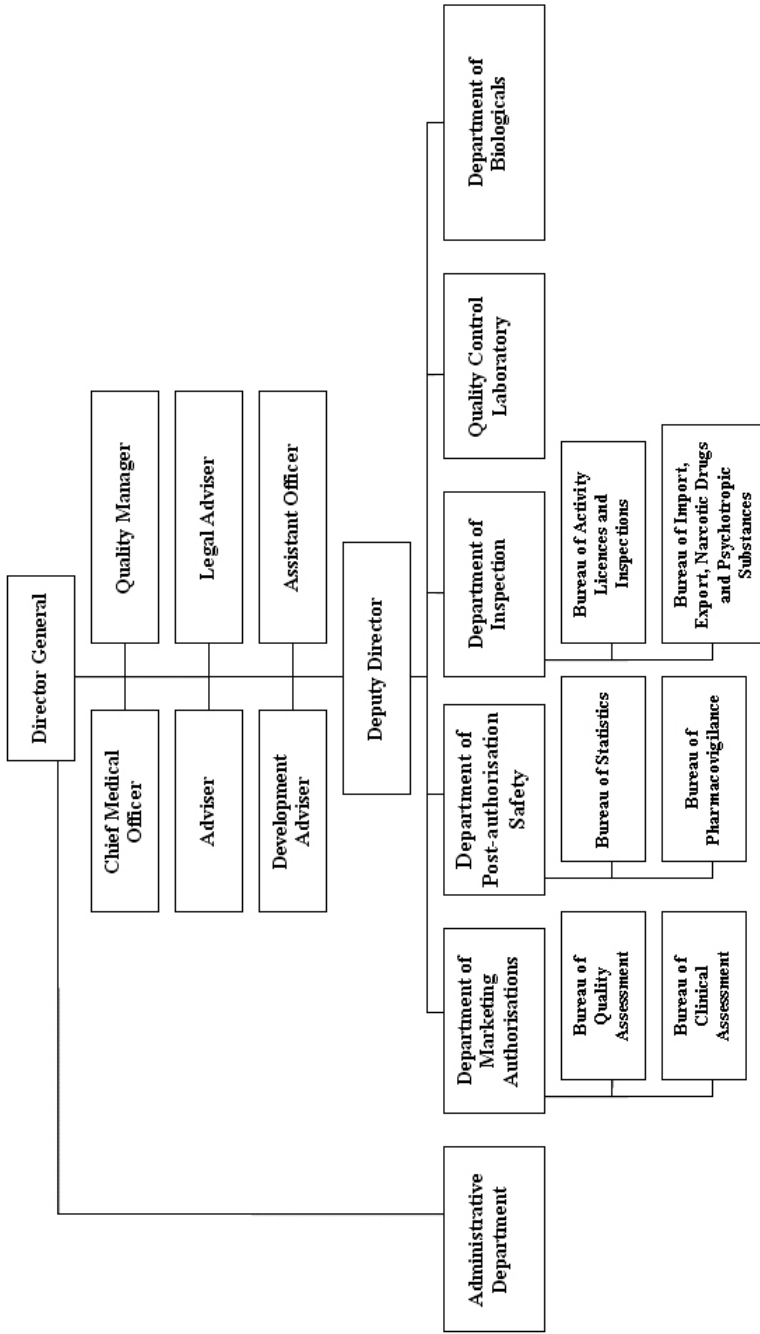
The State Agency of Medicine is with the aim to

- ensure that medicines approved for use in Estonia for the prevention, treatment, and diagnosis of human and animal diseases are proven to be efficacious, of high quality and safe;
- promote the rational use of medicines;
- ensure that when participating in clinical trials conducted in Estonia, the safety of the participants is

guaranteed and their rights are protected;

- ensure that cells, tissues and organs used in the treatment of humans in Estonia are proven to be safe and of high quality;
- ensure that narcotic and psychotropic substances and their precursors are used appropriately and in accordance with international conventions.

<http://sam.ee/en/structure>



5.2. Digital Prescription

◆ In 2010 the digital prescription (e-prescribing) was launched in Estonia. This country-wide project lasted 5 years and its aim was to make e-prescribing of medicines possible in every doctors' office and filling in digital prescriptions in every pharmacy of Estonia.

It involved a big number of partners like governmental bodies responsible for different data registries, hospital and pharmacy software producers, hospitals, pharmacies etc. Project has already enhanced openness and transparency in the area of medicines' prescribing and more importantly has opened a whole new way for future developments which aim to share information and statistics and improve the medical care and also quality of decision making among policy makers.

Doctors can prescribe medications for patients using their computer software and forward an electronic prescription to the national database. The e-prescription is then immediately accessible in every pharmacy on a patient's request.

Formerly, after telephone consultation the patient still had to visit the physician in order to take a prescription, today this is no longer necessary. It paves the way for more extensive future development of telemedicine. Patients have a possibility

to follow the log attached to every prescription and see who and when has accessed the data. Doctors are most appreciative of the system feature that enables the automatic calculation of the correct rate of reimbursement on medications compensated by the Health Insurance Fund. Furthermore, the system can provide an overview of the prescriptions issued for a patient by other doctors and the actual purchasing information regarding these prescriptions.

Automated processing of this information in the future helps to evaluate the interaction of pharmaceuticals prescribed by different doctors, patient adherence to treatment recommendations, misuse of medicaments, etc. For pharmacists, things are simplified by the fact that the greater part of prescription data on prescription is already put into the system by doctor, which is why they are only required to add to prescription information on actually delivered medication and sales data. In most cases this can be done using a barcode reader. The prescription is then ready for e-invoicing to Health Insurance Fund. The state can now have online control over what is going on in the field of pharmaceuticals.

Main benefits

Data necessary for quality pharmaceutical care is readily (on-line)

available at the point of care (physician can access patients full prescription history). Increased transparency of handling of prescriptions and delicate personal data by physicians, pharmacists, civil servants - patient can actually see the log-file for every prescription. Improved governance of the pharmaceutical sector - better possibilities of prompt inspection by watch-dog organizations, possibility to monitor and consequently change prescribing habits (e.g. generic vs branded prescribing of medicines). Changing of habits can be easily done using information technology (e.g. prohibit or encourage prescribing in any particular way a policy-maker has decided).

Results

In May 2011, just 15 months after the launch, 84% of prescriptions are issued digitally. More than 95% of pharmacies are ready to process e-prescriptions. According to a survey 'Citizens' satisfaction with health and healthcare" (n=1524) 92% of users of digital prescription are satisfied with the service. Evidence of doctors' usage of retrieval of patients' prescription history. Evidence of patients queries to find out the details about access to patient prescription data (who, why). Evidence of discovery of malpractice among physicians and pharmacists.

http://www.haigekassa.ee/eng/digital_prescription

5.3. Code of Professional Ethics of Estonian Pharmacists

◆ The Code of Professional Ethics of Estonian Pharmacists is based on the principles of the Pharmacist's Code of Ethics adopted by the Council International Pharmacy Federation on 5 September 1997.

The Code of Professional Ethics of Estonian Pharmacists was approved by the General Meeting of the Estonian Pharmacists' Association on 26 May 2000.

In the present document the term "pharmacist" is used to denote a person having secondary or higher professional education in the field of pharmacy.

1. A pharmacist is a medical worker whose first duty is to act in the interests of a customer of the pharmacy (patient) within the limits of the current legislation. He/ she shall not delay implementing public laws or regulations enacted.

2. A pharmacist shall pay equal attention to all customers of the pharmacy (patients). He/ she shall respect each person's right to live and to choose his/ her own over-the counter medicines and alternative treatment methods. At the same time, a pharmacist shall be responsible for providing the customer with true information which will help him/ her make the choice. A pharmacist shall respect a person's freedom to choose the pharmacy to which he/ she takes his/ her custom.
3. A pharmacist shall serve people needing help, taking into account their personal characteristics, hearing them out and trying to understand them irrespective of their cultural background, age, gender or social status.
4. The interests of a customer shall be placed above the economic interests of the pharmacy. It is the pharmacist's duty to provide the patient with a medicine even if it is unprofitable for the pharmacy.
5. A pharmacist shall be guided in his/ her work by good business practices and adhere to fair methods of competition. He/ she shall not make deals or influence third persons (doctors, nurses, veterinarians etc.) with material incentives so that they would bias patients in their choice of a pharmacy. Co-operation of a pharmacist with doctors and other medical workers shall be aimed at providing better service to a customer of the pharmacy (patient) and not at personal material gain.
6. A pharmacist's professional advice shall be impartial. He/ she shall be responsible for giving correct information to a customer (doctor etc.). The information shall not favour some companies, while placing other companies, which render similar services, in an unfavourable light.
7. A pharmacist shall co-operate with colleagues from other pharmacies. He/ she shall avoid any action or inaction which could damage to honour, dignity or credibility of the profession. He/ she shall not use expressions which could diminish third persons respect for his/ her colleagues. He/ she shall help a colleague to avoid aberrations from professional ethics caused by inexperience or oversight.
8. A pharmacist shall respect a private individual's right to confidentiality. Information concerning a customer's (patient's) health, medicines used, methods of treatment etc., which was obtained in the course of professional activity, may be disclosed to third persons only with the consent of the

patient or his/ her trustee, except in cases when it is in his/ her own or public interest.

9. By his/ her work, a pharmacist shall promote correct and safe use of medicines, try to prevent wilful misuse of medicines and may refuse to sell medicines to persons who purchase medicines for obvious narcotic or malevolent purposes.
10. In order to ensure quality service and information, a pharmacist shall participate in training programmes and improve his/ her professional knowledge and skill on his/ her own.
11. A pharmacist shall ensure pharmaceutical help to people even the pharmacy is closed, informing them of another pharmacy which is still open.

http://www.apteekriteliit.ee/eng/eetika_koodeks-engl.html

6. References

Code of Professional Ethics of Estonian Pharmacists –
http://www.apteekriteliiit.ee/eng/eetika_koodeks-engl.html

Digital Prescription – http://www.haigekassa.ee/eng/digital_prescription

Estonian Education Tree – <http://www.hm.ee/failid/111160.jpg>

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Estonian Ministry of Education and Research –
<http://www.hm.ee/index.php?046408>

Health Board – <http://mveeb.sm.ee/Apteekrid/>

State Agency of Medicines – <http://www.sam.ee/apteegistatistika>

Structure of State Agency of Medicines – <http://sam.ee/en/structure>

Tallinn Health Care College – <http://ttk.ee/?id=29029>

7. Glossary

Assistant pharmacist – *farmatseut* in Estonian – specialist of medicines with professional higher education.

Ex tempore medicine – medicine made only by prescription, made in pharmacy.

Galenic preparations – medications made from plants by absorption in spirit; named by Claudius Galen, 2nd Century Greek physician.

Latvia – country at the Baltic Sea, bordering Estonia in South.

Organoleptic test – testing of *ex tempore* medicines in pharmacy visually, homogenically, about taste, smell etc.

Pharmacist – *proviisor* in Estonian – specialist of medicines with higher education.

Phytotherapy – science of use of natural products (especially plants) like medicines.

Soviet Union – former communist country consisting of 15 (very different) republics.

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