

29th Voorburg Group Meeting

Dublin, Ireland
September 22nd – 26th, 2014

Mini-presentation for SPPI on:
Human Health Activities (ISIC Sector 86)

Statistics Finland
Susanna Tåg

1. INTRODUCTION	3
2. DEFINITION OF THE SERVICE BEING PRICED.....	3
3. UNIT OF MEASURE TO BE PRICED.....	4
4. MARKET CONDITIONS AND CONSTRAINTS	4
4.1 Size of the industry	4
4.2 Special conditions or restrictions.....	5
4.3 Structure of the customer base	7
5. STANDARD CLASSIFICATION STRUCTURE AND PRODUCT DETAILS/LEVELS.....	8
6. EVALUATION OF STANDARD VS. DEFINITION AND MARKET CONDITIONS	9
7. NATIONAL ACCOUNTS CONCEPTS AND MEASUREMENT ISSUES RELATED TO GDP MEASUREMENT.....	10
8. PRICING METHOD(S) AND CRITERIA ON CHOOSING VARIOUS PRICING METHODS.....	10
9. RESULTS	11
10. EVALUATION AND COMPARABILITY OF PRICE INDICES WITH TURNOVER/OUTPUT DATA.....	12
11. SUMMARY	13
SOURCES	14
APPENDIX 1: CPA 2008 HUMAN HEALTH SERVICES	

1. Introduction¹

The purpose of this paper is to provide a brief overview of the Finnish Services Producer Price Indices (SPPI) for human health activities (ISIC Rev. 4 division 86). Statistics Finland started the development work on the SPPI for this industry in 2008. The first data has been published in 2012 dating back to 2010.

It should be noticed that the Finnish SPPI does not cover in full the whole division for human health activities and therefore this paper will focus especially on the groups 86.22 Specialist medical practice activities and 86.90 Other human health activities.

At the moment the scope of the published indices for human health activities is business to business. This is because of the EU regulation that defines the scope of the SPPI to be BtoB. However, it is probably about to extend to BtoAll.

2. Definition of the service being priced

As mentioned above, this paper will focus on the specialist medical practice activities (NACE Rev. 2 86.22) and other human health activities (NACE 86.90). The points of emphasis in the index for private health services are services produced for enterprises, business-to-business perspective. It includes occupational health care services, diagnostic imaging and laboratory services.

For the time being the index does not cover the services of physiotherapy, dental services, hospital services, or municipal customers of the customer groups. The development of the share of municipal customers needs to be carefully monitored in future. It would also be possible to include the prices of physiotherapy and dental services from the CPI in the calculations.

As regards occupational health care the most important service groups are doctor's services, and laboratory and diagnostic imaging examinations. The volume services for which prices are monitored in each of these groups have been ascertained from the data of the Social Insurance Institution of Finland (SII) and by interviewing private service producers. In Finland, occupational health care does not usually extend to dental services and physiotherapy is only included to a minor extent.

The prices of the following health care services are monitored: medical practice services (general practitioner, specialist medical practitioner, occupational health care nurse), laboratory examinations (e.g. C-reactive

¹ This paper is largely based on 'Calculating B to All indices and development of an index for NACE Rev 2. industry 86 (private health services)' report which was submitted to the Eurostat in 2010. The report describes EU funded project, and it was written by Elina Pääkkö (Statistics Finland).

protein), diagnostic imaging examinations (e.g. thorax X-ray) and other services (health examination, general fee for occupational health care).

All private medical centres do not provide diagnostic imaging and laboratory services themselves but purchase them from enterprises specialising in them. The enterprises specialising in diagnostic imaging and laboratory examinations which offer their services to medical centres also are under the scope of the index.

3. Unit of measure to be priced

The price concept in the data collection is the price exclusive of taxes received by the service provider, without deduction of reimbursements by the Social Insurance Institution of Finland (SII). Under certain conditions, health services are exempted from value added taxes in Finland.

It is typical in occupational health care services that large customers have strong negotiating power and thus receive large discounts. Therefore, the price data for the volume services is inquired by customer group (small, medium size and large customers). The size of the customer is measured by the amount of employees.

The questions concerning occupational health care are asked by customer group. Enterprises report prices which comprises both list price and discount rate type by customer group. The questions about medical practice services request time-based charges, e.g. EUR/20 min. The prices concerning laboratory examinations are measured by using prices per an individual examination.

4. Market conditions and constraints

4.1 Size of the industry

Health services (public and private service production) account for around five per cent of gross domestic product and for almost eight per cent of the services sector overall in Finland. The share of the sector of health service enterprises is about 0.2 per cent of the gross domestic product generated by the enterprise sector and nearly three per cent of the gross domestic product generated by the sector of service enterprises. (Source: NA, Production and generation of income accounts).

According to the Business Register, approximately 15,000 enterprises operated in the industry of human health services (class 86 of TOL 2008) in Finland in 2012, and their total turnover amounted to around EUR 3.6 billion (Table 1).

Table 1. NACE 86 Human health activities (Financial statement statistics)

	2010		2011		2012	
	All businesses	Share of SMEs	All businesses	Share of SMEs	All businesses	Share of SMEs
No. of businesses	14 725	99 %	15 114	99 %	15 439	99 %
No. of employees	29 076	64 %	31 128	63 %	33 171	57 %
Turnover (million €)	2 899	65 %	3 253	63 %	3 504	60 %

In absolute numbers, the largest group in Finland was enterprises providing services in other health care services. However, greater share of total turnover comes from specialist medical practice activities (Table 2).

Table 2. NACE 86 Human health activities (Business Register, 2012)

NACE	Classification	No. of businesses	Turnover (million €)	Share of total turnover
86101	Hospital activities proper	21	171.75	5 %
86102	Rehabilitation centres and nursing homes	19	99.86	3 %
86210	General medical practice activities	9	147.54	4 %
86220	Specialist medical practice activities	5150	1 658.46	46 %
86230	Dental practice activities	1766	637.21	18 %
86901	Physiotherapy	2551	270.39	7 %
86902	Laboratory examinations	57	113.15	3 %
86903	Diagnostic imaging examinations	33	21.14	1 %
86904	Ambulance service	133	112.87	3 %
86909	Other health care services	5572	406.68	11 %

4.2 Special conditions or restrictions

The production of health services is dominated by the public sector in Finland. The local government is responsible for the organisation of both basic health care and hospital care services. Municipalities can produce the basic health care services themselves, either alone or as joint municipal boards, or alternatively purchase them from other municipalities or from private service producers (Ekroos 2004).

The private sector's share of the total health care service production is approximately 23 per cent according to portion of costs and 20 per cent according to the amount of employees (National Institute for Health and Welfare, THL). Variations in the need, demand and supply of the public service production affect the production of private health care services. It has been estimated that as the population ages and the structure of municipal services changes the private sector's share of the service production will grow.

In respect of private health care services, the key actor in Finland is the Social Insurance Institution (SII). Based on the national health insurance, the SII reimburses to consumers a part of the fee, and examination and treatment charge of a private doctor or dentist according to a specified schedule of fixed charges. An employer is also entitled to compensation from the SII for the occupational health care services it has organised. The SII does not reimburse the costs of public health care. The aim of the policy on charging for public health care services in Finland is that it should not be an obstacle to seeking the services. A small one-off fee is charged for visits and there is a ceiling on the total amount beyond which customers are not charged.

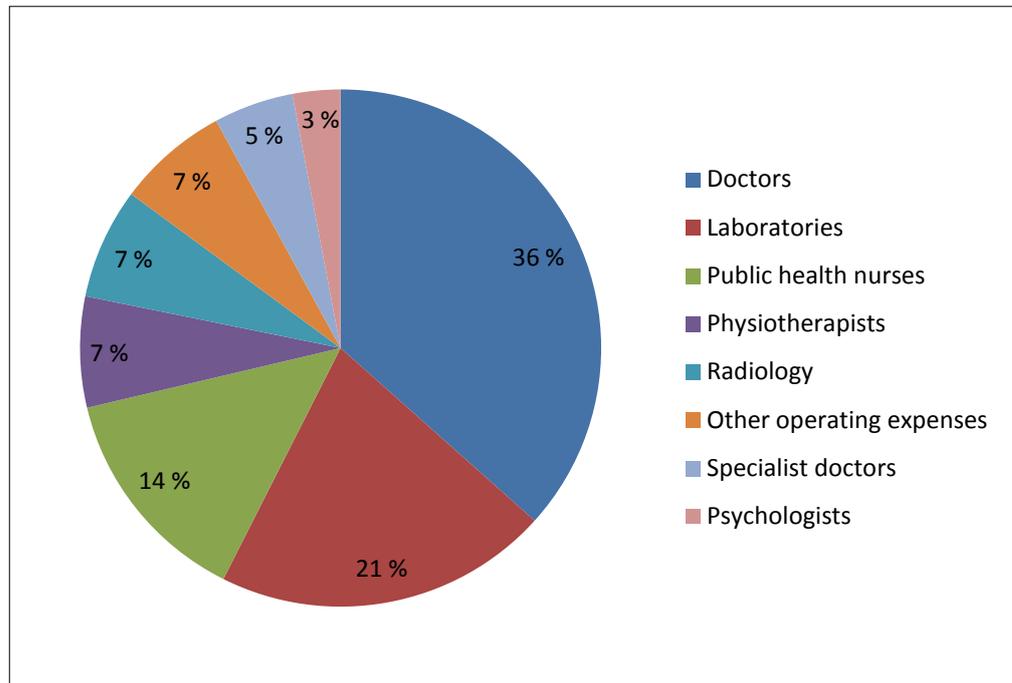
The production of occupational health care services is a significant area of operation for health care services in the private sector (Ekroos 2004). At the moment, private service providers produce approximately half of the employees occupational health care services (Finnish Institute of Occupational Health, FIOH 2012). In addition, occupational health care services are provided by municipal health centres and enterprises' own occupational health care clinics (SII). According to expert estimates, the number of enterprises' own occupational health care clinics is falling continuously and they are being replaced by occupational health care services provided by private service producers.

The largest producers of private health care services typically engage in multiple activities: they produce medical practice services, hospital services and laboratory examination services. Enterprises engaged in physiotherapy are an exception: they are small, often one-person businesses specialising exclusively in physiotherapy.

The complexity of the industry makes the allocation of the turnover between medical practice services, hospital service activities, physiotherapy services, and diagnostic imaging and laboratory examination services difficult.

According to the SII, the distribution of costs in occupational health care services was as follows in 2011: doctors (37 %), laboratories (21 %), public health nurses (14 %), physiotherapists (7 %), radiology (7 %), other operating expenses (7 %), specialist doctors (5 %) and psychologists (3 %).

Figure 1. The distribution of costs in occupational health care services in 2011



4.3 Structure of the customer base

According to the National Institute for Health and Welfare (THL) publication on private service production in Finland, the key customer groups of private health care service providers are households and employers, see Table 3. Municipalities and joint municipal boards together also form an important customer group.

Table 3. Key customer groups of private health care service providers in Finland

Purchaser	2006 EUR million	Share of customer group
Households	692.8	40.1 %
Employers	376.1	21.8 %
Social Security Institution	222.4	12.9 %
Municipalities	163.8	9.5 %
Joint municipal boards	131.2	7.6 %
State Treasury	83.8	4.9 %
Insurance institutions	50.7	2.9 %
Employment pension funds	6.5	0.4 %

Households purchase from private service providers medical practice and specialist medical practice services, whereas employers buy occupational health care services, the most important among them being medical practice services, and laboratory and diagnostic imaging examinations. Municipalities and joint municipal boards typically buy from private service providers single individual interventions, such as endoscopic examinations or cataract operations.

5. Standard classification structure and product details/levels

The structure of the Finnish standard industrial classification TOL 2008 is identical to NACE Rev. 2 at the 4-digit level. In the national TOL 2008 classification of economic activities human health activities are classified as follows:

Table 4. Structure of the Finnish standard industrial classification TOL 2008: Human health activities

TOL2008	Classification
Q	Human health and social work activities
86	Human health activities
861	Hospital activities
8610	Hospital activities
86101	Hospital activities proper
86102	Rehabilitation centres and nursing homes
862	Medical and dental practice activities
8621	General medical practice activities
86210	General medical practice activities
8622	Specialist medical practice activities
86220	Specialist medical practice activities
8623	Dental practice activities
86230	Dental practice activities
869	Other human health activities
8690	Other human health activities
86901	Physiotherapy
86902	Laboratory examinations
86903	Diagnostic imaging examinations
86904	Ambulance services
86909	Other health care services

The classification of human health services in European CPA 2008 is as follows:

Table 5. Structure of the CPA 2008: Human health services

CPA 2008	Classification
Q	Human health and social work services
86	Human health services
86.10	Hospital services
86.10.1	Hospital services
86.10.11	Hospital surgical services
86.10.12	Hospital gynaecological and obstetrical services
86.10.13	Hospital rehabilitation services
86.10.14	Hospital psychiatric services
86.10.15	Other hospital services provided by medical doctors
86.10.19	Other hospital services
86.2	Medical and dental practice services
86.21	General medical practice services
86.21.1	General medical practice services
86.21.10	General medical practice services
86.22	Specialist medical practice services
86.22.1	Specialist medical practice services
86.22.11	Analysis and interpretation services of medical images
86.22.19	Other specialist medical practice services
86.23	Dental practice services
86.23.1	Dental practice services
86.23.11	Orthodontic services
86.23.19	Other dental practice services
86.9	Other human health services
86.90	Other human health services
86.90.1	Other human health services
86.90.11	Pregnancy related services
86.90.12	Nursing services
86.90.13	Physiotherapeutic services
86.90.14	Ambulance services
86.90.15	Medical laboratory services
86.90.16	Blood, sperm and transplant organ bank services
86.90.17	Diagnostic imaging services without interpretation
86.90.18	Mental health services
86.90.19	Other human health services n.e.c.

6. Evaluation of standard vs. definition and market conditions

There are challenges in coherence between the classification of economic activities and the product classification which determines the output of an activity. For instance, the CPA and Nace Rev. 2 (TOL 2008) deviate from each other in the case of imaging services. It was concluded that the CPA does not suit the situation in Finland as such. For instance, in the CPA the imaging services category (86.90.17) excludes the interpretation of images which in Finland is almost always

included in the service concerned. The services of enterprises producing imaging only (inclusive of interpretation) would in the CPA come under category 86.22.11, Analysis and interpretation services of medical images, whereas in the TOL 2008 classification enterprises producing these services belong to class 86903, Diagnostic imaging services.

7. National accounts concepts and measurement issues related to GDP measurement

In the compilation of output at current prices National Accounts use an internal working classification (Table 6).

SPPI covers partly classes 862100 and 869000 other human health services. CPI publishes indices for general practice, specialist practice, dental services, services of medical laboratories and X-ray centres, corrective-gymnastic therapy and basic services of hospitals.

Table 6. Classification used by NA

CPA 2008	Classification
861000	Hospital services
862100	Medical practice services
862300	Dental practice services
869000	Other human health services

8. Pricing method(s) and criteria on choosing various pricing methods

Various pricing methods are used in compiling the index for private health services. The questions concerning occupational health care are asked by customer group. Enterprises report prices which comprises list price *discount rate type by customer group. Secondly, the questions about medical practice services request time-based charges (as e.g. EUR/20 min) for various services. The questions concerning laboratory examinations, in turn, request prices per an individual examination which is direct use of prices of repeated services.

It was concluded that it was not necessarily sensible to monitor unit value prices (EUR charged for a certain service/number of visits by different customer groups), as changes in the customer structure could introduce structural changes into the index. The grouping of customers and services should in this case be done so that structural changes would have no impact. Then, for example, we should be able to standardise the services enterprises of different sizes buy at given times and the enterprises should report euro amounts and numbers of visits by this classification. This kinds of standardisation was thought to be too laborious for the data provider enterprises.

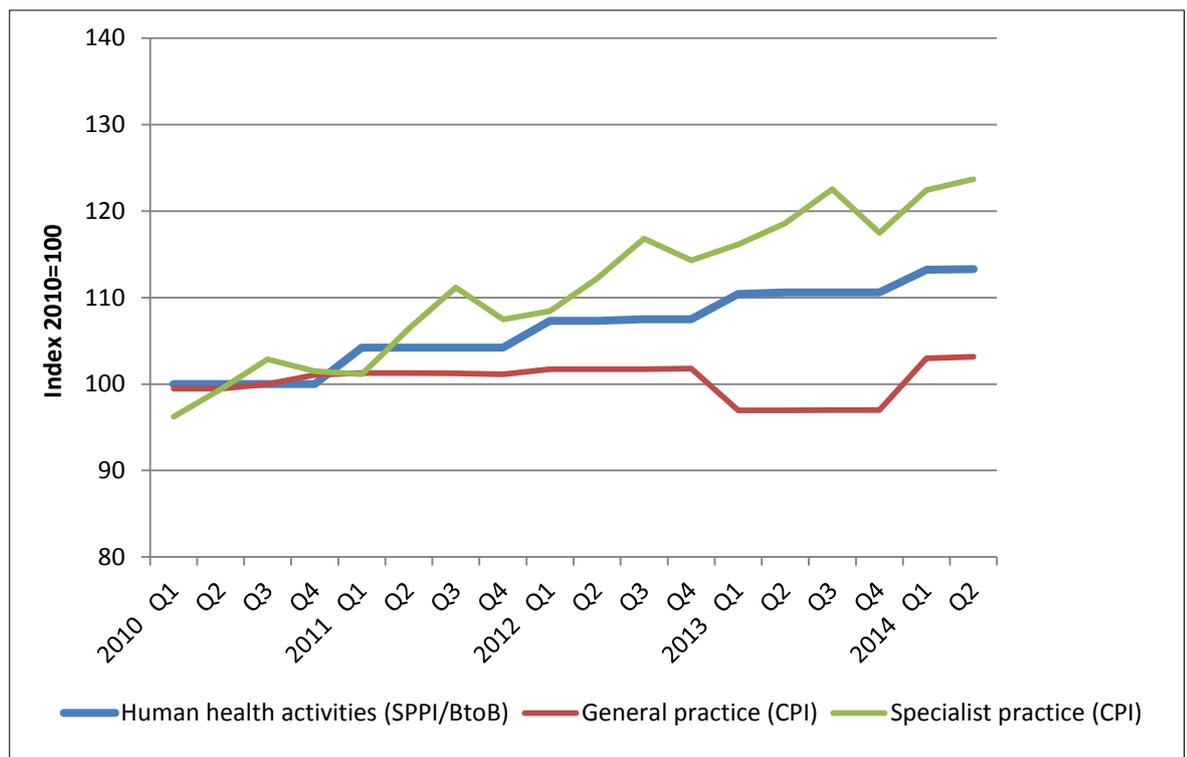
9. Results

Figure 2 shows the development of the price indices for human health activities (SPPI), general practice (CPI) and specialist practice (CPI) from the first quarter of 2010 to the second quarter of 2014.

In the services for enterprises prices have usually risen in the early part of the year and the price development has been quite steady at around three to four per cent per year. Between 2010 and early 2014 the prices went up by about 13.3 per cent. Over the same time period the SPPI total went up by 6.9 per cent.

The development of prices of general practice services differ the most from the other services. An explanation for this could be that it includes only publicly produced services while the other two indices contains privately produced health care services.

Figure 2. The development of SPPI for Human health activities (NACE 86), CPI for General practice (COICOP 06.2.1.1.1) and CPI for Specialist practice (COICOP 06.2.1.2.1)



10. Evaluation and comparability of price indices with turnover/output data

Finnish short-term statistics on services turnover are produced from administrative register data. Monthly turnover indices are calculated using companies' monthly reports of VAT paid to the tax authorities. This information which contains the total taxable turnover is available for Statistics Finland two months after the reference month. Under certain conditions, health services are exempted from value added taxes in Finland. Hence, the trend indicator of output is not available for the industry.

Both the sampling and the construction of the weight structure were challenging in the case of health services because the data on the turnover of the enterprises were not fully comparable. The way financial accounts data are recorded in an industry varies from one enterprise to another in respect of different basic variables of turnover so that, for instance, the reported turnover may or may not include the professionals who produce the services of an enterprise. Likewise, the way of recording size of personnel varies among the enterprises. The used sampling frame was Statistics Finland's Business Register which may, thus, contain data on turnover and size of personnel that have been recorded in deviating ways. However, the largest actors in the industry could be ascertained from the Business Register.

In order to establish the weight structure between service and customer groups, in the first inquiry the sampled enterprises were asked for data on turnover according to a detailed specification. As regards turnover it was decided that the broadly defined turnover, which means the total revenue of medical centres inclusive of e.g. doctor's fees and rents of premises, is asked about. This is in line with the turnover concept of other industries in which subcontracting is widespread.

In future, a sampling frame would be needed in which the definitions of turnover are equal (broad definition of turnover). Likewise, it should be possible to get the distributions of service products and customers direct from the sampling frame. When the data collection was started these matters had to be separately asked about.

One promising future alternative for the sampling frame would be Business Service Statistics which cover some service industries. Extension of the coverage of the Business Service Statistics to health services to get detailed turnover data would be important for the development of the price index for health services.

11. Summary

The Finnish SPPI for human health activities covers groups 86.22 Specialist medical practice activities and 86.90 Other human health activities. The index includes prices of occupational health care services, diagnostic imaging and laboratory services.

At the moment the scope of the published indices for human health activities is BtoB because of the EU regulation.

The Finnish SPPI uses time-based method and direct use of prices of repeated services for compiling the index for private health services.

For the time being the index does not cover the services of physiotherapy, dental services, hospital services, or municipal customers of the customer groups. The development of the share of municipal customers needs to be carefully monitored in future. Furthermore, in future the scope of SPPI will probably be BtoAll which is also one of the key issues for development of the Finnish SPPI.

Sources

Ekroos, V. 2004. Terveysthuollon palvelutuotanto (*Health care service production, available only in Finnish*). Talentum.

Finnish Institute of Occupational Health (FIOH). 2012. Työterveyshuolto Suomessa vuonna 2010 ja kehitystrendi 2000–2010 (*Occupational health services in Finland in 2010 and development in 2000–2010, available only in Finnish*).

National Institute for Health and Welfare (THL). Private service provision in social and health care (*available only in Finnish and Swedish*).

Social Insurance Institution (SII). 2014. Kelan työterveyshuoltotilasto (*Occupational health services statistics, available only in Finnish and Swedish*).

Appendix 1: CPA 2008 Human health services

CPA 2008	Description	This item includes	This item also includes	This item excludes
Q	Human health and social work services			
86	Human health services			
86.10	Hospital services			
86.10.1	Hospital services	<p>- short- or long-term hospital services, i.e. medical, diagnostic and treatment services, of general hospitals (e.g. community and regional hospitals, hospitals of non-profit organisations, university hospitals, military-base and prison hospitals) and specialised hospitals (e.g. mental health and substance abuse hospitals, hospitals for infectious diseases, maternity hospitals, specialised sanatoriums)</p> <p>The services are chiefly directed to inpatients and are carried out under the direct supervision of medical doctors:</p> <ul style="list-style-type: none"> • medical and paramedical services • laboratory and technical services • emergency room, operating room etc. services 		- services delivered by hospital outpatient clinics, see 86.21.10, 86.22.1
86.10.11	Hospital surgical services	- surgical services delivered under the direction of medical doctors to inpatients, aimed at curing, restoring and/or maintaining the health of a patient		- dental surgery in hospitals, see 86.23.11
86.10.12	Hospital gynaecological and obstetrical services	- gynaecological and obstetrical services delivered under the direction of medical doctors to inpatients, aimed at curing, restoring and/or maintaining the health of a patient	- family planning services, including medical treatment such as sterilisation and termination of pregnancy, with accommodation	
86.10.13	Hospital rehabilitation services	- rehabilitation services delivered under the direction of medical doctors to inpatients, aimed at curing, restoring and/or maintaining the health of a patient		
86.10.14	Hospital psychiatric services	- psychiatric services delivered under the direction of medical doctors to inpatients, aimed at curing, restoring and/or maintaining the health of a patient		
86.10.15	Other hospital services provided by medical doctors	- other hospital services delivered under the direction of medical doctors to inpatients, aimed at curing, restoring and/or maintaining the health of a patient		- health services for military personnel in the field, see 84.22.11 - private consultants' services to inpatients, see 86.2 - dental services, see 86.23.1
86.10.19	Other hospital services	- other hospital services (pharmaceutical services, nursing services and laboratory and technical services, including radiological and anaesthesiological services, etc.)		- laboratory testing and inspection services for all types of materials and products, except medical, see 71.20.1 - veterinary services, see 75.00.1 - ambulance services, see 86.90.14 - medical laboratory testing services, see 86.90.15
86.2	Medical and dental practice services			
86.21	General medical practice services			
86.21.1	General medical practice services			
86.21.10	General medical practice services	<p>- general medical services consisting in the prevention, diagnosis and treatment by medical doctors of physical and/or mental diseases, such as:</p> <ul style="list-style-type: none"> • consultations • physical check-ups, etc. <p>These services are not limited to specified or particular conditions, diseases or anatomical regions. They can be provided in general practitioners' practices and also delivered by outpatient clinics, at home, in firms, schools etc. or by phone, Internet or other means.</p>		
86.22	Specialist medical practice services			

86.22.1	Specialist medical practice services	- the specialist medical practice services that can be provided in specialised practitioners' practices and also delivered by outpatient clinics, at home, in firms, schools etc. or by phone, Internet or other means	
86.22.11	Analysis and interpretation services of medical images	- analysis and interpretation of medical images (x-ray, electrocardiograms, endoscopies and the like)	- inpatient hospital services, see 86.10.1 - services of medical laboratories, see 86.90.15
86.22.19	Other specialist medical practice services	- consultation services in paediatrics, gynaecology-obstetrics, neurology and psychiatry, and various medical services - pre-surgical consultation services - treatment services in outpatients clinics, such as dialysis, chemotherapy, insulin therapy, respiratory treatment, radiation treatment and the like	- inpatient hospital services, see 86.10.1 - dental services, see 86.23.1 - services provided by midwives, see 86.90.11 - services provided by nurses, see 86.90.12 - physiotherapeutic services, see 86.90.13 - services of medical laboratories, see 86.90.15 - family planning advice without medical treatment, see 88.99.19
86.23	Dental practice services		
86.23.1	Dental practice services		
86.23.11	Orthodontic services	- orthodontic services, e.g., treatment of protruding teeth, crossbite, overbite, etc., including dental surgery even when given in hospitals to inpatients - services in the field of oral surgery - other specialised dental services, e.g., in the field of periodontics, paedodontics, endodontics and reconstruction	
86.23.19	Other dental practice services	- diagnosis and treatment services of diseases affecting the patient or aberrations in the cavity of the mouth, and services aimed at the prevention of dental diseases These dental services can be delivered in health clinics, such as those attached to schools, firms, homes for the aged, etc., as well as in own consulting rooms. They cover services in the field of general dentistry, such as routine dental examinations, preventive dental care, treatment of caries, etc.	
86.9	Other human health services		
86.90	Other human health services		
86.90.1	Other human health services		
86.90.11	Pregnancy related services	This subcategory includes services provided by authorised persons, other than medical doctors: - supervision services during pregnancy and childbirth - supervision of the mother after birth - family planning services involving medical treatment	
86.90.12	Nursing services	This subcategory includes services provided by authorised persons, other than medical doctors: - services in the field of nursing care (without admission), advice and prevention for patients at home, the provision of maternity care, children's hygiene, etc.	- residential nursing care facility services, see 87.10.10
86.90.13	Physiotherapeutic services	This subcategory includes services provided by authorised persons, other than medical doctors: - services in the field of physiotherapy, ergotherapy, etc.	
86.90.14	Ambulance services	- services involving transport of patients by ambulance, with or without resuscitation equipment or medical personnel	
86.90.15	Medical laboratory services		- non-medical laboratory testing services, see 71.20.1 - testing services in the field of food hygiene, see 71.20.11
86.90.16	Blood, sperm and transplant organ bank services	- services provided by blood, semen, embryo, tissue and transplant organ banks, including storing and cataloguing of available specimen, matching of donated specimen and potential recipients etc.	
86.90.17	Diagnostic imaging services without interpretation	- diagnostic imaging services without analysis or interpretation, e.g., x-ray, ultrasound, magnetic resonance imaging (MRI), etc.	
86.90.18	Mental health services	This subcategory includes services provided by authorised persons, other than medical doctors: - mental health services provided by psychoanalysts, psychologists and psychotherapists	
86.90.19	Other human health services n.e.c.	- other paramedical human health services n.e.c., such as occupational therapy, acupuncture, aroma therapy, speech therapy, homeopathy, nutrition therapy etc. These services are provided by authorised persons, other than medical doctors.	- services such as physiotherapy and ergotherapy, see 86.90.13