EUROPEAN COMMISSION
Information Society and Media Directorate General

Pilot on eHealth Indicators

Benchmarking ICT use among General Practitioners in Europe 2007

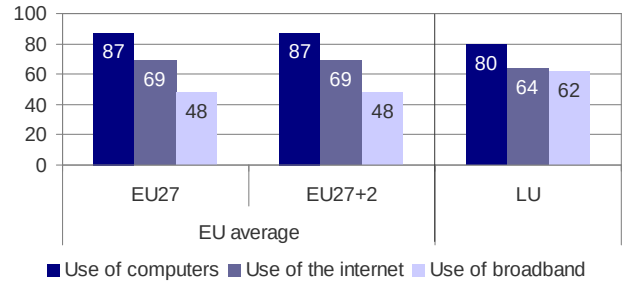
Country Profile: Luxembourg

Key findings: eHealth among GPs in Luxembourg[1]

In comparison to the other EU27 Member States, Luxembourg represents one of the weaker average performers. It scores below the EU27 average with regard to most indicators included in the survey. This concerns especially the use of ICT for different eHealth-related purposes.

In terms of infrastructure, Luxembourg displays a slightly unusual picture: while use rates for computer and Internet stay at a comparatively low level (80% and 64% respetively, both figures being situated below EU27 averages), broadband connections are quite common. They are used in 62% of the Luxemburgish GP practices which means that only 2% of the practices in Luxembourg use narrowband. Broadband can therefore be regarded as the common form of Internet access in Luxembourg.

ICT Infrastructure in Luxembourgish GP practices



Base: All GPs. **Indicators:** R4, C1, C2 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

As shown in the diagram below Luxembourg scores more or less below the EU27 average for most of the eHealth applications under consideration in the survey.

When it comes to the use of eHealth solutions, Luxembourg displays its best results in the areas of administrative and medical data storage as well as with relation to the use of a computer for consultation purposes: 70% of the GP practices store administrative patient data, 65% store at least one type of medical patient data and 59% use a computer for consulation purposes. For all three of these indicators Luxembourg however still stays behind the EU27 averages.

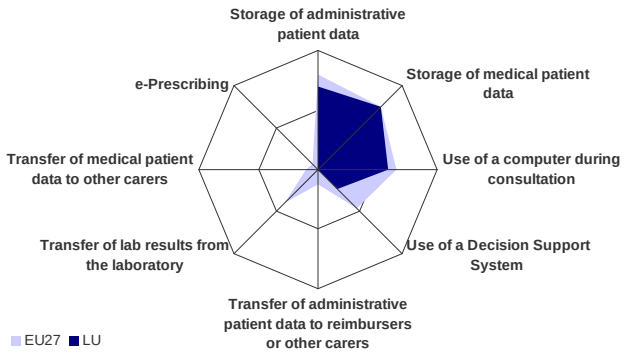
The use of Decision Support Systems is not very common. They are used for diagnosis of prescribing purposes in around 40% of Luxembourgish GP practices, a figure far below the EU27 average of 62%.

The electronic transfer of individual patient data has not yet arrived on the agenda of GPs in Luxembourg. Not a single Luxembourgish GP practice exchanges electronic administrative data via networked conections; neither with other carers nor with reimbursers. The exchange of medical data via networked connections is equally little prevalent: no GP practice uses networks in order to exchange electronic medical data with other care providers. However, already one out of four of the GP practices participating in the survey receives laboratory results via network connections.

ePrescribing is still not a reality in most European Member States. This holds true for Luxembourg as well where none of GPs participating in the survey reported using ePrescribing.

While several eHealth projects have already been implemented in Luxembourg, an encompassing strategy has only been decided on quite recently (2006).

eHealth Use by GPs in Luxembourg



Indicators: Compound indicators of eHealth use (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

[1] **Disclaimer:** Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of the following information. The views expressed are those of the authors and do not necessarily reflect those of the European Commission. Nothing in this document implies or expresses a warranty of any kind. Results should be used only as guidelines as part of an overall strategy.

ICT Infrastructure in GP Practices

An appropriate ICT infrastructure in the GP practice lays the ground for different eHealth use cases (such as storage of patient data, its exchange etc.). It is therefore the baseline from which a European GP can start his or her professional activities in the eHealth domain.

ICT infrastructure as understood here entails

- the availability of one or more computers in the practice;
- a connection with the Internet; and
- the availability of a broadband connection.

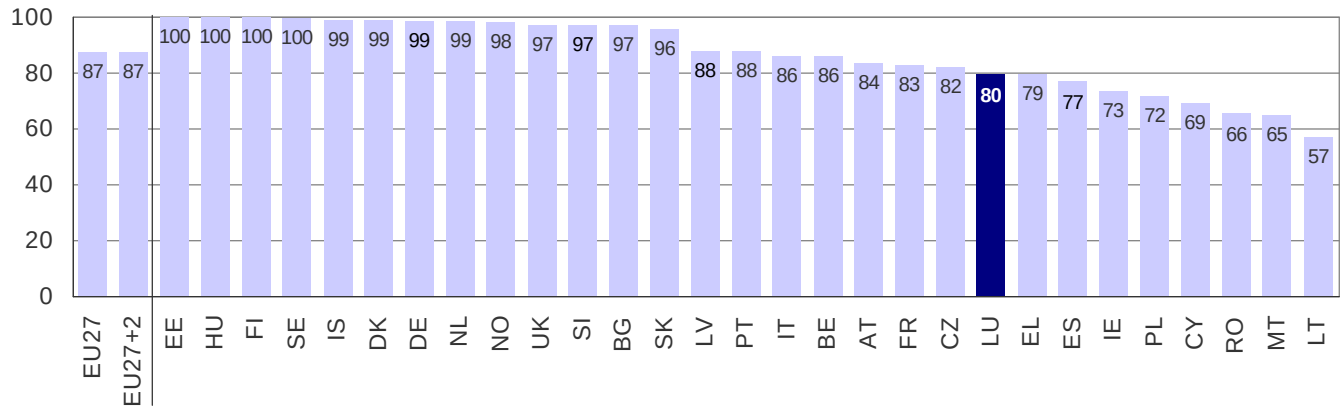
Use of computers

In Luxembourg around 80% of the GP practices are equipped with a computer. This places Luxembourg in a group of medium performers, where between 80% and 90% of the practices have a computer at their disposal.

All in all, 24 of the countries coverd by the survey show a penetration rate of more than 75%, a fact that clearly indicates that computers have arrived in EU GP practices. They are becoming more and more an essential and unquestioned part of practice fixtures.

In Luxembourg around four-fifth of the GP practices fulfil the infrastructural prerequisite for the successful implementation of eHealth applications.

Use of Computers in GP Practices in Luxembourg



Base: All GPs. **Indicator:** R4 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

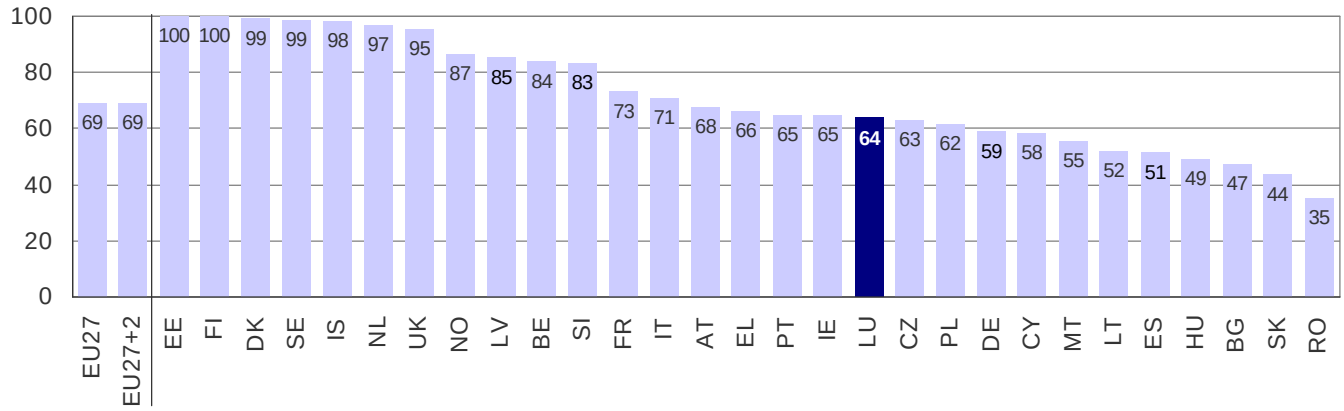
Use of the Internet and broadband

A connection to the Internet or any other dedicated network is a prerequisite for all those eHealth applications that entail data transmissions and information retrieval. In this regard Luxembourg has to be considered a rather weak average performer as well. 64% of Luxembourgish GP practices dispose of an Internet connection, as compared to 69% on average in the EU27. When it comes to Internet connections, large differences between Member States persist. Luxembourg holds a mid field position in a rather large group of countries where less than 75% practices have Internet access.

In Luxembourg, broadband is used by a majority of GP practices (62% of all GP practices). This figure is well above the EU average of 48% of broadband connections and puts Luxembourg on a par with France and Latvia. In Luxembourg, broadband can be considered the usual form of Internet access as only 2% of the GP practices use narrowband instead of broadband.

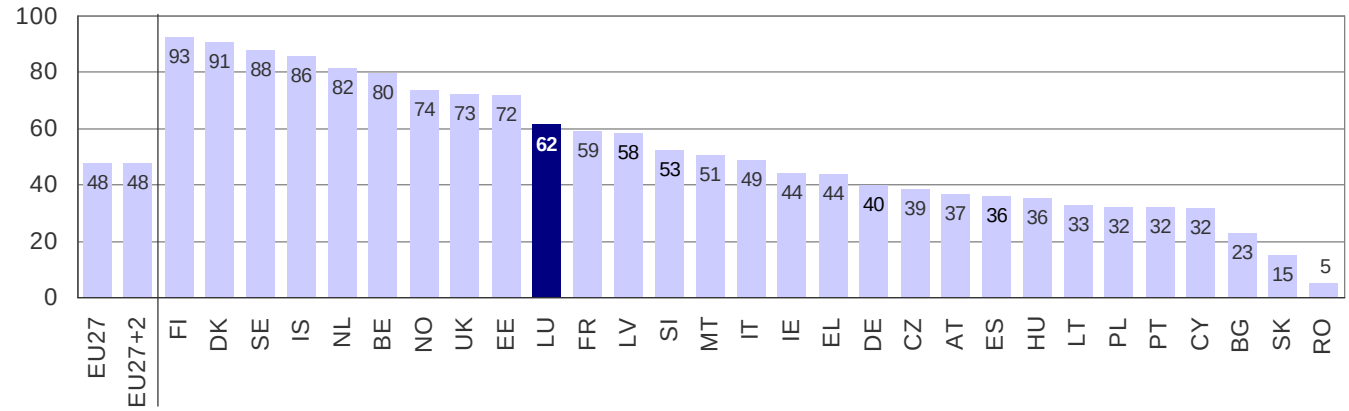
All in all, the differences regarding bandwidth across the EU27 Member States remain high. Availability rates for broadband connections span from only 5% in Romania up to 93% in Finland.

Use of the Internet in GP Practices in Luxembourg



Base: All GPs. **Indicator:** C1 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Luxembourgish GP Practices Using a Broadband Connection



Base: All GPs. **Indicator:** C2 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Use of eHealth Applications

With about 87% of European GP practices having a computer and about 69% being connected to the Internet, the question as to if and how this ICT infrastructure is used. The following sections deal with the use of ICT for different purposes in a GP practice's day-to-day business.

Electronic patient data storage

The electronic storage of patient data is not yet universal in Luxembourg. With 65% of Luxembourgish GP practices storing at least one tape of electronic medical patient data, the country ranks in the lower third of the EU Member States. Similar usage rates can be found for example in Ireland and Portugal. In Europe, around one third of the EU Member States can be regarded as frontrunners, insofar as the use of local EHRs in these countries is nearly universal (90-100% of GP practices storing at least on type of electronic medical patient data).

Concerning the different data types, usage rates in Europe vary substantially, while mostly a common usage pattern emerges. This use pattern differs slightly in the case of Luxembourg. The data type stored most often in those Luxembourgish GP practices that do store any type of patient data concerns information about medicamentations (95% of the practices). Around 90% of the GP practices register basic medical parameters, medical history, diagnoses and symptoms/reasons for encounters. While examination results are stored in 62% of the practices, lab results are only registered in little over 50% of the practices. The data type stored least often - both in the EU and in Luxembourg – concerns radiological images that are stored on average in 34% of European 43% of Luxembourgish GP practices.

Electronic Patient Data Storage in Luxembourg:
Storage of Different Types of Individual Patient Data by GPs storing electronic medical patient data

	EU27	EU27+2	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	NO
Diagnoses	90	91	93	97	89	93	99	94	74	89	89	79	85	93	58	65	88	99	80	96	88	73	77	69	89	94	81	97	94	100	100
Medications	90	90	93	93	88	99	93	86	71	94	91	95	95	90	50	8	95	99	80	97	84	55	85	36	43	85	96	95	98	100	99
Basic medical parameters	83	83	91	80	82	96	80	58	65	88	93	85	85	86	42	14	90	96	73	94	80	35	63	49	31	71	90	82	98	90	84
Lab results	79	80	96	83	58	99	78	58	64	81	77	82	75	76	42	17	52	91	66	95	79	53	59	63	20	26	98	97	96	93	98
Symptoms/reasons for encounters	77	77	89	94	70	97	67	59	68	82	92	80	64	86	42	28	88	96	70	96	82	46	73	32	33	60	96	95	92	98	95
Medical history	75	75	89	93	74	97	52	55	73	86	89	84	70	83	50	13	90	93	75	95	69	46	63	34	18	48	98	90	95	100	97
Examinations and results	75	75	87	86	62	95	56	51	64	81	81	68	82	67	42	20	60	93	66	95	76	55	67	58	15	35	98	76	88	92	98
Vital signs measurements	74	74	88	93	67	92	59	51	62	80	88	73	69	88	42	12	76	93	64	92	63	34	70	52	15	51	93	73	92	79	85
Treatment outcomes	65	66	81	78	68	96	52	46	62	76	66	53	58	71	50	26	62	92	58	94	77	49	52	25	14	47	88	78	77	76	91
Radiological images	34	35	53	50	20	98	15	47	42	55	65	23	5	29	42	2	43	70	34	43	49	40	29	12	8	10	95	34	30	87	54

Base: GPs storing electronic medical patient data. **Indicator:** A2 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Electronic exchange of patient data via the Internet or other dedicated neworks

The electronic exchange of patient data via the Internet or other dedicated networks is not yet very common; neither in Luxembourg, nor in Europe as whole. While 27% of Luxembourgish GPs already resort to network connections for the reception of analytical results from laboratories none of the GP practices having participated in the survey exchanges data with other care providers. These figures - that compare to 40% and 10% on average in the EU27 - place Luxembourg in the lower middle of the European countries. Very similar average rates for the transfer of medical patient data are attained in the Czech Republic.

Telemonitoring has not yet arrived on the scene neither in Luxembourg nor in the EU as a whole. In Luxembourg not even one of the practices uses it. This compares to the highest usage rate which is realised in Sweden. Even here, not more than 9% of the GPs report making use of telemonitoring. The only other countries with a mentionable usage rate of telemonitoring are the Netherlands and Iceland, scoring 3% each.

A similar pattern can be discovered with regard to the exchange of medical patient data across borders. In this case the Netherlands show the highest usage level with however only 5% of practices taking part in cross-border transmissions of medical data. Cyprus and Malta come in second with a score of 3% each. In Luxembourg none of the GP practices included in the survey exchanged medical data across national borders.

The low level of trans-border data sharing may be explained by the fact that the health care jurisdiction is explicitly under the jurisdiction of the indivdual Member States. Due to the differing health care systems in EU Member States, it is unsurprising that, with only very few exections, planned treatment is provided principally in the country of residence.

In Luxembourg the networked exchange of electronic medical data across national borders might be expanded during the upcoming years. The National Luxembourgish eHealth strategy drafted in 2006 identifies cross-border transactions as one of the major eHealth areas that are to be further developed in Luxembourg.

Electronic Exchange of Different Types of Medical Patient Data in Luxembourg

	EU27	EU27+2	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	NO
Medical data with carers	10	11	13	3	6	74	4	1	4	13	5	2	7	3	0	3	0	2	7	26	12	2	8	2	0	1	55	13	26	17	35
Results from labs	40	40	73	5	25	96	63	39	3	30	33	40	8	10	1	8	27	12	11	84	37	10	1	4	10	5	90	82	85	52	88
Telemonitoring	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	0	0	0	3	1	0	1	0	0	0	1	9	2	3	0
Medical data across borders	1	1	1	1	1	2	0	0	2	1	2	0	0	3	0	0	0	0	3	5	1	0	0	0	0	0	0	1	0	0	0

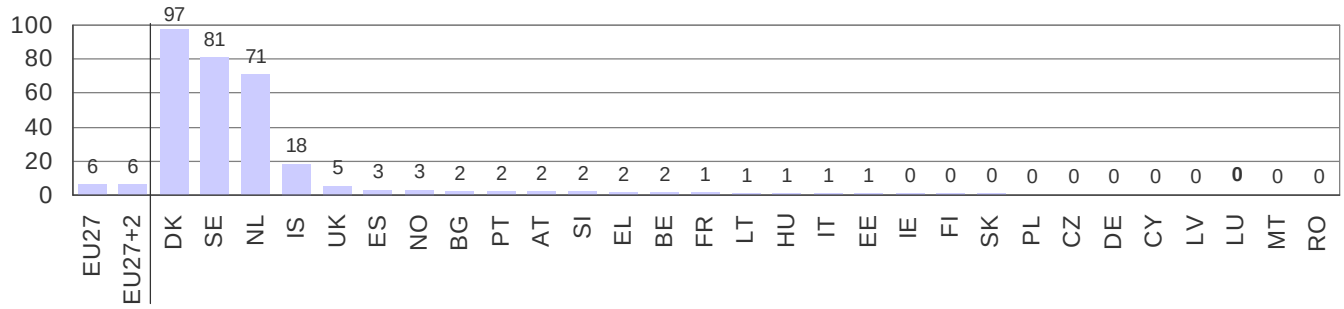
Base: All GPs. **Indicator:** D1 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

ePrescribing

The only three EU meber states where ePrescribing is a reality are Denmark, Sweden and the Netherlands. Apart from this frontrunner group, only Iceland as a non-EU Member State shows an adoption level that rises above 5%.

In Luxembourg however, as in most of the European countries, vitually no GP practice makes use of ePrescribing.

Use of ePrescribing by GPs in Luxembourg



Base: All GPs. **Indicator:** D1 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Coded data entry

In Luxembourg the distribution pattern of coded and uncoded data entries used for the storage of electronic patient data is rather unusual. While in the EU on average a slight majority of GP practices use a mixed form of coded and uncoded data (45%), in Luxembourg most GP practices that store patient data, chose to do so in un-coded form only (60%). Solely coded data is used in only 2% of the Luxembourgish GP practices, as compared to 21% on average in the EU. A mix of both coded and uncoded data is used in a quarter of the Luxembourgish GP practices (45% on average in the EU27). For the

latter, a clear estimation of the coded/uncoded share is not possible.

Coded data entry in this context refers to the use of coding systems such as the ICD (the WHO's International Classification of Diseases) that allows to store a disease or diagnoses as a code rather than as a textual description. Only in a handful of countries the share of practices using solely coded data is above one third. Rather, most practices use a combination of coded and uncoded data.

Use of data coding for the storage of electronic patient data by Luxembourgish GPs

	EU27	EU27+2	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	NO
Coded data only	21	21	29	22	6	19	19	35	20	35	6	10	22	10	25	68	2	6	14	37	11	49	18	24	25	36	2	10	24	41	14
Un-coded data only	30	30	36	27	56	31	33	5	58	26	66	50	26	64	25	8	60	5	39	13	55	44	23	26	34	24	26	29	5	5	18
Both coded and un-coded data	45	46	33	50	33	49	48	59	16	36	19	34	50	14	50	13	24	88	25	49	31	19	49	43	33	36	72	54	70	52	64

Base: GPs storing patient data. **Indicator:** A4 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Exchange of administrative patient data

Data transfer via networks concerns not only medical data, but can also be used for administrative purposes, i.e. for data exchanges between the GP practice and reimbursers or other care providers.

Luxembourg and Lativa are the only two EU Member States where the GP practices exchange neither admininistrative data with other carers, nor with reimbursers. The averages for these two indicators are comparatively low, even on the European level: only 10% of European GP practices exchange administrative data with other carers and 15% with reimbursers. However, Luxemburg and Latvia clearly come in last in line with regard to both indicators. It should be noted that when it comes to the exchange of administrative patient data in the EU27 Member States, huge variations come into view: as regarding the exchange of administrative data with other care providers, shares differ between 0% (Latvia and Luxembourg) and 74% (Denmark). Rates for the exchange of administrative data with reimbursers also differ widely: from 0% (Latvia and Luxembourg) to 48% (Denmark).

Exchange of Administrative Patient Data in Luxembourg

	EU27	EU27+2	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	NO
Admin data with other carers	10	10	13	6	6	74	3	1	4	6	4	4	3	3	0	10	0	1	7	28	7	6	6	6	3	2	21	16	32	12	25
Admin data with reimbursers	15	15	3	10	13	48	4	5	3	2	26	15	1	3	0	21	0	5	3	45	19	23	5	2	14	4	8	8	43	1	19

Base: All GPs. **Indicator:** D1 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Data exchange and security

Data security is an important issue when sensitive, identifiable patient data is stored and transmitted electronically. There are a number of different techniques to make the handling of patient data secure, including password protection of the computer system and of transmitted files, encryption of transmitted files and e-mails as well as the use of e-signatures.

With relation to the use of security features Luxembourgish GP practices follow the general pattern found in the EU27. The Luxembourgish GP practices display use rates for all security methods that approximate the EU27 averages.

Password protected access is the most readily available form of data protection and therefore unsurprisingly the method the most widely used. In Luxembourg 96% of the GP practices protect their PC by means of passwords. This figure approximates the EU27 average of 94% of GP practices having established a password protected computer access. The situation for the use of passwords for the protection of transmitted files is similar. This security method is used by 54% of the Luxembourgish GP practices as compared to 57% on average in the European Union.

Other than the case of password protection, both encryption and the use of electronic signatures require a dedicated infrastructure, which must be present at both ends. The higher effort required by these security techniques explains why they are used by a significantly lower percentage of European GP practices.

The encryption of transmitted files is a security feature that is used by 42% of the GP practices both in Luxembourg and in the EU27 on average.

The use of e-Signatures varies widely across Europe. However, on average only 19% of GP practices use e-signatures. Luxembourg scores slightly below average for this security feature as only 12% of Luxembourgish GP practices employ e-Signatures.

GPs Use of Security Features in Luxembourg

	EU27	EU27+2	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	NO
Password (PW) protected access	94	94	97	92	97	97	95	100	59	93	88	97	100	72	100	92	96	100	94	95	94	86	97	80	92	94	100	98	98	100	100
PW protection of transmitted files	57	57	60	77	65	71	63	76	40	56	39	59	70	41	100	45	54	57	47	62	60	63	62	62	64	69	56	27	58	83	59
Encryption of transmitted files	42	42	64	49	31	68	53	85	22	35	36	30	45	19	50	32	42	31	21	36	46	40	26	44	32	28	14	20	42	37	58
Use of e-signatures	19	19	22	68	49	93	7	58	15	24	16	11	40	13	0	12	12	7	9	28	12	11	5	12	20	19	16	41	10	43	48

Base: All GPs. **Indicator:** D4 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

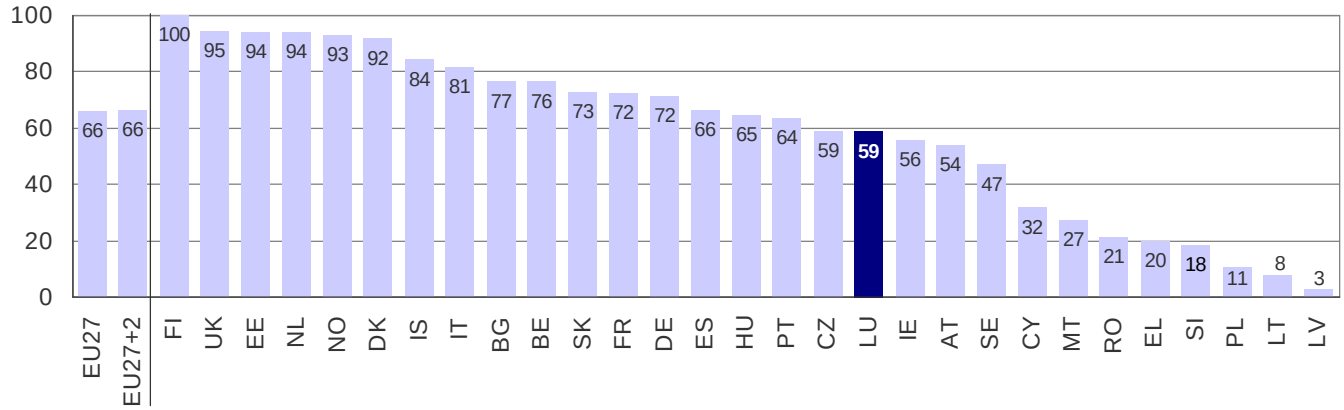
Computer use in consultation

Apart from the storage and exchange of patient data, a computer can also be used in direct interaction with the patient, i.e. during the consultation in the practice. It can be used to display a patient's file to the practitioner, to provide supporting information when making treatment or medication decisions, but also for the explanation of medical issues to the patient, e.g. by means of a graph, photo or animation.

In Luxemborg roughly two-thirds of the GPs use a computer for consultation purposes. This result is slightly below the EU27 average of 66% and puts Luxembourg on a par with the Czech Republic. Similar use rates are attained in Ireland, Austria, Portugal, Hnagary and Spain. The availability versus use gap is not very prominent: only 10% of the Luxembourgish GPs have a PC in their consultation room which they do not use for consultation purposes in direct contact with the patients.

When it comes to the use of a computer in consutation with the patients, a huge gap can be observed between frontrunners countries with more than 90% of computer use (Finland, United Kingdom, Estonia, the Netherlands and Denmark) and the countries following or lagging behind.

Computer Use in Consultation with the Patient in Luxembourg



Base: All GPs. **Indicator:** B2 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

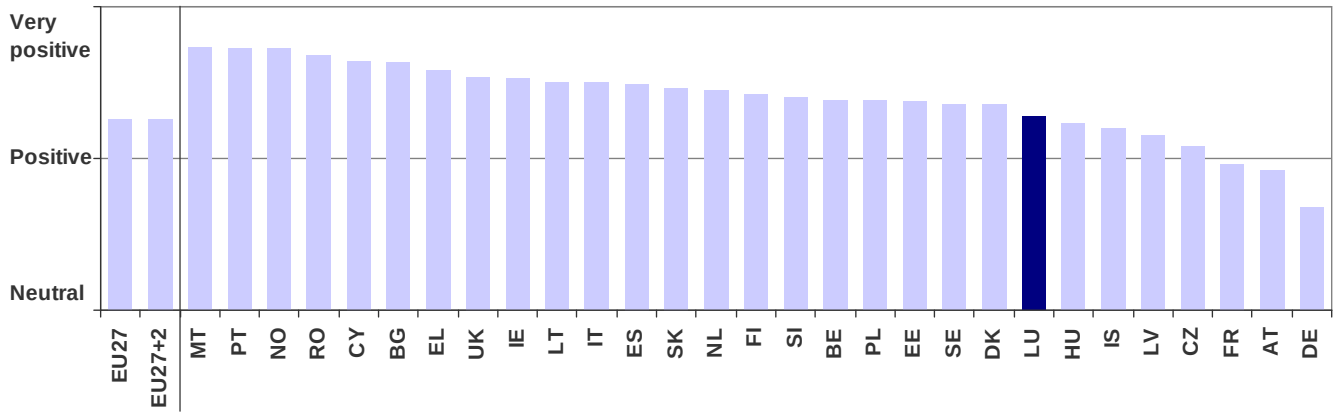
Attitudes and Impacts

What role do ICTs play in the day-to-day work of a European General Practitioner? What is a GPs general attitude towards ICT and what facilitators and barriers towards a wider uptake of eHealth do they perceive? What are the impacts of eHealth?

GPs in Luxembourg are moderately positive when it comes to the question whether ICT really and tangibly improves the quality of health care services. When looking at the other countries it is interesting to see that in none of the 29 countries under observation a negative attitude is prevalent.

This positive attitude seems to have nothing to do with whether a country is more of an eHealth laggard or a frontrunner. Those countries displaying an only moderately positive attitude (such as Germany, France and Austria) are all average eHealth performers. At the same time, GPs using eHealth and practising in countries that can be considered eHealth laggards (e.g. Greece, Cyprus or Romania) show an attitude that is more positive than the EU average. Since difference between the countries in relation to the perception of facilitators and barriers as well as eHealth impacts are only small, the following analysis focuses on the EU average results, reporting national deviations where they occur.

GPs General Attitude Towards ICT Use in Health Care in Luxembourg



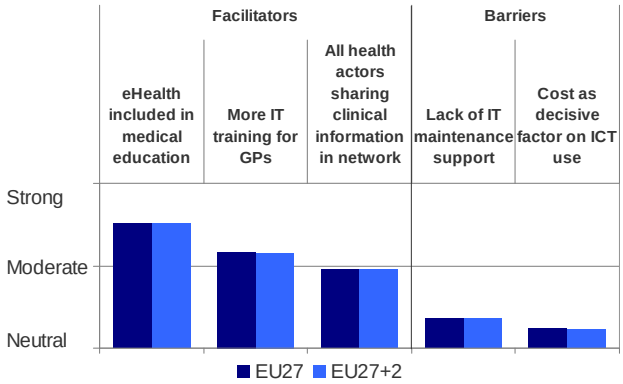
Base: GPs using computers. **Indicator:** F1 (cf. annex for more information), attitude scores. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Perception of facilitators and barriers

Among the factors that could facilitate the diffusion of eHealth, most European GPs would prefer if the issue were included in the curricula of medical education. The second most important facilitating factor is related to IT training provided to the GPs themselves. Thirdly, a better networking of all health actors in order to share clinical information is also regarded as beneficial by a majority of GPs. The perception of facilitators and barriers by Luxembourgish GP corresponds more or less to the pattern to be found on average in the EU.

As regards the electronic exchange of clinical information, GPs in Germany, Poland, Iceland and Norway are less positive about this than the European average, but still mostly agree to a certain extent. On the other hand, Greek, Lithuanian and Romanian GPs are considerably more positive on this issue than their European peers. In relation to IT training for GPs, practitioners in Denmark, Germany, Hungary and the Netherlands see this as a less important issue.

GPs Perception of Facilitators and Barriers in the EU27



Base: GPs using computers. **Indicator:** F1b (cf. annex for more information), agreement scores. **Source:** empirica, Pilot on eHealth Indicators, 2007.

When it comes to potential eHealth barriers, most practitioners seem — on average — to consider neither a lack of IT maintenance support nor cost as a factor that seriously hampers their use of ICT. In some of the Eastern European Member States, GPs are however considerably more critical about both issues. A lack of IT maintenance support is seen as a barrier to eHealth — at least to a certain extent — by a majority. In these countries cost are perceived as a barrier to eHealth by a noticeably larger number of GPs than in the EU on average. In Luxembourg, neither the lack of maintenance support nor the costs are seen as important barriers to the use of eHealth applications.

Noticeable deviations from these patterns can also be found in Greece, Spain and Ireland, here a majority of GPs somewhat agrees to the statement that a lack of IT support has a negative impact on eHealth use.

Perception of impacts

In Luxembourg the perception of eHealth impacts all in all resembles the general pattern found in the EU27.

The general impact perceptions show quite a clear pattern: the GPs are most positive about the administrative impacts of ICT use in health care, namely impacts in relation to their personal or practice staff working processes.

When it comes to patient-related or medical impacts a more ambivalent picture emerges. For every GP being positive about those impacts, there is at least one other GP not perceiving any benefit. This is for instance the case in relation to impact on the quality of diagnosis and treatment decisions: here about half of the GPs see positive impacts as compared to the other half seeing no impacts. In case of doctor-patient relationship and the workload of the support staff — including nurses etc. — between 16% and 25% say that the impacts are actually negative, i.e. that the relationship to the patient has deteriorated or that the workload of the support staff has gone up. The latter could indicate that the brunt of additional effort created by ICT use is not borne by the GP but by the other workers in the practice. This is also not contradicted by the perceived improvement of working processes. For the practitioner this may be due to the fact that they are not burdened with additional work generated by ICT and for the rest of the practice staff improved working processes might mean that an overall increased workload is simply handled more efficiently. In Luxembourg, this phenomenon can be discerned as well: while a majority of 79% of the GPs agree that the introduction of IT solutions in the practice had a positive impact on the working processes of the staff. While none for the GPs judged It solutions to have had a negative impact on the working processes of their practice, 20% thought that the introduction

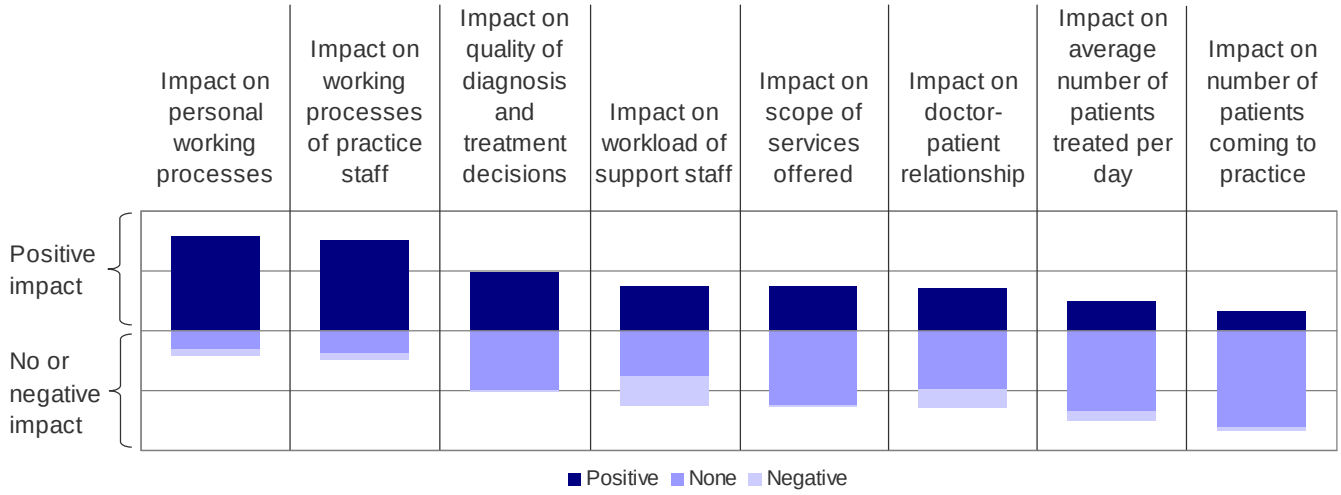
of IT applications increased the workload that their support staff has to bear.

In Europe, on average around one-third of the practitioners state that the scope of services offered by the practice actually increased due to the use of IT systems and software. In Luxembourg the share of GPs being convinced that the introduction of IT helped tham increase the sope of services goes up to around 50% of the GPs. It can be assumed that for those GPs IT is not just a tool to make existing — e.g. administrative — processes more efficient but to broaden the range of their activities.

The last two areas under observation here are the impact on the number of patients treated as well as on the number of patients coming to the practice. In Luxembourg around half of the GPs held that the use of IT increased the average number of patients they could help in one day. An increase in the absolute number of patients coming to the practice was reported by 28% of the Luxembourgish GP practices. In this case, Luxembourgish GPs are more positive than most of their peers. However, still a majority of Luxembourgish GPs did not attribute an increase of the number of patients actually coming to the practice to the introduction of IT solutions in the practice. This observation goes in line with the general impression by European GPs, most of whom did not report any changes in the number of patients coming to the practice or being treated per day.

GPs from eHealth frontrunner countries tend to be somewhat more positive about impacts on personal and staff working processes and also about impacts on the quality of diagnosis and treatment decisions. They perceive a higher increase in the scope of services offered by their practice compared to their colleagues in the other countries. At the same time, negative impacts on the workload of the practice staff are deemed to be stronger.

GPs Perception of eHealth Impacts in the EU27



Base Users of electronic records, or access to health networks, or electronic patient data exchange. **Indicator:** F1 (cf. annex for more information), attitude scores. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Making Sense of eHealth Use Patterns in the Member States

In terms of eHealth infrastructure and use rates Luxembourg can be regarded as one of the average performers.

The availability of infrastructure components in Luxembourg presents a slightly unusual picture: while use rates for computer and Internet stay at a comparatively low level (80% and 64% respectively, both figures being situated below EU27 averages), broadband connections are quite common. They are used in 62% of the Luxemburgish GP practices which means that only 2% of the practices use narrowband. Broadband can therefore be regarded as the common form of Internet access in Luxembourg.

When it comes to the use of eHealth solutions, Luxembourg displays its best results in the areas of administrative and medical data storage as well as with relation to the use of a computer for consultation purposes. For all of these three indicators Luxembourg however still scores below the EU27 averages. The transfer of electronic patient data is virtually non-existent among GPs in Luxembourg.

Luxembourg looks back on a number of eHealth projects realized in the past years, however without the guidance of a central eHealth strategy. In response to this situation the Ministry of Health set up a national eHealth working group in 2005 including representatives of various ministries, hospital associations and research centres. The main task of this working group was to come up with a national eHealth strategy that was published in 2006 and approved by the Governmental Council in the same year.

Luxembourgish policy strategies with eHealth relevance

Luxembourg eHealth strategy 2006

The strategy includes among other things the creation of a national Public Health Portal, support for better sharing of information by implementing an Electronic Health Card and support for the development of a key documentation management application, which shall result in an electronic patient record. Further projects are also planned in the field of ePrescribing. Another key concern — stemming from the high number of foreign commuters in Luxembourg — is the exchange of health-related data with neighbouring countries. If these projects are implemented as planned, major develop-

ments in the area of eHealth are to be expected during the upcoming years.

GPs from eHealth frontrunner countries tend to be somewhat more positive about impacts on personal and staff working processes and also about impacts on the quality of diagnosis and treatment decisions. They perceive a higher increase in the scope of services offered by their practice compared to their colleagues in the other countries. At the same time, negative impacts on the workload of the practice staff are deemed to be stronger.

ANNEXES

The Pilot on eHealth Indicators Study

The "Pilot on eHealth Indicators" study was carried out by empirica in association with IPSOS on behalf of the European Commission, Information Society and Media Directorate-General. The purpose of the present study was to measure the availability and use of ICT by primary care physicians in the EU27 and EEA countries, achieved by means of a survey of primary care physicians on their use of ICT for communicating with patients and between primary and secondary care and other eHealth agencies. Through this survey up-to-date information and data on eHealth developments was obtained. In addition 29 Country Briefs for each of the Member States, Norway and Iceland were developed.

The Final Report

The Final Report of the study puts together all the results from the General Practitioner survey, including many indicators not used for this Country Profile. It also contains an extensive analysis of data, drawing a coherent picture of ICT use among General Practitioners in Europe.

Indicators used

The Final Report contains an indicator annex listing all statistical indicators covered by the survey, including those used for this Country Profile. The indicator codes used in the footnotes of the graphs and tables (e.g. B2, C1 etc.) can be used to identify the corresponding indicator in the list.

Methodology Report

The survey

Data used for this County Profile were collected by means of a survey of primary care physicians and their use of ICT with patients and between primary and secondary care and other health agencies.

The survey was carried out in all 27 Member States of the European Union and in Norway and Iceland. The fieldwork took place in the third quarter of 2007. It was coordinated by the German Ipsos branch Ipsos GmbH, Mölln and was conducted in cooperation with local partner institutes.

The survey was carried out in form of Computer-Aided Telephone Interviewing (C.A.T.I.). Exception is Malta where face-to-face interviews using P.A.P.I. methodology (Paper-and-Pencil Interviews) were conducted. In Sweden CATI interviews were used, until the sample was exhausted due to the specificities of the Swedish health system. The remaining interviews were accomplished through Computer-Aided Web-Interviews.

Universe/ Target Person and Sampling

The universe consisted of all General Practitioners in the respective countries. From the universe a random sample of practices / institutions with a quota on region and - where possible - private practice / institution was drawn. The target respondent within the practice / institution was selected via a random procedure if more than one GP were present. In total, 6,789 interviews were achieved. The sampling was done in a decentralised way and by each of the partner institutes.

Number of Interviews Conducted

	Country	Interviews
BE	Belgium	318
BG	Bulgaria	206
CZ	Czech Republic	304
DK	France	261
DE	Germany	253
EE	Estonia	150
EL	Greece	315
ES	Spain	325
FR	France	302
IE	Ireland	206
IT	Italy	290
CY	Cyprus	72
LV	Latvia	177
LT	Lithuania	263
LU	Luxembourg	63
HU	Hungary	251
MT	Malta	92
NL	Netherlands	258
AT	Austria	299
PL	Poland	351
PT	Portugal	284
RO	Romania	304
SI	Slovenia	103
SK	Slovakia	261
FI	Finland	250
SE	Sweden	267
UK	United Kingdom	257
IS	Iceland	103
NO	Norway	204
	Total	**6.789**

Weighting schemes

After the fieldwork, weighting coefficients were computed giving each country a weight according to its population size in the respective group of countries: EU27+2 (for all 29 countries surveyed), EU27 (all EU Member States).

More information

If you wish to be provided with more details, or to receive news and updates, please contact us at: indeh [at] empirica [dot] com or get in touch with us.

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