Benchmarking ICT use among General Practitioners in Europe 2007

Country Profile: Portugal

Key findings: eHealth among GPs in Portugal[1]

Portugal can be regarded as an average eHealth performer in the EU27.

In terms of infrastructure, 88% of the Portuguese GP practices use a computer and 65% of the GP practices dispose of an Internet connection. In Portugal, broadband connections have not yet arrived in force; they are used in only 32% of GP practices.

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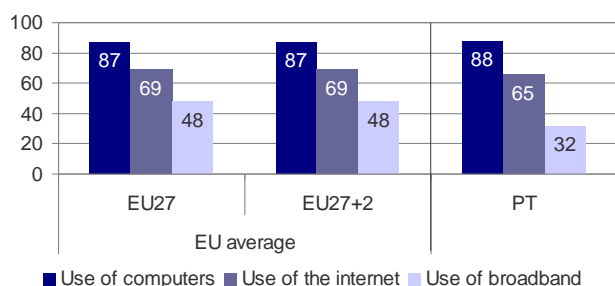
Base: All GPs. **Indicators:** R4, C1, C2 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

The storage of electronic patient data is not very common in Portugal. Only around 60% of GP practices store at least some sort of individual medical patient data. For the different types of stored electronic medical patient data Portuguese GPs reach percentages slightly below the EU27 average rates.

A computer is available in the consultation room of 77% of the Portuguese GP practices. 63% of the Portuguese GPs actually use this computer for consultation purposes when the patient is present, for example to display a patient's file to the practitioner, to explain medical issues to the patient by means of a photo or animation but also to run a decision support system helping in diagnosis or prescribing. 53% of the Portuguese GP practices use of Decision Support System for diagnosis or prescription purposes (50% on average in the EU27).

In Portugal the electronic exchange of patient data has not yet arrived. Only 6% of the Portuguese GPs exchange administrative data with other care providers. This compares to an average rate of 10% reached across the EU27. With only 5% of the Portuguese GP practices that exchange of administrative data with reimbursers, Portugal also cores considerably below the EU average of 15%.

The situation for the transfer of medical patient information is similar: Only 1% of the GP practices use network connections to receive results from laboratories. The reception of lab results is however by far the most frequent use type in the EU27, which is made use of by 40% of the GP practices on average. In Italy only 8% of the GP practices exchange medical data with other health care providers. This figure corresponds more or less to the EU27 average with regard to this indicator.

The electronic exchange of prescriptions, commonly referred to as ePrescription, is used by 2% of GP practices in Portugal. EPrescription can be regarded as a reality in only three member States: Denmark, the Netherlands and Sweden. Apart from these countries adoption levels are never higher than 5%.

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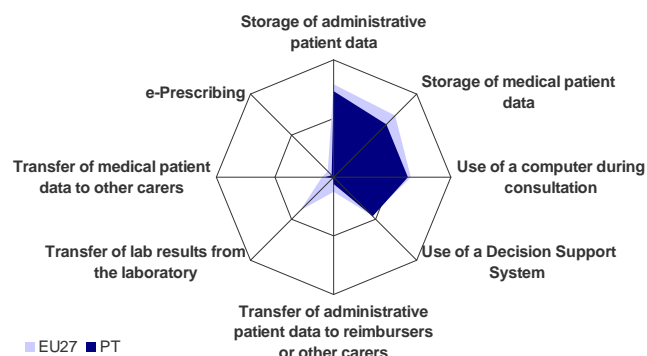
Indicators: Compound indicators of eHealth use (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

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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 Portugal 88% of GP practices are equipped with a computer. This result puts Portugal on a par with 10 other EU countries where computer availability rates of 75 - 90% are reached. All in all 24 of the countries show a penetration rate of more than 75%, a fact that clearly indicates that computers have arrived in EU GP practices. Computers are becoming more and more an essential and unquestioned part of practice fixtures.

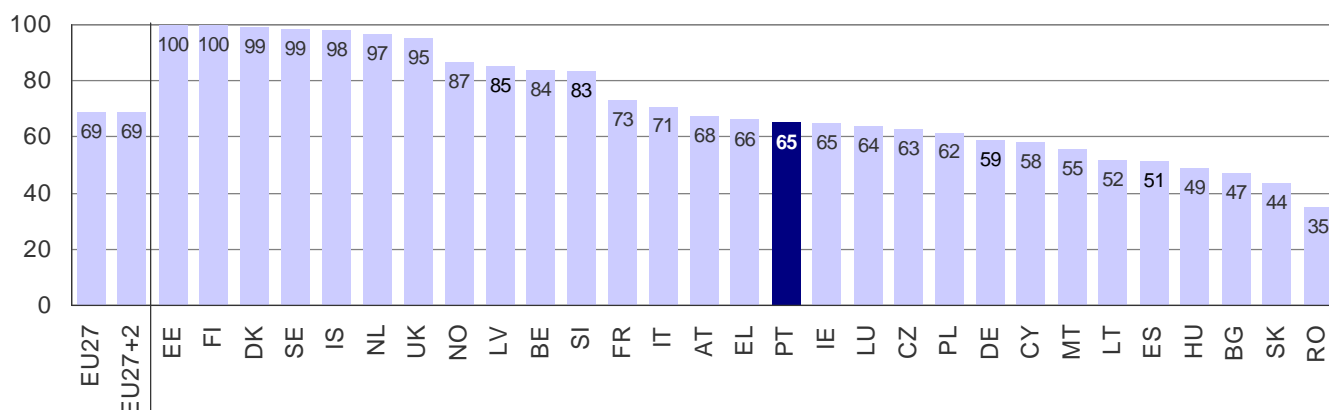**Use of Computers in GP Practices in Portugal**
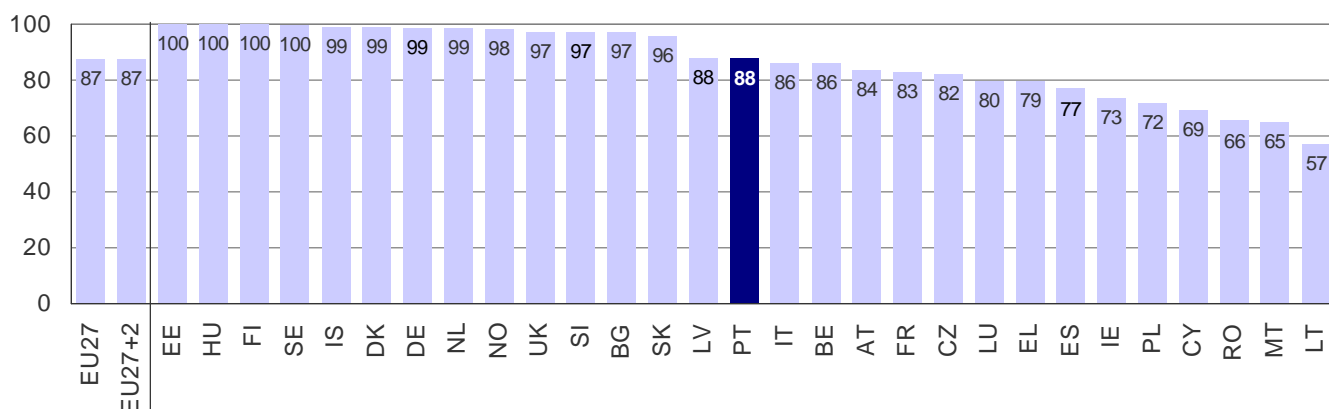
Base: All GPs. **Indicator:** R4 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Use of the Internet and broadband

65% of the Portuguese GP practices are connected to the Internet, a result which is close to the EU27 average (69%). As an infrastructure component, an Internet connection is a prerequisite for all those eHealth applications that are based on data transmission or information retrieval.

When looking at the distribution of Internet connectivity across the European Union large differences persist. Portugal is part of a rather large group of countries with less than 75% practices having Internet access. On the other hand Internet connections are already (nearly) ubiquitous in GP practices in seven countries.

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Use of the Internet in GP Practices in Portugal

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

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Portuguese GP Practices Using a Broadband Connection

EU27	EU27+2	FI	DK	SE	IS	NL	BE	NO	UK	EE	LU	FR	LV	SI	MT	IT	IE	EL	DE	CZ	AT	ES	HU	LT	PL	PT	CY	BG	SK	RO
48	48	93	91	88	86	82	80	74	73	72	62	59	58	53	51	49	44	44	40	39	37	36	36	33	32	32	32	23	15	5
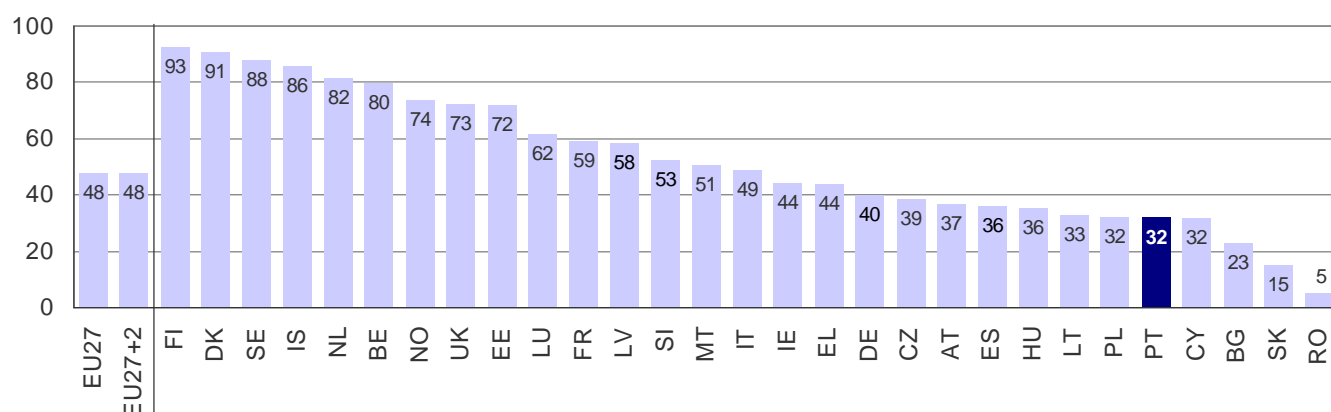
Base: All GPs. **Indicator:** C2 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

In Portugal, only 32% of the practices use a broadband connection in order to access the Internet.

Other than in the case of computer and Internet availability, differences regarding bandwidth remain high across the EU27 Member States. Availability rates vary between 93% and 5%. Portugal positions itself on a par with Lithuania, Poland and Cyprus, all of which form part of the tail-end countries, where less than 35% of GP practices posses a broadband connection.

Use of eHealth Applications

With about 87% of European GP practices having a computer and about 69% being connected to the Internet, the question is 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 storage of electronic patient data is not yet very common in Portugal. Only around 60% of GP practices store at least some sort of individual medical patient data. Those Portuguese practices that store electronic patient data store most often diagnoses (77%), medications (85%), symptoms reasons for encounters (73%), vital signs measurement (70%), examinations and results (67%), medical history (63%) and basic medical parameters (63%). Lab results, Treatment outcomes and radiological images are all registered in less than 60% of the GP practices that store medical patient data.

Electronic Patient Data Storage in Portugal:

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 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 networks

The electronic exchange of patient data via the Internet or other networks has not yet arrived in Portugal. Only 1% of the GP practices in Portugal use a network connection to receive results from laboratories. The reception of laboratory results is otherwise by far the most frequent application in the EU27 (40%). 8% of the Portuguese GP practices exchange data with other medical care providers.

Telemonitoring has not yet arrived on the scene neither in Portugal nor in the EU as a whole. In Portugal only 1% of the GP practices offer telemonitoring services. The highest share in this regard can be found in Sweden where however still only 9% of GPs report making use of telemonitoring. The only other countries where telemonitoring is used to some limited extent are the Netherlands and Iceland, with use rates of 3% each.

A similar pattern can be discovered with regard to the exchange of medical patient data across borders. In Portugal, none of the GP practices having participated in the survey transfers electronic patient data across national borders. In this case the Netherlands show the highest use level with however only 5% of practices taking part in cross-border transmissions of medical data. France, Cyprus, Malta, Denmark and Greece come in second with scores between 2% and 3%.

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 individual Member States. Due to the differing health care systems in EU member states, it is unsurprising that, with only very few exceptions, planned treatment is provided principally in the country of residence.

Electronic Exchange of Different Types of Medical Patient Data in Portugal																															
	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
Analytic 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.

ePrescription

Electronic exchange of prescriptions, commonly referred to as ePrescription, is currently practiced by 2% of GP practices in Portugal. A similar situation can be found in nearly all EU27 Member States as well as in Norway.

There are only three EU Member States where ePrescription is a reality: Denmark, Sweden and the Netherlands.

This shows clearly that ePrescription has so far not arrived on the scene throughout the EU.

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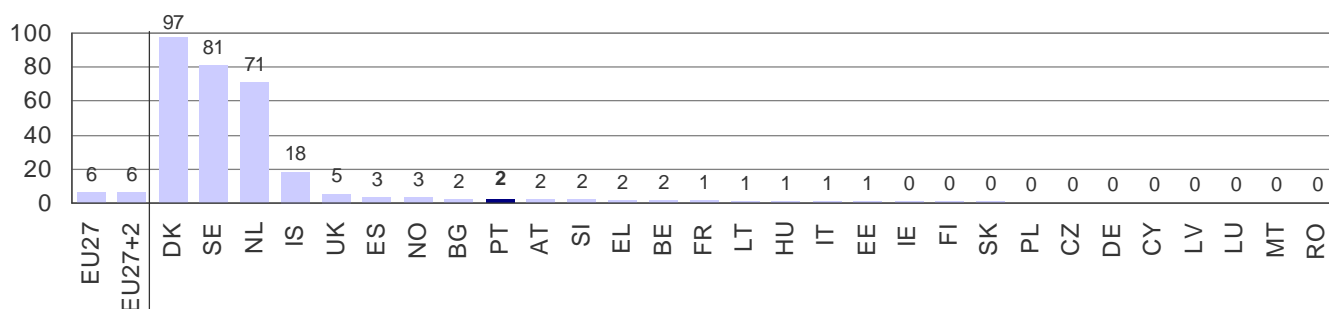
Base: All GPs. **Indicator:** D1 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Coded data entry

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. Use of coded data facilitates the further processing of the patient data, e.g. for billing purposes.

18% of Portuguese GP practices use exclusively coded data for the storage of electronic patient information. 23% of the practices store data only in un-coded form and about one half of the GP practicesstore both coded and un-coded data. For the latter, a clear estimation of the coded/un-coded share is not possible.

In this regard, Portugal is in line with the European average. Most European practices use a combination of coded and un-coded data.

Use of data coding for the storage of electronic patient data by Portuguese 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	30	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	25	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.

6% of the Portuguese GPs use networks to exchange administrative patient data with other carers, as compared to the average rate of 10% reached by the EU27.

With only 5% of the GP practices that exchange administrative patient data with reimbursers, Portugal scores clearly below the EU average of 15%. Frontrunner countries in this regard are Denmark, the Netherlands and the United Kingdom, but even here not more than one out of two GP practices uses this feature.

Exchange of Administrative Patient Data in Portugal

	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.

In Portugal, 97% of GP practices have established a password protected PC access. As shown in the table below, nearly all (94%) of the European GPs use this security feature.

High rates in almost all countries with regard to the use of this basic security method are due to the fact that password protection can be achieved comparatively easy as it is available for all basically commercial computer operating systems.

GPs Use of Security Features in Portugal

	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.

Password protection of transmitted files is used by 62% of Portuguese GP practices. Even though password protection of files is also technically available in many applications, only 57% of GPs in the EU27 use this technique.

26% of Portuguese GPs encrypt transmitted files and e-mails and only 5% of the GP practices use e-signatures. The average usage rates of the EU27 exceed the Portuguese ones by around 15%. Other than in the case of password protection, both encryption and the use of electronic signatures require a dedicated infrastructure, comprising software, an encryption key and a signature. This infrastructure must be present at both ends: on the side if the transmitting as well as of the receiving party. This explains the relatively low usage rates in Portugal but also in most of the countries of the EU27. Frontrunners in regard to the usage of both methods are Denmark and Estonia.

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.

77% of the Portuguese GP practices have a computer in the consultation room. In 64% of the GPs practices this computer is actually used for consultation purposes when the patient is present. A similar availability versus use gap can be found in many European countries. For some countries it is as high as 50% and more.

The results for the EU27 show a significant gap between frontrunners with more than 90% of GP practices using a computer (Finland, UK, Estonia, Netherlands and Denmark) and the countries following or lagging behind (less than 30%). With 64% Portugal is among a group of slightly advanced average performers with usage rates varying between 60% and 80%.

Computer Use in Consultation with the Patient in Portugal
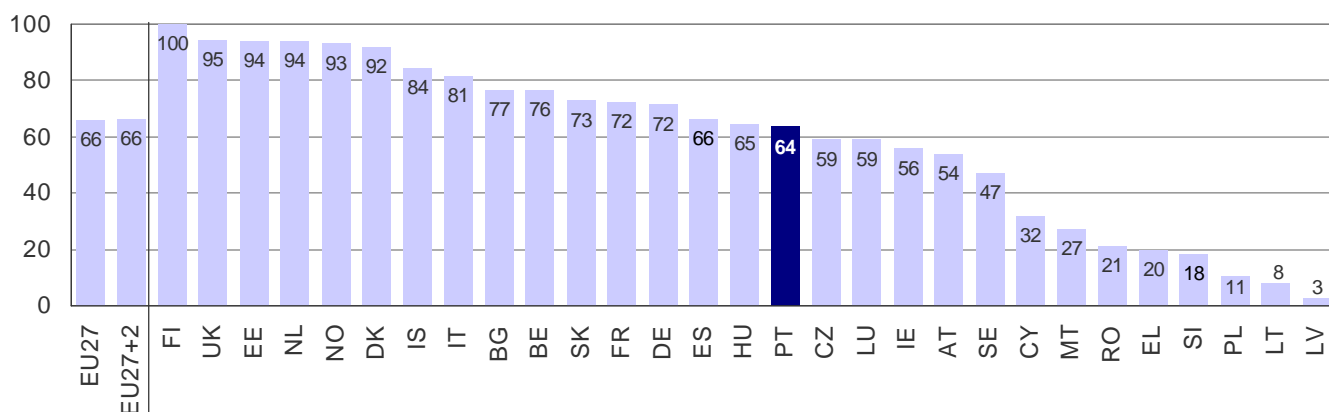
Base: All GPs. **Indicator:** B2 (cf. annex for more information), % values. **Source:** empirica, Pilot on eHealth Indicators, 2007.

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 Portugal are quite positive when it comes to the question whether ICT really and tangibly improves the quality of health care services, as are basically all GPs in Europe. On a scale ranging from a very negative to a very positive attitude, Portuguese GPs can be found more towards a very positive attitude. 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.

GPs General Attitude Towards ICT Use in Health Care in Portugal
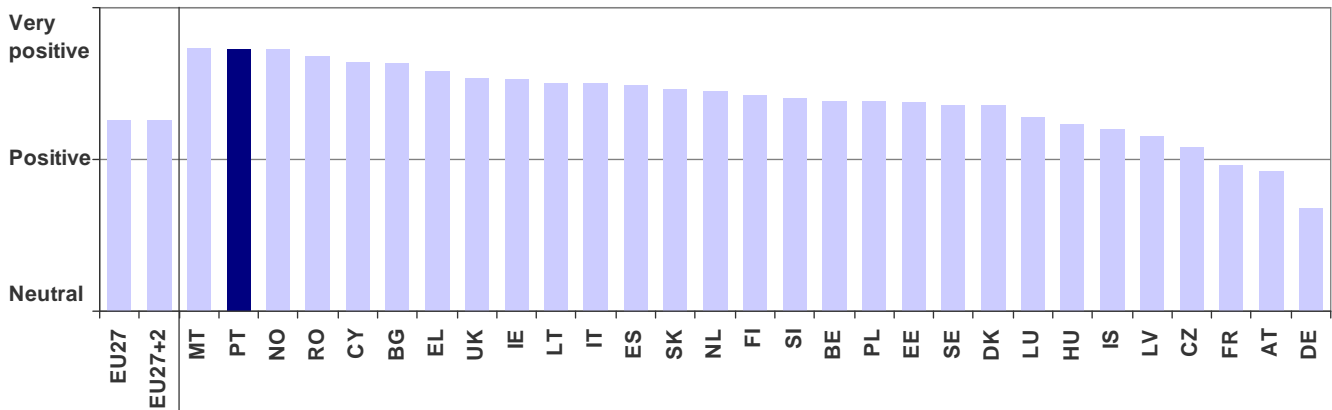
Base: GPs using computers. **Indicator:** F1 (cf. annex for more information), attitude scores. **Source:** empirica, Pilot on eHealth Indicators, 2007.

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.

Perception of facilitators and barriers

The perception of facilitators and barriers of Portuguese GPs is slightly more positive than the perception shown by the majority of GPs in the EU27.

Among 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.

GPs Perception of Facilitators and Barriers in the EU27
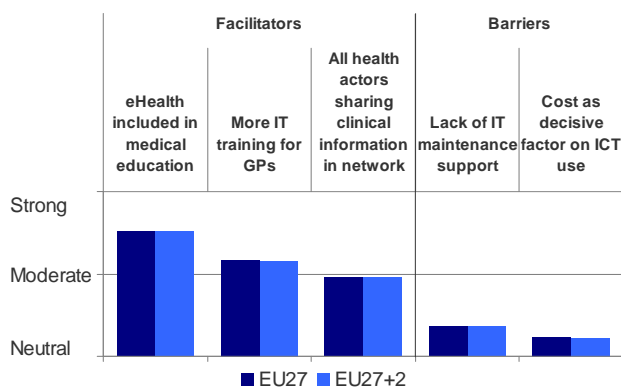
Base: GPs using computers. **Indicator:** F1b (cf. annex for more information), agreement scores. **Source:** empirica, Pilot on eHealth Indicators, 2007.

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.

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 is perceived as a barrier to eHealth by a noticeably larger number of GPs than in the EU on average.

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 Portugal the perception of eHealth impacts 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 pattern hold true for the EU27 as a whole as well as for the Portuguese GPs in particular. 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. About 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 Portugal this positive impact could be discerned by 30% of GP practices. 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. A slight majority of Irish GPs did not experience any changes in the number of patients coming to the practice (79%) nor the number of patients

treated per day (60%) that could be related to the introduction of eHealth solutions. This 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
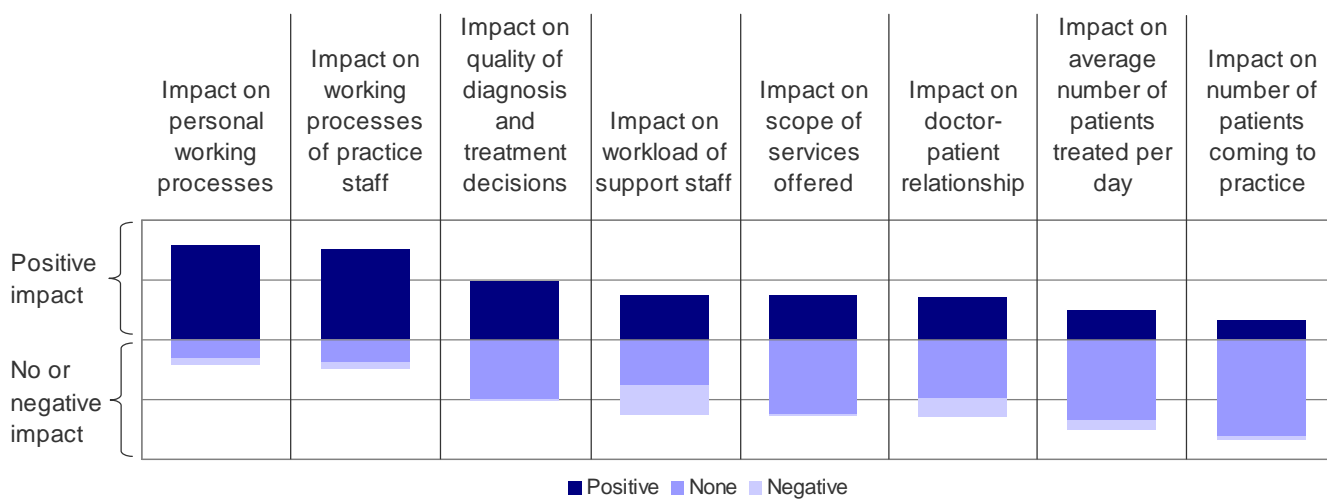
Base: Users of electronic records, or acess to health networks or electronic patient data exchange.. **Indicator:** F1 (cf. annex for more information), attitude scores. **Source:** empirica, Pilot on eHealth Indicators, 2007.

Making Sense of eHealth Use Patterns in the Member States

Portugal can be regarded as an average eHealth performer in the EU27. In terms of infrastructure, Portugal is on a par with the EU27 average concerning the use of computers and the use of the Internet. However, with relation to broadband connections Portugal scores below the European average.

The storage of medical patient data is not yet very common in Portugal with only one half of the Portuguese GP practices storing any medical patient data at all, only very few GP practices transfer patient data electronically.

The National Health Plan defines the guiding principles of healthcare provision in Portugal. There is currently no dedicated legal framework for eHealth.

Portuguese policy strategies with eHealth relevance

"National Action Plan for Info Society" 2003 with eHealth as 1 priority

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Regulatory measures with a bearing on this field are limited to data protection laws and publicity and medication marketing guidelines. The latest governmental initiative was the National Action Plan for the Information Society, which addresses a number of eHealth issues. The improvement of the

communication infrastructure in the health sector, the enhancement of online health services and the introduction of a user card for patients are the main objectives of the Portuguese eHealth policy.

A lack of infrastructure may also be the reason for the fact that transfer of administrative and medical patient data between GPs and care providers and professionals is today used by only few Portuguese GPs. This has also been recognised by the Portuguese government which is taking steps to facilitate data exchange by setting up a national health information network.

Several eHealth Internet portals are already implemented and some pilots for telemedicine and teleconferencing have already been launched. In a second step, online health services are planned to be established, aiming to improve the communication between patients and doctors by using web-based applications to assist continuous monitoring of chronic diseases and treatment follow-up. Same as in most EU countries, telemonitoring in Portugal today is rather a concept than a reality with only about 1% of the GPs doing so.

The Portuguese electronic identify card (eID) will replace five existing cards and the data will be stored in the National Data Centre. Another future activity will be the implementation of a nationwide ePrescription scheme. Average rates are reached in regard to the use of computers during the consultation with the patient and the use of decision support systems.

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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