

PRESENTATION 1: Friday 8th October, 2004
09.15 – 09.45 h.

THEME PAPER
Results of a project which is finished

TITLE: Participation in a quality of care study using electronic patient records and consequences for generalizability.

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Background: Non-participation of general practitioners (GPs) hampers primary health care research. Using existing network structures can improve participation, but may introduce sampling effects.

Objectives: To examine the role of network-based recruitment and to estimate effects of sampling and non-participation on generalizability in a study using electronic patient records.

Methods: For a study of quality of care assessment using electronic patient records, we recruited GPs from (1) a regionally defined population and (2) a pre-existing network of general practitioners. Effects of sampling and non-participation were analysed by comparing main characteristics between study participants, the respective target samples, and reference data for all German GPs. Factors influencing study participation were assessed in multivariate analysis.

Results: Compared to the regional sample, network GPs were more likely to complete survey questionnaires (92% vs. 69%) and to participate in the study (66% vs. 23%). Compared to national reference data, study participants from both populations were significantly younger, had a higher level of professional training, and included more women. These differences were already present in the network sample, but were largely attributable to selective participation in the regional sample. Network-membership remained the strongest determinant of participation in multivariate analysis (OR 5.01, 95% CI: 2.53 - 9.91). A younger age, higher professional training status, and membership in the German society of general practice and family medicine were also significantly associated with participation.

Conclusions: Although network-based recruitment of GPs increases participation rates, sample effects are similar in size and direction as effects of non-participation in the regionally defined population. Careful analysis of participants based on publicly

available data is therefore crucial for the assessment of generalizability in quality of care research using electronic patient records.

Relevance to EGPRN: The sampling effects detected in this study seem to be especially important in projects using electronic patient records, since GP networks are often “electronic pioneers”. The described effects may have increasing relevance for EGPRN studies.

PRESENTATION 2: Friday 8th October, 2004
09.45 – 10.15 h.

THEME PAPER
Preliminary results

TITLE: Assessment of quality of care for patients with asthma and COPD based on electronic patient records.

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Background: Compared to internationally accepted guidelines, care for patients with asthma and chronic obstructive pulmonary disease (COPD) seems often to be inadequate. Electronic patient records (EPRs) offer an easily accessible tool for quality assessment. However, reliance on EPRs for quality assessment ideally requires complete and structured documentation of all relevant data by physicians.

Aim/Objectives: The aim of this study is to assess whether available routine data are apt to indicate key process and outcome measures according to current national guidelines, and to derive recommendations for future documentation standards.

Method: In the region of Goettingen in the north of Germany 40 general practitioners (GPs) have been recruited. Technical supporters extracted (anonymised) electronic medical data via a standardised interface. Patients were identified from the records using an algorithm including diagnoses and asthma-specific medication.

Results: Several indicators such as frequency of exacerbation or current level of control have been proposed as process and outcome measures and were analysed in the study. Patient characteristics (e.g. age and gender) and current medication could easily be assessed from electronic patient records. Subclassification by diagnosis was hampered by a broad variety of synonyms being used (e.g. asthmoid bronchitis). Documentation of diagnostic findings and comorbidity was incomplete. Medical advice (e.g. motivation for asthma self management or peak flow monitoring) was rarely documented.

Conclusions/Discussion: Currently available medical routine data based on EPRs permits us to assess some basic aspects of quality of care for patients with asthma or COPD. More elaborate documentation standards are urgently needed, in particular with respect to risk factors such as smoking, symptoms, current objective and subjective health status and patient management.

What do you hope to get out the presentation at EGPRN/Relevance to EGPRN?: To initiate and bring forward the discussion about which electronic documentation standards are necessary for quality assessment based on electronic patient records and will be accepted by physicians.

PRESENTATION 3: Friday 8th October, 2004
10.30 – 11.00 h.

THEME PAPER

TITLE: A gold mine for research
Data and scientific use of the Registration Network Family Practices: a Dutch PBRN

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Background: General Practitioners (GP) possess comprehensive information on the health and management of their patients. Hence they are in a unique position to gather information for research.

Objective: The Registration Network Family Practices (RNH) has been established as a sampling frame for research, the main goal being to create an anonymous computerised database containing patient characteristics and relevant health problems.

Methods: The GPs in the network use computerised health information systems to store the medical records of their patients. The database of the RNH represents a permanently up-to-date dynamic population that can be used for various types of statistical analyses and as a sampling frame for patient centred studies. 65 GPs from 22 general practices are participating, all in the province of Limburg. The Netherlands Data on patient encounters and other health information, including the medical history, are stored on the practice computer. A limited set of demographic patient characteristics, all relevant health problems (coded with the ICPC), and all medication prescribed (coded with the ATC) are made anonymous and transferred into the central database at Maastricht University.

Results: Data of 83,553 patients (80% of all eligible patients) are currently included. The database contains 314,476 health problems. Since 1990 over 60 research projects made use of the RNH database and there is a yearly average of two PhD theses and 8 international peer reviewed publications.

Conclusions: The RNH database cannot always provide all data that researchers ask for as the database does not contain information on so-called minor illnesses or on GPs' actions. The available data are easily accessible from the central database. It is important to agree on a limited set of data to be collected in a standardised manner, to avoid very time consuming registration and to avoid an excessive database of questionable relevance. The RNH meets its goal as a Practice-Based Registration Network.

Relevance to EGPRN: To demonstrate that data commonly collected through the electronic patient record can be very valuable for scientific research, when there is a clear agreement on the set of data to be collected.

PRESENTATION 4: Friday 8th October, 2004
11.00 – 11.30 h.

THEME PAPER
An ongoing study/work in progress

TITLE: The use of integrated software in acquiring data from electronic patient record in General Practice for scientific research; possibilities and pitfalls.

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Background: The Registration Network Family Practices (RegistratieNet Huisartspraktijken / RNH) is a network of 22 GP-practices in the southern part of the Netherlands, with a total of 107.000 eligible patients. Patient data of some 83.000 patients are stored in an anonymous database containing a limited set of patient characteristics and all relevant health problems. The database is used for scientific research and acts as a sampling frame. Data are extracted from the GP's computerised health information system (HIS) by means of a computer program.

Aim: To facilitate and improve quality and quantity of data input and to facilitate inclusion of patients in studies.

Method: The development of two types of HIS-integrated software to support the GP while entering data in the HIS.

Result: The first type of software is called RNH-assistant, a program that performs a check on the various data while entering them into the HIS. The GP is then immediately triggered to complete or correct these data.

The second type of software is called research-module. For specific research projects we developed computer programs that pop up while entering data in the HIS reminding the GP for specific action (for example questioning the patient, or filling in the electronic CRF). Electronic CRF-forms are integrated in the HIS so the GP only has to fill in the required data once.

Conclusion/Discussion: Improving quality by introducing computer add-ons is feasible and seems effective: numbers of missing-data are declining. The use of HIS-integrated software reduces the effort of time-consuming and annoying paper-work. For most effectiveness computer-feedback should not interfere with the consultation and therefore the moment of feedback should be meticulously planned. Thorough analysis of the information to be collected, by whom and at what moment, is necessary.

We encountered some practical difficulties on the part of software-hardware-incompatibilities. Also the installation of software in 22 GP-practices does require an extensive infrastructure and intensive technical support.

Relevance to EGPRN: Sharing our experience could be profitable both for our project as well as other registration networks in Europe. To discuss the practical difficulties of implementing self-developed software on commercial available HIS-software.

PRESENTATION 5: Friday 8th October, 2004
11.30 – 12.00 h.

THEME PAPER
Preliminary results

TITLE: Looking inside: data retrieval in electronic patient records in general practice.

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Background: Analysis of electronic patient records (EPRs) may be an effective way to provide critical data for health care research and quality assurance in general practice. However, in Germany, more than 40 types of practice software are available and the quality of documentation is highly variable so that feasibility and scope of EPR-based research needs to be evaluated.

Aim/Objectives: The aim of this study was to investigate the feasibility and validity of computerized medical records for quality of care assessment in a German general practice setting.

Method: EPRs from general practices over a period of 18 months were anonymised, exported and transferred into a relational SQL database. Structure and contents of the EPR data were transferred into a suitable system of tables ("relations"). This database permits structured and comprehensive queries retaining the allocation to individual practices and patients.

Results: EPRs from 107 GPs and 28 different software systems were exported successfully in the Göttingen area. The practices documented more or less completely patients' age (99,9%) and sex (98%). Drug prescriptions were recorded completely by their brand name; 48% of entries additionally contained a centrally standardised number (PZN) facilitating the calculation of DDDs and linkage of prescriptions to ATC codes. To detect patients' diseases, or diagnoses, required a systematic retrieval from 2 fields in the database. Patients' history, symptoms and clinical findings, however, were often 'hidden' in a database maze and could only be retrieved with data mining techniques. An example of this kind of retrieval will be demonstrated.

Conclusions/Discussion: EPRs provide more or less complete information on basic medical care in general practice (diagnoses, pharmacotherapy). Since documentation was initially developed for accounting purposes and more detailed information on patients' history, symptoms and other findings could only be detected by complex data mining techniques, future documentation standards which are easy to apply, but valid for data entry and analysis are called for.

What do you hope to get out the presentation at EGPRN/Relevance to EGPRN?: A discussion on European experiences in pooling and analysing EPRs and common standards for future studies on electronic documentation and data collection.

PRESENTATION 6: Friday 8th October, 2004
12.00 – 12.30 h.

THEME PAPER
An ongoing study/work in progress

TITLE: A pilot study of the feasibility and acceptability of an electronic computer generated medical history in primary care.

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Background: Instant Medical History (IMH), developed in USA, has a database of 25,000 questions and takes a history directly from a patient. It is consistent, it does not forget to ask questions or record the response. By shortening the history taking, it allows doctors more time to deal with the patient's problems. When appropriate, it will complete a validated score e.g. Beck depression index. It automatically produces a summary of the history and questionnaire scores. It does not make diagnoses and does not replace a physician. American doctors using IMH are less likely to be sued. It has many potential applications from chronic disease management to on-line consultations.

Aim/Objectives: To explore the feasibility and acceptability to patients and clinicians of IMH in primary care, with a view to larger studies on its use.

Methods: Fifty patients will be seen by 3 GPs or practice nurses in 2 practices in Devon, UK. Receptionists will invite patients to take part, those declining will be invited to complete a form explaining their reasons. Those consenting will complete the computerised history with help from a trained volunteer patient. The history will be printed and given to the patient and electronic record deleted. The patient will present this to the clinician at the start of the consultation. After the consultation both clinician and patient will complete a questionnaire about satisfaction with IMH:

- ease of use,
- accuracy in representing their history
- whether they would use it again,
- its effect on the consultation.

The questionnaire will collect quantitative data and free text for comments.

After the main study, focus groups will be held: one will involve receptionists, administrators, doctors and nurses. One will involve patients and volunteer helpers including those taking part and those who declined. They will explore the themes of feasibility and acceptability and how the implementation of the IMH might proceed.

Relevance to EGPRN: I will briefly demonstrate IMH and seek the views of participants from across Europe on the software, its application in primary care, and the methodologies we are adopting in assessing it.

PRESENTATION 7: Friday 8th October, 2004
Parallel A: 13.30–14.00 h.

THEME PAPER
An ongoing study/work in progress
(Partly) Preliminary results

TITLE: General practices' epidemiological data – what makes them comparable.

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Background: The content of family medicine/ general practice is best described by the health complaints presenting in primary care. Education, research, development in quality improvement, and finally costs have to be based on the multiplicity of those illnesses. To analyze “morbidity” in a practice population we need to compare current data with either data from the past, or from other practices, or from other countries.

Objectives: By viewing published data from other GPs or general practice networks, the challenges concerning
a) the method of data collection and
b) the labelling of illnesses will be addressed.

Method: Different publications and data on practice-“morbidity” were selected, - from the US, China (Hong Kong), Nordic countries, Malta, France and Switzerland. Their data were compared with data from a solo practice in Austria, recorded “manually” over a period of 10 years (Oct. 1989 – Sept. 1999).

Results: Differences in the method of recording need to be considered :
In some surveys they could be allowed for to a certain extent, provided enough information on data was available in the publication.

A short observation period, requiring a larger group of participating GPs, results in higher frequencies of chronic conditions.

Grouping health problems helps to improve comparability, when different terminologies are used, but is accompanied by a loss of more detailed information on health complaints.

Conclusions/ Discussion: Nowadays expectations are high that working with computers in daily practice during the patient encounter will facilitate data collection and extend the possibilities of surveys on practice epidemiology. But using a computer does not necessarily mean that valid statistics can be obtained just on the side.

Nevertheless it is a worthwhile goal to get reliable, comparable data without further workload for the practising physician. Networks may provide better resources of computer expertise. And maybe computers can - by the means of intelligent software - replace the need for a common language (terminology of health complaints in primary care), which is otherwise a prerequisite for all participating doctors.

Relevance to EGPRW and the Workshop Theme: Many countries have already, or are trying to set up, practice networks for epidemiological data collection. The presentation should help to discuss difficulties involved in this activity .

PRESENTATION 8: Friday 8th October, 2004
Parallel A: 14.00–14.30 h.

THEME PAPER
Results of a project which is finished

TITLE: Collecting prescribing data from primary care using two different methods: extraction from the electronic patient record as compared with registration on paper sheets.

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Background: As electronic networks for data collection in primary care begin to emerge, it has become necessary to evaluate this data collection method. One way of doing this is to compare study results obtained from the electronic patient record (EPR) with results from other data collection methods, such as data collection on paper sheets (GPs fill out a paper sheet for each patient included in the study).

Objectives: To compare, in a heterogeneous context (various EPR software systems on the market in Belgium), outcomes from two data collection methods (EPR and paper sheets) used simultaneously in a primary care research project on the pharmacological management of osteoarthritis in the elderly.

Subjects: 222 GPs collecting data from 4,321 patients with osteoarthritis on paper sheets and 146 GPs extracting data from the EPR of 3,055 osteoarthritis patients, in Belgium.

Methods: The proportion of patients with respectively a drug prescription, paracetamol, an NSAID (non-steroidal anti-inflammatory drug) and ibuprofen were compared between the two data collection methods. The independent impact of the data collection method on these proportions was examined in a multilevel model incorporating patient and GP characteristics.

Results: After adjustment for patient and GP factors, the EPR-derived method gave a significantly lower proportion of osteoarthritis patients with a drug prescription compared to the paper sheets data collection (adjusted OR: 0.31; 95% CI 0.25 -0.39). The proportion of users of a specific type of drug was, however not significantly different between the data collection methods compared.

Conclusions: This study may suggest the usefulness of EPR-data for quality assessment where the proportion of patients on a specific type of drug among those with a drug prescription are considered, rather than the proportion of patients on medication of any sort .

Relevance to EGPRN: These findings may be of interest to other countries with a comparable heterogeneous make-up of the EPR-market.

PRESENTATION 9: Friday 8th October, 2004
Parallel A: 14.30–15.00 h.

THEME PAPER

TITLE: Data from electronic patient records are suitable for surveillance of antibiotic prescriptions for respiratory tract infections in primary health care.

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Objective: To analyse diagnoses and antibiotic treatments related to respiratory tract infections (RTI).

Design: One-year retrospective study of electronic patient records (EPR) for encounters concerning RTIs.

Setting: Primary health care in Sweden.

Subjects – A registered population of 102 050 individuals at twelve primary health care centres in three counties.

Outcome measure: Number of episodes, encounters, diagnostic codes and antibiotic prescriptions.

Results: The yearly number of episodes of RTIs was 16 964 or 166 / 1000 inhabitants / year. The total number of encounters was 19 965. The most frequent diagnoses were common cold (40 %), acute tonsillitis (18 %), and acute bronchitis (15 %). The yearly number of antibiotic prescriptions was 7961, accounting for 47% of the episodes or 78 / 1000 inhabitants / year. The most frequently prescribed antibiotics were phenoxymethylpenicillin (61%), tetracyclines (18 %) and macrolides (8 %).

Conclusions: Everyday EPRs provide a feasible source of clinical information which, taking the limitations into consideration, could be used for the follow-up of trends in antibiotic prescribing and of adherence to guidelines, concerning RTIs.

PRESENTATION 11: Friday 8th October, 2004
Parallel B: 13.30 – 14.00 h.

THEME PAPER
Preliminary results

TITLE: Use of a large database derived from primary care electronic clinical records to study Co-Morbidity.

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Background: Co-morbidity refers to the occurrence of more than one significant illness in one individual, each of which may impact on the course and management of the othersⁱ. Almost all major disease categories show a socio-economic gradient in their incidence and prevalence^{ii,iii}. Thus co-morbidity is more common among deprived populations and the elderly, and particularly among the deprived elderly^{iv,v}. When a person has co-morbidity, the effect can be greater than the sum of the individual diseases themselves, especially psychologically^{vi}. Yet most research has concentrated on people with single morbidity. Indeed, many RCTs specifically exclude people with co-morbidity. The RCGP has recently issued a statement on people with co-morbidity^{vii}. Among many recommendations, it asks that “public health and academic professionals should work with general practices to document the extent and effects of co-morbidity in individuals and families”.

Objectives: To study current and future patterns of co-morbidity, and the effects on outcomes of co-morbidity itself, deprivation and complex medication regimens.

Methods: This study uses the clinical records of an anonymised sample of 100,000 adult patients extracted from the QRESEARCH pilot dataset. We have described patterns of co-morbidity for the major chronic diseases by age, gender and deprivation; the patterns of incidence of major chronic diseases and their co-morbidity over time to predict future likely trends; the outcome (mortality) from specific common patterns of co-morbidity; and the relationship between co-morbidity and health service interventions (such as prescribing).

Results: The analysis is not fully complete at the time of submission; however the results will be available

Conclusions: The presentation will comment on the use of British EPRs for research; the potential use of QRESEARCH; and the implications of changing co-morbidity for primary care workloads.

What I hope to get out of presentation: Advice on how to best prepare the findings for publication.

PRESENTATION 12: Friday 8th October, 2004
Parallel B: 14.00 – 14.30 h.

THEME PAPER
An ongoing study/work in progress

TITLE: Croatian Primary Health Care Information Technology (IT) Project for Improvement in Prescribing Drugs and Education of Patients in Family Medicine.

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Background: Currently, most doctors in Croatia write prescriptions by hand and they are also obliged to add an ICD10 code to identify the clinical problem for which the drug was prescribed. It often happens that where a drug is prescribed, it doesn't match with the ICD10 code or that the drugs are not prescribed following the latest therapeutic guidelines. In 2003 Croatian government and Ministry of Health started a pilot project in Primary Health Care Information Technology.

Aim: To assist family physicians in prescribing drugs by providing hardware and software to encourage good clinical practice.

Method: Personal computers with full equipment are distributed for 60 family practices in five Croatian regions. They were all connected using Medicus.net software which was developed by experts from Ericsson and experts in family medicine. Best practice therapeutic guidelines for drugs prescription and a possibility for printing of educational material for patients are all incorporated into the software. All physicians and their nurses' attended an education course for using this program. High security level and technical backup of the system is provided by the experts from Ericsson. The impact of computerization has been assessed by comparing the prescribing habits of doctors using the system for the targeted conditions on a monthly basis for the first 6 months after its introduction.

Results: 75% of family physicians were prescribing drugs in concordance with therapeutic guidelines and more than 40% of all prescribed forms were related to cardiovascular diseases. 4000 printed pieces of educational material are available for patients.

Discussion: Drug prescribing is a very important task for all family physicians and it can be improved using sophisticated software. The system provides a valuable mechanism to keep them up-to-date with best practice and opens a possibility of creating proper indicators for good clinical practice. From the other side, patients receive printed material which should help them to use drugs wisely and thus obtain the maximum benefits from drug therapy.

Relevance to EGPRN: The experiences from the Croatian Primary Health Care Information Technology Project can be a good subject for discussion about good clinical practice in Family Medicine and the possibilities of improvement.

PRESENTATION 14: Friday 8th October, 2004
Parallel B: 15.00 – 15.30 h.

THEME PAPER
Results of a project which is finished

TITLE: The use of Electronic Patient Records in hospital-based Drug Detoxification Units: a multicenter comparative study.

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Background: The effectiveness of the drug detoxification procedure depends on several factors, such as frequency and duration of patient contact and availability of psychosocial support. However, there are no studies showing the potential benefits of using Electronic Patient Records in hospital-based Drug Detoxification Units.

Aim/Objectives: The aim of our study is to show whether the use of Electronic Patient Records in a Drug Detoxification Unit could improve the treatment's efficacy. This could increase the number of patients that each Unit can treat and improve the treatment's effectiveness.

Method: We made a comparative retrospective study involving two hospital-based Drug Detoxification Units. On a daily basis, one of the two units (Unit A) uses a custom-made, Microsoft-Access based Electronic Medical File database to register medical information regarding detoxification therapy, past and present medical history and personal data. Both units are newly founded and started patient treatment with 2 months time difference. All data refers to the 7th month.

Results: Patients in both Units are treated daily with buprenorphine. Staff and patient numbers are shown in Table 1. Table 2 shows the number of patients not using opiates during the last 2 months. Table 3 depicts the patient's employment status in both Units.

Table 1. Staff and patients.

	Unit A	Unit B
Patient number	85	60
Total staff number	5	9
Physicians	1	1
Nurses	2	4
Psychologists	0	2
Social psychologists	0	1
Secretaries	2	1

Table 2. Patients not using opiates during the last 2 months.

	Unit A	Unit B
Number of patients	27(31,8%)	16(26,6%)

Table 3. Patient's employment status.

Employment status	Unit A	Unit B
Currently unemployed	34(40,0%)	35(58,3%)
Working patients during detoxification treatment but previously unemployed	35(41,2%)	6(10,0%)
Working patients during detoxification treatment and previously employed	16(18,8%)	19(31,7%)

Conclusions/Discussion: We assume that the use of Electronic Patient Records enabled Unit A to effectively treat an increased number of patients with a diminished staff number compared to Unit B, although other factors could also have affected our results.

Relevance to EGPRN: We wish to show the advantages of using Electronic Patient Records in a medical field where the number of treatable patients and treatment quality is critical and often life-saving.

PRESENTATION 15: Friday 8th October, 2004
15.45 – 16.15 h.

THEME PAPER
An ongoing study/work in progress
Preliminary results

TITLE: The EQuIP Electronic Medical Record Audit Tool (EMRAT) in a German morbidity registration project.

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Background: In order to assess the quality of medical records an internet based tool has been provided by EQuIP on the basis of an expert group consensus. This tool was used in the German CONTENT morbidity registration project.

Objectives: To assess the quality of documentation among a group of GPs in the unfolding registration network. Feed-back of results to a focus group to improve recording in practices and to develop a new episode based EMR using ICPC-2-E.

Method: 10 GPs in 10 practices provided 30 randomly selected patient files each of adult patients who had at least 10 encounters with them and/or had been in the GPs practice on a regular basis over at least two years. Anonymous information was extracted from these files and entered in the online questionnaire of EQuIP (www.equip.ch). Results were fed back to the participants in a focus group on present and future EMRs.

Results: Formal aspects such as data security, chronological order of test results and demographic patient information rated higher than aspects such as reason for encounter, evidence supporting diagnoses, prescribed duration of medication, smoking status and allergies. Mean scores for the participants from Heidelberg as percentages of the maximum score for each EMRAT item were: demographic data in the EMR: 86%, major problem list: 65%, comment (positive or negative) about allergies/sensitivities: 16%, smoking status: 16%, patient's complaints or reasons for encounter: 28%, a defined problem/diagnosis: 56%, the problem / diagnosis supported by recorded data: 38%, inclusion of a plan: 32%, note of what the patient was told: 20%, physician responsible for the visit clearly identified: 70%, duration of medication specified: 6%, imaging results stored by chronological order: 100%, laboratory test results recorded in a specific section of the EMR: 100%, EMR safe from unauthorised access: 72%.

Conclusions: Despite of some methodological criticism and suggestions for the improvement of the presentation of results, participants appreciated the construction and the ease of use of EMRAT and found the items of the questionnaire and the results relevant and encouraging for improvement in practice recording.

Relevance to EGPRN: This sample provides 300 files as reference EMR for comparative analysis in other projects using EMRAT. Our approach shows a combination of qualitative and

quantitative methods that can help to explore in more depth strengths and opportunities in present documentation systems and expectations towards new systems even in a small sample. EMRAT is available online and free of charge to all GPs. It is well documented and can easily be used in EGPRN research projects on Electronic Patient Records or in projects that need an assessment of EMR quality in their sample.

PRESENTATION 16: Friday 8th October, 2004
16.15 – 16.45 h.

THEME PAPER
Results of a project which is finished

TITLE: Organization of health check-up programs in Greek children aged 6-17 years old with the aid of Electronic Patient Records.

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Background: In Greece, pediatric health check-up programs are organized for children aged 6, 8, 12, 15 and 17 years old in order to maintain a good health status. However, children's health records are not analyzed on a national level and, therefore, no local, community-based prevention and intervention programs are organized.

Aim/Objectives: The aim of our study is to investigate the use of Electronic Patient Records in carrying out pediatric health check-up programs and medical follow-up, in order to achieve a faster and more thorough registration of the children's health data. This could lead to the organization of local, community-based prevention and intervention programs.

Method: We used a custom-made, Microsoft-Access based Electronic Medical File database to register medical information for children aged 6, 8, 12, 15 and 17 years attending local schools. A personal medical record was created for every child, which was retrospectively reviewed. We performed statistical analysis and calculated mean values and standard deviations for the parameters we studied, according to children's age.

Results: Ninety children aged 6 to 17 years took part in our study. The children were first examined at the age of 6 years. The following clinical examinations were set at the age of 8, 12, 15 and 17 years. We registered personal data, somatological data such as height, weight and waist perimeter, blood pressure, vaccination status and children's medical past and present history. We looked for drug use or abuse. We also performed ECG, visual acuity and dental examinations as well as orthopedic and psychiatric clinical examinations. The children's medical history and present status were re-evaluated at every clinical examination. We achieved a fast and thorough registration of the children's health data and drew statistical results for the health parameters that we studied.

Conclusions/Discussion: The use of Electronic Patient Records enabled us analyze our children's records and to organize local, community-based prevention and intervention programs, in order to improve local health.

Relevance to EGPRN: We wish to expose our work to European colleagues in order to improve our Electronic Medical Filing System and to gain international experience concerning the benefits resulting from its use.

PRESENTATION 17: Friday 8th October, 2004
16.45 – 17.15 h.

THEME PAPER
Preliminary results / Results of Pilot Study

TITLE: ICD-10 revisited. Reasons of encounter in rural vs. urban population.
Results of the pilot study.

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Background: Computerised medical records have not been widely used in Primary Health Care (PHC) in Poland before 1999. In years 1999-2002 regional sickness funds developed different methodologies of PHC data collection on the basis of ICD-10. Reunification of the national health service (2003) was followed by introduction of obligatory collection of PHC data according to ICD (2004). It has started national debate about advantages and disadvantages of this method of PHC morbidity and services monitoring.

Objectives: The main objective of the study was to compare the reasons for encounter in rural practice and inner-city health care centre. The secondary objective of the pilot study was to test the validity and to explore the limitations of data collection method currently used in PHC.

Method: Retrospective data analysis of reasons for encounter in rural practice vs. inner-city health centre. The study was performed in two selected PHC settings: rural practice where three family physicians had together 5926 patients on their lists and inner-city health care centre where two internists and two paediatricians were responsible for the health of 6556 patients. There were statistically significant differences in age and sex profiles between compared patient populations. Participating doctors had not been trained to use ICD-10 for the purpose of the study but they were using it in their everyday clinical practice. The study reviewed all records of routinely collected data in 2003.

Results: The data from 22675 rural and 20841 urban encounters has been analysed. Rural practice had higher encounter rate (3.8 per patient) than inner-city health care centre (3.2 per patient). 78% (n=17703) of rural encounter and 98% (n=20472) of urban encounter were coded according to ICD-10 classification. Respiratory diseases were the most frequent morbidity in both PHC settings, respectively 27% (n=6174) of rural encounters and 23% (n=4811) of urban encounters, and there was statistical significant difference ($p < 0.05$) in occurrence of this reason for encounter. Significant differences were present in almost all kind of reasons for encounter, apart from endocrine, nutrition and metabolic health problems ($p = 0.3$), infective and parasitic health problems ($p = 0.7$) and blood diseases ($p = 0.06$). An interesting finding was the relatively high prevalence of mental health problems in the rural population (17.5%, n=3969).

Conclusions: The results showed differences in reasons for encounter between rural and urban populations. Some differences could be explained by different demographic structure and socio-economic profile of the studied populations, or unequal access to secondary care. This pilot study demonstrated validity of the method of data collection used. However, before the

main study there is a need to provide random selection of PHC settings, to standardise criteria of ICD coding, to train participating doctors and to improve data collection (direct data input by participating doctor during each consultation).

Relevance to ERGPN: The author is looking for critical review of the project, suggestions for improvement of the main study and partners for further international co-operation.

PRESENTATION 18: Friday 8th October, 2004
17.15 – 17.45 h.

THEME PAPER
Preliminary results

TITLE: Extracted electronic medical records or a short assessment form to describe GPs' long term management of depression in the elderly?

AUTHOR(S): Els Licht-Strunk¹, Florijn Jonkers-Jacobi¹
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Background: Little is known about the prognosis of depression in older general practice attenders and about its determinants. In a cohort study we aim to describe the three-year prognosis and determinants in a sample of elderly general practice attenders of 55 years and over with various types of depression.

Aim: We want to explore and describe GPs' management as a determinant of prognosis.

Method: A Short Depression Management Questionnaire (SDM-Q) that the GP filled in was compared to a) repeated yearly patient interviews, and b) to extracted electronic medical records with the Long Depression Management Questionnaire (LDM-Q). Agreement between data sources was analysed with Cohen's κ .

Results: Of the first 50 patients, 39 were available for this analysis, 11 men and 28 women. The mean age was 65 years (55-82). They were on the list of 14 different GP practices in West Friesland, in the Dutch province of Noord-Holland. The diagnosis depression, conversations with the GP for depression, antidepressant prescription, and referrals for depression had adequate levels of agreement between SDM-Q and LDM-Q (κ 0.53; κ 0.59; κ 0.57; κ 0.64). Diabetes mellitus and cerebrovascular disease had a very high to perfect agreement (κ 0.823-1.0) in all comparisons, while vascular disease (intermittent claudication, hypertension, and cerebrovascular problems) had a reasonable agreement (κ 0.52 – 0.74). Other conditions, and mostly joint conditions had less agreement.

Conclusion/discussion: Long-term management of depression can be assessed with a short form that the GP completes in three minutes. The question is whether an adapted SDM-Q will suffice to adequately describe management for the other patients.

What do you hope to get out the presentation at EGPRN/Relevance to EGPRN?
A good discussion about how to use electronic medical data for research purposes.

PRESENTATION 20: Saturday 9th October, 2004
09.00 – 09.30 h.

THEME PAPER
Results of a project which is finished

TITLE: Smoking cessation treatment in U.K. primary care: prospective cohort study.

AUTHOR(S): Andrew Wilson
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Background: Smoking cessation treatments are the most cost-effective available in the NHS. Guidelines emphasise the importance of general practice treating smokers motivated to quit, but little is known about who are prescribed these drugs.

Objective: To describe the extent of prescribing of smoking cessation treatment in primary care and compare the characteristics of smokers who do and do not receive treatment.

Method: Prospective cohort study using practices registered with the pilot QRESEARCH database of 40 general practices located within the former Trent Region, UK. The records of patients registered between 01/04/01 and 31/03/03 and aged 18 years and over were searched. The outcome was one or more prescriptions for smoking cessation treatment (nicotine replacement therapy [NRT] or bupropion) to identified smokers in the two-year study period. Possible explanatory variables were age, sex, deprivation score and co-morbidity.

Results: Of the 30,232 smokers identified at the start of the study period, 2,331 (7.7%) were given prescriptions for smoking cessation treatment during the subsequent two years. Smokers were more likely to receive smoking cessation treatment if they lived in the most deprived areas (Odds Ratio [OR] for the most relative to the least deprived fifth, adjusted for sex, age and co-morbidity - 1.35, 95% CI 1.14 to 1.60), and less likely to if they were male (adjusted OR 0.84, 95% CI 0.76 to 0.92) and older (adjusted OR for smokers aged 75 and over relative to aged 18-24, 0.25, 95% CI 0.17 to 0.36). Smokers with co-morbidity were also more likely to receive smoking cessation treatment.

Conclusion: The low proportion of smokers being prescribed these products demonstrates that opportunities to assist motivated smokers to quit are not being fully exploited.

Relevance to EGPRN: The study shows how routinely collected electronic data may be used to investigate clinical practice. The topic of smoking is important in all European countries, and the presentation will allow discussion of how approaches may vary between countries.

PRESENTATION 21: Saturday 9th October, 2004
09.30 – 10.00 h.

THEME PAPER
An ongoing study/work in progress

TITLE: Clinical audit based on electronic patient records: opportunities and limits.

AUTHOR(S): Anna Katharina Rieve
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Pio Pavone, Renato Seller, Lucio Zinni
with the participation of "Gruppo degli Animatori SIMG Marche-Abruzzo"
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Background: Most members of the Italian Society of General Practice (SIMG) use a software for clinical recording ("Mille Win"), based on a problem-oriented medical record employing the ICD 9 classification and endowed with a data collection and extraction program based on SQL procedures, using predefined or constructable query strings. The widespread use of such software allows audit procedures aimed at verifying the quality of primary care and the achievement of educational objectives.

Objectives: In Central Italy, during 2003-2004, we performed several different audit procedures in important clinical conditions, such as heart failure, chronic obstructive pulmonary disease and asthma, with the two-level aim of verifying the quality of clinical management (the audit itself) and evaluating feasibility, difficulties and pitfalls of data extraction procedures from clinical records for research purposes.

Methods: GP participating to the audits underwent preliminary training courses on the best evidences and guidelines for the management of the condition and the meaning, use and procedures of the audit. Electronically collected and elaborated data were given back and discussed with participants during a second meeting.

Results: We here summarize only one audit procedure, concerning diagnosis and treatment of COPD, among the different performed, as a paradigmatic example of the obtainable results in terms participation, numbers of patients involved and outcomes, rather than specific research results. Of 308 GPs involved, 240 actually performed the audit, 193 providing useful data. The overall number of COPD patients in charge of these GPs was 7674. Since each GP randomized 10 patients, the analysis was performed on 1930 patients. Data obtained on the prevalence of the condition, diagnostic and therapeutic aspects highlighted several problems: underestimated prevalence of COPD (2,89% in our sample vs. 5-6% expected), discontinuous treatment, lack of lung function tests, insufficient recording of disease staging parameters (smoke habits, referrals, exacerbations).

Conclusion/Discussion: Audit based on electronic clinical records is feasible thanks to the widespread use of data extraction facilities. Similar procedures might allow more general research projects in epidemiologic and clinical areas, though some difficulties and pitfalls must be taken into account: sampling (e.g. geographic distribution, numbers of patients in charge, cultural differences among GPs), data recording (different classification, difficulties in relating

significant conditions not classified as diseases. such as smoking, body weight, life habits, with specific diseases. These limitations might be overcome developing appropriate electronic both for clinical management and research purposes.

Relevance to EGPRN: This experience might provide a model for the feasibility of research based on electronic patient records in General Practice. How to develop appropriate electronic patient records both for clinical management and research purposes.

PRESENTATION 22: Saturday 9th October, 2004
10.00 – 10.30 h.

THEME PAPER

TITLE: Developing an Infrastructure to use Electronic Patient Records for Research in German General Practice: The MedViP Study

AUTHOR(S): Joerg Sigle, C. Scheidt-Nave, D. Wetzel
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Background: German GPs routinely perform computer based data collection, primarily motivated by billing and administrative requirements. Quality assurance, continuous improvement and research in the primary care setting do not regularly use resulting data sets, neither do they motivate physicians to keep concise electronic patient records.

Aim/Objective: The MedViP project (Medizinische Versorgung in der Praxis = medical care in general practice) develops infrastructure to identify and follow patient populations, to assess the quality of care and to evaluate the feasibility and effect of electronic guidelines. The project includes three major research applications of the resulting infrastructure.

Methods: German GPs' electronic patient records are collected using the BDT-interface, transferred into native XML and relational SQL data bases, and imported into the SAS software. Data exchange paths between the various environments and electronic guidelines with configurable hyperlinked content, context sensitive reminders and usage monitoring capability have been prepared.

Results: Of 422 invited practices, 167 agreed to participate. Data collection was technically limited to 164 practices. A prototype environment for processing of data on medical problems, clinical findings, diagnoses, resources spent, objective and subjective outcomes and intervention has been constructed.

Conclusion/Discussion: Basic analysis tasks can be carried out easily. Advanced tasks like selection of patient populations and testing for guideline adherence over multiple practices have already been performed but appear demanding due to variations in data content and quality. At the time being we are extending data analysis know-how and our library of algorithms.

Relevance to EGPRN: We can describe our research infrastructure and point out current limitations. Improvements for future electronic patient records, standards of communication, data collection and a research platform that can be used by multiple groups will be addressed.

PRESENTATION 23: Saturday 9th October, 2004
10.45 – 11.15 h.

FREESTANDING PAPER
Results of a project which is finished

TITLE: Job Satisfaction among Government GPs in Malta - Addressing Medical Manpower Needs.

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Background & Aim/Objectives: A study on job satisfaction among state GPs in Malta addressed the problem of the inadequate number of doctors within the government GP Service. It investigated the hypothesis that it is a result of poor job satisfaction, and allowed GPs to come up with other possible reasons and propose practicable solutions.

Method: A mixed methodology was used, with both quantitative (the Spector 'Job Satisfaction Survey') and qualitative questionnaires (3 open questions) sent to current and former government GPs, together with focus group/elite interviews.

Results: 71 out of 136 questionnaires were returned, giving a 52% response rate.

- *Quantitative analysis:* Job dissatisfaction was confirmed among health-centre doctors during 1998-2003. Taking significance as $p < 0.05$, regression analysis revealed that doctors formerly working in health centres were significantly more dissatisfied than present state GPs (univariate $p = 0.033$), and working part-time is significantly more satisfying than working full time (univariate $p = 0.007$, multiple $p = 0.039$).
- *Qualitative analysis:* 39% of GPs revealed overwhelmingly negative feelings, experiencing job dissatisfaction, stress and depression; 41% felt unappreciated, neglected and disrespected; while 31% felt verbally and physically used, misused and abused. Doctors believed that the top three causes of the lack of government GPs were poor pay and ancillary benefits (70%), poor training prospects/career progression (54%) and poor working conditions (46%).

Conclusions/Discussion: Poor job satisfaction among state GPs was confirmed (especially among full-timers), with doctors themselves being sure that this was the cause of their lack in numbers. The following solutions for this shortage were proposed and discussed:

- Direct solutions: enhancement of working conditions through remuneration, non-monetary benefits and working environment; development of training in family medicine and of specialist status with career progression.
- Indirect solutions: introduction of continuity of information and care; implementation of better management, organisation of service delivery, curtailment of client abuse; optimisation of health-centre use and raising of GPs' status through educational campaigns.

Relevance to EGPRN: Job dissatisfaction among GPs has been documented in Europe and beyond, and it has been associated with job retention and turnover in the UK (and now too in Malta). Is this also the experience in Europe, and have any solutions been proposed to this dilemma?

PRESENTATION 24: Saturday 9th October, 2004
11.15 – 11.45 h.

FREESTANDING PAPER
Results of a project which is finished

TITLE: Does Age Predict Pulse Pressure In Type 1 as well as In Type 2 Diabetes?

AUTHOR(S): Pinar Topsever
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Background: Elevated pulse pressure (PP) is a known cardiovascular risk factor especially in diabetic individuals who are at enhanced risk of arteriosclerosis. On the other hand arterial stiffness biologically increases with age.

Aim: To investigate the association of age with PP in type 1 and type 2 diabetic individuals, to assess impact of disease related factors on pulse pressure.

Method: In this cross sectional study, 429 (55.5% female, n=238; mean age 39.0±19.4 years; 58.3% type 1, n=250) diabetes outpatient clinic records were randomly selected and surveyed for demographic, metabolic and clinical parameters. PP=systolic blood pressure (SBP)–diastolic blood pressure (DBP). Mean arterial pressure (MAP)= DBP+ 1/3PP. Data are presented as mean ± SD or %. Multiple linear regression was used with PP as dependent and parameters of interest as independent variables and p<0.05 with a CI of 95% was considered significant.

Results: The study population (diabetes duration 9.0 ± 0.6 years, 54.3% with at least one diabetic complication 20.7% smokers, body mass index (BMI) 25.8 ± 4.3 kg/m², HbA1c 8.5 ± 1.9 %, PP 49.5±18.0 mmHg, MAP 95.8 ± 15.4 mmHg, SBP 128.7 ± 25.8 mmHg, DBP 79.3 ± 11.4 mmHg) was grouped by diabetes type into type 1 and type 2 diabetic individuals (T1DM, T2DM). MAP was the main determinant for PP in T1DM with each unit increase in MAP, independently of other variables of interest, accounting for 0.64 mmHg increase in PP. In T2DM, MAP and age were independent determinants for PP (1 mmHg increase in MAP was associated with 0.78 mmHg increase, each year increase of age with 0.44 mmHg increase in PP (p<0.001 for all).

Conclusions: The results of this study showed that PP was determined by MAP only in the younger type 1 diabetic group, whereas age contributed to PP in the elderly type 2 diabetic group. This relationship was independent of disease related factors like diabetes duration and glycaemia.

Relevance to EGPRN: To evaluate the prognostic significance of PP as a marker for cardiovascular risk in diabetic individuals in primary health care, it is important to know how far PP is determined by biological plausible confounders like age in different disease subgroups (i.e. type 1 and 2 diabetes).

PRESENTATION 25: Saturday 9th October, 2004
Parallel 1: 11.45 – 12.30 h.

POSTER
An ongoing study/work in progress

TITLE: The Lung Information Needs Questionnaire (LINQ), the ongoing development and validation of a new questionnaire.

AUTHOR(S): Michael E Hyland¹, Rupert C.M Jones,²
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Background: Many COPD patients report a poor quality of life with chronic daily symptoms including distressing breathlessness. In a series of focus groups we identified patient perceptions of factors that can influence their compliance with healthy behaviours. This highlighted the need for accurate information from health professionals to effect critical lifestyle changes. There are no currently available tools to assess information needs in chronic respiratory disease. LINQ was developed using an iterative process from five further focus groups, to identify COPD patients information needs and concordance with medication and lifestyle advice. It is a self-complete questionnaire of 23 questions with 6 scored domains; disease knowledge, medicines, self-management, smoking, exercise and diet.

Aim/Objectives: To validate LINQ using a large-scale field study including test and retest reliability.

Methods: Approximately 650 patients with a physician diagnosis of COPD will be recruited aiming for 500 correctly completed questionnaires. They will be recruited from primary care (expert and non-expert practices) in the Plymouth PCT and from a database of patients who have attended pulmonary rehabilitation. LINQ will be posted, the first 50 returns will be data checked and LINQ reviewed. Retest reliability will be assessed in 50 patients with a two-week interval between mailings. A duplicate mailing will be sent to non-responders twenty-one days after first mailing. Psychometrics will be measured and a final version of LINQ will be produced. LINQ maybe used for individual patient assessment and assessing the impact of interventions, e.g. pulmonary rehabilitation.

Relevance to EGPRN: LINQ will be useful is assessing individual patient's need for information about medication, smoking, exercise, diet and we hope, in the future, that it can be adapted to be used internationally.

PRESENTATION 26: Saturday 9th October, 2004
Parallel 1: 11.45 – 12.30 h..

POSTER
Results of a project which is finished

TITLE: Is the therapeutic management of people with type 2 diabetics related to their Body Mass Index? A review from the electronic medical records of Italian GPs.

AUTHOR(S): Filippo D' Addio, Ferdinando Petrazzuoli
Nicola Buono, Alfonso Sauro, Alessandro Correra
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Background: GPs' database can be used to examine the real management of patients. For example, in type 2 diabetes mellitus (NIDDM) some drugs such as insulin should not be used frequently in obese patients, while other drugs, such as metformin, are recommended in these patients.

Aim: To compare the different therapeutic managements of patients affected by NIDDM, according to their Body Mass Index (BMI).

Methods: Data on diabetics from the cohort of patients of 8 Italian GPs were analysed. These data included age, sex, BMI and therapeutic management. According to BMI the patients were classified as normal weight, overweight, or obese. The therapeutic management was also divided into three groups: insulin, metformin treatment and alimentary diet alone.

Results: In this population of 11,322 patients the prevalence of type 1 diabetes mellitus (IDDM) was 25/10000 patients and NIDDM prevalence was 5.8% (660 patients). Of the NIDDM patients, 25.6% were of normal weight, 34.8% were obese, and 39.6% overweight. Alimentary diet alone was followed by 22.4%: there was no difference in the three groups. Insulin was used more in the normal weight group than in the overweight or obese groups, but the difference was not statistically significant. (odds ratio=1.19 CL 0.82<1.19<1.71 p=0.4). Metformin was the most used drug in obese and overweight patients, with a statistically significant difference compared to those with normal weight (odds ratio =0.63 CL 0.47<0.63<0.85 p=0.002).

Conclusion: This study confirms the correct use of metformin and insulin, according to BMI, in people with type 2 diabetes.

Relevance to EGPRW: There is very often quite a big difference between guidelines and what GPs do in everyday practice. The electronic patient record in general practice is an important tool to monitor and to improve quality. Although in this case the therapeutic approach is correct, it is always useful to have a feed back of everyday clinical activity.

PRESENTATION 27: Saturday 9th October, 2004
Parallel 1: 11.45 – 12.30 h.

POSTER
Results of a project which is finished

TITLE: The Profile Of Osteoporotic Women In A Rural Area In Greece.

AUTHOR(S): Stella Argyriadou
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Background: Osteoporosis is a very common disease in post-menopausal women and is responsible for fractures, pain and mobility restriction – conditions that can affect their well-being. However General Practitioners (GPs) often encounter advanced cases of osteoporosis in whom there has been misdiagnosis and/or ineffective treatment.

Aim: To establish the prevalence of osteoporosis in post-menstrual women; and to investigate the possible coexistence with depression and its influence on the patient's quality of life.

Study population- methods: 858 women (Mean age 64.91, sd=9.10) were examined at the Health Centre of Chrissoupolis (HCCh) and the Health Centre of Thassos island (HCTh) during 2003. A semi structured questionnaire was used consisting of demographics, medical history, Geriatric Depression Screening Scale (GDSS), Activities of Daily Living (ADL), and Visual Analytical Scale (VAS). Ultrasound measurement of the calcaneus with the Quantitative Ultrasounometry (QUS) method was undertaken.

Results: The mean T score was -1.23 (sd=1.48) and 270 (31.47%) of the women had rates < -2 (diagnostic of osteoporosis). When the women with T score < -2 were compared to the others, there were older (age 68.80 years vs 63.12 years); lighter (BMI 29.76 vs 31.08); scored lower on the VAS (59.20 vs 72.84); and were more likely to be depressed (GDSS 4.83 vs 3.16). Finally the results of the regression analysis showed that osteoporosis is related to age, menopause (p=.000) and the place of living (p=.018), and affects VAS (p=.000).

Conclusion: Osteoporosis is a frequent disorder, causing disability and affecting the well being of the sufferers. It seems to be related with depression. GPs should be aware to detect and treat effectively osteoporosis in order to avoid its consequences.

Relevance for EGPRN: This study underlines the need for adoption of the same tools for detection and effective treatment, in order to prevent the outcomes of osteoporosis.

PRESENTATION 28: Saturday 9th October, 2004
Parallel 2: 11.45 – 12.30 h.

POSTER
Preliminary Results

TITLE: Quality of drug therapy in patients with asthma and COPD.

AUTHOR(S): Susanne Fassheber, Anja Rogausch
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Wolfgang Himmel, Michael M. Kochen, Jörg Sigle
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Background: Compared to internationally accepted guidelines, care for patients with asthma and chronic obstructive pulmonary disease (COPD) often seems to be inadequate. Electronic patient records (EPRs) offer a tool for the assessment of the quality of medical care. Patients' diagnosis and current medication can easily be assessed from EPRs.

Aim/Objectives: To describe the pharmacological treatment of patients with asthma and COPD and to investigate the extent to which treatment accords with guideline recommendations.

Method: In the region of Goettingen in the north of Germany 40 general practitioners (GPs) have been recruited. Technical supporters extracted anonymised electronic medical data via a standardized interface. Patients with asthma and COPD and their relevant medication were identified from these records. The medication of these patients was compared to therapy recommendations in an internationally accepted guideline.

Results: The analyses of the data are currently being conducted.

Conclusions/Discussion: After completion of the data analyses we will know the proportion of patients with asthma and COPD that is treated on the basis of guideline recommendations.

What do you hope to get out the presentation at EGPRN/Relevance to EGPRN?: To discuss possible limitations on the implementation of internationally excepted guidelines in daily practice; and to consider the similarities and differences in the different participating countries.

PRESENTATION 29: Saturday 9th October, 2004
Parallel 2: 11.45 – 12.30 h.

POSTER
Results of a project which is finished

TITLE: Correlation of the type of physical training in adults with the ankle-arm index.

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Aim: In this prospective study, we used the values of ankle-arm index to evaluate the impact of aerobic and anaerobic exercise on reduction of cardiovascular risk in adults.

Patients and Methods: In total, 58 adults were advised to follow a standard program of supervised physical training for a period of 6 months' duration. Following matching, the subjects were divided into two groups. The subjects in group A followed an anaerobic program consisting of specific circuit weight training, and those in group B followed an aerobic training program. Statistical analysis was undertaken using the Statistical Package for the Social Sciences (SPSS v.11).

Results: Our study showed that the adults who followed the 6 month structured isotonic – type training (group B) had a significant steady improvement in the ankle-arm index, a finding also present in those who followed weight training. Before the start of exercise program, the mean value of ankle-arm index in adults in group A was 1.130 ± 0.06 and 1.094 ± 0.07 in those in group B, (mean difference 0.036-3.8%). Six months later, the mean values of ankle-arm index were 1.138 ± 0.02 and 1.112 ± 0.03 in Groups A and B respectively. For those who followed the six months' continuous systematic exercise of specific circuit weight training, the mean standard improvement in ankle-arm index was 0.008 (0.86%), while for those who followed the aerobic training, it was 0.018 (2.01%) - $p=0.006$.

Conclusion: We believe that the ankle-arm index is influenced most by the type of exercise. In addition, isometric training proved safer than isotonic, as far as the complications of the heart rhythm were concerned. Other standard factors that account for the cardiovascular risk did not influence the index.

PRESENTATION 30: Saturday 9th October, 2004
Parallel 2: 11.45 – 12.30 h.

POSTER
Results of a project which is finished

TITLE: Designation of risk factors of atherosclerosis in patients with early manifestation of coronary disease.

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Aim: The purpose of the present prospective study was to explore the distribution of coronary disease risk factors (CDRs) in patients with early coronary heart disease (CHD).

Population – Methods: The study included 74 successive patients surviving an acute ischaemic syndrome during the period 1999 – 2004. The patients were all resident in northern Greece and were aged 32-45 years, and all had angiographically documented coronary vessel disease. For each patient, all the standard risk factors for atherosclerosis were recorded. Access 2003 was used for the elaboration of the available data. Continuously distributed variables were expressed as mean values with a standard deviation (\pm SD). The chi square test (X^2) was used for the statistical analysis of the qualitative observations.

Results: Seventy-one (95.9%) of the patients were males. A positive family history of CHD was mentioned by only 22 of these patients. All of them reported at least one major modifiable risk factor for CHD, with smoking being the most common (n=72 (97.2%) p<0.001), followed by dyslipidaemia (n=39 (52.7%) p=0.06), arterial hypertension (n=11 (14.8%) NS) and diabetes mellitus (n=5 (6.7%) NS). The most common of minor modifiable risk factors were found to be the following: sedentary life (n=59 (79.7%) p<0,007), psychosocial factors (n=47 (63.5%) p<0.04) and obesity (n=31(41.8%) NS). Multifactorial statistical analysis revealed that prolonged smoking (26.5 ± 5.7), starting smoking at an early age (16.02 ± 3.9) and high levels of consumption of cigarettes (39.4 ± 15.7) were primarily responsible for the clinical manifestation of acute ischemic episodes in young patients.

Conclusion: Smoking appears to be the major risk factor for the development of acute ischaemic episodes in patients younger than 45 years of age, invalidating the protection provided by young age against coronary atherosclerosis. As smoking is a modifiable risk factor, all primary health care professionals should be actively encouraged to undertake preventive medicine for both future smokers and high risk young smokers.

PRESENTATION 31: Saturday 9th October, 2004
Parallel C: 14.15 – 14.45 h. FREESTANDING PAPER
Results of a PILOT project which is finished

TITLE: A simplified severity scale for the assessment of restless legs syndrome (rls): the DESYR study.

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Objectives: To develop a simple dichotomous scale for the assessment of RLS severity to be used for facilitating therapeutic decisions.

Methods: A prospective epidemiological study was conducted in primary healthcare in France. First, patients fulfilling the RLS diagnostic criteria from the International Restless Legs Study Group were identified. Secondly, the severity of identified RLS subjects was assessed using the IRLS rating scale. This scale includes ten items, each rated on a five point Likert scale from 0 to 4 ("non" to "very severe") and summed in a global score from 0 to 40 (0-20 : non-severe ; 21-40: severe). Using a segmentation analysis applied to the rating scale items and other measures of RLS impact, we attempted to find a small number of items able to distinguish severe from non-severe RLS patients as the rating scale would have done.

Results: 537 patients were included in the analysis. Three items emerged from the segmentation analysis, consolidated into "RS3". All three were part of the rating scale. They dealt with: overall RLS severity, overall sleep disturbance and mood disturbance. The decision rule was that an answer 0,1 or 2 (ie. none, mild or moderate) to at least one of the three items assigned an RS3 grade of 'non-severe'. The sensitivity and specificity of RS3 were 82% and 95% respectively. The positive and negative predictive values (PPV and NPV) were 92% and 88% respectively. Sensitivity analyses with thresholds of 15, 25 and 30 were performed without improving sensitivity and specificity. The reproducibility of the RS3 was assessed in another RLS population (731 subjects from the INSTANT Study) with sensitivity and specificity of 88% and 91%;and PPV and NPV of 73% and 97%, respectively.

Conclusion: The metrology of the RS3 scale appears to be strong enough to be used in larger sample.

Relevance to EGPRN: Discussion about prevalence of RLS in general practice in Europe and how GPs diagnose these patients and take care of them.

PRESENTATION 32: Saturday 9th October, 2004
Parallel C: 14.45 – 15.15 h.

FREESTANDING PAPER
An ongoing study/work in progress

TITLE: Type 2 diabetic patients' behaviours with therapeutics and their epistemological and practical consequences on EBM and research.

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Background: Currently, evidence based medicine (EBM) is the main methodological paradigm for general practice. In the last few years, criticisms of this approach have arisen, particularly from anthropologists and ethicists. Among those criticisms, the following are worthy of discussion:

- 1- Focussing EBM methodologies on a small range of quantitative methods ipso facto excludes from the field of *imaginable research* all subjects that need to be addressed through different methods and particularly qualitative ones.
- 2- EBM methodology is meant to produce *evidence* that practitioners will implement according to the singularity of clinical situations. However, nothing guarantees that the clinician's way of adapting evidence to the care of individual patients is pertinent. Furthermore, clinicians may be tempted to use guidelines as a normative tool independently of patients' preferences and systems of meaning.

Aim/Objectives: We explore different rationalities that underlie their relations to treatment of non-insulin dependant diabetic patients, and contrast these with the culturally and historically complex universe of biomedicine.

Method: About ten in-depth interviews will be conducted with non-insulin dependent patients selected through their general practitioners. If patients respond to therapeutic interventions according to social, cultural and personal factors, then focusing on patients' compliance to guideline recommendations will prove an ineffective strategy, which is both symbolically violent and utopian.

Relevance to EGPRN: EBM must expand to include qualitative as well as quantitative methods, in order to evaluate the relevance of evidence within social and cultural contexts (research level). Such research will help clinicians to perceive the multiple dimensions underlying patients' behaviours and thus to integrate them in their practice (clinical level). The authors are interested in the views of EGPRN members about methods used in this study.

PRESENTATION 33: Saturday 9th October, 2004
Parallel D: 14.15 – 14.45 h.

THEME PAPER
Preliminary Results

TITLE: Quality of care assessment in general practice patients with chronic heart failure, using electronic patient records.

AUTHOR(S): Dirk Wetzel¹, Regine Heidenreich¹, Eva Hummers-Pradier¹
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Background: Existing evidence-based guidelines give recommendations for the diagnosis and therapy of chronic heart failure (CHF). However, it is known that general practitioners (GPs) often do not follow these guidelines. Research in this field often relies on abstract data like prescription statistics. Electronic patient records (EPRs) could be a valuable tool for more detailed quality assessment, but their usability is limited in several ways.

Aim/Objectives: To explore the usability of EPRs for quality of care assessment in CHF patients and to present first results on quality of care in CHF patients.

Methods: In the Goettingen area, EPRs were exported from computers of over 80 GPs. CHF-patients were identified by using an algorithm including coded diagnoses (ICD 10) and text diagnoses (synonyma for CHF). Within the data sets of these patients, established quality indicators concerning the management of CHF were searched, described and evaluated.

First results: Some quality indicators (mainly prescribed drugs) are mostly well documented and can be evaluated, whereas the documentation quality of other important items like clinical and diagnostic findings (eg. echocardiography results), frequency and severity of decompensation or doses of prescribed drugs is very inconsistent. Evaluation of the identified quality indicators will be presented at the EGPRN meeting.

Conclusions/Discussion: Identification and evaluation of quality indicators using EPRs of heart failure patients is possible, but structurally restricted. For a valid assessment of quality of care, more structured and detailed information is needed in the EPR.

What do you hope to get out the presentation at EGPRN/Relevance to EGPRN?: While research using EPRs is easily feasible and becoming more popular, attention should be drawn to the validity and completeness of data contained in EPRs.

PRESENTATION 34: Saturday 9th October, 2004
Parallel D: 14.45 – 15.15 h.

THEME PAPER
An ongoing study/work in progress

TITLE: Intego, Computerized Morbidity Registration in Belgium: Epidemiology of herpes zoster.

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Background: Intego is the first computerized morbidity registration network of voluntary sentinel GPs who work with an electronic medical record in Belgium. Intego provides data on incidence and prevalence rates of all diseases, laboratory tests and prescriptions from 1994 onward. In 2004 Intego includes about 139.000 different patients, 50 practices and covers about 1 % of the population in Flanders (Northern part of Belgium). In this contribution we would like to present the possibilities of the network by means of herpes zoster as a new source of information for epidemiological research in Belgium.

Research question(s): What can Intego tell us about the basic epidemiology (incidence rates, age, sex and seasonal differences) of shingles in Flanders?

Methods: Once a year data are copied from the electronical medical record Medidoc[®] and sent by e-mail to Intego. The GP uses references for diagnoses that all have a unique code. This code is then transformed into an ICPC-2 classification. Data are analyzed using the SAS-system for windows. We performed t-tests to examine possible sex differences in shingles; multiplicative decomposition method to examine seasonal trends and linear regression analysis to investigate the well established effect of increasing age on incidence of shingles. Yearly contact group data are used as the denominator.

Results: Between 1994 and 2001 we found a mean incidence rate of 4.55 per 1000 patients/year. These incidences remain stable over the years, with an absence of seasonal variation. The mean incidence (CI 95%) for women is significantly higher ($p=.01$) than the incidence rate for men, respectively 4.85 (4.5-5.2) and 4.24 (3.9-4.6) per 1000 patients/year. Increasing age seems to be a risk factor for herpes zoster ($p=.001$).

Conclusion(s): Our results show that Intego presents interesting new data with regard to the epidemiology of herpes zoster in Flanders. This analysis is only one example of the possibilities of the Intego network and can be utilized for every ICPC-2 code.

Relevance to EGPRN: The data collected by Intego are an important source of information on diseases presented in primary care and possible changes over time. Discussion on limitations of morbidity registration however is necessary.

PRESENTATION 35: Saturday 9th October, 2004
Parallel E: 15.15 – 15.45 h.

FREESTANDING PAPER
Results of a project which is finished

TITLE: A Study on Stress in Maltese General Practitioners

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Background: In Malta, Maltese GPs are divided into two main groups, those who work in full-time private practice and those employed full-time by government. GPs in private practice are self-employed, often work in solo practice and are independent. They can set their own fees and are in control of their method of working, hours of work and their work environment, especially if they have their own clinic. The group which is employed full-time by government work in a multi-disciplinary setting, in group practices, in designated health centres, on a roster basis. The organisational structure the latter group belongs to is a hierarchical one.

Objectives: To measure and compare stress and job satisfaction of public and private GPs.

Method: Postal questionnaire survey of 100 GPs divided equally between private and public doctors. The main outcome measures included quantitative measures of job satisfaction, job stressors and mental health (General Health Questionnaire).

Results: A total of 70 GPs (70%) returned the questionnaires. Fifty two percent of public GPs scored 3 or more on the General Health Questionnaire (GHQ-12) compared with 32% of private GPs, which indicated a high level of psychological symptoms in public GPs. Private GPs had significantly higher scores in 6 out of 8 dimensions of the job satisfaction scale when compared to public GPs. Significant correlations were found between GHQ-12 scores and total job satisfaction scores.

Conclusions: Fifty-two per cent of public GPs who responded showed high levels of psychological symptoms compared with thirty-two per cent of private GPs. Public GPs scored overall less on the Job satisfaction scale compared to private GPs. Public GPs expressed least satisfaction with rate of pay, freedom to choose own method of working and recognition they get for their good work. These results point to a need to improve working conditions in primary care and for further research to determine the effects of any such changes.

Relevance to EGPRW: It is hoped that presenting this paper would generate discussion and further research in our European forum to find measures to decrease stress and thus improve the mental health of European GPs.

1. What further research can be done in this area of stress in Maltese GPs?
2. Have there been studies in Europe where it was found that the levels of stress in GPs in that particular region were similar to the average population?
3. Can we determine from research what ideal working parameters are necessary to decrease levels of stress?

PRESENTATION 36: Saturday 9th October, 2004
Parallel E: 15.45 – 16.15 h.

FREESTANDING PAPER

TITLE: Use of electronic GP data to determine the effectiveness of the Polypill on mortality.

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Objective: To determine the effect of the Polypill (aspirin, beta blockers and ACE inhibitors) on mortality using observational data.

Methods: Design: Open cohort study with nested case control analysis.

Setting: 1.18 million patients registered with 89 practices spread across 23 strategic health authority areas within the United Kingdom. All practices had a minimum of 8 years of longitudinal data.

Subjects: All patients with a first diagnosis of ischaemic heart disease between January 1996 and December 2003.

Outcomes: Adjusted hazard ratio with 95% confidence intervals for all cause mortality (cohort analysis) and odds ratio with 95% confidence interval (case control analysis) for use of statins; aspirin, beta blockers and ACE inhibitors. Adjustments made for co-morbidity (myocardial infarction, diabetes, hypertension, congestive cardiac failure), smoking and body mass index.

Results: Patients on statins had a 37% lower risk of death compared with patients not on statins (adjusted OR 0.63 95% CI 0.54 to 0.72) after taking use of other medication, co-morbidity, smoking and body mass index into account. A combination of three drugs (statins, aspirin and beta blockers) was more favourable than the combination which also included an ACE inhibitor. We found no difference in the benefit derived from atorvastatin and simvastatin – the two most commonly prescribed statins.

Conclusions: A combination of three drugs (statins, aspirin and beta blockers) is more favourable than a combination of four agents which include an ACE inhibitor.

PRESENTATION 37: Saturday 9th October, 2004
Parallel F: 15.15 – 15.45 h.

FREESTANDING PAPER
Preliminary results

TITLE: From pen to computer : information system or Tower of Babel ?

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Background: A decree published in France in April 1996 made provision for the computerisation of all medical surgeries by 31 December 1998. Five years on, what is the situation today? What use do GPs make of their equipment? What do they view as the advantages and constraints? What are the likely prospects?

Method:

- Postal and on-line survey by questionnaire among a representative panel of Breton GPs. (n=120).
- Data analysis on Sphinx Plus².

Objectives:

1. Give an appraisal of the computerisation of medical surgeries.
2. Describe the functions of the software that is used and of that which is not.
3. Gather the opinions of doctors as to the contribution of information technology to their practice.

Results: The response rate was 95%; 98% of respondents use the computer in their surgery and half of them have installed computers since 1998. A quarter of them have been trained in the use of computers and half of them in the use of their software. They use a wide variety of software, with 23 different systems identified. The use of the computer is essentially « minimal », using the computer file just as the paper file. The administrative and secretarial functions are little used. The potential for improvement of quality of care and of working conditions for the doctor that is provided by information technology is neglected. GPs generally have a positive view of information technology though 17.5% of users see it as extra work, a constraint, a waste of time, added stress.

Conclusion: The computerisation of medical surgeries is a reality. There is a shortfall of training, resulting in the various software functions being under-used. Problems related to data back-up and maintenance of equipment are also noted. Among doctors using information technology, only 1 in 5 shares files with other colleagues or health professionals. The wish to share information with other health professionals, expressed by 60% of doctors, is hampered by the diversity of software used. A system enabling such exchanges despite this obstacle needs to be invented.

EGPRN: The diversity of software used, the lack of systematic data encoding, as well as the insufficient training, greatly restrict the sharing of information. Is this a French peculiarity?

PRESENTATION 39: Saturday 9th October, 2004
16.30 – 17.00 h.

FREESTANDING PAPER
Results of a project which is finished

TITLE: Positive tests results motivate GPs to continue screening in a chlamydia prevalence study

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Background: Chlamydia trachomatis is a major cause of pelvic inflammatory disease, ectopic pregnancy and infertility. Opportunistic screening in general practice has been suggested as a valuable strategy for controlling chlamydial infections, but adding once again a new preventive measure to routine practice is not easily done. GPs must build up an automatic reflex in implementing screening in their daily practice, but this is not evident because of disturbing factors, such as lack of motivation and scepticism about the usefulness and effectiveness of the intervention.

Aim: To describe how clinicians' expectations and outcomes of their patients' screening tests influence further screening behaviour.

Methods: During a period of 18 months, 22 GPs were asked to predict for each of the patients they included in a screening project whether they would be infected or not. These predictions in relation to feedback on actual test outcomes were linked to further screening behaviour.

Results: A prediction to be infected was associated with urogenital complaints, low education, sexual risk behaviour, and non-Belgian origin. GPs who had infected patients in the beginning of the screening project, were more motivated to continue screening than their colleagues who got only negative results.

Conclusion: GPs' intuitive predictions of the infection status of patients are often based on irrelevant information (information which is not linked to actual infection risk). A rigid screening protocol is necessary to minimise the likelihood of GPs from choosing wrong candidates for screening and subsequently getting demoralized because no infections are diagnosed. Selective screening in a subgroup with higher prevalence would be helpful in keeping up GPs motivation for screening.

Full article published in BJGP: Br J Gen Pract 2003;53:640-1.

PRESENTATION 40: Saturday 9th October, 2004
17.00 – 17.30 h.

FREESTANDING PAPER
Results of a project which is finished

TITLE: Neurophysiological Grading Scale versus Clinical Examination Scale in Carpal Tunnel Syndrome.

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Background: The aetiology of numbness or paresthesiae in the hand has a wide spectrum that includes carpal tunnel syndrome (CTS). Different ways of expressing the severity CTS are described in the Literature and in clinical settings. Consensus committees of professional societies have endorsed diagnosis using electrical nerve conduction studies as the “reference diagnostic standard” of choice in CTS.

Aim/objectives: This study is designed to examine the relationship between electrophysiological classification and Historical Objective (Hi-Ob) scores in idiopathic CTS cases.

Method: This cross-sectional study is based on data of 765 cases (1268 hands) electromyographically diagnosed with CTS, between 2000-2003. After electrodiagnostic evaluation confirming CTS (classified into 5 groups), patients were classified into 5 groups according to Hi-Ob scale. Spearman correlation coefficients for electrophysiological and Hi-Ob classifications were computed. Likelihood ratios (LR) were computed via cross tabulation with 95%CI intervals. P value<0.05 was considered significant.

Results: Of the 765 CTS cases: mean age 47.6 ± 10.4 years, female/ male ratio= 6.8:1, dominant/non-dominant hand ratio= 3:2. Hi-Ob score of female patients was higher than male patients (2.9 ± 1.3 vs 2.5 ± 1.1). In spite of 60.3% discordance between clinical and electrophysiological findings, a highly significant positive correlation was observed between Hi-Ob score and neurophysiological classes ($p < 0.001$, $r = 0.4$). The odds of electrophysiological class and Hi-Ob score corresponding was highest for electrophysiological class 5 (LR= 13.69 (95% CI= 10.65 to 17.61) with a negative likelihood below 0.5.

Conclusions: According to the results of this study, Hi-Ob scoring carries a risk of misclassification in CTS, which can mislead decisions concerning type of treatment. A more sensitive, specific and precise neurological scale is needed for making decisions of treatment and referral for electrophysiological evaluation.

Relevance to EGPRN: The authors want to discuss: 1-The value of sensitivity/ specificity studies for primary health care . 2-How to obtain a practical tool for determining CTS patients at risk in primary care settings.

PRESENTATION 41: Saturday 9th October, 2004
17.30 – 18.00 h.

FREESTANDING PAPER
Results of a project which is finished

TITLE: Does Knowledge About Sexually Transmitted Diseases Translate Into Protective Behavior? A Comparative Study between Adolescents at High Risk and Academics.

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Background: Counseling for sexually transmitted diseases (STD) is often neglected for men, although it is equally important as for women.

Aim/objectives: To compare knowledge and behavior about STDs between male academics and maritime school students (high risk group for STDs).

Method: One hundred and thirty eight sexually active male academics (38.0±10.5yrs) from different faculties of Kocaeli University and 121 maritime school students (21.1±1.2yrs) of the same university were randomly selected for this cross-sectional study. A questionnaire was used to investigate knowledge, behaviour about STDs and protective methods. Except for descriptives, Spearman correlation and chi-square tests were used for data analyses.

Results: Academics were mostly married (72.6%, n=114) whereas students were all single. Knowledge about STDs was significantly different among groups with students being better informed about protective methods (79.3% vs 62.4%, p=0.002). The use of protective methods was more prominent among students (53.7% vs 27.4%). The correlation between knowledge and behaviour was more pronounced among academics (r=0.39, p<0.001) compared to students (r=0.22, p=0.014).

Conclusions: The low use of protection among academics is most likely due to the high proportion of married men in this group, nevertheless the results of the study revealed that the higher level of knowledge in the young risk group does not translate into protective behaviour as well as does the lower level of knowledge in the academic group.

Relevance to EGPRN: Counselling of single men about STDs and contraception seems to be a neglected topic in primary health care, the authors want to discuss this issue and explore solutions.

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