ΠΑΡΑΤΗΡΗΤΗΡΙΟ
για την Κοινωνία
της Πληροφορίας

**GREEK
Information Society
OBSERVATORY**

FEBRUARY 2007

**Project: "Study for measuring the indicators of the
initiatives eEurope and i2010 for the years 2006 and
2007"**

REPORT ON THE RESEARCH FINDINGS AMONG

GENERAL PRACTITIONERS

***Prepared for the Greek Information Society
Observatory***

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RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS

1. Identity of the research

The present research was carried out among GPs in the country as part of a study for determining and monitoring the indicators of the eEurope 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 3rd Community Support Framework; it was designed and supervised by the Information Society Observatory.

1.1   Research objectives

The present research aims to record the percentage of GPs in the country who use electronic patient records

1.2   Methodology of the research

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 doctors[1]).

- **_Sampling:_** The sample was formed 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:

    → **1st stage:** Distributing the GPs per regions of the country and determining the required sample per region;

    → **2nd stage:** Selection of a sample of GPs in each region.

The final sample numbered **510 GPs**, 33% of whom were among the originally selected doctors of the sample. 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 at various times.

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[1] Source: National Statistical Service of Greece, 2001

RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS

Weightings: No weighting of the data was used.

Dates of interviews: 09/10-24.11.2006

Notes/ comments: The research findings were compared with those of the 2005 project. An asterisk is used to indicate any statistical differences within 95% confidence interval.

Statistical errors:

	Sample	Statistical error
Total contacts:	510 GPs	+/- 4,35
Access to internet:	282 GPs	+/- 5,86

2. Main conclusions of the research

The majority of GPs are users of computers (73%). Computer use either in private doctors' offices or in hospitals/clinics or at home is at the same levels with 2005.

Computer use in private doctors' offices is 51%, while among GPs in hospitals or clinics the use of computers is considerably lower.

Overall, the keeping of electronic records is relatively low (27%) and at the same levels compared to 2005. Among the doctors who are already involved with computers –used by themselves or by their secretaries– the keeping of electronic records is considerably higher (almost 1 out of 2).

The usual information that doctors keep in an electronic patient record is the patient's medical file. The electronic records are used for other purposes as well –albeit to a lesser extent, in approximately 50% of all cases– such as preparing diagnostic reports, entering test results, drafting patient statistics, issuing orders for tests and processing of patient lists for social security funds, as required in each individual case. At lower levels is only the issuing of drug prescriptions (30%).

The information that doctors keep at the electronic patient record is not different compared to 2005.

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

Compared to 2005, certain information (medical history, diagnosis, test results) is significantly less entered by doctors at the electronic patient record, but it still is at high level around 90%, while on the contrary, significantly more often the type of session / contact is entered, even if it remains the less recorded data.

One effect of the doctors' familiarity with computers is their good relationship with the Internet. Slightly over half the doctors (56%) 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 has not increased compared to 2005.

However, the type of internet connection is significantly different, since the Dial-up and ISDN

connections have decreased and the Broadband connection has increased (from 3% at 2005 to 29% at 2006).

Email usage remains at a low level of penetration among doctors (3 out of 10, just like 2005), but it is at a very high level among younger practitioners (59% among younger ones, 38% among middle aged and only 15% among older ones), while the practice of doctors having their own websites is still at an early stage (just 4%, almost the same with 2005).

GPs use the internet mainly for issues of a professional nature, such as: consulting databases with information about their work (79%); seeking information about interactions between drugs (76%); looking for new drugs on the Internet (72%); seeking advice about official guidelines issued by state agencies (67%) and also sending/ receiving e-mail (63%).

The order of priority of the main reasons for GPs using the Internet as it is expressed in 2006 is not different compared to that of 2005, however it is used significantly more for information about interactions between drugs, for new drugs and also for exchanging views between colleagues.

Other reasons for using the Internet is information about conferences (75%), enrolling in conferences (62%), use of accommodation-related services (55%) and travel-related services (51%). The information about enrolling in conferences and the use of accommodation-related services has increased significantly in 2006.

Other reasons for using the Internet that have increased significantly in 2006 but still remain at low levels are banking transactions, ordering or purchasing goods, transactions with public or other financial services.

Overall, GPs give a positive evaluation about the use of information systems at their work. Almost all GPs that already keep electronic patient records or use computers give positive evaluation.

It is noted a very low level of awareness regarding e-Health Forum that was realized at Hong-Kong during September and even among those that were aware of it, their overall opinion was quite indifferent.

3.1. Summary of the research findings

GPs & the computer

The majority (73%) of GPs use computers, 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 remains at the same levels compared to 2005.

1 out of 2 GPs (51%) use computers in their private office, with younger GPs representing a significantly higher proportion. The use of computers at home is higher, reaching 60%.

The use of computers in hospitals or clinics –public or private– is considerably lower compared to the use at home or in private offices (approx. 45%).

Electronic patient record-keeping

Overall, 27% (1 in 4) of the GPs keep electronic patient records. The frequency is exactly the same as in 2005.
Younger practitioners seem to have adopted this habit significantly more than older ones.

The patient records are mainly kept at the office (97% of the GPs). There is a large variety of software used, with higher mentions among personal application (9%) and ACCESS (4%).

Information entered in the electronic records of GPs

All GPs' patient records include medical files, and almost 60% are used for preparing diagnostic reports. Almost half of the records are used for entering test results and issuing orders for tests. Frequent as well is their use in drafting patient statistics (43%) and processing of patient lists for social security funds (44%), while less frequent is the use for issuing of drug prescriptions (30%). Compared to 2005, there is no differentiation regarding the information kept in patient records.

Moreover, the usual information found in almost all records is personal information for each patient (particulars, medical history) as well as entries about the diagnosis on each occasion, test results, monitoring the progress of a systematically followed drug treatment and the treatment prescribed by the doctor. The type of session/ contact is less frequently found in patient records, although more often than in 2005.

Compared to 2005, certain information (medical history, diagnosis, test results) is significantly less entered by doctors at the electronic patient record, but it still is at high levels around 90%.

It is worth noticing that female practitioners seem to enter significantly less than male practitioners, information of this type.

GPs and the Internet

Overall, the majority of GPs today (56%, almost 6 out of 10) have access to the Internet, with no differentiation compared to 2005. Younger doctors use the Internet significantly more than older ones and seem to have access both at the office and at home.

Although there is no rise in the Internet access, the type of internet connection at the office has changed significantly compared to 2005. The Dial-up (from 51% to 36%) and ISDN (from 46% to 35%) connections have decreased and the Broadband connection has increased (from just 3% in 2005 to 29% in 2006).
Older GPs use significantly more often Dial-up connection.

GPs and the email

Email usage remains at a low level of penetration among GPs, (just 3 out of 10 have a personal email address on the Internet), almost the same as in 2005.

The vast majority of those having email address use it personally themselves. As expected, significantly fewer older GPs have email address.

GPs and websites

Very few GPs have their own website in Greece. Overall penetration is measured at 4%, with no differentiation compared to 2005 and the information found on the sites is the CV of the GP, information about the medical practice, ways of communication and articles published.

Reasons for using the internet

GPs use the Internet mainly for issues of a professional nature, such as: consulting databases with information about their work (79%); seeking information about interactions between drugs (76%); looking for new drugs on the Internet (72%); seeking advice about official guidelines issued by state agencies (67%) and also sending/ receiving e-mail (63%).

The ranking order of the reasons for using the Internet as it is expressed in 2006 is not different compared to that of 2005, however it is used significantly more for information for

interactions between drugs, for new drugs and also for exchanging views between colleagues.

Other reasons for using the Internet is information about conferences (75%), enrolling in conferences (62%), use of accommodation-related services (55%) and travel-related services (51%). The information about enrolling in conferences and the use of accommodation-related services has increased significantly in 2006.

Other reasons for using the Internet, which have increased significantly in 2006 but still remain at low levels, are banking transactions, ordering or purchasing goods, transactions with public or other financial services.

Contribution of use of information systems at the work of GPs

Overall, GPs give a positive evaluation about the use of information systems at their work. Almost all GPs that already keep electronic patient records or use computers give positive evaluation.

Awareness and opinion about e-Health Forum

It is noted a very low level of awareness regarding e-Health Forum that was realized at Hong-Kong during September and even among those that were aware of it, their overall opinion was quite indifferent.

In general, their opinion about international Forums is positive because they offer information.

3.2. e-Europe Indicators

INDICATOR ST2: % of GPs who use patient records	
27%	27%
2005	2006

No data for EU available from Eurostat

Sampling error: ± 4,88	± 3,88

4. Findings of the research

Overall, 73% of GPs, at the same level as in 2005, are computer users, either at home or at the hospital or clinic, if applicable. The most usual type of equipment used by GPs is desktop computers.

COMPUTER USE BY GPs
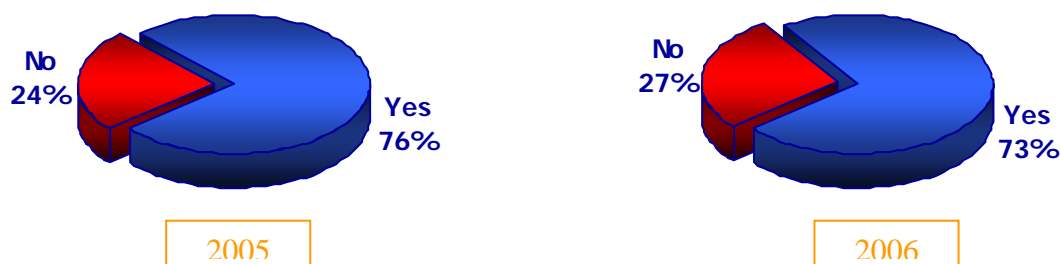
COMPUTER USE IN THE OFFICE

As regards the location where GPs use computers, 1 in 2 GPs uses computers in the office. There is an inverted relationship between computer use at the office & doctors' ages. A significantly higher computer use is recorded among younger GPs (32-45 y.o.: 76%), whereas 7 out of 10 doctors of 56+ y.o. use no computer at all. The most usual type of equipment in GPs' offices is desktop computers.
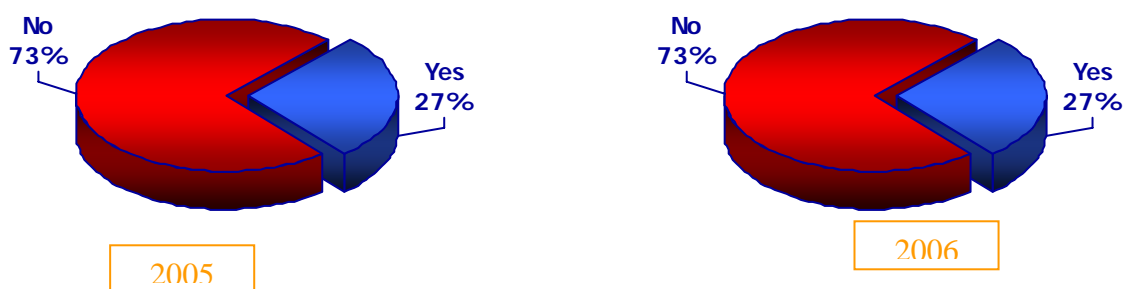
The respective percentage of computer use in doctors' homes is 60%.
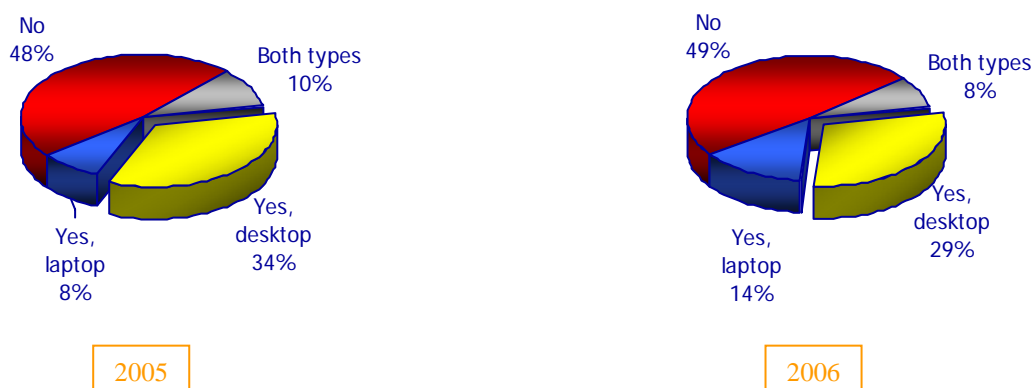
Among the doctors who are also employed in hospitals or clinics, public or private, 4 out of 10 use computers, usually a desktop type.

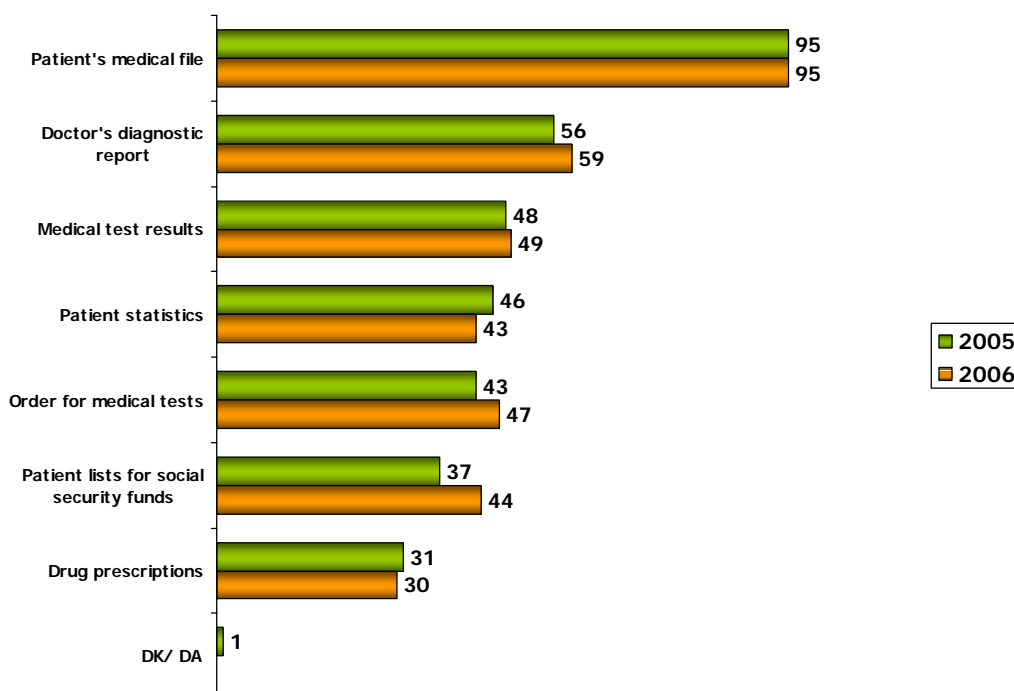**RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS**

ELECTRONIC PATIENT RECORD[2] KEEPING

No 73%   Yes 27%   2005

No 73%   Yes 27%   2006

Where do you keep your patient record?

	2005	2006
In the office	94	97
In the hospital	1	1
Both	5	2

Almost 1 in 4 GPs keep electronic patient records, predominantly in the office, with no differentiation compared to 2005. Younger GPs tend to adopt this habit significantly more than older ones.

There is a large variety of software used by GPs for patient record keeping, with higher mentions among personal application (9%) and ACCESS (4%).

PATIENT INFORMATION KEPT IN ELECTRONIC PATIENT RECORDS

	2005	2006
Patient's medical file	95	95
Doctor's diagnostic report	56	59
Medical test results	48	49
Patient statistics	46	43
Order for medical tests	43	47
Patient lists for social security funds	37	44
Drug prescriptions	31	30
DK/ DA	1	

[2] The type of patient record was not part of the question

RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS

The data kept in the patient records at the office of GPs, according to the 2006 survey are not differentiated compared to those of 2005.

Almost all electronic patient records contain medical files, 6 out of 10 are used for preparing diagnostic reports and almost half of them are used for entering medical test results, drafting patient statistics and issuing orders for tests or compiling patient lists for social security funds. Less frequently, patient records are used for issuing drug prescriptions.

### INFORMATION ENTERED IN PATIENT RECORDS

Patients' personal information	**100**	**100**
Medical history	**99**	**94***
Diagnosis on each visit	**98**	**89***
Patients' medical test results	**95**	**86***
Drugs taken systematically by the patient	**94**	**89**
Drugs & treatment prescribed by the doctor	**93**	**87**
Data from monitoring the progress of the prescribed treatment	**88**	**82**
Type of session / contact	**43**	**64***

In 2005, all electronic patient records kept by GPs include personal information on each patient, medical history, the diagnosis on each occasion, the results of the patient's medical tests and the drug treatment recommended by the doctor as well as data from the progress of the patient's treatment.

Compared to 2005, certain information (medical history, diagnosis, test results) is significantly less entered by doctors at the electronic patient record, but it is still at high levels around 90%, while on the contrary, significantly more often the type of session / contact is entered, even if it remains the less recorded data.

ACCESS TO THE INTERNET, IN THE OFFICE, IN THE HOSPITAL OR AT HOME
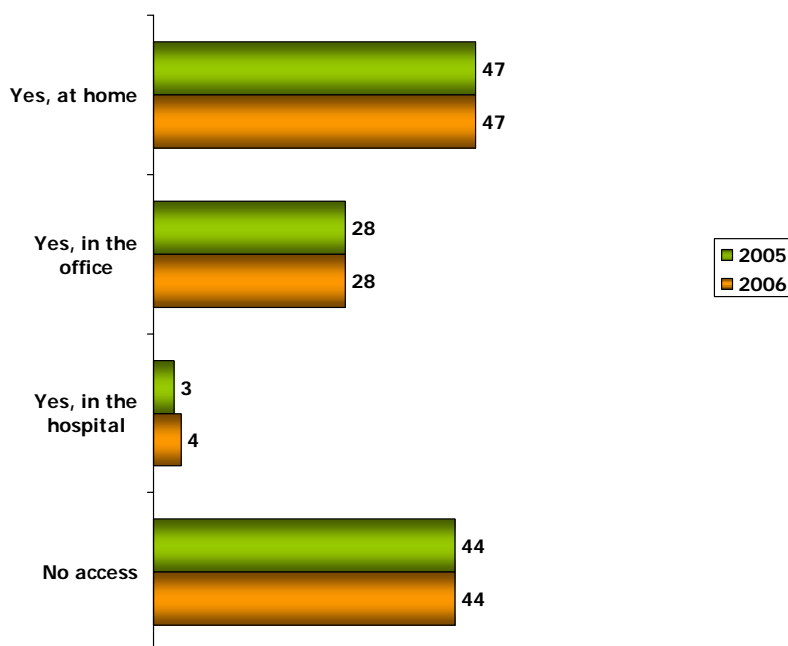
Overall, the majority of doctors (56%), that is, 6 out of 10 GPs– have access to the Internet. There is no differentiation compared to 2005.
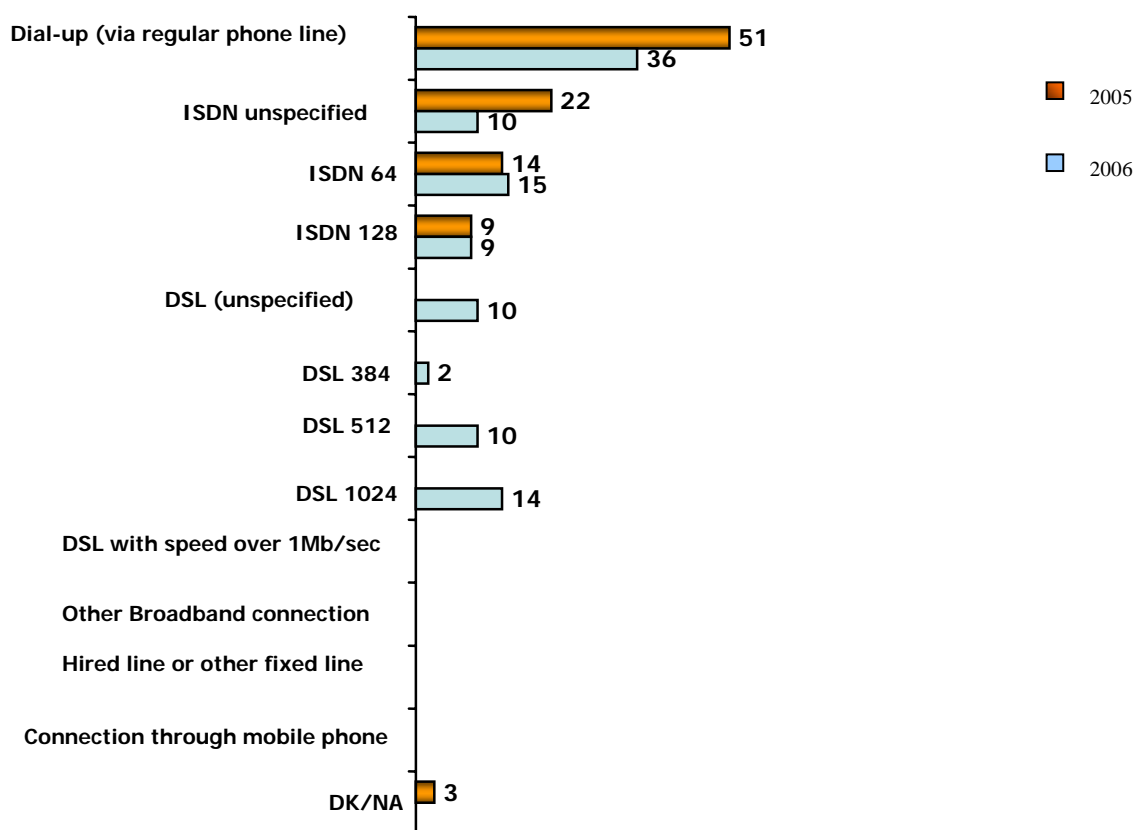
Internet access is considerably higher among younger GPs, who seem to have access both at the office and at home.

	32-45 %	46-55 %	56+ %
Yes, at the office	**52*** ↑	**30**	**14**
Yes, in the hospital	**9**	**4**	**-**
Yes, at home	**55**	**54**	**31*** ↓

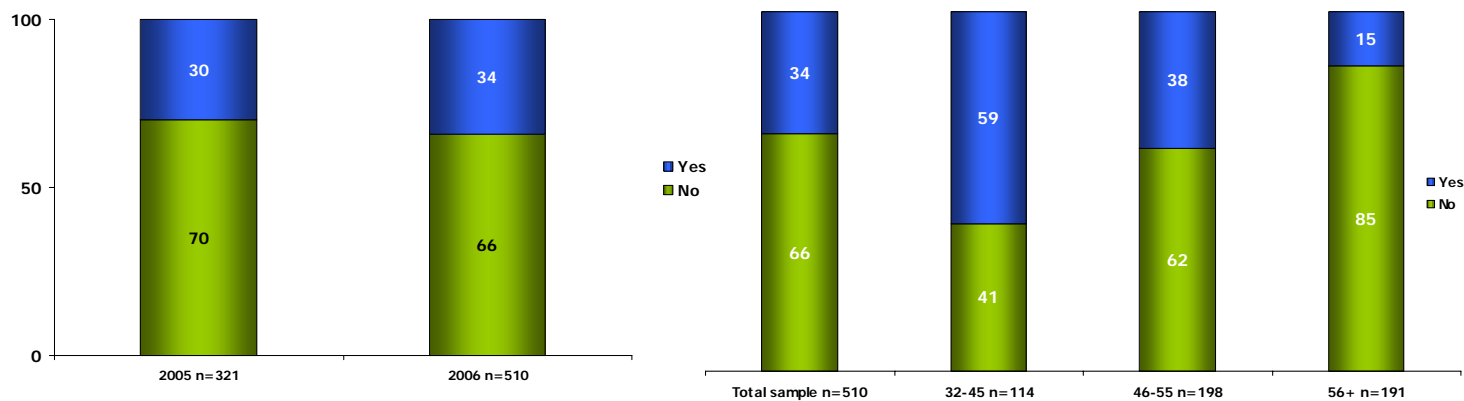**RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS**

Overall, access to the Internet has not increased compared to 2005. However, the type of Internet connection in the office is significantly different from that of 2005. Dial-up and ISDN connections have decreased and the DSL connection has increased (from 3% at 2005 to 29% at 2006).

TYPES OF INTERNET CONNECTION

Connection Type	2005	2006
Dial-up (via regular phone line)	51	36
ISDN unspecified	22	10
ISDN 64	14	15
ISDN 128	9	9
DSL (unspecified)		10
DSL 384		2
DSL 512		10
DSL 1024		14
DSL with speed over 1Mb/sec		
Other Broadband connection		
Hired line or other fixed line		
Connection through mobile phone		
DK/NA	3	

RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS

PERSONAL E-MAIL ADDRESS

Just like the 2005 survey, overall, 3 out of 10 GPs have a personal email address, and the great majority use it themselves.

As expected, the GPs of a higher age who have a personal email address are considerably fewer, while among younger GPs (32-45 years old) there is a statistically significant raise compared to 2005 (from 40% to 59%).

Very few GPs have their own website (4%), almost the same as in 2005.
The website is either exclusively theirs or hosted elsewhere, and it contains mainly the CV of the GP, information about the medical practice, ways of communicating and articles published.

RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS
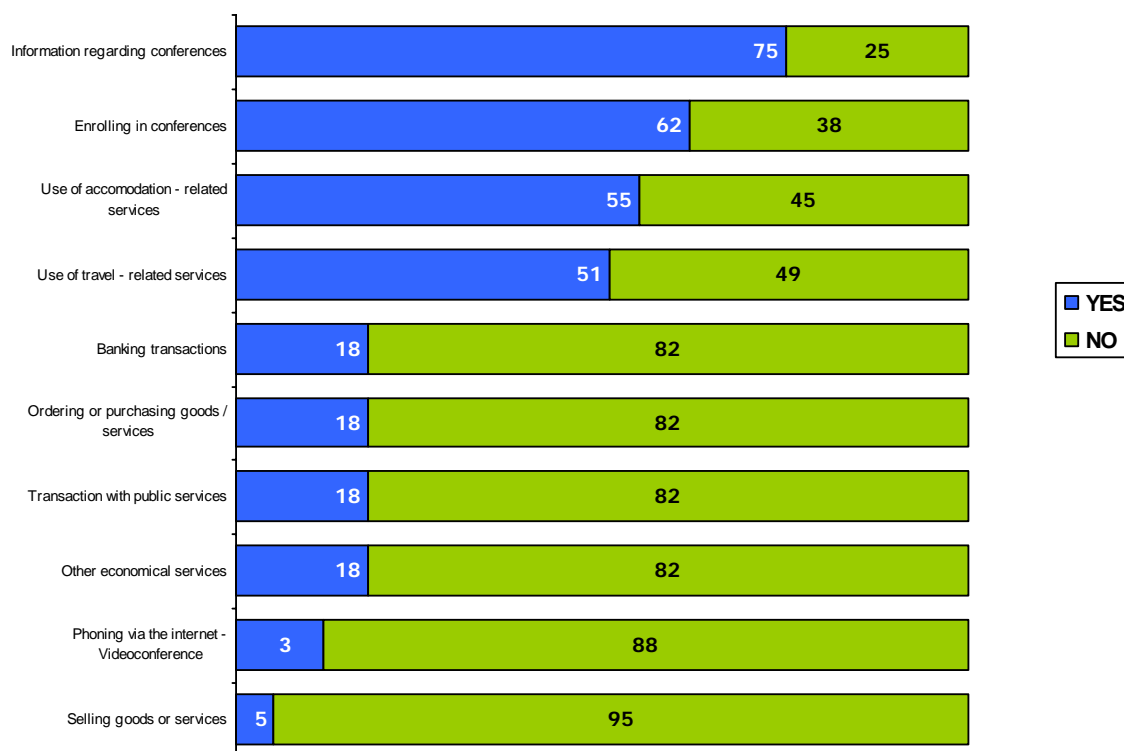
REASONS FOR USING THE INTERNET

The main reasons for GPs using the Internet are the following, in order of priority...
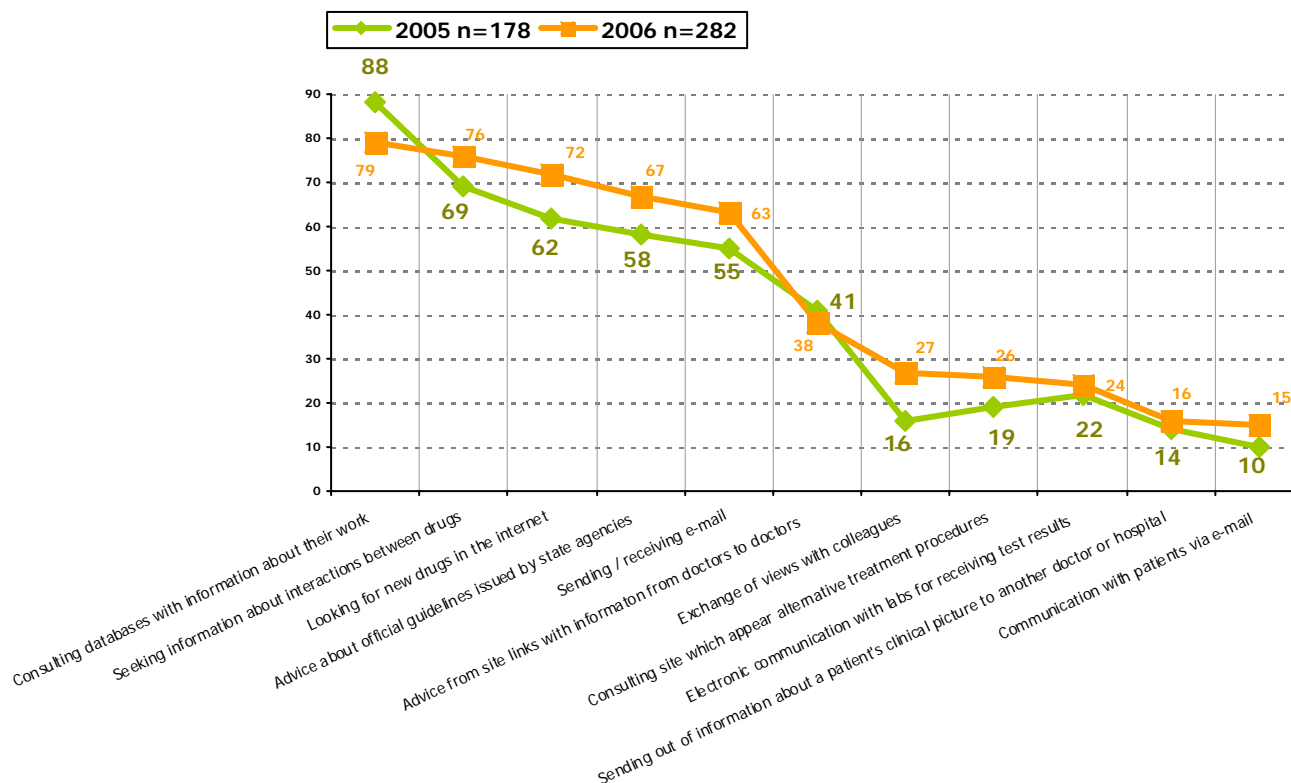
The order of priority of the main reasons for GPs using the Internet as it is expressed in 2006 is not different compared to that of 2005. In 2006 it seems that the Internet is used significantly more for information about interactions between drugs, for new drugs and also for exchanging views between colleagues.

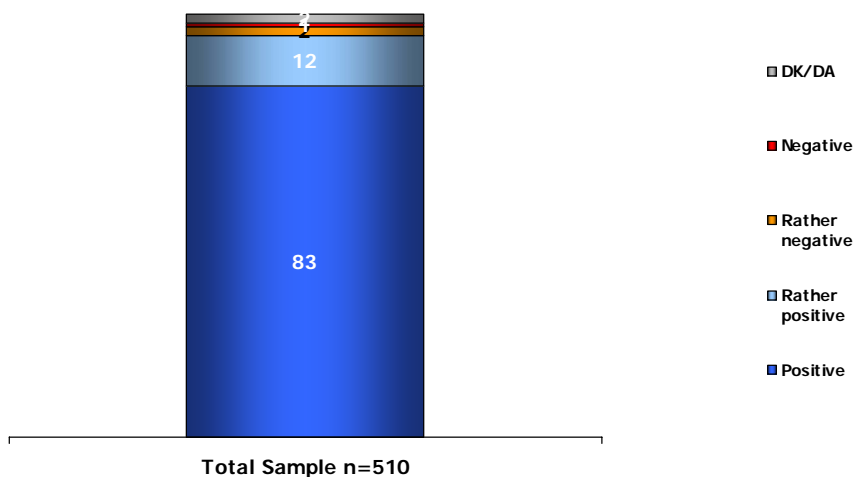**RESEARCH FINDINGS AMONG GENERAL PRACTITIONERS**

As it is shown on the above chart, other reasons for GPs using the Internet are information about conferences (75%), enrolling in conferences (62%), use of accommodation-related services (55%) and travel-related services (51%). The information about enrolling in conferences and the use of accommodation-related services has increased significantly in 2006.

Other reasons for using the Internet, which have increased significantly in 2006 but still remain at low levels, are banking transactions, ordering or purchasing goods, transactions with public or other financial services.

CONTRIBUTION OF USE OF INFORMATION SYSTEMS AT THE WORK OF GPS

Overall, GPs give a positive evaluation about the use of information systems at their work. Almost all GPs that already keep electronic patient records or use computers give positive evaluation.


Total Sample n=510

AWARENESS AND OPINION ABOUT E-HEALTH FORUM

It is noted a very low level of awareness regarding e-Health Forum that was realized at Hong-Kong during September and even among those that were aware of it, their overall opinion was quite indifferent.

In general, their opinion about international Forums is positive because they offer information.

Did you know that eHealth forum was realized in 15-16 September at Hong Kong?
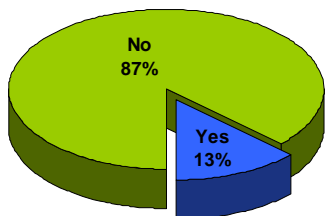
What is your opinion about international forums regarding information technology and communication in medicine?

I find it positive	39%
They offer information	14%
They help at the progress of medicine	7%
They are very useful	5%
They help at the promotion of new technologies	4%