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Abstracts

European General Practice Research Network (EGPRN)

KEYNOTE LECTURES

Development of GP as an academic discipline in Slovenia

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Slovenia has a long tradition of community-oriented primary care, based on health centres that have been established in the first half of the previous century. Primary care has early been recognised as the key component of health care. In line with this, speciality training of general practice was introduced already in 1966. Nevertheless, the struggle for the academic recognition of family medicine was long and difficult.

First attempts of academic recognition of family medicine date in the 1950's, where students were first sent to practices in the country. However, this experiment was soon abolished due to lack of interest by the medical school. New attempts have been made in 1960's and especially in 1980's, where the first organised programme for students was implemented. During the same period, the first research projects in the area of family medicine have emerged. Slovenian participants have also started to take part in international research collaboration. The EGPRW meeting in Dubrovnik was a starting point of a more widespread research in general practice. By participating in the EGPRW meetings and some projects (e.g. the EGPRW referral study, the EGPRW study on home visits), the Slovenian general practitioners have managed to achieve PhD titles and could then become eligible for teaching positions at the university. This was a prerequisite for the establishment of the academic departments of family medicine in Ljubljana in 1994 and later in Maribor.

Currently, family medicine is recognised as a strong academic discipline with its own research group that is among the strongest in medicine and the strongest in public health. Slovenian family medicine doctors are regularly taking part in international studies, financed through different programmes. The family medicine department in Ljubljana is leading in the area of teaching expertise at the Ljubljana medical school. Regular contribution to high quality international research meetings, like the one of EGPRN, is the key element in the strategy of keeping the academic standards of the discipline up to date.

Quality Improvement in the Care of Chronic Disease in Family Practice: the contribution of education and research

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Terms like 'chronic care model' or 'chronic disease management programme' were coined to demonstrate novelty and attract care providers to accept pay for performance as a panacea for bursting health services costs, which were due to a growing number of chronic patients, better medical technologies available and higher public expectations. Information technologies and abundance of leisure time made populations more educated and demanding in terms of safety and overall quality of health care services provided. Payers and health care politicians used these facts in commissioning health care services. They claim money should follow the patient and reimbursement should be based on the quality of service. In addition, quality improvement is sometimes used in health political decisions for changes in structures or financing.

Suddenly, family physicians are faced with contracts demanding more and more data on particularities of patient management – in preventive activities as well care for chronic patients. Building structures for reporting and data collection became the main focus in office management. Besides computers full of better processes and outcomes, is there still any place for a holistic approach? Where in all of these actions is room for our patients, ethics and professionalism? Has family practice become a tool of a totalitarian medicalization of whole societies? If we regard chronic disease management as a completely new phenomenon, then we should worry about the consequences of actively chasing of our patients to get their measurements below target values, and forgetting about a comprehensive approach of each individual patient.

It is human to reinvent the wheel. Looking back into the history of family medicine, we can identify such approach already in the works of public medicine specialist Andria Stampar from Zagreb. He was employed as the expert of the Health Organization before the Second World War, and he was president of the World Health Organization Assembly from the twenties of the previous century.

Integrated, comprehensive patient management should encompass health promotion, disease prevention, early detection and treatment as well continuous management and palliation. Principles of comprehensive management are: knowing our patients (lists), active seeking of patients at risk or ill, developing disease registers, teamwork, community orientation, group patient education and targeted activities. Therefore, reporting on numbers of patients on the lists and in registers and reporting on quality indicators is only a tiny part of overall quality improvement and reimbursement. Patients and their priorities should stay in focus. Medical education on all levels and research projects should address these issues and dilemmas to overcome the threat of splitting our patients again into organs, diseases and target values. Furthermore, this should give voices to family physicians to practice comprehensive patient management.

Research in quality improvement

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Research in quality improvement in healthcare is now a recognized field in the applied health sciences. It aims to identify interventions and factors, which are associated with relevant changes in process and outcomes of healthcare. Recent examples of studies in the field will be used to illustrate the importance of understanding the mechanisms underlying quality improvement, how to improve patient safety in primary care, the potential of decision support for patients and clinicians, and sustainable improvement.

It is widely believed that improvement interventions have to be tailored to local needs, but concepts and methods for tailoring vary widely. Furthermore, evidence to make an informed choice is hardly available. In a large European study 'Tailored implementation for chronic diseases' (TICD), we examine how to improve chronic illness care. Some theoretical ideas on understanding the mechanisms underlying improvement of care are presented as well.

A 'magic bullet' for improving primary care does not exist, but we should improve our understanding of the mechanisms underlying it. Current focus of research mostly is on organization and financing of healthcare, but educational and decision support of clinicians and patients remain important topics as well.

PRIZE WINNING POSTER

Study FPDM (Depression and Multimorbidity in Family Medicine): Systematic literature review: what validated tools are used to screen or diagnose depression in general practice?

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Background: Tools for depression screening and diagnosis in primary care are available for several years, but their validity in practice is unclear.

Research Question: The objective of this study was to identify the tools validated against reference tools.

Method: A systematic literature review with ten national teams of the EGPRN was carried out. The search query contained the following Keywords: 'depression definition' or 'depression criteria' or 'depression diagnosis' or 'depressive disorders' or 'depressive syndrome' and 'tools' or 'scales' or 'questionnaires' and 'primary care' or 'family practice' or 'general practice.' Databases: PubMed, Embase, Cochrane. The abstracts have been included by two teams of two researchers each (French and EGPRN). Only tools validated against reference tools were selected. The alphanumeric (number of items, language, ⍰) and numeric data (PPV, NPV, Se, Sp, ...) of each tool were extracted.

Results: Overall 615 abstract extracts; 59 abstracts and 39 articles were included A total of 32 screening and nine diagnostic tools were found, and 23 different tools used as references. Features, alphanumeric data and numeric data validity of each tool were collected.

Conclusion: This systematic literature review has found and identified the tools used in the screening and diagnosis of depression in primary care, validated against reference tools. Research teams and general practitioners can choose according to their needs from the list of validated tools.

THEME PRESENTATIONS

Development and validation of an instrument to assess the burden of treatment among patients with multiple chronic conditions

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Background: Treatment burden represents the constraints associated with everything patients must do to take care of their health.

Research Question: How to develop and validate an instrument to assess the treatment burden of chronic diseases for patients with multiple chronic conditions.

Method: Items were derived from a literature review, physician opinions and qualitative semi-structured interviews with patients. The wording of items was evaluated during a pre-test. Principal component analysis was used to analyze the dimensional structure of the questionnaire. Construct validity was assessed by examining the relationships between the instrument's global score, the Treatment Satisfaction Questionnaire for Medication (TSQM) scores, and variables

describing treatment workload. Agreement between evaluations by patients, informal caregivers and physicians was appraised. Reliability was determined by a test–retest method.

Results: The final questionnaire consisted of 13 items determined after semi-structured interviews with 22 patients. During the validation study, 502 inpatients and outpatients presenting with various chronic conditions completed the instrument. The questionnaire showed a unidimensional structure with high internal consistency (Cronbach's alpha = 0.89). The global score was negatively correlated with TSQM global score (rs = −0.41) and convenience score (rs = −0.53) and positively correlated with treatment workload items (rs = 0.16–0.40). Agreement between patients and physicians (n = 396) was weak (Intraclass correlation coefficient 0.38 [95% confidence interval 0.29–0.47]. Reliability of the retest (n = 211 patients) was 0.76 [0.67–0.83].

Conclusion: This study provided the first valid and reliable instrument to assess the treatment burden of chronic diseases for patients and could help physicians finding treatment regimens that fit with patients' contexts.

The relationship between somatization and (persistent) disability

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Background: In patients with depressive and anxiety disorders social disability is a sizable and often persistent problem. Somatization (characterized by medically unexplained physical symptoms) is often associated with depressive and anxiety disorders. Previous studies showed a linear relationship between somatization and disability in primary care patients. Currently, it is unknown to what extent somatization is responsible for the occurrence and persistence of disability in patients with anxiety and depressive disorders.

Research Question: Is somatization associated with (persistent) disability in patients with anxiety and depressive disorders?

Method: Data were derived from the Netherlands Study of Depression and Anxiety (NESDA) (multi centre cohort study, n = 2981). We used data from 1260 depressive and/or anxiety disorder patients in primary and secondary care. Somatization was measured with the somatization scale of the Four-Dimensional Symptom Questionnaire. The WHO Disability Assessment Schedule 2.0 (WHO-DAS II) was applied to measure disability. Linear and logistic regression were used to investigate the association between somatization and (persistent) disability (after one year of follow-up).

Results: Cross-sectionally, somatization was associated with disability after adjustment for confounders and effect modifiers (B: .297, CI: .169-.425). Longitudinally, there is a relationship between somatization and persistent disability (OR: 1.04, CI: 1.00–1.07). Somatization accounted cross-sectionally for 0.8% (22,1% in the unadjusted model) of the variance in WHO-DAS disability and longitudinally for 1.4% (3,8% in the unadjusted model) of the variance in persistent disability. Variables that confounded the relationship between somatization and disability cross-sectionally were depression severity, anxiety severity, distress and anxiety disorder (DSM IV). Longitudinally, education level, number of chronic diseases, depression severity, anxiety severity and distress were confounders for the relationship between somatization and persistent disability.

Conclusion: Somatization has a small, but significant, impact on (persistent) disability in patients with anxiety and depressive disorders in primary and secondary care.

Longstanding disease, disability or infirmity and depression in primary care

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Background: Current evidence suggests that depression is much more prevalent among those with chronic medical conditions compared to the general population. Depression will rank second to cardiovascular disease as a global cause of disability by 2020. With ageing of the population, physicians are called upon to treat a higher percentage of patients with chronic medical illness.

Research Question: To assess the prevalence and incidence of depression and likelihood for new-onset depression in patients with self reported longstanding illness, disability or infirmity in the sample of primary care attendees.

Method: Consecutive family medicine practice attendees aged 18 to 75 years were recruited and followed up after six months. Presence of longstanding disease, disability or infirmity was recorded.

Results: Prevalence of major depression was 8.9% in the group of patients reporting longstanding disease compared to 3.1% in the group without longstanding disease. Incidence of major depression after 6 months was 2.7% in the group with longstanding disease and 0.9% in the group without longstanding disease. For patients with a longstanding disease at the baseline, it was almost four times more likely to have major depression after six months than for patients who didn't report any longstanding disease at the baseline.

Conclusion: The associations between longstanding disease and depression are important in primary care setting.

Barriers and facilitating factors for children with obesity participating in a lifestyle intervention programme - interviews with parents and children

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Background: Obesity is increasing among children. Many lifestyle interventions have been developed. However, the effectiveness of these programmes is limited. Information about barriers and facilitating factors perceived by children with obesity and their parents when participating in a lifestyle intervention can improve these interventions.

Research Question: What are the barriers and facilitating factors for obese children and their parents, who participated in a lifestyle intervention program, to change their lifestyle behaviour?

Method: The data for this qualitative study was obtained by semi-structured interviews. We recruited obese children, who had participated in one of three different lifestyle programmes. The social network theory, the social learning theory and the self regulation theory were used to set the topics for the interviews, namely: experiences in participation of the programme, role of the general practitioner, expectations of the programme and ideas for a new programme, and consequences of overweight. All interviews were recorded and transcribed verbatim. To increase inter-observer reliability, three independent experienced qualitative researchers discussed the interviews in a consensus meeting to reach agreement on the results of the interviews.

Results: We interviewed 18 children (ten girls, average age 10.3 years) and 24 parents. Support given by the caregiver during the programme was very important. Both children and parents indicated that the GP needs to be honest, give attention to the health care question, understand the severity of the problem, and treat the child with respect. For children, the social environment was perceived as more facilitating than for parents. Exchanging experiences with peers gives parents a feeling of solidarity. Stigma is experienced in every contact.

Conclusion: Our results show that parents and children need support from the caregiver, the social environment and their peers to learn and maintain successful behaviour change. This knowledge can help the GP to support obese children and enhance lifestyle interventions.

Predictors of the quality of cardiovascular prevention for high risk patients

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Background: Preventive activities for patients at high risk for cardiovascular disease (CVD) are an important task of family doctors. The process of preventive care includes several organisational and medical interventions.

Research Question: How can we evaluate the process of CVD prevention and what are the predictors for CVD prevention quality in patients at high risk.

Method: The study represents the Slovenian part of international Epa-Cardio study. A stratified sample of 36 family practices by size and location was taken from the national register. Each practice invited a random sample of 30 patients from the register of patients at high risk for CVD. The data were gathered from the patients' records, a questionnaire for patients, practice questionnaire and interview with the family physician. We defined the process of care as one dependent variable by principle component analysis and tested the relationship of the process with family physicians,' patients,' and practice characteristics by multilevel regression analysis.

Results: Overall 871 patients (response rate 80.6%) participated. The process of care was represented by five compound variables and presented by the first component of PCA. Patients' characteristics that predicted the higher-quality process of CVD prevention were younger age (t $= -4.94$, 95% [CI] -0.018 to -0.008) and lower socioeconomic status (t $= -2.18$, 95% CI -0.195 to -0.010). Practice characteristics were smaller practice size (t $= 2.83$, 95% CI 0.063 to 1.166), a good information system for CVD prevention (t $= 3.15$, 95%CI 0.030 to 0.282), and the organization of education on CVD prevention (t $= 3.19$, 95% CI 0.043 to 0.380).

Conclusion: We present a broad prediction model, which comprehensively takes into account numerous factors related to the practice, physicians and patients. The process of CVD prevention is dependent on the practice organization and not specifically dependent on patients' characteristics. Nevertheless, some patients' groups need special attention, such as those of lower socioeconomic class.

Multimorbidity clusters in the elderly primary care population ($\geq$ 75 years)

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Background: The epidemiology of multi-morbidity has been usually studied based on lists of selected health problems and in selected populations, making the interpretation of the observed patterns of clustering difficult.

Research Question: To determine the epidemiology of multi-morbidity and its patterns in elderly people in Catalonia (Spain).

Method: Cross-sectional study, based on all ICD-10 diagnosis (3-digits codes) from electronic medical records for a representative sample of people aged $\geq$ 75 years. Multimorbidity was defined as co-occurrence of $\geq$ 2 health problems. Cluster analysis was performed to determine the associations using the Jaccard Coefficient (JC) as the measure of distance.

Results: We analysed 173 088 electronic medical records. The mean ages were 81.9 years (standard deviation, SD 5.3) in women and 80.8 years (SD 4.7) in men. The most prevalent health problems in women and men were hypertension (72.3 vs 63.7), metabolic disorders (51.0% vs. 44.6%) and osteoarthritis, (44.7% vs. 44.6%), respectively. About 95.3% of women and 95.5% of men suffered from multi-morbidity, with a median number of health problems of eight in women and seven in men.

Cluster analysis revealed that, in women, hypertension was closely associated with the presence of metabolic disorders (JC $= 0.49$), followed by osteoarthritis (JC $= 0.42$) and other forms of heart disease (JC $= 0.30$). In men, hypertension was associated with the presence of metabolic disorders (JC $= 0.43$), followed by prostatic disorders (JC $= 0.36$) and other forms of heart disease (JC $= 0.33$).

Conclusion: Multimorbidity has a high prevalence in primary care amongst older people. The most prevalent multimorbidity pattern in women was a cardiovascular-metabolic-osteoarthritis cluster and in men, the cardiovascular-metabolic-prostatic. The knowledge of the most frequent clusters could be helpful to better manage health problems in elderly people.

Medical home visits: incidence, population characteristics and consultation content in a Portuguese family health unit

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Background: Home visit (HV) is cost-effective in delivering care to dependent patients. Its rate is used as a performance indicator in Portuguese Family Health Units (FHU). However, little is known about the content of this activity in the work of the Portuguese GP.

Research Question: In an average Portuguese FHU, what is /are: -the annual incidence rate of medical HV? -The socio-demography and morbidity of the home-cared patients? -The main reasons for encounter (RFE), diagnosis and interventions in HV?

Method: Cross-sectional design; census of patients visited by their GP, at FF-mais FHU, Jan 1st-Nov 30th 2010 (N = 209). Sociodemographic data were obtained from medical records; active health problems, RFE, diagnosis and interventions were coded using ICPC-2 and collected in a Microsoft Excel® database. Descriptive statistics were applied.

Results: Annual HV incidence rate: 42.8%; 491 HV occurred; 2.35/patient. Patients: mean age 79.7 years; 59.1% women; 17% living alone; 71.9% Graffard's classes IV-V; 74.1% dependent persons, at an average of 2.23 km to FHU; most common caregivers spouses and children (70%). An average of 7.02 health problems/patient was observed. There were 1.64 RFE, 4.05 diagnosis and 2.89 interventions/HV. About 60% of RFE used ICPC-2 codes suggesting chronic illness routine; 27% of RFE belonged to component 1. The most common interventions were prescription and therapeutic counseling/listening, which occurred each 1.08 and 0.93 times/HV; test request and administrative procedures were the least common, occurring 0.45 and 0.06 times/HV. A referral was done in 7% of HV.

Conclusion: The annual incidence of medical HV was lower than reported in the literature but higher than the goal proposed by administration, making relevant the discussion of its appropriateness. A proximity, low-tech medical home consultation programme, oriented to comprehensive care, seems appropriate to this population.

Addressing Healthcare Inequities in Israel by Eliminating Prescription Drug Copayments

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Background: Drug copayments are increasing in all health care systems and may act as a barrier to adequate treatment for low-income residents with chronic diseases.

Research Question: To determine if subsidizing prescription drug co-payments for low socioeconomic, chronically ill patients would increase their use of prescription medications and thereby improve their health.

Methods: A total of 355 patients with a low socioeconomic status (SES), as defined by The Israel National Insurance Institute, who were not regularly purchasing prescribed medications, were enrolled. Patients (average age 64.6 years) with hypertension, hypercholesterolemia, or diabetes were included, as these chronic illnesses have easily measurable surrogate endpoints. Patients were followed for 24 months. Serum HbA1c, blood pressure, and LDL-cholesterol levels were measured. Patients paid their co-payments with a 'credit card' covered by a donation.

Results: Two years after initiation of the subsidized copayment program, blood pressure measures ($136.2 \pm 16.7/78.0 \pm 8.7$ mmHg vs. $128.2 \pm 13.3/74.8 \pm 8.1$ mmHg, $p < 0.001$) and LDL cholesterol levels (116.2 ± 38.0 mg/dl vs. 105.3 ± 38.0 mg/dl, $p < 0.001$) were significantly below those at the onset of the program. Average HbA1c showed no improvement in the first year and a significant increase was noted by the second year of the program.

Conclusion: When co-payments for prescription medications were eliminated, low-income patients demonstrated increased compliance with obtaining medications, improved response to treatment and improved blood pressure and LDL-cholesterol levels; glycemic control did not improve.

Resident doctors' professional satisfaction and its effects on their lives

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Background: Residency preferences affect both education and living conditions of residents and are also affected by them. The aim of this study was to evaluate the satisfaction of residents, about their residency preferences, living conditions and medical residency training; working in a university hospital.

Research Question: What is the residents' job satisfaction and relationship with living, working conditions and quality of education during residency?

Method: A cross-sectional study was designed based on a questionnaire, consisting of 51 questions including socio-demographic characteristics, working and health conditions and Minnesota Job Satisfaction Questionnaire. The questions about health conditions and residency training consisted of items including yes or no replies. It was administered face-to-face to 252 assistants (44.5% response rate) who agreed to participate. The analysis of quantitative data was carried out using SPSS 15.0.

Results: Of the participants, 92.1% were enthusiastic when choosing their specialization, but it was the ideal career for only 51.2%. Although the income affected the choice of

25.8%, most of them (72.2%) considered that the income is not enough. Of the assistants, 73.4% were satisfied with their residency training. The assistants who declared problems about healthy nutrition and recreational opportunities, also had social living and relations negatively affected ($p < 0.001$). The mean job satisfaction score was determined as 3.39 ± 0.59. Most of the residents' (71.8%) scores were in the medium level. Job satisfaction scores were higher in residents who were enthusiastic about their specialization, had less duty, had priority for training within their departments, thought that they are not used for drudgery, found the physical conditions and salary as adequate, were satisfied with the relationship with colleagues, assessed their training as sufficient ($p < 0.05$).

Conclusion: Resident doctors in general were satisfied. It is important to be aware of the factors affecting residents' job satisfaction so that a better training and working environment can be achieved.

Clinical Decision Rules for excluding pulmonary embolism

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Background: Clinical probability assessment combined with D-dimer testing is used to exclude pulmonary embolism (PE). In AMUSE-2, a study presented at the EGPRN Krakow 2011 (not published yet), we showed that the GP can safely exclude PE with a Wells-clinical decision rule and a point-of-care D-dimer test.

Research Question: What are the test-characteristics of gestalt (physicians' unstructured estimate) and different clinical decision rules for evaluating adults with suspected pulmonary embolism? What is the failure-rate (missed cases) when used in combination with D-dimer testing?

Method: We searched Medline and Embase for articles in English, French, German, Italian, Spanish and Dutch, published between 1966 and June 2011. We selected prospective studies conducted in consecutive patients suspected of PE. Studies provided PE-probability estimate using gestalt or decision rule as compared to an appropriate reference standard. We extracted data on study characteristics, test performance and prevalence, constructed 2*2-tables and assessed methodological quality.

Results: A total of 52 studies, including 55268 patients, were selected. Meta-analysis was performed on studies investigating gestalt (n = 15; sensitivity 0.85/specificity 0.51), Wells-rule at cut-off < 2 (n = 19; 0.84/0.58), Wells-rule at cut-off ≤ 4 (n = 11; 0.60/0.80), Geneva-rule (n = 5; 0.84/0.50) and revised Geneva-rule (n = 4; 0.91/0.37). Sensitivity and specificity of both decision rule and D-dimer test increased, respectively decreased with increasing prevalence of PE. Combining a decision rule or gestalt with a D-dimer test seemed safe for all strategies except for combining the less sensitive Wells4 with the less sensitive qualitative D-dimer.

Conclusion: Combined with sensitive D-dimer tests all rules and gestalt are safe to exclude PE. We advocate physicians to use a standardized rule because of the lower specificity of gestalt. The availability of point-of care D-dimer tests makes this strategy feasible in primary care.

TRANSFoRm: An ontology-driven approach to clinical evidence modelling implementing clinical prediction rules

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Background: This study describes the development of a computable ontology of clinical evidence that utilises clinical prediction rules to support the provision of diagnostic decision support tools utilised in family practice. This work is part of our contribution to the EU funded TRANSFoRm project, Grant Number FP7 247787.

Research Question: 1. Can we define a computable representation of diagnostic clinical evidence in the form of an ontology? 2. Can we represent and reason with clinical prediction rules as one mechanism to clinically interpret evidence for providing decision support through defined questions supporting diagnosis?

Method: Systematic reviews were performed to document the clinical evidence supporting the diagnosis of 20 selected medical conditions related to three broad clinical areas. These captured the key diagnostic cues indicative of the selected differential diagnoses as found in sources of evidence-based medicine. An ontology of evidence was constructed based on data models for allowing construction of a flexible representation using clinical prediction rules. The completeness of the ontology structure was validated through population with data supporting the chosen clinical scenarios and construction of defined diagnostic clinical questions expressed as formal ontology queries.

Results: The ontology of evidence was expressive enough to capture the clinical concepts required to represent diagnostic clinical evidence for TRANSFoRm and also to capture the specifics related to the chosen diagnostic scenarios. The results generated from the ontology queries were as expected based on the populated ontology data describing the TRANSFoRm diagnostic scenarios.

Conclusion: A clinical evidence ontology can provide a core data model to answer diagnostic questions for developing decision support tools to assist primary care practitioners. The key challenges of this approach are the on-going development of maintenance tools and generation and quantification of underlying data used to populate the ontology.

TRANSFoRm Provenance model for clinical trial data collection

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Background: Provenance represents the knowledge about the origin of an entity such as a document or a data set, including its original source, actors involved and tasks carried out to bring it to its final form. A provenance-aware system tracks system processes across different modules, stages and authorities; so that the full set of influences on the resulting data can be understood. Such metadata tracking has significant impact on administration, efficiency and efficacy. In healthcare, it enables audits about the procedures carried out by the medical personnel, determining best practices and adherence to guidelines, and gives practitioners a uniform and complete vision of each task. This work is part of our contribution to the EU-funded TRANSFoRm project (FP7 247787).

Research Question: How can domain specific knowledge be integrated into the provenance information, and does the resulting system provide a useful software environment for querying and analyzing the conduct of clinical trials?

Method: Following the two clinical information models, PCROM and the ICH Good Clinical Practice guideline, we have designed two new ontologies for describing the key concepts and their relationships associated to clinical trial conduct. The ontologies were constructed using Protégé, and formal syntactical and semantic constraints defined using Ontology Web Language.

Results: The two new ontologies were combined with the Open Provenance Model, to produce OPM-RCT, the OPM extension for clinical trials. To validate design correctness, a set of TRANSFoRm use cases was represented in OPM-RCT, with typical queries from the use cases mapped to SPARQL query language.

Conclusion: The approach taken offers the richness and ease of mapping of the domain specific ontologies, together with the benefits of storage and query tools that come with the OPM. A similar strategy could be employed in other medical and non-medical domains with rich semantic background knowledge.

From qualitative data to educational training of CRC screening

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Background: Colorectal cancer (CRC) is the third most common cancer worldwide. In France, mass screening has been established with FOBT since 2008. The participation rate remains too low. Previous studies were conducted to explore doctors' and patients' perspectives. We also explored GPs performance by recording and analyzing GPs' consultations in which patients come and ask for FOBT.

Research Question: How to develop educational material and training for GPs, to enhance their communication with patients on CRC screening, based on results from two qualitative studies?

Method: Qualitative data were collected from five GP focus groups, 24 patient interviews and 35 recorded consultations from nine GPs. Content analysis was carried out using Nvivo 9. The communication between doctors and patients was explored with RIAS coding. Triangulation of all qualitative data was undertaken and discussed with communication teachers of the University of Antwerp, to develop the educational material and training

Results: The qualitative data indicated that improvement was needed in patient-centered communication such as asking patients what they already know about CRC and the test, from starting the consultation, exploring patients' health beliefs for CRC screening, giving appropriately timed explanation, providing the correct amount and type of information, checking their understanding, and avoiding to deliver only technical information. Based on these triangulated data two different scenarios were developed to improve communication with patients: one for a compliant patient, another for a resistant patient. Two videos were made with a doctor and simulated patient. Educational training was elaborated with two sequences, including role playing, the presentation of the video followed by a discussion. A memo was given to the participants with the main items concerning communication skills.

Conclusion: Qualitative data helped us to produce useful and relevant educational training for GPs about CRC screening.

Why patients don't want to participate in a patient educational program?

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Background: In primary care settings, 80% of medical consultations are dedicated to chronic diseases and control of risk factors. The WHO assessed that in 2020, chronic diseases will be the first cause of mortality and disability worldwide. Patient's education is a major issue to prevent complications, and to improve quality of life. Nevertheless, only few patients take advantage of this intervention.

Research Question: To understand reasons patients don't want to participate in a patient educational programme.

Method: We performed a qualitative study with semi structured phone interviews among DT2 patients who beneficiated of an educational diagnosis, but declined the invitation to participate in the educational programme during the year 2008. After re-transcription of the verbatim, thematic analysis was performed.

Results: Twenty-eight patients were identified, 13 accepted the interview. The main issue was the influence of the stage of acceptance of the disease to participate to the programme. The patients were not aware of the functioning of the network, and reported their GP was neither. Some of patients have changed their health behaviour from their first interview at the network. Communication among the health professionals, the GPs and the patients was badly assessed.

Conclusion: Conclusions of this work allow us to draw assumptions to improve patient's care: patients who are not already

accepting their illness can't accept an educational intervention. The GP have to help them moving from the denial stage to the acceptance stage of the disease. It also highlights the need of a better communication between health professionals to improve patient's education.

FREESTANDING PRESENTATIONS

Prognosis for children with otitis media symptoms

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Background: Otitis media is one of the most common childhood infections and at the age of three up to 90% of all children have suffered from at least one episode of acute otitis media (AOM) or secretory otitis media (SOM). A lot of symptoms are related to ear diseases, but it is unknown whether symptoms being present at the onset of the diseases have any prognostic value for the course of the diseases.

Research Question: The objective is to analyse whether symptoms being present in children with AOM and SOM have any prognostic value for the condition of the children four weeks later.

Method: A cohort study was conducted. General practitioners (GPs) consecutively included 730 children with a new ear symptom. At the first consultation the GPs registered symptoms, results of otoscopy and tympanometry, together with diagnosis and treatment. The children were followed up by their GP four weeks later with the same registration.

Results: Among children with sleeping problems on inclusion and one or more symptoms after four weeks an OR of 1.59 (95 % CI: 1.12–2.25, $p < 0.05$) was significant. Earache on inclusion was significantly associated with one or more symptoms after four weeks (OR = 0.66 (0.45–0.97, $p < 0.05$)). Children aged 0–2 years were significantly associated with a higher crude OR for one or more symptoms after four weeks (OR = 1.50 (1.10–2.07, $p < 0.05$)). However, after adjusting for symptoms at the inclusion (fever, sleeping problems, ear ache and ear rubbing) this association was not significant. None of the other symptoms were significantly associated with ear symptoms after four weeks.

Conclusion: Our results demonstrate that sleep problems on inclusion enhance the risk of still suffering from one or more ear symptoms after four weeks, while earache on inclusion reduces the risk of suffering from one or more ear symptoms after four weeks.

COPARIME: design and first results

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Background: Melanoma prognosis is correlated to Breslow index at the moment of the diagnosis. Healthcare system constraints lead researchers to promote screening focused on patients 'at high risk' to develop melanoma. The Self Assessment Melanoma risk Score is a validated tool developed to identify high risk patients. The aim of the COPARIME program is to evaluate the impact of a screening procedure on a population recruited in primary care. The aim of the first step of the program was to build up the cohort.

Method: The cohort size was calculated to demonstrate an efficiency ratio greater than 5 with a power of 80% and an alpha risk lower than 5%. General practitioners were recruited among the referent GP network of two departments in the West of France. In the waiting room, a poster of the study asked to patients to complete the SAMScore. Patients assessed at high risk by the score signed a consent form and were enrolled in the cohort. They were examined by their GP. If a suspect lesion was detected, they were referred to a dermatologist. All clinical data were directly captured on eCRF. All patients of the cohort were asked to go back to their GP for a full skin examination every year.

Results: Between April 2011 and October 2011, 85 GPs participated. More than 10 173 Patients were screened of whom 4 188 patients were identified at high risk and signed the consent. Patients who had a personal history of melanoma (n = 86) were excluded from the cohort. A total of 1 814 patients were referred to a dermatologist.

Conclusion: This study showed that screening patients for melanoma is feasible but required a minimum of organisation and increased the time of the consultation. It will be cost efficient to propose a specific quotation as an activity of medical prevention.

Affective temperamental roots of smoking habit in a hypertensive population in primary care

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Background: Smoking and hypertension together multiply the risk for cardiovascular events. Depressive disorders while increasing the risk, also contribute to poorer prognosis of cardiovascular disorders. Affective temperaments are the stable, genetically determined roots of affective disorders and strongly determine the personal reactions to environmental stressors.

Research Question: To determine the possible role of affective temperaments in smoking habit in a hypertensive population.

Method: Consecutive hypertensive patients (taking antihypertensive medication) were enrolled in 27 primary care practices in Hungary. Smoking status was defined as current smokers, never smoked and quit smoking. The Temperament Evaluation of Memphis, Pisa, Paris and San Diego Autoquestionnaire (TEMPS-A) was used. Medical data was provided by GPs, smoking status and autoquestionnaires were completed by the patients. The Kruskal-Wallis test was used for comparisons.

Results: The data of 124 hypertensive patients (91 males age (SD): 60–15 years and 123 females: 63–13 years) was

analysed. Current and ex-smokers scored higher in the irritable temperament subscale (p = 0.008) compared to those who never smoked. The score for cyclothymic temperament also showed the same tendency, however the result was non-significant (p = 0.184). Ex-smokers showed the highest hyperthymic ranks (p = 0.198) and the lowest depressive ranks (p = 0.101).

Conclusion: The significantly higher irritable temperament scores of current and ex-smokers indicates that this temperamental trait may contribute to CHD through harmful behavioural pathways. The highest hyperthymic and lowest depressive temperament scores of ex-smokers may be indicators of effectiveness in lifestyle changing, which is essential in cardiovascular disease prevention. These data require further research to confirm our findings.

Empathy of first year medical students in Slovenia

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Background: Empathy is the most frequently mentioned humanistic dimension of patient care and is considered to be an important quality in doctors. The importance of fostering the development of empathy in undergraduate students is continuously emphasised in international recommendations for medical education.

Research Question: To examine an international tool for measuring empathy (Jefferson Scale of Empathy–Students version (JSE-S version) among a sample of first year medical students in Slovenia.

Method: First year students of the medical faculty in Ljubljana participated in the research. JSE – S version, a self-administered 20 item questionnaire, was used for collecting data. Each item is answered on a seven-point Likert-type scale. An instrument was translated into Slovene from English using back translation by three independent translators. Descriptive statistics at item level and on the scale level, factor analysis, reliability analysis and temporal stability (two weeks after the first administration) of the JSE–S version were undertaken.

Results: A total of 234 out of 298 (response rate 78.5%) of students completed JSE–S version. The mean score for the items ranged from a low of 3.27 (SD 1.72) for the item: Health care providers should not allow themselves to be influenced by strong personal bonds between patients and their family members, to 6.50 (SD 0.82) for the item: Patients feel better when their health care providers understand their feelings. The mean score for the scale (possible range from 20 to 140) was 107.6 (from 71 to 131, SD 12.6). Using the factor analysis we identified six factors describing 57.2% of total variability. The Cronbach Alpha as a measure of internal consistency was 0.79. The instrument has good temporal stability (ICC 0.703).

Conclusion: Findings support the construct validity and reliability of JSE-S version for measuring empathy in medical students in Slovenia. Future research is needed to evaluate the factors, which contribute to empathy.

Quality of life questionnaires in the ETIC trial (Therapeutic Education for patients with heart failure)

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Background: ETIC is a cluster randomised trial comparing a therapeutic education program with usual care for chronic heart failure outpatients. The primary outcome is quality of life measured by two questionnaires: Minnesota (MLHF) and SF-36.

Research Question: Are there differences between MLHF and SF-36 scores depending on the characteristics of the patients included in ETIC trial?

Method: Cross sectional analysis of SF-36 and MLHF scores at baseline to assess the correlation between these two questionnaires and study their respective capabilities to characterize patients regarding diabetes, cholesterol, hypertension, smoking, alcohol consumption, overweight, sex and the physician's type of practice.

Results: The correlation coefficient between the overall SF-36 and the MLHF was −0.69 (p < 0.05) indicating a significant correlation. There was no difference in quality of life between the two groups (control n = 118, intervention n = 111) assessed by mental health SF-36 (p = 0.69), physical health SF-36 (p = 0.44), overall SF-36 (p = 0.54), and MLHF (p = 0.09). According to the MLHF, non-diabetics patients had a better quality of life than diabetic patients (1.30 ± 1.00 vs. 1.88 ± 1.17; p < 0.05). Men had a better quality of life than women with the physical SF-36 (58.72 ± 21.99 vs. 43.37 ± 21.07, p < 0.05) and overall SF-36 (60.95 ± 20, 25 vs. 49.63 ± 19.59, p < 0.05). Other features did not differ significantly, regardless of which, questionnaire was used.

Conclusion: Considering some of the patients' characteristics, such as gender or diabetes, either MHLF or SF-36 proved to assess quality of life differently. Variables such as diabetes or gender could be confounding factors in assessing the impact of the intervention of ETIC trial on quality of life. As a consequence, multivariate analysis has been used to ensure optimal interpretation of this trial.

Which positive factors determine the attractiveness of General Practice and retention in Clinical Practice? A qualitative research with individual interviews

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Background: GPs leave clinical practice and the GP workforce is in decline all over the world. Until now research was focused on reasons for leaving the practice. Strategies to

improve capacity, based on these studies, have not been successful to date. We need to look at positive elements that could influence GP's retention in clinical practice and consider the implications for future strategies. This is the focus of our study, which is part of the EGPRN collaborative project on 'WoManPower.'

Research Question: Which positive factors can be found to improve the attractiveness of general practice and the retention of GPs in the profession?

Method: Within the French part of the study, our team undertook qualitative research with a phenomenological approach from the GP's perspective. We conducted individual interviews with GPs on what gives them satisfaction in their profession. They were selected by a purposeful strategy and recruited until saturation of data was reached. Two researchers independently analysed the transcripts using open and axial coding and discussed them in a second step with the whole team.

Results: Eleven interviews with GPs were conducted. Saturation was obtained after nine interviews. GPs satisfaction was explained by personal factors, identity or behavioural, and professional themes: job content, liberal status, teaching, patient-doctor relationship, intellectual stimulation, recognition of work and involvement in the professional community. These elements of satisfaction in the medical profession are superimposed with the European definition of general practice by Wonca.

Conclusion: This study identified possible themes of a positive job model for general practice. It stressed the importance of focusing the academic training of young doctors to acquire skills in family medicine defined by WONCA because they are sources of satisfaction. This model needs to be further reviewed in other French and international studies.

Quality of life of migraine sufferers: feelings, experiences and care expectations

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Background: Migraine is a frequent pathology and it is likely to cause disability and to impair quality of life. Despite a high level of morbidity, it is poorly managed in primary care, and general practitioners have difficulties appreciating the real impact of migraine on patients.

Research Question: What are the perceptions of migraine sufferers regarding their quality of life and the management of their illness by their caregivers?

Method: Qualitative research was conducted: two focus group interviews were held with fifteen patients suffering from migraine.

Results: Migraine sufferers report the disabling nature and the severity of their migraines, both during and outside migraine attacks. Their quality of life is highly affected by major changes in their family and in their social and professional lives. Migraine sufferers organize their life according to their migraine attacks and between these. They affirm their need for recognition and listening. According to migraine patients, listening and solutions to their headaches and associated disorders are partially satisfactory, but they expect caregivers to have more information about the causes and possible triggers of migraine. They also await new more effective drugs.

Conclusion: One of the expectations of migraine patients is the recognition of their illness. The careful and empathic listening and regular assessment of quality of life of migraine sufferers appears to be essential to support diagnostic and therapeutic management of these patients.

The FPDM (Family Practice Depression and Multimorbidity) Study: A pragmatic definition of Multimorbidity from scientific medical literature

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Background: Multimorbidity is a new concept deeply in touch with the holistic modelling core competency of GPs. It could help to detect frail patients in primary care before decompensating. However, as often for new concepts, its definition and subsequent operationalization are still unclear.

Research Question: What is the definition of multimorbidity according to inclusion criteria of patients in medical literature?

Method: Systematic qualitative review with nine national teams from the European General Practitioner Research Network (EGPRN). The only keyword was multimorbidity. Pubmed, Embase and Cochrane databases were searched. For inclusion articles had to be in IMRAD format, languages had to be English or one of the team's native language and multimorbidity had to be described. All articles were quadruple screened. Two independent teams of two researchers did the first data extraction. A thematic analysis was carried out by six researchers. Finally, four researchers undertook selective coding with the intention of forming a definition.

Results: Overall 416 abstracts, 68 articles were selected and 54 included. A total of 1 631 criteria of definitions were found with 132 different definitions. The research group described 11 axial codes. The selective coding achieved the following definition: Multimorbidity is defined as any combination of chronic disease with at least another disease (acute or chronic) or a bio psychosocial factor (associated or not) or risk factor. Bio psychosocial factor, risk factor, social network, burden of diseases, health care consumption and patient's coping strategies may function as modifiers. Multimorbidity may modify the health outcomes and lead to an increased disability or a decreased quality of life or frailty.

Conclusion: This systematic review achieved a pragmatic definition of multimorbidity in medical research. However, it's operationalization against the clinical expertise of European GPs must be assessed.

What does the anxiety scale of the Four-Dimensional Symptom Questionnaire (4DSQ) actually measure and which cut-off points should be used?

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Background: The 4DSQ is a practical self-rating questionnaire measuring distress, depression, anxiety and somatization. The anxiety scale of the 4DSQ is intended to measure what is specific to anxiety disorders. However, the DSM-IV defines many different types of anxiety disorders.

Research Question: 1) To what extent does the anxiety scale detect the various types of anxiety disorders? 2) Which cut-off points are best to use?

Method: We analyzed six cross-sectional datasets in which standardized psychiatric diagnoses were made while symptoms were rated using the 4DSQ. We examined panic disorder, agoraphobia, social phobia, generalized anxiety disorder and specific phobia. We explored the anxiety score distribution per disorder. Logistic regression was used to determine the explained variance (Nagelkerke R^2) of the individual disorders and to calculate disorder-specific likelihood ratios as a function of the 4DSQ anxiety score. ROC-analysis was used to determine optimal cut-off points.

Results: Most patients with panic disorder, agoraphobia or social phobia scored high on the 4DSQ anxiety scale, as expected. However, substantial proportions of patients with generalized anxiety disorder or specific phobia scored low on the anxiety scale. The anxiety score explained 20–25% of the variance of panic disorder, agoraphobia and social phobia, but significantly less (7–12%) of the variance of generalized anxiety disorder and specific phobia. ROC-analysis suggested that ≥ 4 was the optimal cut-off point to rule out and ≥ 10 the cut-off point to rule in anxiety disorders.

Conclusion: The 4DSQ anxiety scale detects panic disorder, agoraphobia and social phobia adequately, but generalized anxiety disorder and specific phobia less so. Nevertheless, the proposed cut-off points performed reasonably well.

Medication adherence among diabetic patients – One disease with different adherence to different medications

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Background: The effectiveness of different interventions to improve medication adherence have been studied, but actual medication adherence rate haven't been studied.

Research Question: To learn about the actual medication adherence rates among diabetic patients.

Method: Diabetic patients over 40 years of age that were treated by the same family physician during 2008–2010 were eligible. Medications adherence rates were studied during 2009, among diabetic patients who took the medication at least once every year during 2008–2010, to avoid treatment changes, or end of treatment.

Medications that were checked: metformin, sulphanilurea, acarbose, statins, ACE inhibitors, ARB's. Purchase of nine monthly prescriptions was considered as good adherence.

Results: Overall 25,214 diabetic patients were included. Average age was 66.2 (range 40–101); 50.1% were men; 34.8% were of low socioeconomic status. In terms of adherence rates for each medication, the following was found: −13 495 patients were treated with metformin, good adherence – rate was 58.6%. −5 621 patients were treated with sulphanilurea, good adherence – rate was 55.3%. −382 patients were treated with acarbose, good adherence – rate was 67.8%. −16 236 patients were treated with statins, good adherence – rate was 66.6%. −14 647 patients were treated with ACE inhibitors, good adherence – rate was 69.0%. −3 152 patients were treated with ARB's, good adherence – rate was 78.8%. No differences in adherence rates were noted between men and women for the different medications. Socioeconomic status was not related to medication adherence rate. Advanced age was related to better medication adherence. Patients with good adherence rate have lower HbA1c and LDL cholesterol then patients with low medication adherence.

Conclusion: There are differences in adherence rate for different diabetic medications. It is important to study the cause for these differences in order to improve medication adherence.

Vitamin B-12 deficiency – A clinical observational study in Primary Care

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Background: Cobalamin deficiency is a chronic, controversial and under-diagnosed problem reaching a 15% prevalence in the elderly. The lack of a diagnostic gold standard recommends initiate an empirical treatment based on clinical grounds with oral tablets as first-line.

Research Question: The objective is to describe the prevalence and the main clinical characteristics associated with B-12 deficiency to gain experience and awareness of its management.

Method: The design was an observational follow-up study, in an urban primary care setting. Patients were screened either (1) opportunistically for the vitamin B-12 or (2) actively when presenting symptoms or signs associated with this deficiency, mainly tiredness, memory complaints, peripheral neuropathies, gastroenterological conditions and hypothyroidism. The diagnostic inclusion criteria was: (1) vitamin B-12 bellow 200 pmol/L or (2) vitamin B-12 bellow 300 pmol/L plus symptoms or signs associated with this deficiency. The recruitment period was between 08/2008-04/2010 and patients were treated orally or intramuscularly. The clinical follow-up assessment was based on the improvement of symptoms and documented rise of the vitamin level.

Results: Overall 57 patients were recruited (61% females). The stratified prevalence increased from 1.6–4.5 − 6.25 in adults

(periods 14–45−65–74) and 23% in elderly (＞m74). Tiredness was the cardinal symptom affecting 68% of patients, memory disturbances 14%, somnolence 17%, peripheral nerve symptoms 23%, psychiatric manifestations 17%, hypothyroidism 17%, cardiovascular events 19%, low D3-vitamin 7%, on Metformin 7% and on proton pump inhibitors 7%. At the one month follow-up assessment: three patients were lost, eight were complex or of doubtful condition and 45 (83%) showed an improvement in their symptoms while one didn't. Treatment was maintained orally in 66% (34) and intramuscularly in 33% (17).

Conclusion: Cobalamin deficiency is highly prevalent in the community, tiredness is the cardinal feature, frequently associated with other conditions and in most, treatable orally.

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What are the general practitioner's difficulties in the consultation of migrants in the French healthcare system: a qualitative study

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Background: Migrants experience many difficulties when accessing the French healthcare system. The general practitioner (GP) is often the first and sometimes the sole healthcare professional consulting this population. Interactions of this type, poorly described in the literature, can be difficult for many reasons.

Research Question: What sort of migrants consult the GPs in France? What difficulties do GPs encounter during these consultations?

Method: A qualitative study was conducted, by semi-structured interviews, until saturation point, with 15 GPs in 4 'migrant districts' in a mid-sized city. The survey involved random phone requests. Interviews were recorded and carried out a one-on-one basis in accordance with our topic list. This was defined after in-depth interviews and was composed of three opening questions about the definition of migrant, the specificities and difficulties encountered during the consultation. We conducted a content analysis with constant comparison after entire transcription and manual coding.

Results: A migrant is defined by GPs as a foreign person, recently arrived in France, with different culture and language. The migrant has also a cause of migration. He is detected as non-integrated, without social security and medical record. He has a social security cover (AME or CMU). Specificities of his care related to the GP (major coordinator role), the migrant (singular clinical signs) and the social and medical aspect of the consultation. Three main difficulties are noticed: language barrier, social care for the patient and differing cultural aspects of the migrant. Difficulties are overcome by most GPs with an ethical and enlightened behaviour, whereas some display racial prejudice.

Conclusion: Our results show that a translator and social workers are two essential partners to enable a GP to provide good care to migrants. If we don't consider the specificities of care to migrants, GP consultations may contribute to migrant social inequality.

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What link does family practice quality improvement have with information quality in e-Health?

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Background: Development of methods to measure practice outcomes will greatly depend on the capability of computational applications to manage and explore medical data.

Research Question: To emphasize the need for family physician-computer programmer interaction (Human-Computer Interaction) in developing proper user interfaces in regard to medical data storing, compressing and extracting evidence.

Method: The author's personal reflections upon and summing up the materials presented at the conference on Information quality in e-Health and the Workgroup Human-Computer Interaction, held in Graz, Austria, November 2011, and organised by the Austrian Computer Society, where the author actively participated.

Results: The challenge of unifying computational applications to be capable of health care systems networking and medical data sharing across the EU, has been discussed. This idea is close to the claim for medical data record standardisation. The final aim is medical care quality improvement and cost-effectiveness optimisation. In this regard, it has been stressed that most current health information technology is not designed to support the cognitive aspects of medical doctors' decision-making. The need for medical expert-computer designer interaction and for even larger interdisciplinary orientation, in this area of research, has been emphasized.

Conclusion: There is a need for the EU community of primary care physicians to be included in this discussion, initiated by the computer and usability engineers society, and to identify its own assumptions and needs as a medical profession, as well as the main research strategies.

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Qualitative approach of Multimorbidity by semi-structured interviews with French GPs

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Background: Multimorbidity is a poorly defined concept: more than two chronic conditions in one individual. The word condition leads to multiple interpretations. However, this model is very attractive for general practice (GP) as it is closely linked to the holistic core competency of GP. A pragmatic definition of multimorbidity in GP is necessary for future international

research. This is one of the aims of the FPDM (Family Practice Depression and Multimorbidity) team.

Research Question: Which criteria define multimorbidity in primary care?

Method: Qualitative study using semi-structured interviews with GPs. The sampling strategy was purposive to achieve maximum variation. Records were fully transcribed and anonymized. Two independent researchers did a manual thematic analysis of the verbatim records before pooling results. Data saturation had to be tested in the axial coding phase of analysis.

Results: Ten interviews were conducted. Saturation was achieved with the ninth and confirmed with the tenth. Multimorbidity was defined as the association of at least two medical and/or social and/or psychological criteria weighted by sex and age, lifestyle and sometimes revealed by a trigger factor. Physicians were able to detect these patients through their experience and clinical examination. Relevant signs to identify multimorbidity came up with patients' behaviors, somatization, hidden motive of the consultation, change in attitude/way of life, overmedication. These signs changed with patients and culture. Multimorbidity takes time because it requires psychological support to the patient, a multidisciplinary approach and a close follow-up.

Conclusion: This qualitative approach for the definition of multimorbidity by GPs has to be triangulated with those of focus group studies and systematic literature review. Pooling of the different European studies will provide a European definition of multimorbidity.

Challenges in Chronic Diseases Management in the Bulgarian Health Care System

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Background: European countries differ in their strategies for the management of care for patients with chronic diseases. Due to the unfavorable demographic situation in Bulgaria as well as to the significant incidence of chronic diseases, our health care system is facing a growing challenge to organize care appropriate to the needs of the population.

Research Question: What are the main advantages and disadvantages of chronic diseases management in Bulgarian health care system? Does the chronic care model work? How to improve chronic illness care?

Method: First, the literature will be reviewed systematically. Second, a qualitative study will be performed using focus groups with patients, GPs, specialists, health policy makers. Third, the original questionnaire will be developed based on the results from the systematic literature review and the focus groups. Fourth, a reliability analysis (split-half-reliability model) will be performed to validate the questionnaire. Representatives from patients' non-governmental organizations will be involved in workshops to discuss the further implementation of the questionnaire.

Results: To elaborate a tool capable of revealing the evidence about the advantages and disadvantages of chronic disease management. To point out the core problems, to improve the care of patients with chronic diseases.

Conclusion: We believe that the application of a reliable tool of management for care of patients with chronic diseases will contribute to the improvement of the current model.

Primary Care according to the Chronic Care Model in Germany – Current state and future perspectives

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Background: Considering the increasing prevalence of multimorbidity, it is important to improve chronic illness care. Our subproject within the ESTHER-net consortium assessed to what degree primary care in Germany complies with the Chronic Care Model. Therefore, the 'Questionnaire of Chronic Illness Care in Primary Care' (QCPC) based on a detailed literature research and the Assessment of Chronic Illness Care (ACIC) was developed.

Research Question: The aim of this study is to analyse the current state of chronic care in family practices to identify potential for improvement.

Method: The QCPC was sent to 695 physicians in the federal state of Saarland. Data were analyzed as frequency counts and percentages or means and standard deviations. Results were displayed descriptively.

Results: The response rate was 42% (290), of which 272 were suitable for analysis. Participating physicians have a mean age of 54 years and a female proportion of 29%. They work on average 53 hours per week and mostly within single handed practices. The physicians see about 250 patients per week. Almost half of their patients are over 60 years old and 49% of the patients are multimorbid (at least two chronic conditions). About 93% of physicians use structured disease management programmes (DMP), e.g. for diabetes mellitus type 2. However, they include only 38% of their patients eligible to take part in those programmes. Further results will be presented at the meeting.

Conclusion: The descriptive analyses of our study gives suggestions about the possibilities to improve chronic care according to CCM in German primary care. As a next step within our study, we will give the physicians a tailored feedback about their results. As there is good evidence for the CCM, an improvement within the single elements of the model contributes to sustainable and evidence-based chronic care.

Training students to use the ICPC for research

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Background: Main aim of the 'ECOGEN' study was to describe reasons for encounter, associated with the diagnosis in primary care in France, during five months in 130 GPs offices. Secondary aims were to describe the process, realized or planned, by the physician, and the determinants influencing the length of the consultation. These different components have to be observed and described by trainees during their course in the GP's office.

Research Question: How could a training course be elaborated for students for the relevant use of the ICPC to assess consultations for the study?

Method: Our building material was previous epidemiological studies using ICPC, theoretical data and literature collected by the French 'CISP Club.' A group of ICPC and educational experts gathered the information to build a list of objectives and the more relevant educational tools to be used.

Results: First focus was on explaining difficulties and representations about the different components of the consultation, and explaining the 'SOAP' form to assess it. Second, vignettes were built, choosing the situations among the most common situations based on previous studies. Third, video consultations were created, focusing on real practice life during which patients' motives, procedures, conditions were randomly mixed. A final session completed the course relying on questions, which were gathered in a form. After the session by itself, during the study, the questions showing up were collected in a Web forum, and helped to improve the precision of the coding and support the students. The final assessment is ongoing.

Conclusion: Trainees (54) were recruited and educated, and 40 regional supervisors, who benefited from the course during two training sessions. A final assessment is planned to evaluate and improve the use of ICPC for research and education.

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GPs' patient care in the last phase of the life – results of a retrospective study

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Background: Although general practitioners (GPs) are considered to be a cornerstone of outpatient palliative care, little is known about the healthcare provided by GPs to patients in their last phase of life.

Research Question: The aim was investigate end of live care from the GP's point of view.

Method: In a retrospective study in 30 general practices, data from all patients who died within the last 12 months, were collected with a self-developed questionnaire. The focus was on diagnoses, symptoms and GP involvement in the last 12 months of life.

Results: A total of 452 deceased patients, mean age 81 years (IQR 71–88), were included in the study. In 67% of these cases, GPs made regular house calls. During the last weeks of life, GPs made house calls to visit 54% of these patients. In the last 48h of the life, 48% had a GP involved in their end of life care, even though the largest proportion (40%) died in a hospital. The spectrum of the diseases was broad including chronic heart failure (42%), tumor diseases (36%), dementia (30%), cerebrovascular diseases (29%), diabetes (27%) and pulmonary diseases (27%) among others. Most common symptoms were weakness (62%), pain (45%), dyspnoea (37%), disorientation (31%), vomiting (20%) and anxiety (18%). For symptom control, sedatives (57%) and opiates (45%) were mostly given. Only 10% of patients received additional palliative care.

Conclusion: GPs are highly involved in palliative health care, although many people die in hospitals. The spectrum of symptoms, treatments and diseases is markedly different compared to hospice or hospital based palliative care. This should be considered in educational programs in palliative care destined for primary care.

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Becoming old makes one empathic: a randomized controlled trial

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Background: Empathy means 'understanding and sharing the feelings of another person': it is an essential faculty that should be acquired during medical education. The elderly are a particularly useful model for understanding the needs for this learning. Several European universities have been working on this topic and are involved in this study.

Research Question: The aim was to evaluate the impact of a standardized simulation session with the 'patient aging system' on the students' empathy towards the elderly.

Method: Randomized controlled trial with trainees and medical students of the University of Brest. Vision, audition, tact and mobility were hampered during a standardized simulation workshop in the tested group. The participants had to walk through a course and fulfill a pill box according to a medical prescription. The primary outcome was the score pre and post-test measured through a validated questionnaire 'the Aging Semantic Differential.' The control group attended normal classes and filled the questionnaire at the beginning and the end of the day. Univariate and multivariate analysis were performed with a team of statisticians.

Results: Overall 81 persons participated: 56 women and 25 men. Average score differences between pre-test and post-test were significantly higher in the test group ($p < 0.05$). Results were not influenced by status (trainees or medical student) or by gender.

Conclusion: Patient Aging System increased students' empathy towards the elderly. Further studies are needed in different places and with higher samples to integrate simulation sessions with this aging system during medical education. The effects of this awareness of aging could also be assessed with participants who are now professional prescribers.

Why don't you take your cholesterol-lowering pills?

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Background: Lipid-lowering agents are effective in coronary heart disease (CHD) and risk management when used appropriately. Once prescribed, patients' adherence to medications is crucial for the treatment target. During the 'follow-up,' we realized that some patients did not start to use, continue or use the pills regularly. We aimed to research the reasons in our department's patient population.

Research Question: What is the rate of adherence to medical treatment? What are the reasons for not starting, discontinuing and irregular use of lipid-lowering medications?

Method: A total of 241 patients who were prescribed lipid-lowering pills in two outpatient clinics of our department and an affiliated family practice between January 1st, 2010 and December 31st, 2011 were included in this retrospective cross-sectional study. By telephone (75) and face to face (166) interviews, the patients were asked whether they started, continued, or regularly used the pills, and if not, the reason for not starting, discontinuing and irregularity.

Results: Of 241 patients prescribed lipid-lowering pills, 68 (28%) were still on treatment, 82 (34%) had never started, 91 (38%) discontinued or were using irregularly. The reasons for never starting the medication were; not want/like to use pills (n = 36), worry about side effects (n = 22), want to lower by lifestyle changes (n = 17), insurance problems (n = 4), do not want to use because of other health concerns (n = 3). The reasons for discontinuing the medication were; side effects (n = 16), news on media (n = 31), normalization of lipid levels (n = 12), want to lower the lipids by diet without pills (n = 11), want to intermit taking the pills (n = 20), pregnancy (n = 1).

Conclusion: Our patients' adherence to lipid-lowering medications was low (28%). Patients' wishes and worries are more prominent in negative self-decision. Recent discussions in the media might also have a negative influence on our patients' self-decision. We need a patient education plan for improving adherence to treatment.

Improving quality of care of hypertension by educational outreach visits with equipment in primary care settings: A pilot study

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Background: Self-blood pressure monitoring (SBPM) is recommended by the French and European guidelines, to improve the management of hypertensive patients. The diffusion of recommendations is insufficient because despite the use of SBPM the respect of recommendations remains poor.

Research Question: To equip GPs with SBPM materiel during academic visits and measure GPs' and patients' satisfaction.

Method: A pragmatic study was performed in real medical settings financed by the French national security system. The study took place in the Haute-Normandie region in France, among GPs from CME groups, who agreed to participate. They received information, material and three new devices for SBPM to be used by patients in their practice. After a year of follow up, each GP was due to provide 10 patients' satisfaction files (10 closed questions, 1 open) with SBPM with 10 SBPM measurements, and to complete a final questionnaire (8 closed questions , 3 open) on the experiment.

Results: A total of 94 GPs participated. According to their declarations, 58 (78.3%) of GPs lent out devices. Less than 25% of their patients benefited from the loan of the device. Overall, 80% (n = 81/101) participated to the final evaluation. Of whom 92.6% (n = 75/81) think their blood pressure targets could be improved for more than 25% of their hypertensive patients, and for 64% for up to at least 50% of their patients. From 722 patients files, 97% found the loan of SBPM useful. At least 93% found the explanations given by doctors, the notices, the rules of measurement and the measurement itself simple and 94% are ready to start again.

Conclusion: Although measured by subjective criterions, this simple intervention has pragmatic effects in terms of GPs' behavior of patients access to SBPM. Patients' and GPs' satisfaction was high.This kind of knowledge transfer could well improve the simple diffusion of recommendations.

General practitioners' programmed intervention improves cardiovascular disease factors in the Croatian elderly

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Background: Nutritional status and cardiovascular (CV) risk factors in the elderly are major challenges in general practitioners' (GPs') practice.

Research Question: What is the geographic distribution of malnutrition and CV risk factors in the population aged ≥ 65 years, enlisted with GPs in Croatia? What is the efficacy of GPs' programmed intervention (education on lifestyle/pharmacotherapy intervention according to guidelines including follow up protocol) in patients compared to 'usual care?'

Method: The sample was representative for Croatian elderly population enlisted with GPs. In first cross-sectional arm, GPs included 738 participants aged ≥ 65 years (response rate 78%), interviewed them using a questionnaire with additional anthropometric measurements (BMI, WC, WHR, skinfold thickness, Framingham CV risk score) and blood sample analyses covering CV risk factors. There were 371 (50%) participants in the interventional and 367 (50%) in control group. In the interventional arm, 654 participants (98%) in the study [353 (95%) interventional, 302 (82%) control group], were interviewed, measured and had blood sample laboratory analyses performed using identical methods.

Results: Most participants were overweight/obese, with no significant difference regarding region (coastal/continental), and significantly more overweight in urban and obese and undernourished in rural settlements.

In the cross-sectional study arm, 213 (29%) participants met primary CV prevention criteria (without established CV disease or diabetes), and the remaining 465 (63%) met secondary CV prevention criteria. Numbers for primary and secondary CV prevention in the interventional arm were 153 (23%) and 501 (68%), respectively. Target blood pressure (BP) goals for primary CV prevention were achieved in 51% (95% CI = 46.20–51.20) and target lipid goals in 18% (CI = 15.69–21.09). In secondary CV prevention, target BP < 130/80 mm Hg was found in 41% (57.63–60.97), while total cholesterol < 4.5 mmol/l and LDL – cholesterol < 2.5 mmol/l was reached in 12.2% (CI = 9.13–15.27) participants.

Patient information leaflet in the mid term control of type 2 diabetes

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Background: Enablement, through information, is a key feature for type 2 diabetes (T2D) better control.

Research Question: To study the impact of patient information, by a leaflet, on what diabetes is and its therapeutics, on T2D control.

Method: Random, non blind, controlled, multi-centre, prospective study in three consecutive diabetes consultations: the beginning (T0), at six (T1) and nine months (T2), from October 2010. The validated leaflet was distributed by Family Doctors to T2D patients using a protocol data-sheet. T2D patients assigned to the leaflet group (PAL) were reminded about to reading it and patients without the leaflet (PWL) received usual care. T2D patients consent was obtained. A1c Hemoglobin (HbA1c), number of different anti-diabetic medicines (NAM), number of daily anti-diabetic medicine doses (DAMD) and physical activity (PA) were studied using descriptive and inferential statistics.

Results: Cohort of n = 96 patients, with no statistical differences between the two groups at T0. There were nine (9.4%) and 18 (18.8%) drop-outs at T1 and T2, respectively. From T0 to T1 to T2 the trends were: A1cHb for PAL (6.7 ± 1.8% to 6.7 ± 0.9% to 6.5 ± 0.8%) and for PWL (6.9 ± 1.3% to 6.8 ± 0.9% to 7.0 ± 1.2%); NAM for PAL (1.8 ± 0.8 to 1.8 ± 0.8 to 1.8 ± 0.8) and for PWL (1.6 ± 1.0 to 1.8 ± 0.9 to 1.9 ± 1.0), DAMD for PAL (2.8 ± 1.4 to 2.8 ± 1.4 to 2.7 ± 1.5) and for PWL (2.4 ± 1.4 to 2.6 ± 1.5 to 2.9 ± 1.7); for practicing PA for PAL (19 (39.6%) to 21 (43.8%) to 19 (45.2%) and for PWL 20 (41.7%) to nine (22.0%) to 15 (48.4%). There was a significant difference for PAL between T0 and T2 for increasing PA (p = 0.018) and for PWL for DAMD (p = 0.011).

Conclusion: The small number of patients is a limitation. A positive trend was verified for all the variables in PAL; the same did not occur in PWL. Information leaflet based information appears to be of value in the control of diabetic patients.

Comparison between primary care indicators in Hungary and in the UK

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Background: Improving the quality of care in general practice is very important. The quality indicator system was introduced in Hungary in 2009 and was updated in 2011.

In the United Kingdom, a quality indicator system, Quality Outcome Framework (QOF) was introduced in 2004 and since then has been modified several times, recently in 2011.

Research Question: What are the differences and similarities between the indicator systems? How did it improve the quality of care? How can we measure that? What changes could be made to improve the quality of care? How can we use the experiences from the UK system to improve the Hungarian indicator system?

Method: Legal background, national guidelines, and regulations of the indicator systems were compared in both countries. Systematic literature review and analysis of available data were conducted in the relevant topics.

Results: There were 15 adult and six paediatric quality indicators in Hungary and 134 indicators in the United Kingdom in 2011. The Hungarian indicator system measures mostly the clinical activity of GPs. There are clinical indicators, but no organisational or patient experience domains in Hungary. There is a big difference in the financial background of the systems, the financial reward and incentive is smaller in Hungary.

There are no studies, which investigate how the introduction of the indicator system improved quality in Hungarian primary care. Results with the QOF are encouraging in the UK, the Hungarian system should be revised and there might be a need for some changes.

Conclusion: The Hungarian indicator system needs to be improved and revised to ensure the quality of care. There is a need for further research to establish the efficiency of the Hungarian system and how it is improving the quality of care.

Diagnosis and coordination of patients presenting with dermatological problems in general practice in Germany: a qualitative study of GPs' approaches

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Background: GPs encounter patients with dermatological diseases regularly. Many of these patients are treated by the GP while others, mainly suffering from chronic disorders, will be referred to a dermatologist. There is a large variation in the proportion of referrals to or direct encounters with specialists in Germany. Although a highly relevant topic, there is virtually no research on dermatology in primary care. Consequently,

little is known about GPs diagnostic approaches in these patients.

Research Question: Aim is to analyse how GPs approach patients presenting skin disease; how they cooperate with dermatologists; and what areas GPs should identify for further research and training.

Method: In semi-structured interviews, 15 GPs were asked to describe, among other topics, their personal diagnostic approaches in 2–3 of their patients with acute or chronic skin problems they had prospectively identified (stimulated recall). Interviews were taped, transcribed and analysed qualitatively by two independent raters.

Results: Data collection not yet finished; results and conclusions will be presented at the EGPRN meeting.

Towards a multidisciplinary Primary Care Research Network: a data linkage project

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Background: GP electronic medical records provide a wealth of information regarding the health problems in the population as well as the functioning of the health care system. However, in the past decade, multiple developments have made it necessary to move towards an integrated primary care information network: the introduction of out of hours services and partial abolishment of the referral system; disease management programmes in which multidisciplinary teams take care of chronic patients. These and other (future!) developments make it necessary to link the GP data with data about health service utilisation from out of hours services, allied health care providers such as physiotherapists, primary care psychologists, pharmacies and secondary care. The Dutch ministry of health asked NIVEL to set up such an information network.

Research Question: What are the issues need to be resolved to create this network, and how can they be resolved?

Method: First many important issues pertaining to will be described: governance over the data (who is in charge regarding data coming from different sources); trust; data protection; data quality; interoperability; validity; and representativeness.

Results: Subsequently, the way dealing with these issues will be discussed. For example, the governance issue is resolved by strong involvement of stakeholders; the privacy issue is resolved by pseudo-anonymisation of personal identification numbers; the data quality issue is taken care of by developing an instrument to measure data quality.

GPs´ poor adherence to asthma guidelines: a lack of knowledge?

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Background: Initially, 90% of patients with asthma consult a general practitioner, but their treatment does not always conform the asthma guidelines (AG). Looking for improvement, the first step is to explore the barriers of a successful implementation of AG. Therefore, in a prospective mixed-methods study, patients' and general practitioners' (GP) concepts of 'best asthma therapy,' and GPs´ knowledge of the guidelines was analyzed. Results of the latter is presented here.

Research Question: Could a lack of knowledge be one of the reasons for GPs´ poor adherence to AG?

Method: A total of 585 GPs and GP trainees (GPt) from Lower Saxony and Bavaria were invited to participate in the survey. They were asked to fill in a questionnaire, which focused on the definition of asthma, clinical findings, diagnostics, differential diagnostics, treatment and prevention. The demographic part was followed by an asthma-specific one including 15 questions and three case studies. The credit points were awarded according a bonus-malus system. Descriptive and analytic statistics with SPSS was used to analyse results.

Results: Return rate: 295 physicians (50.4%); demographics: 75% of GPt and 25% of GPs were female. GPt attained a mean total score of 57%. Bavarian GPt scored better than their colleagues from Lower Saxony (average 58% versus 55%). Significant differences especially appeared in: definition, clinical findings and diagnostics. GPs reached a mean total score of 58% without significant differences between the results of the Bavarian GPs and the ones from Lower Saxony. GPt and GPs showed in the main all-over-uncertainty concerning the two subjects: prevention and clinical findings. Both groups were best in differential diagnostics, which mainly aimed to discern asthma and COPC.

Conclusion: Sub-score analyses of answers suggest a suboptimal knowledge of all tested areas of the AG. But these results may not reflect real daily practice, because this was an artificial setting. GPs and GPts might have handled cases differently in a real practice situation. Nevertheless, the qualitative parts of the AG-GPs study supports this finding and gives first insights in reasons, why physicians' asthmas treatment deviates from the AG requirements. However, there is a need for further investigation. Meanwhile physician knowledge of AG should be improved.

The application of the Transition Project ICPC data to study the contribution of patients' reasons for encounter to the final diagnoses of common problems in family practice

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Background: This study uses the Transition Project data to study the contribution of patients' reasons for encounter to the final diagnoses of common problems in family practice. This work is part of our contribution to the EU funded TRANSFoRm project, Grant Number FP7 247787.

Research Question: What are the quantitative relationships between common reasons for encounter and common diagnoses (episode titles) within episodes of care in routine family

practice in practice populations from Malta, the Netherlands and Serbia? What are the generic similarities and differences in the relationships between common reasons for encounter and common diagnoses (episode titles) in these practice populations? Do these similarities in the relationships between common reasons for encounter and common diagnoses support the existence of an international core process of diagnosis in the domain of FM?

Method: The Transition Project database, collected from the electronic patient records of family doctor practices, was used to study the epidemiology of family medicine. Participating family doctors (FDs) recorded details of all their patient contacts in an 'episode of care (EoC)' structure using the International Classification of Primary Care (ICPC). Reasons for Encounter (RfEs) presented by the patient and episode titles (diagnostic labels of EoCs) were classified with ICPC. The relationships between RfEs and episode titles were studied with Bayesian methods.

Results: Relationships between patients' RfEs and doctors' diagnosis within EoCs of common health problems, as coded using ICPC are described.

Conclusion: Distributions of diagnostic associations between RfEs and episode titles in the Transition Project international populations show remarkable similarities and congruences in the process of diagnosis from both the RfE and the episode title perspectives. The congruence of diagnostic associations between populations supports the use of such data from one population to inform diagnostic decisions in another.

Rate of women attending GP waiting rooms, under-screened for cervical cancer

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Background: In France, screening for cervical cancer is opportunistic, except in 13 districts out of 100 where screening is organized. National guidelines recommend screening by Pap-test every three years, after two yearly initial screenings, from the age of 25 to 65. Coverage is 56.6% of the target population with 51.6% of the women under-screened and 40.6% over-screened. GPs carry out about 5% of the Pap-tests. Most of Pap-tests are done by gynaecologists. Barriers in screening assigned to women and GPs are roughly known. It is not known what proportion of the under-screened population is to be found in GPs' practices.

Research Question: What is the rate of women attending GP waiting rooms which are under-screened for cervical cancer?

Method: Survey by 250 self-completed questionnaires. Setting: GP waiting rooms in Northern France (only opportunistic screening). Randomization unit: GPs. Main outcome: last screening prior to five years.

Results: The study is still ongoing, but final results are expected to be known in May. Preliminary results tend to show that only 15% of the women attending GP offices are under-screened.

Conclusion: The vast majority of under-screened women appear to be dropped outside the primary health care circuit. Only generalized organized screening might increase the coverage rates.

Attitudes and compliance of target populations in performing of fecal immunochemical test at home

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Background: There is undeniable evidence that the screening for colorectal cancer (CRC) may lead to a 40% reduction in mortality. In Bulgaria, screening tests for CRC have not been performed systematically. The requirements for conducting screening for CRC, introduced some time ago with the National Frame Contract, were cancelled due to low compliance and negative attitudes of GPs and patients to the guaiac-based fecal occult blood test (gFOBT).

Research Question: This study aims to explore attitudes and willingness of persons to perform the immunoassay occult blood test (iFOBT).

Method: A two-stage selection representative cross-sectional survey was carried out. Forty practices for primary care from Plovdiv region were randomly selected. Direct individual anonymous questionnaires (before and after education information campaign including a discussion and handing leaflets) were distributed to 600 persons aged above 45 years from the selected practices.

Results: The results revealed that the demographic characteristics, such as gender, age and level of education of respondents, had a significant impact on their attitudes and behavior in terms of doing the test at home. The study found that the majority ($>80\%$) of respondents had readiness and willingness to carry out the immunoassay test for occult blood at their homes. The preferred methods for obtaining health information for early diagnosis of various diseases, according to respondents were discussions with physician, followed by printed materials and the internet. The respondents' preferences were informed by a general practitioner followed by physician with other specialty, which confirmed their confidence in health professionals, $p < 0,01$ ($u = 3.64$).

Conclusion: Health education had significantly influenced their awareness about the usefulness of the test and its implementation. This allows the implementation of patient-centered approaches to these target groups and achievement of higher quality of preventive activity of GPs.

Slovene family physicians decision making for testing blood and urine

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Background: Laboratory tests are part of routine diagnostic procedures in family medicine and the care of patients with chronic diseases. The accuracy of diagnosis is dependent on the adequacy of diagnostic tests. Research results would be applicable for further analyses and recommendations regarding proficiency and cost-effectiveness in using laboratory tests.

Research Question: What is the portion of patients referred to laboratory investigations; the portion of the most frequently performed laboratory tests; and which are the factors influencing decision making of family physicians for performing them?

Method: The study was based on a cross-sectional study of Slovenian family physicians. A random sample of 42 physicians participated in the survey. The first successive 300 consultations were recorded. A total of 12 596 contacts with patients was observed.

Results: Complete blood count, glucose, sedimentation rate, urine analysis and lipid profile account for 54.6 % of all tests and belong to five most used laboratory tests. Blood tests were 5.3 times more often than urine tests. The lowest portion of patients referred to laboratory tests by a single physician was 8.8 %; the highest was 47.2 %. On average, 20.6% of patients were referred for laboratory tests by one physician. On average, 184.2 laboratory tests were ordered per physician and 5.4 times difference was observed between the lowest and the highest number of tests per physician. Referral to laboratory tests and the number of laboratory tests for an individual patient depends on the characteristics of patients, physicians and offices in which they work.

Conclusion: Great variation in referring patients for laboratory tests was observed in Slovene family physicians. The portion of the patients referred, and the most frequently performed tests are comparable to the data from other European countries. There is a need for research about the reasons for such variation in referrals for laboratory tests.

The importance of family suicide history in the screening of depression in primary care

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Background: Depressive disorders are common conditions in primary health care service, but GPs have some difficulties in the diagnosis of depression.

Research Question: What is the current prevalence of DSM-IV depressive disorders in primary care?

Method: In the present study among 984 primary care attendees in six GP practices in Hungary, we used the Beck Depression Inventory (BDI) and the PRIME-MD screening instrument. Overall 60% were female, mean (SD) age: 52 (17) years. Socio-demographic characteristics of the patients and family history of completed suicide were recorded.

Results: The current prevalence rate of DSM-IV depressive disorders was 18.5%: 7.3% symptomatic major depressive episode (MDE), 2.3% MDE in partial remission, 4.0% dysthymia, 4.9% minor depressive episode. Beck Depression Inventory identified any current depressive disorder with 95% sensitivity and 56% specificity and the same figures for current symptomatic major depressive episode were 83% and 23%, respectively. The results are similar to those reported previously from Hungary and from other countries. 50% of patients with a family history of suicide, and only 14.3% of those with a negative family history have a current MDE (symptomatic and in partial remission, combined). Every second primary care patient with, but only every seventh patient without, a family history of completed suicide have had some current major depressive episode.

Conclusion: The Beck Depression Inventory and PRIME-MD are useful screening tools for detecting depressive disorders in primary care. Given the strong relationship between untreated depression and suicidal behaviour, these results also suggest that successful screening, diagnosis and management of depressive disorders in primary care are important steps in suicide prevention. The history of completed suicide among first or second degree relatives could be a good and simple clinical marker for current MDE in primary care patients.

A Methodologic Study of the Four-Dimensional Symptom Questionnaire (4DSQ) in Turkish

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Background: Screening tests that identifies and differentiates depression from other common disorders will help primary care physicians in Turkey as it is the number one mental health problem in Primary Care.

Research Question: Will the 4DSQ translated in Turkish, be precise and accurate enough to use in primary care for the Turkish speaking consultants?

Method: The 4DSQ is a self-report questionnaire comprising 50 items distributed over four scales; depression, anxiety, somatization and distress. The reference period is 'the past week.' The response categories are worded as 'no,' 'sometimes,' 'regularly,' 'often,' 'very often or constantly.' The Turkish version was obtained through a procedure of translation from Dutch into Turkish and back-translation by three bilingual physicians. It was applied to 220 patients who visited Marmara University Medical School Ambulatory clinics, other than psychiatry, and including the Family Medicine clinic.

Results: The mean age of the participants was 35.4 ± 1.4, women comprised 67.3% (n = 148), higher educated and high school graduates accounted for 88.5%, 61.8% (n = 136) were married, 32.7% housewifes and 25.9% students. According to the original cut off points of 4DSQ, 19.5% (n = 43) have depression risk, 20.5% (n = 45) have anxiety), 67.7% (n = 149) have somatization and 55.9% (n = 123) have distress risk. When Z score of the participants' mean point is concluded as > 1 then depression frequency was 13.6%, anxiety 14.5%, and somatization and distress 15.9%. Original scores of the 4DSQ was higher in women in all four dimensions ($p = 0.01$, $p = 0.001$, $p = 0.000$, $p = 0.000$, respectively for depression, anxiety, somatization and distress).

Conclusion: Psychiatry consultations of the randomly selected participants, either with high or low scores, will be organized as the second step of the validity study.

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The CODEX test: diagnosis of dementia in primary care

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Background: The diagnosis of dementia is a very common medical problem in primary care. It is as important to reassure the sane patients as to address the pathological ones. The Mini Mental State Examination (MMSE) is the referential test, but is not used in primary care. The team of Prof. Belmin (geriatric physician, Paris) wanted to developed a quicker test, named CODEX, selecting the most discriminant parts of standards. There are two stages: a combination of three words of Dubois and the clock Test, and, if abnormal, a simplified spatial orientation. It has been validated on 300 patients.

Research Question: What is the validity of the CODEX test compared with the definitive standard (criteria of DSM IV) in primary care?

Method: Comparative multicenter double-blind study between the CODEX test and the definitive standard in patients over 75 years old with memory or attention problems. Each patient passed the Codex with a GP, and after, at home, the referees tests with a psychologist. Two independents physicians compared results for each patient.

Results: Twenty-one GP investigators. A total of 139 patients, 92 women and 47 men, age: 82.3 ± 4.6 years. Experts' diagnosis: demencia 37 (27%), no demencia 102 (73%) including Mild Cognitive Impairement 46 (33%). The sensitivity for Codex in primary care is 87%, in center is 92%, and the MMS 91%, the specificity is 72%, 85% and 70%, respectively. The predictive positive value is 53%, 89% and 54%; the negative one is 94%, 86% and 93%.

Conclusion: This study confirms the precedent results of the Codex, compared to the MMS, with an average time of two minutes.

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Efficacy of treatment of Herpes Zoster and prevention of post-herpetic neuralgia with Trans Cutaneous Neural Stimulation (TENS)

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Background: Post-herpetic neuralgia is the most common complication of Herpes Zoster. Its treatment is difficult and results are not good. The results of some rare retrospective studies have shown that treatment of Herpes Zoster with TENS is at least as effective as with antiviral drugs, and that the prevention of post-herpetic neuralgia is even better.

Research Question: In a prospective, case control study we compare the effectiveness of treatment of Herpes Zoster and prevention of post-herpetic neuralgia with antiviral drugs and TENS. We would like to show that TENS is more effective in prevention of post-herpetic neuralgia than antiviral drugs.

Method: Threehundred adult immunocompetent patients were enrolled, which were divided into two groups. The first group did not receive antiviral therapy; the first subgroup (1/2 of first group) received TENS, the second subgroup (1/2 of first group) received only analgesic treatment, when needed. The second group received antiviral therapy; the first subgroup (1/2 of second group) received only antiviral drug, the second subgroup (1/2 of second group) received antiviral drug and TENS. The duration of pain preceding the rash, the number of papules and vesicles, the duration and the intensity of pain (assessed on VAS), the period until the resolution of rash, and possible side effects were followed. Patients were checked twice weekly until the resolution of rash, and three and six months after the rash.

Results: At the moment around 150 patients have enrolled and 26 patients have completed the study. Among them two patients didn't receive any specific therapy (only analgesics), five patients received only TENS, 10 patients received only antiviral drug, and nine patients received both TENS and antiviral drug. Results regarding relief of acute pain are very good in the patients receiving TENS. None of these 26 patients developed post-mherpetic neuralgia.

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Using ICPC2 chapter Z in Primary Care in a group of health centres in Portugal

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Background: To focus the appointment register data regarding the approach to patient-centered problems in a bio-psycho-social view with the use of ICPC2 classification system (for symptoms (S), diagnosis of a problem (A) and outline a plan of procedure (P), specifically its chapter Z, because it extends the paradigm and reflects the impact of the European Definition of Family Medicine.

Research Question: Determine the frequency of the coding of the group Z ICPC2 in (S) (A) and (P) in 2010 in a group of public health centres (ACES) in Central Portugal.

Method: Observational, cross-sectional analysis. After authorization, global results were obtained for each doctor record in 2010 on all Health Centres (HC) in the ACES, by using the SAM-STAT statistical program. We studied the components of Z on (S) (A) and (P), using descriptive and inferential statistics by Kruskal-Wallis and OneWayANOVA.

Results: Studied seven of the eight HC that compose the ACES. The chapter Z components coded in S represents 0.2% and 0.4% of the components of the total registered in all 17 chapters. The use of Z chapter does not differ statistically by HC but the average number of components per HC has a significant difference in (A) 13.4 ± 17.2 (p $= 0.008$) and (S) 14.0 ± 8.4 (p < 0.001). There is almost no coding in (P). The six components most

registered are Z22, Z14, Z18, Z12, Z20 and Z5 representing on average 62.6% of the Z codes in (A) (40.5% to 85.1%), and 49.2% of Z codes in (S) (18.9% to 94.9%) by HC.

Conclusion: The coding for Z is 0.2% (S), 0.4% (A) and almost zero in (P), with no quantitative or qualitative difference between the HC. The average number of components differs by HC. No comparative data prior or later. The low prevalence found could motivate coding training for physicians.

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STUDY PROPOSALS

Multidisciplinary cooperation in diabetes management: the Ferrara project

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Background: Type II Diabetes mellitus and its comorbidities require regular structured treatment. Regrettably, studies consistently document a large gap between evidence-based standards and current diabetes care: on the other hand, prolonging patients contact with GPs tends to increase the already heavy workload.

Research Question: Can an advanced model of a multidisciplinary intensive diabetes education and management programme be effective and feasible in our primary care setting?

Method: The setting of our project is the city of Ferrara (Italy) where 29 family doctors and six trained diabetes nurses will be involved in the project; 400 diabetics, selected from the lists of two multipractices, with prolonged self-management difficulties manifesting in poor glycaemic control, will be referred to a primary care diabetes outpatient clinic. Inclusion criteria will be: three consecutive HBA1c > 7.5 (or 8.0 in uncomplicated diabetics aged over 75). Each patient will be referred to a trained diabetes nurse 'Case Manager.' This Case manager using a checklist, will evaluate the need of the patient (missing investigations, need for specialist consultations: ophthalmologist, dietician, cardiologist). The participants will be measured before they start the intervention (T0), and at 1-year follow-up (T1). Data on glycaemic control (HbA1c), LDL cholesterol, blood pressure, body mass index (BMI), smoking status and data on procedures performed or not will be assessed as outcome indicators. Changes over time will be analysed and means at T0 and T1 will be compared.

(Expected) Results: The results of the project will be useful for further decision and evaluation on the cost and feasibility to implement this approach on a wider scale.

Discussion: Similar experience in your country. Further outcome indicators to analyze.

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Recognising early dementia in the team of family practice

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Background: Despite frequency of disorder, early recognition of dementia in primary care is missed due to the presence of diagnostic and therapeutic nihilism between the professionals. Dementia differs from other chronic diseases. Usually patients do not complain neither are they aware of it, so we have to assist them through the process of care. Noticing some changes in behaviour or mood require some further steps to confirm the illness and progress from observing to diagnosing and treatment of the patient. Exploring the meaning of the first thought 'might be dementia' and the importance of interpersonal communication within the team to transmit the information in a proper way could be helpful in recognizing early dementia.

Research Question: Do statements and feelings represent barriers in recognizing early dementia? What different forms of interactions in the team improve the recognition, diagnosing and treatment of patients with early dementia in primary care?

Method: The protocol consists of three parts. After a literature review, the second part consists of qualitative research using the focus-group interviews in two steps until saturation occurs. At first, focus groups are conducted with representatives of different professions including the caregivers. In the second step, members of the team together form the focus group. In the part of the study, the results of previous data are analyzed and presented to the final meeting of experts where recommendations about early dementia in primary care team will be proposed. Reliability and internal validity is assured, triangulation of experts and methods will confirm the external validity.

(Expected) Results: Early recognition and treatment slow down dementia and improve quality of life for the whole family. Enhancing the awareness of team members about the initial signs of dementia and stimulating the information interactions between them could provide improved care of patients with dementia in family medicine.

Discussion: Is an additional questionnaire about the initial signs of dementia among health professionals needed to highlight the pre-understanding of the research?

Information from caregivers is important for diagnosing dementia. Is there any doubt?

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Primary Care management of patients suffering from eating disorders (ED) by French General Practitioners (GP): Identification of the population

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Background: Patients suffering from ED in France are mostly studied in secondary or tertiary care, where patients suffer from specific syndromes as anorexia nervosa. An early detection and an adequate treatment are known to improve the prognosis. Before the detection of ED, patients visit their GP more frequently than the general population, but for other purposes. In primary care, few studies describe the subsyndromic disorders and patients' characteristics, especially in France, where there have never been trials on this topic so far. There seems to be a correlation between depression and ED.

Research Question: What are the characteristics of patients suffering from ED in primary care? What is the chronological correlation between ED and depression?

Methods: A primary descriptive study of 1 319 patients suffering from ED was carried out on a French GP database. Patients were described by their age, gender, number of consultations, comorbidities and medicine consumption. A temporal study was then carried out to evaluate the link between depression and ED.

(Expected) Results: The results will be available in May 2012. It seems clear that patients' characteristics in primary care are totally different from tertiary care, with a great diversity of comorbidities.

Discussion: It is a preliminary descriptive study. A second comparative study with a case control method will be following. A third part with a mixed method will exploit the results of the two first studies.

Arterial hypertension screening by home blood pressure measurement

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Background: White coat hypertension (WCH) might affect up to 42% of the hypertensive treated patients in France. The proportion of patients with masked hypertension (MH) is estimated to be up to 10%, but is still uncertain. WCH is associated with an increased risk of developing sustained hypertension. MH is associated with an increased cardiovascular risk than confirmed hypertension. Those particular hypertension states suggest that treated patients are not those who really deserve it. The best way to diagnose WCH and MH is ambulatory or home blood pressure (BP) measurement. Some studies evaluated the benefit of home BP measurement to monitor treated hypertensive patients or to confirm high BP measured by the doctor. The use of home BP measurement to systematically screen patients with or without any high BP measure at the doctor's office has never been evaluated.

Research Question: What is the efficacy of home BP screening in terms of diagnosis of hypertension and initiation of an antihypertensive treatment in a population of adults over 40 years old?

Method: Prospective comparative controlled study. Selection of adults over 40 years old followed by a general practitioner. Inclusion of all eligible patients consulting their general practitioner during a selected period (i.e. 1 month). Exclusion criteria: patients with antihypertensive treatment. Inclusion criteria: patients over 40 years old who signed consent. Patients will be randomized into an intervention and a usual group. In the intervention group, three home BP measurements (morning and evening) for three days with a validated electronic device will be proposed. The management of results depending on the doctor's decision will be reported. Control group will have usual care. We will report for each patient their cardiovascular risk factors, treatments, hypertension diagnosis, data about BP measures at the office and prescription of home or ambulatory BP monitoring.

Discussion: Should we randomize at the patient level, or use cluster randomization? Is there a risk of diffusion of the intervention in the control group? Should we stratify the population? Should we use electronic devices that record BP measures?

Home and ambulatory blood pressure measurement in France

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Background: New recommendations about blood pressure (BP) measurement have been published by the French Society of Hypertension (SFHTA) in 2011. BP measurement outside the doctor's office is recommended to confirm the diagnosis of arterial hypertension before introducing an antihypertensive treatment and during the monitoring of the treatment. Ambulatory or home BP measurement is indeed more reproducible, more related to target organ damage (heart, kidneys, arteries) and can diagnose white-coat and masked hypertension when compared with the doctor's BP measurement.

Research Question: What is the gap between the new recommendations and the actual practice of French general practitioners in the use of home or ambulatory BP measurement?

Method: An epidemiological study in the centre region of France. Data will be gathered by trainees in general practice. They will select the patients attending the practice of their internship during a selected period of three or six months. Inclusion criteria will be adult patients with an antihypertensive treatment and who signed consent. The data collected will be: introduction, monitoring or adaptation of an antihypertensive treatment, and BP measurements (ambulatory, home or office) preceding and following the prescription. Data not found in the patient's file will be gathered directly from the patient. We will determine the proportion of prescription process, which includes home or ambulatory measurement.

Discussion: Should we exclude patients with a treatment introduced or adapted a long time ago or followed by another general practitioner? Should we extend the study to several regions? Should we systematically compare home or ambulatory BP with office BP?

Effectiveness of a medication review in elderly nursing home residents

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Background: Elderly nursing home residents are exposed to polypharmacy and inappropriate prescribing, which contribute to morbidity, hospitalization and death. Studies have demonstrated a significant association of STOPP (Screening

Tool of Older Persons potentially inappropriate Prescriptions) criteria with avoidable adverse drug events in the elderly that cause or contribute to urgent hospitalization. Interventions with removal of unnecessary drugs in the elderly have shown the positive impact on hospitalizations and mortality.

Research Question: Can a review of medications using START and STOPP criteria and drug interactions checker influence the frequency of potentially inappropriate prescriptions (PIMs), polypharmacy, mortality and urgent hospitalizations in elderly nursing home residents?

Method: Nursing home residents from several nursing homes will be randomly assigned into two groups (intervention and control). In the intervention group, a review of medications will be performed together with a patient consultation and using the patient's medical chart data. The review will consist of correcting eventual general errors (doubling, overdosing), using an online drug interaction checker to find possible interactions and a START and STOPP criteria review. Changes will be discussed and implemented upon both patient and nursing home physician's agreement. The frequency of PIMs, polypharmacy, hospitalization rate and mortality in both groups will be compared after six and twelve months.

(Expected) Results: We expect to find less potentially inappropriate medications in the patient's therapy and decreased polypharmacy after one year in the group where the review was performed. We also hope to find less urgent hospitalizations and lower mortality in comparison to the group without medication review.

Discussion: What confounding factors should I account for? How to track the unsuccessful changes in medication therapy (changes suggested upon revision that are not followed through or are reverted by the patient's physician)?

Management of obstructive respiratory diseases in French primary care: a multicentre qualitative study

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Background: Asthma and COPD, respectively concern 6.7% and 1% to 11% of the French population. Under diagnosis hinders management of obstructive respiratory conditions in primary care (only 36% of patients with COPD are diagnosed). Guidelines are poorly followed in France (under prescription of inhaled corticosteroids, over prescription of inhaled bronchodilators). Spirometry has been shown to be the optimization of diagnosis and follow-up.

Factors of this under diagnosis and misuse of guidelines are poorly explored. Few data are available on general practitioners' (GP) opinion about spirometry performed by themselves in the French healthcare system.

Research Question: Which barriers and facilitators are perceived by the French GPs in their management of obstructive respiratory diseases? What are their representations of the spirometry use by the GP in France?

Method: Qualitative multicentre study. Data will be collected by using the focus group method. Participants will be chosen

among the GP community by purposeful sampling. Verbatim accounts will be recorded, transcribed and the content analysis will be led by systematic comparison with electronic support.

(Expected) Results: The qualitative method chosen does not allow expectation as the results are extracted from the data. The main concepts identified should permit description of facilitators and barriers linked to the condition's specificities, patient's characteristics, practitioner's characteristics and healthcare system organization.

Discussion: Method choice: modalities of the multicentre data collection and analysis, focus group and/or interviews, sampling. Experience of participants on this topic: open the discussion on factors already identified in other countries.

The British and Polish primary care systems in the Polish migrant's opinion

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Background: With the advent of the extended EU community and the Schengen agreement, mobility within the EU has increased. Harmonization, access and equality are key principles of EU policy. However, individuals within the EU have their own, potentially differing, views of health and the service they require. We think that this may have perverse consequences, e.g. it is better to ask for a sick note, which would entitle you to be off work due to back pain in UK, where you are more likely to get one, than in the Netherlands, where there is a whole system, which focuses on people with back pain. It is possible to hypothesize then that Polish migrants choose to view the UK healthcare system as more approachable than that in Poland or in other EU countries.

Research Question: What do we know about the perception of the British and Polish primary care systems and the quality of medical services in these two countries among the Polish migrants who emigrated to the UK after Poland joining the EU in 2004.

Method: An extensive literature search drawing on both qualitative and quantitative methods to meet this objective will be conducted. Although a part of this study will be performed in Poland, we anticipate that we will need to go to the UK (Warwick Medical School) to access a more extensive range of databases and grey literature, so that our review is as complete as possible.

(Expected) Results: We seek to produce and publish a critical literature review, which will comprehensively describe this area of interest.

Discussion: Possible comparison studies with other countries.

Dedicated consultation in general practice for caregivers who support demented patients

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Background: The number of patients who informally take care of demented people–called informal caregivers (CG) – is expanding, due to the increase in neurodegenerative diseases such as Alzheimer disease. It is proven that caregivers are suffering from their situation. Caregivers' health is affected by their status, and they consequently require specific management. General practice guidelines recommend a dedicated consultation to take care of their specific situation. A preliminary qualitative study among involved actors assessed an overall interest in such a consultation, yet the consultation needs to be adequately customized to shape caregivers' and general practitioners'(GP) expectations.

Research Question: To build an adequate course to help GPs to run optimized dedicated caregivers' consultations.

Method: First, investigation will focus on what GPs and CGs expect from a dedicated consultation. A qualitative study will be conducted, using semi structured interviews among GPs and CGs. A guidebook initially built from previous qualitative data will be used to explore expectations. It aims to lead to an optimized consultation.

Second, a training course for GPs will be developed from the collected data.

Finally, a pilot 'before and after' study will analyze the course, its use and usefulness after the formation, and three months later. All this information will be gathered to finalize the course.

(Expected) Results: Positive impact, satisfaction of GPs and feasibility of the dedicated consultation will be central to analyze the course and its contents. This is the first stage of a study plan to build an intervention study aiming to demonstrate the impact of an intervention of GPs on caregivers' health.

Discussion: Feasibility of the project? What would be the adequate training tool format for the GPs' course? What do you advise for the criteria of the main outcome of this expected interventional study?

Measuring use and utility of the bio-psychosocial approach in family medicine

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Background: An integrated bio-psychosocial (BPS) approach is of great importance. Evidence for science-based policy-making is lacking. The purpose of this study will be to explore the scope of primary health care and assess the prospects for a higher quality of an integrated approach to treatment, in comparison with the biomedical model, which focuses only on the disease, and address the possible consequences of the disease.

Research Question: What impact does the bio-psychosocial model of health have on quality outcomes.

Method: We used the Delphi method and the nominal technique to identify an appropriate set of questions for the measurement of the BPS dimensions in family practice. We will produce a list of separate indicators that will show the biological approach on one hand and the psychosocial approach on the other. These indicators will serve for the comparison of the two models of care (biomedical versus psychosocial). The survey will be done on a representative sample of 220 family practitioners and 2 200 family practice visitors.

(Expected) Results: The expected results of the study will be to describe the bio-psychosocial approach by indicators; specify, which factors affect this approach and its individual dimension; validate a questionnaire for measuring the bio-psychosocial model; see the link between quality of work and the approach taken with the patient, holistic treatment and participation between doctor and the patient.

Discussion: What is the main issue in being more psychosocially centered in comparison to the biomedical approach? Do you think that the patient centered, holistic approach and health as well-being are all included (or can be included) in the bio-psychosocial model?