

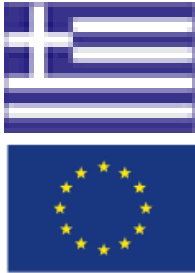
Project: "Study for measuring the indicators of the i2010 action plan for the year 2008"

**RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS**



ΠΑΡΑΤΗΡΗΤΗΡΙΟ  
για την Κοινωνία  
της Πληροφορίας  
**GREEK**  
Information Society  
**OBSERVATORY**

**November 2008**



**Project: "Study for measuring the indicators of the  
i2010 action plan for the year 2008"**

**REPORT ON THE RESEARCH FINDINGS AMONG  
GENERAL PRACTITIONERS**



*Prepared for the Greek Information Society  
Observatory*

**RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS**

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## RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS

### 1. Research Identity

The present research was carried out among General Practitioners (GPs) in the country as part of a study for determining and monitoring the indicators of the i2010 plan. The project is co-funded by the European Union and forms part of Action Line 5 "Technical Assistance", Measure 5.2 of the Operational Program "Information Society" of the 3<sup>rd</sup> Community Support Framework. It was designed and supervised by the Information Society Observatory.

#### 1.1 Research objectives

The present research aims at measuring the percentage of GPs in the country who use electronic patient records.

#### 1.2 Research methodology

The data were collected through telephone interviews at the doctors' offices, with the CATI system; the interviews lasted on average 6.5 minutes and a fully structured questionnaire was used.

- **Population:** All GPs in the country (3658 GPs<sup>1</sup>).
- **Sampling:** The sample was collected from the register of GPs using a random probability method based on specific, electronically set guidelines for both the random choice and the replacements. The process comprised two stages:

→ **1<sup>st</sup> stage:** Distributing the GPs per regions of the country and determining the required sample per region

→ **2<sup>nd</sup> stage:** Selection of a sample of GPs in each region.

The final sample numbered **307 GPs**. An originally selected doctor was replaced in case of refusal to participate or when no contact with the doctor was achieved after 5 attempts on different days and times within the day.

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<sup>1</sup> Source: National Statistical Service of Greece, 2001

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**Weightings:** No weighting of the data was used.

**Date of interviews:** 03/11 – 22/11/2008

**Notes/Comments:** The research findings were compared with those of the 2005 – 2007 projects. An asterisk is used to indicate any statistical difference within 95% confidence interval.

**Statistical errors:**

	<b><u>Sample</u></b>	<b><u>Statistical error</u></b>
Total contacts:	307 GPs	+/- 5,6
Have access to Internet:	177 GPs	+/- 7,4

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### 2. Main conclusions of the research

The majority of GPs (73%) use personal computer. Computer use, either in private doctor's practice or in hospitals/ clinics or at home, increased slightly in 2008 (from 68% in 2007).

Computer use in private doctors' offices is estimated at 51% in 2008 remaining at the same levels with the previous years. An important increase has been noticed in the use of laptops (21% in 2008 vs 13% in 2007), with a parallel decrease in the use of desktop.

Overall, the maintenance of electronic records is low in 2008 (25%) and at the same levels with previous measurements (27% in 2005 and 2006 and 28% in 2007).

Almost all doctors keep an electronic patient record at the patient's medical file. A high percentage is recorded in preparing diagnostic reports and entering test results, both at around 60% significantly higher from 50% that they had in 2007. A statistical important increase has been noticed in drafting statistics for patients (48% in 2008 vs 25% in 2007), issuing orders for tests (53% in 2008 vs 38% in 2007), but also for processing of patients lists for social security funds (39% in 2008 vs 23% in 2007).

Moreover, in all records currently kept, the GPs stated that they enter each patient's personal data (personal data, medical history) and record specific information about each incident or consultation, such as diagnosis, drug treatment prescribed, or data from monitoring the progress of a therapeutic treatment already prescribed for the patient.

Compared to 2007, in 2008 it has been reported that information such as drug prescriptions, type of visit is significantly less entered by doctors in the electronic patients records.

One effect of the doctors' familiarity with computers is their good relationship with the Internet. Slightly over half the doctors use the Internet today, while significantly more among them are younger practitioners and those that have access both at the office and at home. Overall, access to the Internet did not alter compared to 2007 (58% vs 57%).

However, the type of Internet connection has changed significantly, since dial-up connection has decreased (17% in 2008 vs 29% in 2007) and ISDN and the broadband connection remained at the same levels of 2007 (34% and 44% respectively).

Almost 5 out of 10 GPs have a personal e-mail address, but it is very high among younger practitioners (71% among younger ones, 66% among middle-aged and just 29% among older ones), while the practice of doctors having their own websites is still at an early stage

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(just 6%, at the same levels but slightly higher than the previous measurements).

GPs mainly use the Internet for issues of professional nature such as: consulting databases with information about their work (89%), seeking information about drugs (82%), looking for new drugs on the Internet (74%), seeking advice about official guidelines issued by state agencies (73%) and also sending/ receiving e-mail (72%).

The use of Internet for consulting sites that present alternative treatments (73% in 2008 vs 78% in 2007) is reported significantly lower compared to 2007, while the use for sending/ receiving email, receiving patients medical results from laboratories and the communication with the them through emails are recorded significantly higher.

Other reasons for using the internet is information about conferences (83%), the use of travel related services (67%) and accommodation (58%), as well as enrolling in conferences (54%). The information about conferences and the use of travel related services, showed significant increase in 2008 of 7%, the other reasons remained at the same levels.

Other reasons for using the Internet that still remain at low levels, are banking transactions, transactions with public Sector and Videoconference.

Overall, GPs in 2008 give a positive evaluation about the use of information systems at their work. Almost all GPs that already keep electronic patients' records or use computers give a positive evaluation. Their attitude is the same the past three years, that is to say the period 2006 – 2008.

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**3.1. Summary of the research findings**

**GPs and the computer**

The majority of GPs (73%) use PC either at home or at their place of work - private office or hospital/ clinic. Computer use, either at home or at their place of work was recorded slightly higher in comparison with 2007.

1 out of 2 GPs (51%) use computers in their private office, with significantly higher the use of laptops and with younger GPs using it significantly more. The use of computer at home is higher and reaches 66%, recording in 2008 a rise of 7%.

**Electronic patient record keeping**

Overall, 25% (1 out of 4) GPs keep electronic patient record in 2008. The frequency is exactly the same as in the two previous measurements. Younger practitioners seem to have adopted this habit significantly more than the older ones. The patient records are mainly kept at the office (83% of the GPs in 2008).

**Information entered in the electronic records of GPs**

The majority of GPs who keep electronic records for their patients use the electronic records to keep medical files for their patients and 60% are used for preparing diagnostic reports. Almost 6 out of 10 records are used for entering test results, 53% (vs 38% in 2007) of electronic records include medical tests prescribed and 40% the issuing of drugs prescriptions.

Compared to the three previous measurements, the data kept in the patients' electronic records do not show any significant differentiation, except that the issuing of diagnostic reports was significantly increased.

Moreover, the usual information found in almost all records is personal information for each patient (personal data, medical history), entries about the diagnosis on each occasion, the treatment prescribed, patients medical test results, the drugs taken systematically by the patient and data for monitoring the progress of the prescribed treatment.

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**GPs and the Internet**

Overall, the majority of GPs today (58%, almost 6 out of 10) have access to the Internet with no differentiation compared to 2005 -2007. Younger doctors have adopted the Internet significantly more than older ones and seem to have access both at the office and at home.

Although there is no increase in the Internet access, the type of Internet connection at the office has changed significantly compared to 2005 -2007. There is a decrease in the use of dial-up connection (17% in 2008 vs 29% in 2007) while ISDN and the broadband connection, remained at the levels of 2007.

**GPs and the e-mail**

Personal e-mail address is still very low among GPs, despite the significant increase that was monitored in 2008 (47% have a personal e-mail address on the Internet vs 39% in 2007). Overall, about 1 out of 2 GPs keep a personal e-mail address and the vast majority (9 out of 10) use it personally themselves. As expected, older GPs (56+ years old) have a personal e-mail address significantly less (29% in 2008 vs 24% in 2007).

**GPs and websites**

Very few GPs have their own website (6%). The website is mainly theirs (75%), or is being hosted (25%). The information included in the sites is the CV of the GP, information about the medical practice and ways of communication, as well as articles that have been published. No significant change is recorded in the availability of websites in comparison with the measurements of 2005 – 2007 even though there is a slight upward trend, which is though in the limits of statistical error.

**Reasons for using the Internet**

GPs use mainly the Internet for issues of professional nature, such as consulting databases with information about their work (89%), seeking information about drugs (82%), looking for new drugs on the Internet (74%), seeking advice about official guidelines issued by state agencies (73%) and also sending/ receiving e-mail (72%).

The use of Internet for consulting sites that have information from doctors to doctors appears significantly lower compared to 2007 (from 47% to 42%), while the use of electronic mail recorded significantly higher.

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Other reasons for using the Internet is information about conferences (83%), the use of services relating to travel (67%) and accommodation (58%), as well as enrolling in conferences (54%). Significant increase by 7% was recorded in 2008, in comparison with the measurement of 2007, in obtaining information about conferences and the use of travel related services, other reasons remained at the same levels.

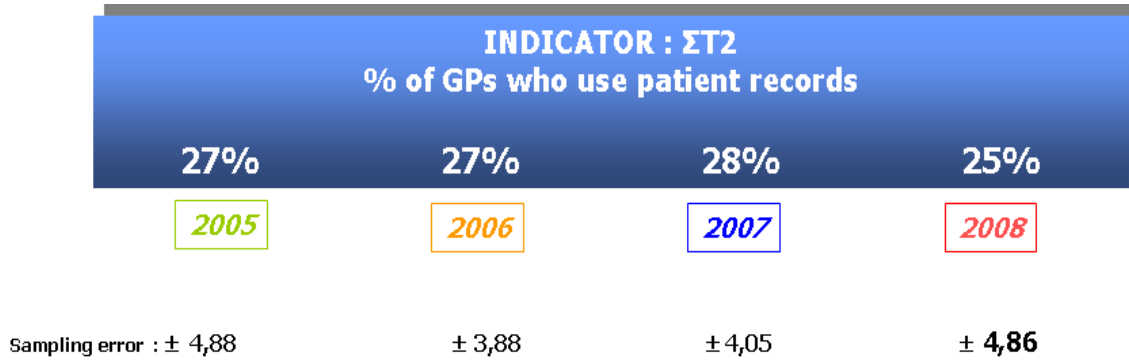
Other reasons for using the Internet, still recorded at low levels, are the banking transactions, the transactions with the Public Sector and Videoconference.

**Contribution of use of information systems at the work of GPs**

Overall, GPs in 2008 give a positive evaluation about the use of information systems at their work. Almost all GPs that already keep electronic patients' records or use computers give a positive evaluation. Their attitude is the same the past three years, that is to say the period 2006 – 2008.

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3.2. i2010 Indicators



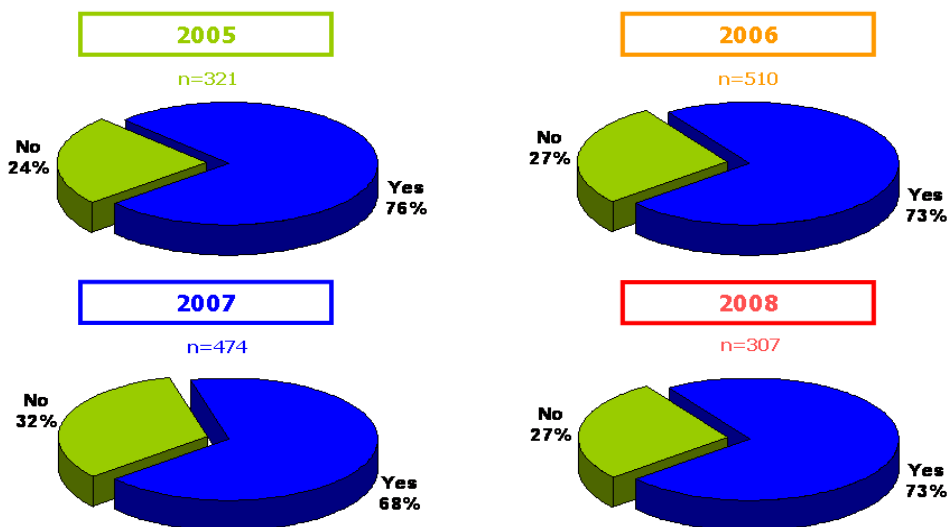
**RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS**

**4. Findings of the research**

Overall, 73% of GPs are computer users either at home or at the hospital or clinic, if employed in such institution. The most usual type of PC used by GPs is the desktop computer.

**COMPUTER USE BY GPs**

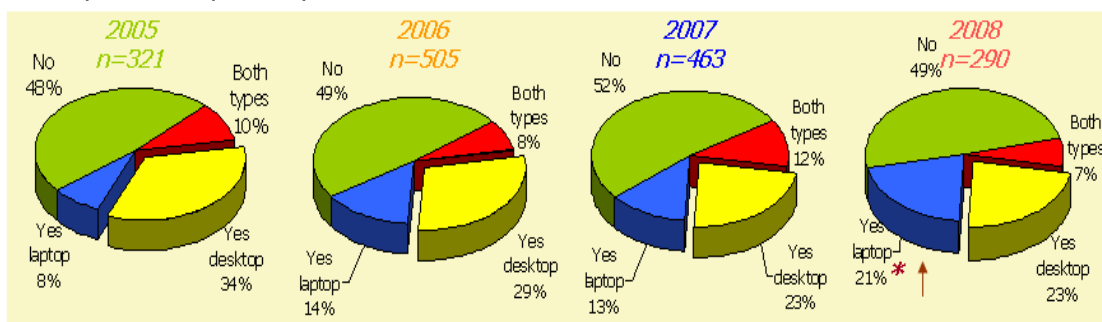
*Do you use Computer (unduplicate use, in private doctor's office, in the hospital/clinic, at home);*



**COMPUTER USE IN THE OFFICE AND AT HOME**

1 out of 2 GPs use computer in the office. Although there is no increase overall in PC use, a significant increase has been noticed in the use of laptop and a decrease of parallel use of laptop & desktop in the doctor's office. As expected, the laptop use in the office is significantly higher among younger doctors, aged 25-45 years, from which 38% uses only a laptop.

*Do you use Computer in you office?*

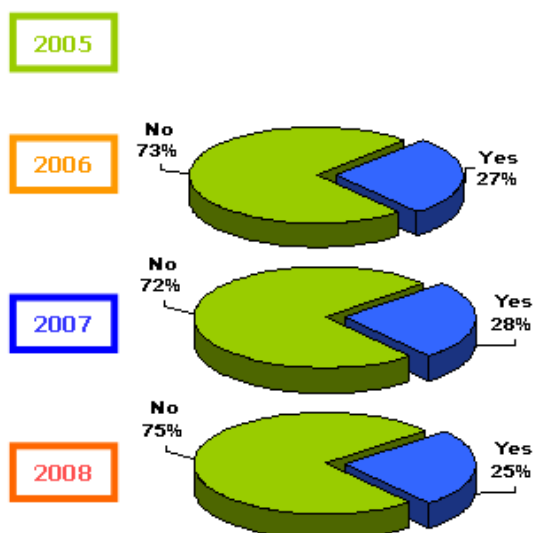


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The percentage of computer use in doctors' home is higher than the use in the office (51% use in the office, 66% use at home). Increase of 7% in the use of computers from home has been recorded amongst the GPs in the country, the biggest that has been seen among the measurements.

**ELECTRONIC PATIENT RECORD KEEPING**

*Do you keep a patient record in your Computer?*



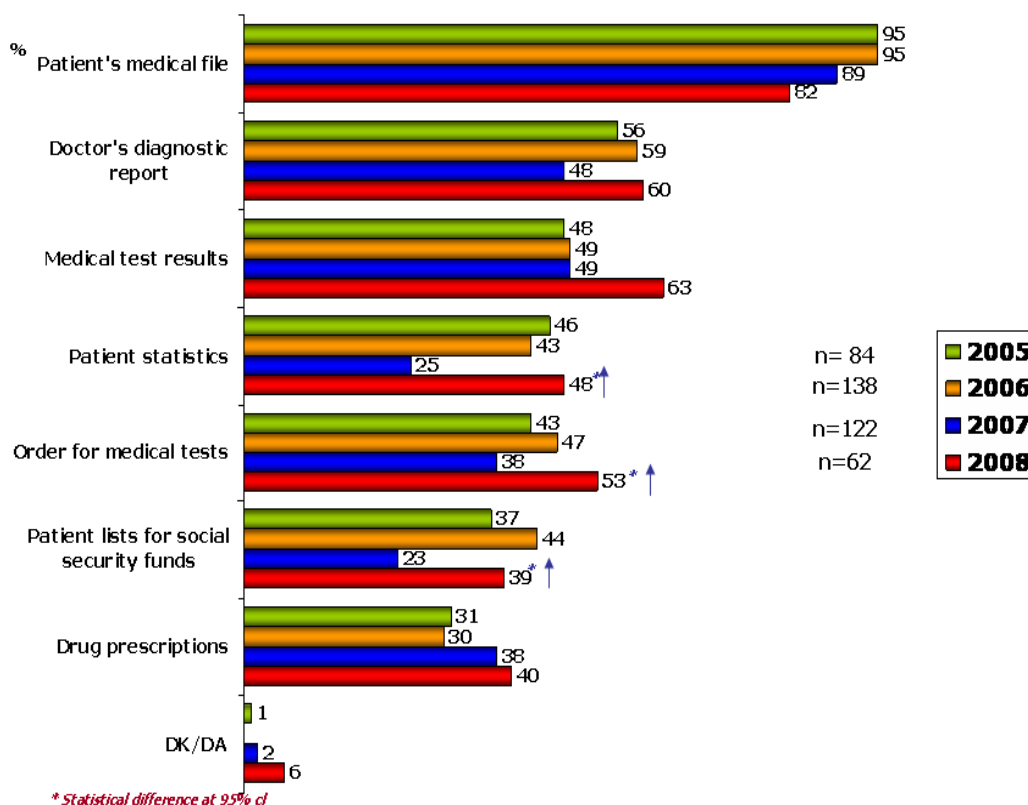
*Where do you keep your patient record;*

	2005 n=85	2006 n=140	2007 n=132	2008 n=75
At the office	94	97	96	83
At the hospital	1	1	2	13
Both	5	2	2	4

Overall, 1 out of 4 GPs keep electronic patients records, like in previous measurements. Younger GPs tend to adopt this practice significantly more than older ones. There is a large variety of software used by GPs for patient record keeping, with most common some personal application (16%) and to Excel and Word (5%).

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PATIENT INFORMATION KEPT IN ELECTRONIC PATIENT RECORDS



The data kept in the patient records at the office of GPs, according to the 2008 survey, do not differentiate significantly compared to those of 2005-2007. A slight drop appears in patients' medical file, the other items indicate significant increases.

The most usual information entered by doctors in patients' records is patients' medical file, followed by the orders for medical tests and the input of diagnostic examinations.

INFORMATION ENTERED IN PATIENT RECORDS

	2005 n=85	%	2006 n=140	%	2007 n=132	%	2008 n=75
<b>Patients' personal information</b>	100		100		98		97
<b>Medical history</b>	99		94		93		95
<b>Diagnosis on each visit</b>	98		89		89		91
<b>Patients' medical test results</b>	95		86		63		88
<b>Drugs taken systematically by the patient</b>	94		89		66		89
<b>Drugs &amp; treatment prescribed by the doctor</b>	93		87		86		80
<b>Data from monitoring the progress of the prescribed treatment</b>	88		82		56		84
<b>Type of session / contact</b>	43		64		67		57

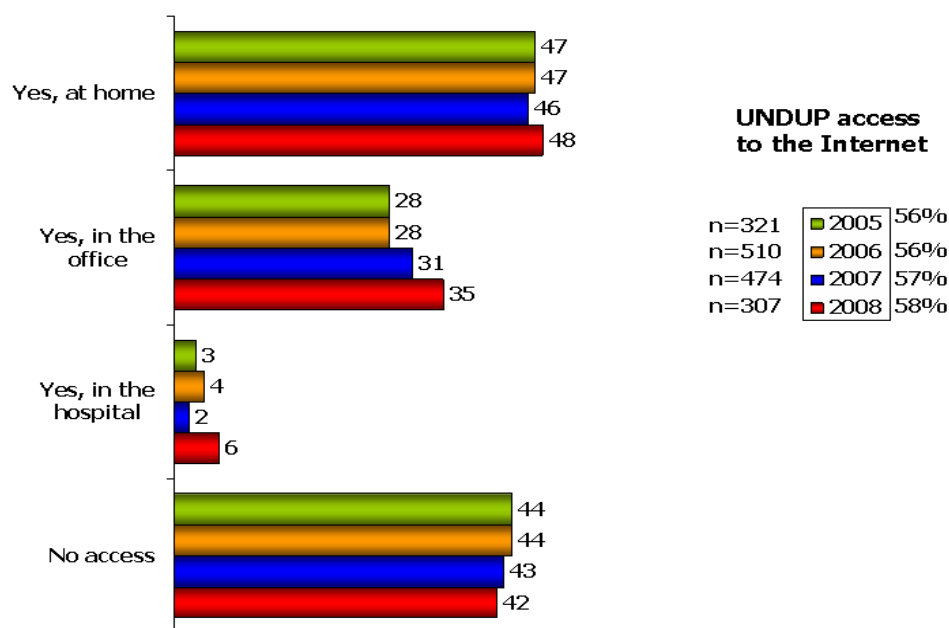
**RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS**

Almost all electronic patient records kept by GPs include personal information for each patient, medical history and in 9 out of 10 cases the diagnosis on each visit and drugs and treatment prescribed by the doctor. In 8 out of 10 the patients' medical test results are included, the drugs taken systematically by the patient, as well as data from the progress of the patients' treatment.

Compared to 2007, in 2008 certain information is significantly more entered by doctors at the electronic patient record (medical tests results, drugs taken systematically by the patient, data from monitoring the progress of the prescribed treatment), and they are now at the levels of more than 80%.

**ACCESS TO THE INTERNET IN THE OFFICE, IN THE HOSPITAL OR AT HOME**

*Do you have access to the Internet in the office, in the hospital, at home?*



Access to the Internet in 2008 remained at the levels of 2005-2007, estimated at 58%.

Younger doctors have adopted the Internet significantly more than older ones and it seems that they have access both in the office and at home.

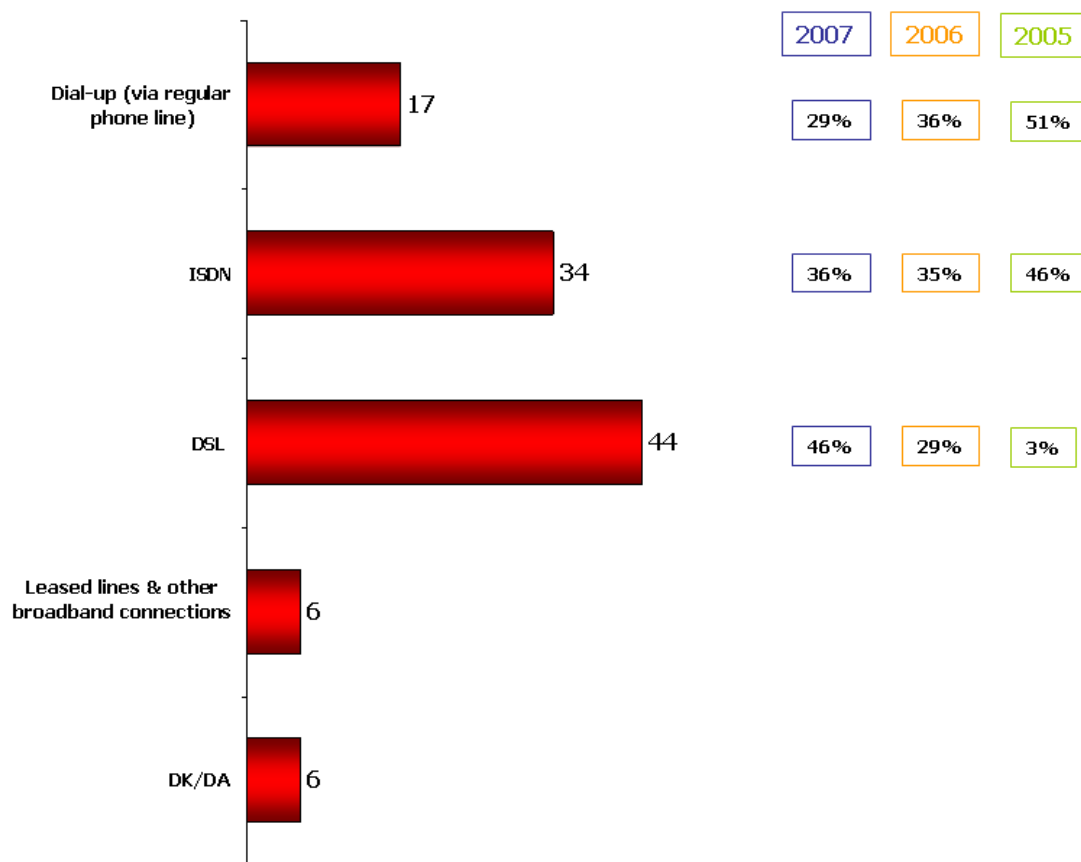
	25-45 %	46-55 %	56+ %
Yes, in the office	54	53	20*
Yes, in the hospital	15	8	1*
Yes, at home	69	68	30*

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After the dramatic increase of broadband connection that was recorded in the measurements of 2006 & 2007, in 2008 it seems to have stabilized in the levels of 44%.

Dial-up connection is continuing its downward trend with the same rates recording a percentage of 17% for the current measurement, ISDN remained at 34%.

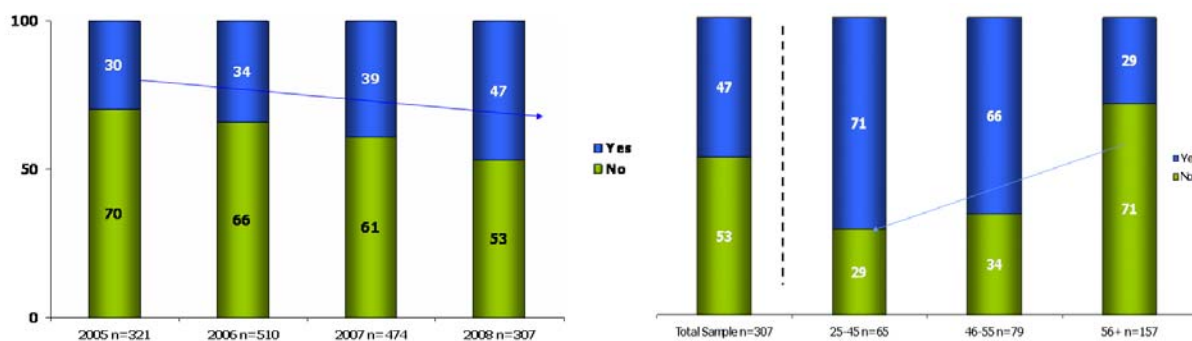
**TYPES OF INTERNET CONNECTION**



*\* Statistical difference at 95% of*

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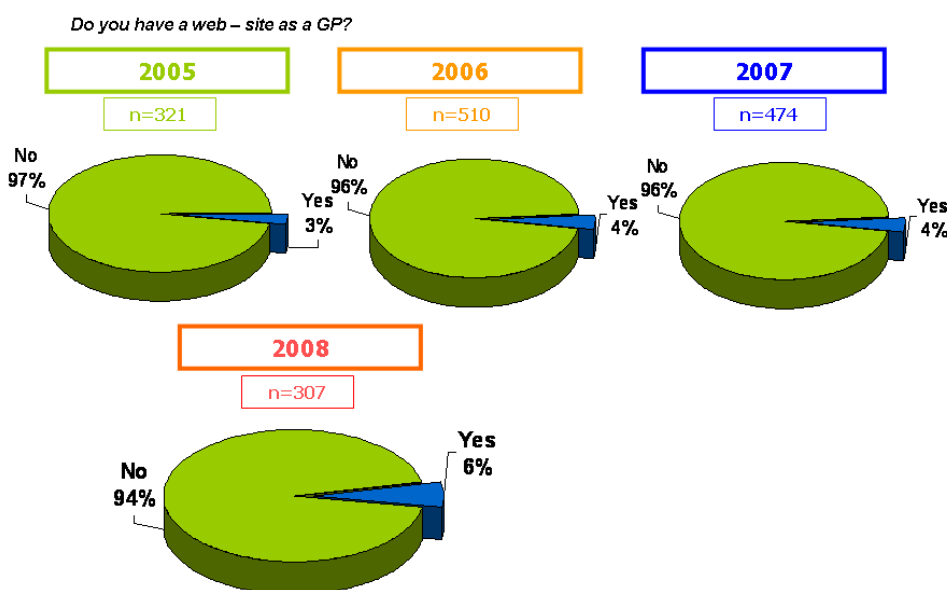
PERSONAL E-MAIL ADDRESS



Personal e-mail address increases steadily by 4% every year until 2007, but in 2008 the increase was doubled and reached 8%.

Overall, almost 1 out of 2 GPs have a personal e-mail address and the great majority use it themselves (9 out of 10). As expected, the GPs of a higher age (56+ years), who have a personal e-mail address are significantly fewer (29%).

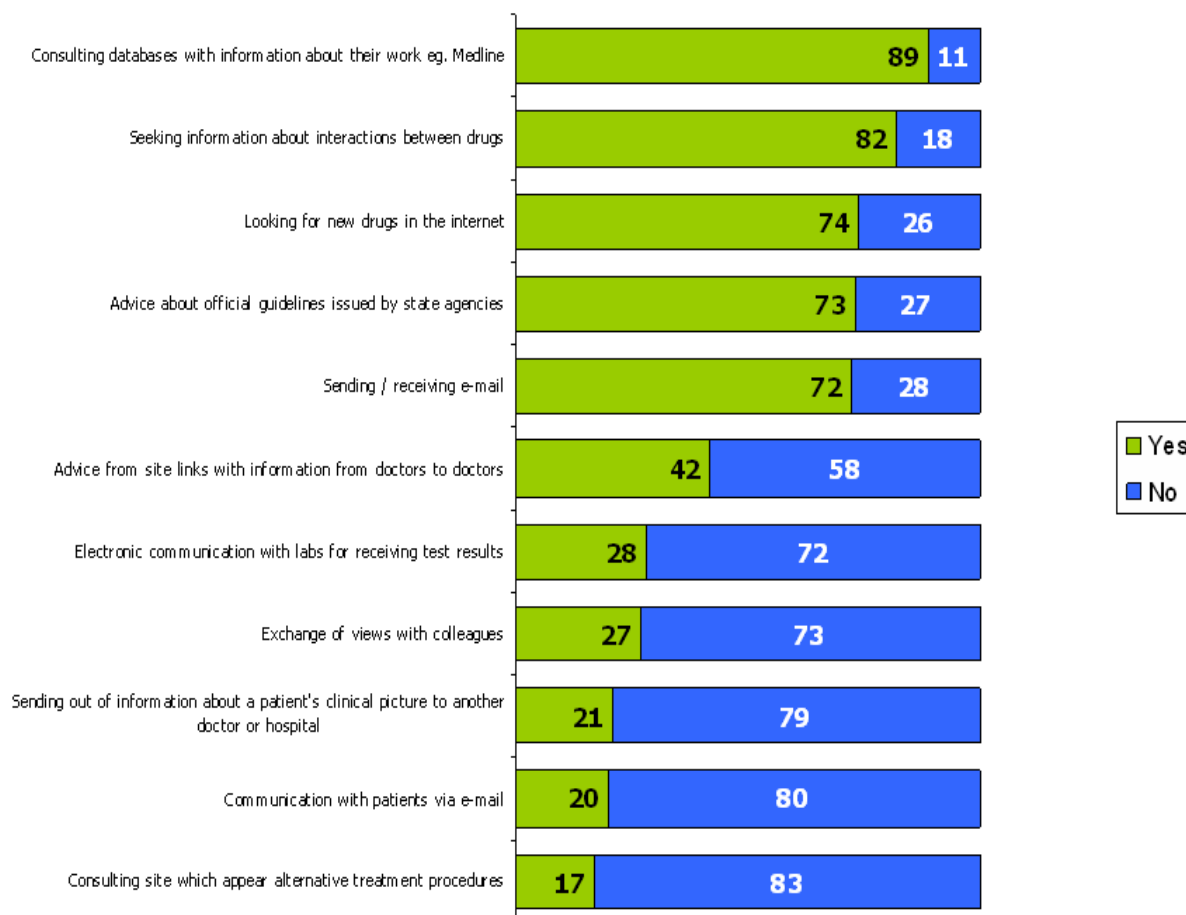
Very few GPs have their own website (6%). The website is mainly theirs (75%), or is being hosted (25%). The information found on the sites is the CV of the GP, information about the medical practice and ways of communication, as well as articles that have been published. No significant change is recorded in the availability of websites in comparison with the measurements of 2005 – 2007 even though there is a slight upward trend, which is though in the limits of statistical error.



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**REASONS FOR USING THE INTERNET**

The main reasons for using the Internet in 2008 are the following, in order of priority:



The main reasons GPs using the Internet for are to consult databases with information about their work, to look for advice about official guidelines issued by State agencies, to seek for information about interactions between drugs, to look for new drugs on the Internet. Moreover, GPs use the Internet to send and receive e-mails.

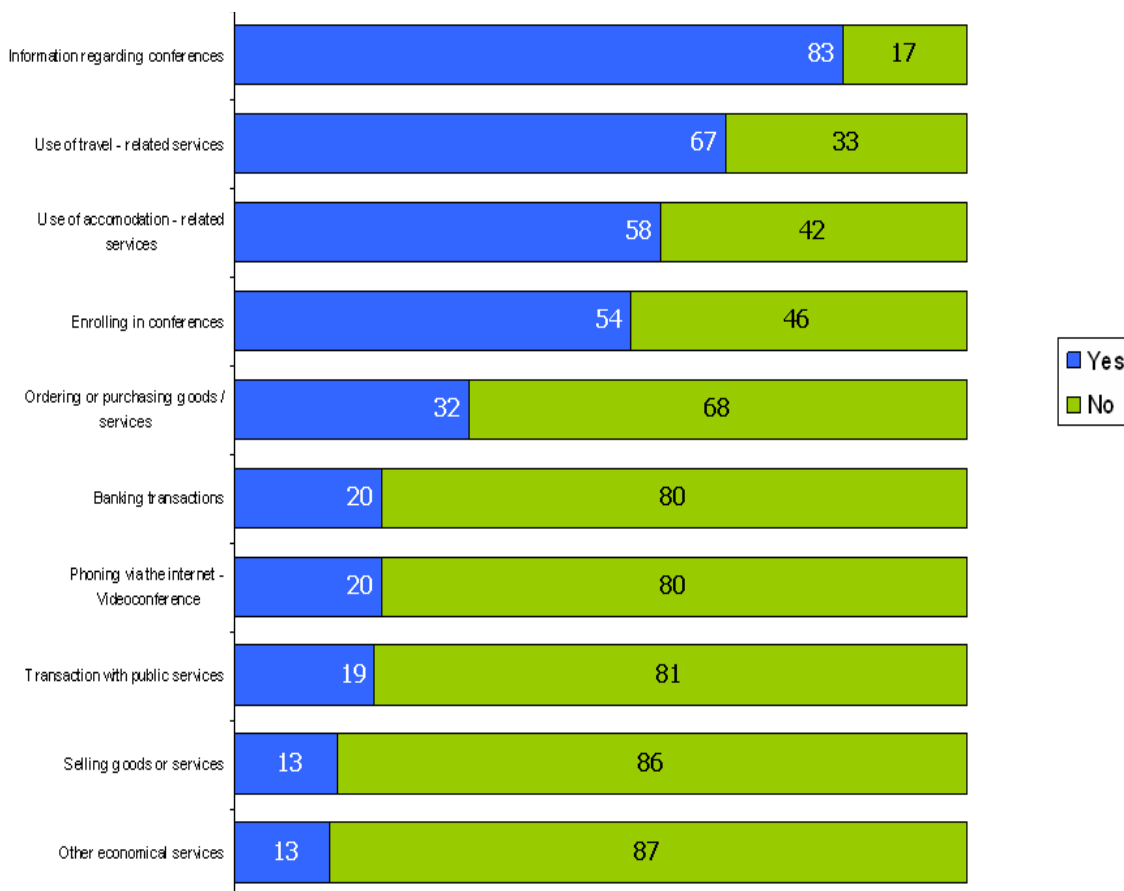
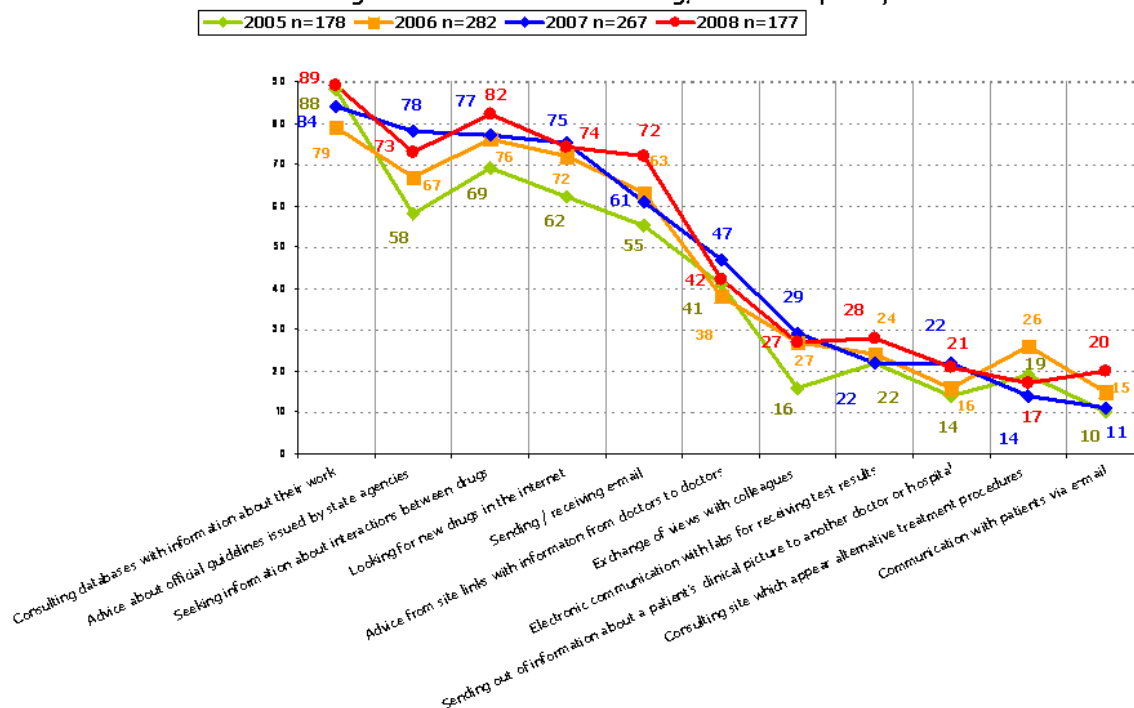
Internet use for looking for advice about official guidelines issued by State agencies is recorded significantly lower in 2008 vs 2007. On the other hand exchanging opinions through sending/ receiving emails, test examinations from laboratories and the communication with patients through emails have recorded significant increase. The other reasons do not present any differentiation in 2008 compared to the previous three years.

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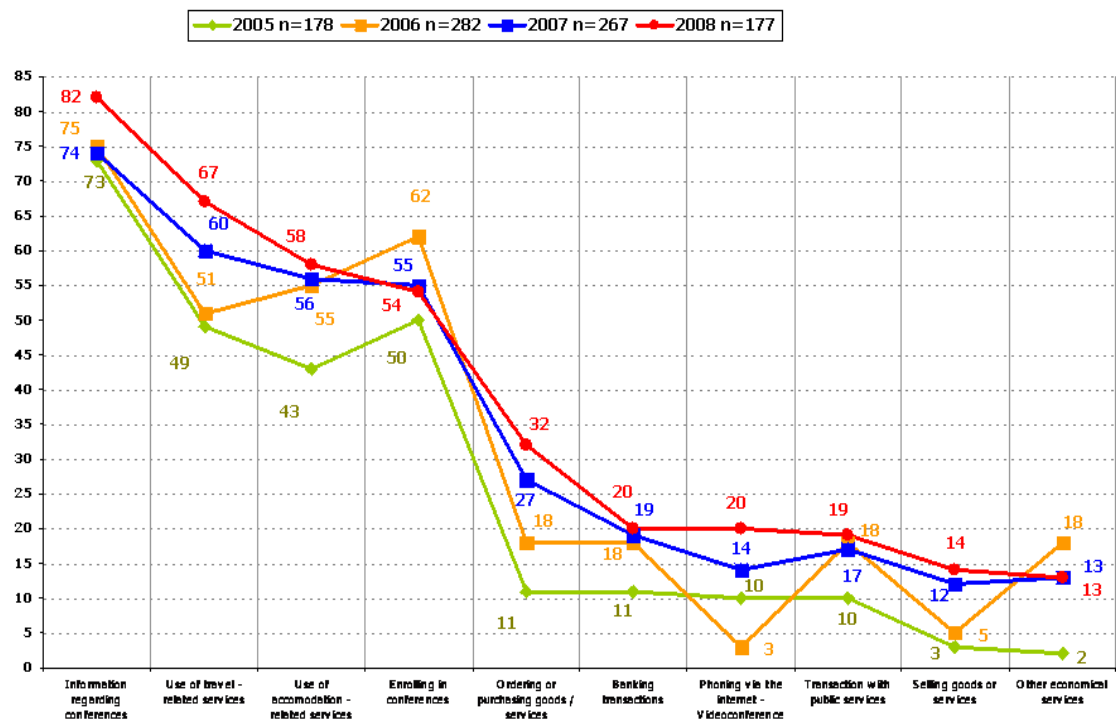
The main reasons for GPs using the Internet are the following, in order of priority...



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Other reasons for using the Internet is information about conferences (83%), the use of services relating to travel (67%) and accommodation (58%), as well as enrolling in conferences (54%). Significant increase by 7% was recorded in 2008, in comparison with the measurement of 2007, in obtaining information about conferences and the use of travel related services, other reasons remained at the same levels.

The main reasons for GPs using the Internet are the following , in order of priority...



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**CONTRIBUTION OF USE OF INFORMATION SYSTEMS AT THE WORK OF GPs**

Overall, GPs in 2008 give a positive evaluation about the use of information systems at their work. Almost all GPs that already keep electronic patients' records or use computers give a positive evaluation. Their attitude is the same the past three years, that is to say the period 2006 – 2008.

