

Optimising the organisation of family medicine practice. Selected abstracts from the 94th EGPRN conference, Istanbul, Turkey, 12–15 May 2022

All abstracts of the conference can be found at the EGPRN website <https://www.egprn.org/page/conference-abstracts>

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ABSTRACTS



Optimising the organisation of family medicine practice. Selected abstracts from the 94th EGPRN conference, Istanbul, Turkey, 12–15 May 2022

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KEYWORDS Organisation of care; COVID-19; prevention, clinical topics & research

The mission of WONCA Europe is the development of General Practice / Family Medicine (GP/FM) discipline in Region Europe by addressing the current challenges of health and healthcare. The theme of this meeting is 'Optimising the organisation of family medicine practice' to accomplish this vision. When we checked the meaning of 'organisation' in the Webster dictionary, the words 'forming a business for a particular purpose,' 'certain order to be found or used easily' and the 'process of planning' emerged and attracted our attention. The crucial discussion describing primary care (PC) organisation was based on the same concepts (if we summarise the words as needs, structure and delivery) after many years.

Today the authors consolidated several frameworks and defined: (1) population needs; (2) organisation and structure of PC practices; (3) delivery of PC services and (4) patient and population health outcomes as the four domains and added connecting constructs to link the domains: accessibility, appropriateness, productivity, efficiency, effectiveness, equity and integration. Knowledge about the relationship between structure and process (including the interpersonal and societal exchange/performance of GP/FP) and outcome derives from the organisational, behavioural and healthcare sciences. So we need to partner with interprofessional and multisectoral teams to evaluate detailed research on PC organisation.

In EGPRN-Istanbul, we hope we will discuss weaknesses and strengths, opportunities and threats of PC organisation in different conditions and develop many approaches during this meeting under the light of well-planned and applied trials or controlled observational studies, evidence, collaboration and collectivity.

Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes. In 1966, Donabedian put forward a conceptual model that provided a framework for examining health-care services and evaluating the quality of healthcare. According to that model, quality of care can be evaluated based on three categories: structure, process, and outcome. In primary care, several frameworks for assessing quality and performance were developed but all are based on those three categories.

Valid and reliable measures of structures and processes in primary care are needed to reflect upon performance/outcomes of primary care accurately. In this presentation, I will focus on the process dimension of primary care.

Process/delivery of primary care services is described as the processes that involve actions by the practitioners in the system, as well as the actions of the populations and patients, and manner by which health care services are delivered by the providers, actions taken and processes of care received by patients, families and communities. Different primary care models suggest different elements of primary care delivery that describe quality of care. They can be summarised into seven key elements: first contact, continuity, coordination, interpersonal care, comprehensive care, interprofessional care, and community orientation. A recent umbrella review of primary care quality indicators by Ramalho et al., found 542 indicators that assess the quality of the primary care processes.

Studies showed that key elements of primary care delivery directly or indirectly affect quality of care, health outcomes (better health of population, lower mortality rates, better quality of life), performance (lower hospitalisation rates, less deterioration of chronic diseases), safety (higher prescription quality, less foregone care, lower risk for safety incidents, shorter time to diagnosis, less fragmentation of care), costs (lower costs for healthcare), and better equity of care.

KEYNOTE LECTURES

International keynote lecture: Assessing the quality of primary care delivery

Zalika Klemenc Ketiš

Community Health Centre Ljubljana, Ljubljana, Slovenia

CONTACT  zalika.klemenc@um.si

National keynote lecture: Establishing primary care; Turkey and Azerbaijan primary care organization

Mehmet Akman

Marmara University School of Medicine, Department of Family Medicine, Istanbul, Turkey

CONTACT  makman4@gmail.com

Health systems built based on primary health care are fundamental to succeeding universal health coverage. Well-organised primary healthcare services can play a basic role in improving population health as well as the well-being of the population. Although significant improvements in the health outcomes of the global population during the era of the Millennium Development Goals, nearly half of the population cannot access the health services, they need. Health is central to the 2030 Agenda for Sustainable Development as it relates to many of the Sustainable Development Goals and is the specific focus of Goal 3. Outbreaks of global pandemics or emergencies like COVID-19 are the biggest challenges to the 'resilience' of primary care systems. Therefore, countries need to establish a regular system of facility assessments to provide objective measures for evaluating the health services' availability, readiness, quality, including measures to evaluate preparedness and response capacities.

Barbara Starfield was the first author to explore the context of primary care organisation (PCO). She mentioned that organisation of primary care includes four main primary care domains: first-contact care, comprehensiveness, continuity, and coordination. In 2008 Hogg et al., proposed that the conceptual framework for PCO consists of structural and performance domains and this domain classification influenced new authors on the subject until today. The structural domain includes three components; the health care system, the practice context and the organisation of the practice; and the performance domain includes two components; healthcare service delivery and technical quality of clinical care. According to Krings et al., the structure of primary care consists of three dimensions: primary care governance, financing of primary care and primary care workforce development. They determined the primary care process by four dimensions: accessibility of primary care, comprehensiveness of primary care; continuity of primary care; and coordination of primary care.

Senn et al., proposed a consolidated framework, which is particularly beneficial for primary care organisations designing and implementing well-defined monitoring activities. With the addition socio-cultural, economic and biological contexts, the framework became multidimensional and in-depth. Inclusion of needs and outcomes of patients and the population has the potential to cover the productivity of the given organisation.

Strong primary care requires well-developed organisational planning between levels of care. Primary care-oriented health systems are required to effectively handle the unmet health needs of the population. An efficient primary care organisation is very important for achieving a primary care-oriented health system. In this keynote, PCO's key aspects and benchmarks will be explored based on previously mentioned frameworks and domains.

As an example of health systems in transition, Turkey and Azerbaijan are reforming their health systems, including primary care services. Turkey has completed the implementation of several interventions in the structural component of primary care, however, there is still room for development in the process components. Azerbaijan has established a state health insurance scheme and set up family health centres as primary care facilities serving a defined population. However, serious structural reforms are still needed for a functional primary care service accessible to the whole nation. This

keynote will also cover more information on recent primary care reforms in both countries. The frameworks provided above will serve as tools for analysing primary care in these countries.

POSTER PRIZE WINNER

Very simple PDF-based online ageing game equivalent enhances medical students' understanding of elderly patients

Anne-Kathrin Geier, Stefan Lippmann, Antje Rau, Anne Schrimpf, Markus Bleckwenn and Tobias Deutsch

Department of General Practice, Medical Faculty, University of Leipzig, Leipzig, Germany

CONTACT  Annkathrin.geier@medizin.uni-leipzig.de

Background: Aging simulation games are established tools in undergraduate medical education aiming to provide medical students with insights into elderly patient's everyday life and raise awareness for age-related difficulties. At Leipzig University, a 90-min ageing simulation game is part of a compulsory geriatric medicine course in the fifth study year (of six). In the course of online teaching during the COVID-19 pandemic, we replaced the classroom-based simulation with an elementary online version based on four PDF documents containing audio and video links, directives for 'do it yourself' experiences and prompts for reflection.

Research question: Is a simple, self-directed online ageing game able to provide students with relevant experiences and insights to enhance their understanding of elderly patients?

Methods: Anonymous post-hoc survey among 277 fifth-year medical students eligible for the course in 2020. Descriptive statistical analysis and qualitative analysis of students' free-text responses regarding their main insights from the course.

Results: Response rate was 92.4% (n=256, Ø age =26 years, 60% women). 88% of the students enjoyed working on the course, and 83% perceived it as practice-orientated. 75% reported having gained new personal insights and 60% new professional knowledge. Although 92% reported an enhanced understanding of elderly patients, 85% disagreed that online simulations may generally replace real-world ageing games. PDF documents containing audio and video links directly imitating conditions (visual or hearing impairment) were rated best. Students' main insights from the course (qualitative data) most frequently referred to aspects of professional interaction with geriatric patients, knowledge about conditions/diseases, role reversal, and enhanced empathy.

Conclusion: Very simple online ageing game equivalents can provide students with relevant insights and raise awareness for elderly patients' needs. They might be alternatively implemented into the education of health professionals where resource-intensive real-world simulations are unfeasible.

KEYWORDS Online learning; aging game; aging simulation; geriatric medicine; awareness

SELECTED ABSTRACTS ORGANISATION OF CARE

Higher patient waiting times are associated with higher chronic stress of general practice personnel: Results of the cluster-randomised IMPROVEjob study

Julian Göbel, Karen Linden, Matthias Grot, Brigitte Werners, Lukas Degen, Tanja Seifried-Dübon, Esther Rind, Anna-Lisa Eilerts, Claudia Pieper, Verena Schröder, Monika A. Rieger and Birgitta Weltermann
Institute of General Practice and Family Medicine, Bonn, Germany

CONTACT ✉ julian.goebel@ukbonn.de

Background: Studies showed that higher waiting times in general practices lower patients' satisfaction with care. Yet, there are little data on associations between patients' waiting times and chronic stress of practice personnel. To address this question, we used baseline data of the cluster-randomised IMPROVEjob study with 60 German general practices.

Research question: We aimed to assess associations between chronic stress of practice personnel and personnel-reported waiting times.

Methods: The IMPROVEjob study included 366 professionals from 60 practices in the German North-Rhine region: 84 practice leaders, 28 employed physicians and 254 practice assistants. Perceived chronic stress was measured with the validated TICS-SSCS questionnaire (scale 0 = low to 48 = high). The waiting time was surveyed with a self-developed item ('On average, how long do patients wait in your practice?') offering six answer options: '5–15 minutes,' '16–30 minutes,' '31–45 minutes,' '46–60 minutes,' 'over 1 hour,' 'over 2 hours.' A multilevel regression model analysed for associations between personnel's perceived chronic stress and the reported waiting time while respecting the clustered data.

Results: The reported waiting times were: 5–15 minutes: 11.0%, 16–30 minutes: 35.8%, 31–45 minutes: 30.3%, 46–60 minutes: 12.1%, over 1 hour: 7.5%, over 2 hours: 3.2%. The average TICS-SSCS sum score across all three occupational groups was 19 out of 48 (SD = 8.78). Higher waiting times correlated with higher chronic stress of personnel on individual level (r all staff = 0.25; r practice leader = 0.24; r employed physician = 0.40; r practice assistants = 0.22). In the regression model, each waiting time shift from a shorter to a longer waiting time was associated with a significant increase in chronic stress (+1.72 points on the TICS SSCS scale).

Conclusion: Higher patient waiting times are associated with a negative effect on practice staff's well-being. Optimised work processes are needed to reduce waiting times and personnel's chronic stress.

KEYWORDS Waiting times; stress; general practitioners; practice personnel

The desire to be a better doctor versus the lack of time and resources: Promotors and inhibitors for quality improvement work in general practice. A qualitative analysis of 2715 free-text replies from participants in a quality improvement project

Torunn Bjerve Eide, Nicolas Øyane and Sigurd Høye

Department of General Practice, University of Oslo, Oslo, Norway

CONTACT ✉ torunnbjerveide@gmail.com

Background: Continuous quality improvement (QI) is necessary to maintain and develop high-quality general practice services. GPs' motivation is an important factor in understanding QI initiatives' success. There is an increasing strain on GPs' time and responsibilities (6), and we need more knowledge concerning GPs reactions to participation in QI projects to help initiate and implement further QI work.

Research question: Which factors impair or promote GPs' motivation for and participation in QI projects?

Methods: We used questionnaire data from the QI project 'Correct Antibiotic Use in the Municipalities,' a combined electronic and face-to-face course consisting of three GP peer group meetings over nine months. Each GP individually completed e-learning modules and the content was discussed in the subsequent meetings. The participants received reports detailing their individual antibiotic prescriptions for a defined period, including a comparison with the corresponding period during the previous year. Using text-driven inductive thematic analysis, we analysed 2715 free text answers from 2208 GPs.

Results: We identified three overarching themes in the GPs' thoughts on inhibitors and promotors of QI work: (1) The desire to be a better doctor; (2) Practical and structural factors as both promotors and inhibitors; and (3) Properties related to different QI measures. The participants stressed the importance of a safe peer group for discussions. The motivating effect of involving the whole GP practice in QI work was underlined. QI tools should be easily available and directly relevant to clinical work. The provision of individual prescription data was generally very well received.

Conclusion: The desire to be a good doctor is a strong motivator but the framework for general practice must allow for QI initiatives. QI tools must be easily obtainable and relevant for practice. Initiatives to facilitate QI work may be more successful if they target the GP practice instead of the individual GP.

KEYWORDS Quality improvement; continuous medical education; antibiotic prescribing

The process of diagnosis of cancer and the effect of the primary care in this process: A single-centre survey analysis

Ayşenur Duman Dilbaz and Saliha Serap Çifçili
Karadeniz Technical University, Trabzon, Turkey

CONTACT  aysnr27dmn@gmail.com

Background: Cancer diagnosis process can be affected by many factors related to the patient, physician and health system. To increase early diagnosis, problems at each step should be determined and precautions should be taken. Studies are showing that cancer misdiagnosis constitutes most diagnostic errors in primary care. This study aims to determine the factors affecting the timely diagnosis of cancer and the role of primary care in this process.

Research question: What are the effects of primary care and other effective factors in the cancer diagnosis process?

Methods: Our research was conducted in various outpatient clinics of Marmara University Pendik Training and Research Hospital, between 1 February and 31 May 2019. Patients aged over 18 and diagnosed with cancer in the last six months were included. The data was collected through a questionnaire and using face-to-face interviews.

Results: A total of 176 patients with a mean age of 55 participated, 45% of them stated that they reached out to primary care first when they had a complaint. Median time between first recognising the symptoms to admission was 30 days, 45% of the patients said they waited for the symptoms to go away on their own. The mean time from the first suspicion of cancer to diagnosis was 39.7 days, 19% of them stated that they applied to primary care with the symptoms present at the time of diagnosis. There was no significant difference between the diagnostic interval and diagnosis stage and the health institution patients first applied to.

Conclusion: There is no referral system in our country, patients can apply to any health institution. Our study suggests no relationship between admission steps and early diagnosis. Primary care has a significant advantage in the early diagnosis of cancer with its accessibility and holistic approach; its role in this field needs to be increased.

KEYWORDS Cancer diagnosis; early diagnosis; cancer delay; diagnostic delay

Developing a Serbian strategy to improve implementation of primary family violence care

Snežana Knežević, Nell Van Hansewyck, Bosiljka Đikanović, Raquel Gomez Bravo, Filiz Ak, Carmen Fernandez Alonso and Lodewijk Pas
University of Kragujevac & Health Center Kraljevo, Kraljevo, Serbia

CONTACT  lesta59@yahoo.com

Background: Family violence is in Serbia recognised as a criminal act since 2002. Health professionals at primary care level are uniquely positioned to create safe and confidential environments for facilitating disclosure of violence.

Research question: How to improve implementation for primary health care tasks of family violence?

Methods: Key-person inquiries, developed within the IMOCAPV project, resulted in 26 helpful answers about detection, barriers, facilitators, risk assessment and monitoring. Open-ended responses were coded independently by two readers. Participants were recruited equally from PHC physicians, public health doctors, paediatricians, nurses, midwives, psychologists, forensics, social workers and NGO representatives. We submitted related questions to nominal group discussions. Conclusions will be submitted to further broad analysis using Delphi online questionnaires.

Results: Barriers highlighted were lack of time assessment, suitable infrastructure, insufficient funding and data collection, lack of staff to assess, respond and perform case management. Legislation gaps at justice and policy levels as well as poor coordination of individual services limit efficacy. Facilitators identified were: public policy for awareness, clearly defined tasks, continuous medical education, knowledge transfer as well as incentives for collaboration. Positive factors are: public policy in Serbia, including the gender perspective; detection, risk assessment and monitoring are included in protocols. Local implementation could be promoted by prevention and intervention programs, targeted on increasing detection, better management of coordination, incentives for individual efforts. At regional level, improved data collection and development of guidance as well as partnerships between healthcare sector and statutory bodies, preventive campaigns and emergency measures would enhance performance and efficacy. Further enhancement might result from survivor follow-up, assessment of services' quality with feedback and financial support for Primary health care multidisciplinary collaboration.

Conclusion: Nominal groups concentrate on raising public and professional awareness, capability for a systematic approach, risk assessment and orientation from health care to statutory bodies and NGO's embedded in a public policy approach.

KEYWORDS Primary health care; family violence; barriers; facilitators; implementation

Contextual factors associated with successful implementation of the evidence-based health promotion intervention Prescribe Vida Saludable

Heather L. Rogers, Susana Pablo Harnando, Silvia Nunez-Fernandez, Alvaro Sanchez, Carlos Martos, Maribel Moreno and Gonzalo Grandes
Biocruces Bizkaia Health Research Institute, Barakaldo, Spain

CONTACT  rogersheatherl@gmail.com

Background: The benefits of primary care health promotion are well-documented, yet primary prevention lifestyle advice is not typical routine clinical practice in primary care.

Research question: This study aims to elucidate the contextual factors associated with the implementation effectiveness of an evidence-based health promotion intervention in primary care centres in Basque Country, Spain.

Methods: Seven primary care centres participated in the 'Prescribe Vida Saludable' (PVS) phase III intervention-implementation effectiveness trial. After 18 months of participation, centres were classified as having high, medium, or low implementation effectiveness based on the proportion of their population who received the 5A's intervention. This qualitative study comprised seven focus groups with the participating staff of six primary care centres. Three trained researchers coded the transcripts using The Consolidated Framework for Implementation Research (CFIR) codebook: <https://cfirguide.org/constructs/>.

Results: Of the 36 CFIR constructs, 14 were associated with implementation performance: 2 intervention characteristics (relative advantage, adaptability), 1 outer setting construct (needs & resources), 4 inner setting constructs (structural characteristics, networks & communication, culture, implementation climate), 2 characteristics of individuals (self-efficacy, individual stage of change), and 5 process constructs (engaging, engaging champions, engaging external change agents, executing, reflecting & evaluating). Of these, three of the inner setting constructs and two of the process constructs (engaging champions, executing) were positively related with implementation effectiveness. In contrast, smaller centers had higher implementation effectiveness, indicating a negative relationship.

Conclusion: Inner setting and process factors are crucial to effectively implementing health promotion interventions in primary care. In those centres with smaller size, strong existing communication networks among staff (e.g. regular meetings), a culture of teamwork, a favourable implementation climate, champions who promote the intervention and motivate colleagues, and the capacity to execute their planned strategy reach higher percentages of their assigned populations than those without these characteristics.

KEYWORDS Health promotion; implementation science; primary care

Effectiveness of combining patient follow-up with an educational intervention on self-management skills of type 2 diabetes mellitus patients: A primary care pragmatic trial

Ayşenur Aktemur, Güldeniz Kılıç, Handenur Tan Doğrusever and Saliha Serap Çifçili

Marmara University, Pendik, Turkey

CONTACT ✉ aysenursvl@gmail.com

Background: Self-management tools and programmes have been developed to help Diabetes Mellitus (DM) patients

manage their disease. However, these methods may not be effective in patients with low health literacy.

Research question: Can a shared follow-up plan combined with education, facilitate patients' diabetes self-management skills in primary care? Is this effect affected by patients' current health literacy levels?

Methods: This is a non-randomised controlled clinical trial. We enrolled 84 Type 2 DM patients from three primary care centres in Istanbul, at least 40 participants being in the intervention (IG) and control groups (CG) (%80 power and %95 confidence level). A set of questions including patient characteristics, diabetes self-management scale and health literacy scale were used. Patients in the IG had three meetings with the researcher, in which, a 'DM Identity Card' and a 'DM Diary' developed by the researchers were given to the patients combined with an education session. The CG participants were called by the researcher three times and briefly informed about DM. Diabetes self-management scale and health literacy scale were used.

Results: The mean age of IG was 55.10 (± 8.40) and the CG was 59.51 (± 9.04). The participants of both groups were predominantly female (IG: %58.5 - CG: %60.5). After a three-months follow-up, the mean self-management score of the IG increased from 65.53 (SD = 11.69) to 73.64 (SD = 11.50) ($p < .05$), whereas the mean score of the CG increased from 57.3 (SD = 11.72) to 58.3 (SD = 9.36). No statistically significant relationship was found between the increase in self-management scores and the current health literacy of the participant ($r = 0.11$ $p > .05$).

Conclusion: The follow-up method we developed may increase the type 2 DM patients' self-management skills regardless of the level of health literacy in primary care.

KEYWORDS Type 2 diabetes mellitus; self-management; intervention; patient-empowerment

COVID-19

Quality and outcome of diabetes care during the COVID-19 pandemic in a primary care setting in Switzerland

Benjamin Sebastian Lüthi, Stefania Di Gangi, Laura Diaz Hernandez, Andreas Zeller, Stefan Zechmann and Roland Fischer

Centre for Primary Health Care, University of Basel, Basel, Switzerland

CONTACT ✉ benjamin.s.luethi@gmail.com

Background: During the pandemic, not only SARS-CoV-2 infections and their complications have an impact on public health. The management of non-communicable diseases such as diabetes mellitus can be affected too. Patients may not receive the same quality of care because of pandemic.

Research question: To determine the impact of the pandemic on quality and outcome of diabetes care.

Methods: Retrospective comparison of two cohorts in a primary care setting in Switzerland. Adult patients (≥ 18 years) with a diagnosis of diabetes mellitus and with at least one

consultation with a general practitioner, between 17 March 2018 and 16 March 2019 (cohort 1) and 17 March 2019 and 16 March 2020 (cohort 2), were included and observed for two years (until 16 March 2020 and 16 March 2021, respectively). Quality indicators and outcomes of diabetes care at patient and practitioner level, were compared before and during the COVID-19 pandemic.

Results: A total of 27,043 patients and 191 practices were included, 23,903 in cohort 1 and 25,092 in cohort 2. The fraction of patients lost to follow-up attributable to the pandemic was 28% [95% Confidence Interval: 25%, 30%]. At patient level, regular measurements of weight, Hemoglobin A1c (HbA1c), blood pressure and serum creatinine were less frequent during the pandemic. At the practitioner level, fewer patients reached the target of an HbA1c value $\leq 7\%$ and a blood pressure value of $<140/90$ mmHg during the pandemic. However, more patients had an LDL-cholesterol value of <2.6 mmol/l. Although higher HbA1c values were observed in the months after lockdown, values converged to the same level for both cohorts by the end of the follow-up period.

Conclusion: A considerable quality drop in diabetes mellitus care could be observed during the pandemic (17 March 2020–16 March 2021). However, HbA1c values converged to the same level for both cohorts at the end of the observation period. Thus, the long-term effect on relevant outcomes has not yet been visible.

KEYWORDS Diabetes mellitus; primary care; COVID-19 pandemic; quality indicators; diabetes outcomes

COVID-19 severity prediction based on patient risk factors and number of vaccines received

Shlomo Vinker, Ariel Israel, Alejandro A. Schäffer, Eugene Merzon, Ilan Green, Eli Magen, Avivit GolanCohen and Eytan Ruppin
Leumit Health Services, Family Medicine, Ashdod, Israel

CONTACT ✉ vinker01@gmail.com

Background: Vaccines are highly effective in preventing severe disease and death from COVID-19, and new medications that can reduce disease severity have been approved. However, many countries are facing limited supply of vaccine doses and medications.

Research question: A model estimating the probabilities for hospitalisation and mortality according to individual risk factors and vaccine doses received could help prioritise vaccination and yet scarce medications to maximise lives saved and reduce the burden on hospitalisation facilities.

Methods: Electronic health records from 101,034 individuals infected with SARS-CoV-2, since the beginning of the pandemic and until 30 November 2021, were extracted from a national healthcare organization in Israel. Logistic regression models were built to estimate the risk for subsequent hospitalization and death based on the number of BNT162b2 mRNA vaccine doses received and few major risk factors (age, sex, body mass index, hemoglobin A1C, kidney function, and presence of hypertension, pulmonary disease or malignancy).

Results: The models built predicts the outcome of newly infected individuals with remarkable accuracy: area under the

curve was 0.889 for predicting hospitalisation, and 0.967 for predicting mortality. Even when a breakthrough infection occurs, receiving three vaccination doses significantly reduces the risk of hospitalization by 66% (OR = 0.336) and death by 78% (OR = 0.220).

Conclusion: The models enable rapid identification of individuals at high risk for hospitalisation and death when infected. These patients can be prioritised to receive booster vaccination and the yet scarce medications. A calculator based on these models is made public: <http://covidest.web.app>

KEYWORDS COVID-19; disease severity; calculator; diabetes; obesity; kidney disease

Acceptability and feasibility of self-organised blood sample collection for SARS-CoV-2 antibody screening in persons with a high risk for a severe COVID-19 disease progression

Dominik Schröder, Alexandra Dopfer-Jablonka, Frank Klawonn, Frank Müller and Stephanie Heinemann

Department of General Medicine, University Medical Center Goettingen, Germany, Göttingen, Germany

CONTACT ✉ dominik.schroeder@med.uni-goettingen.de

Background: The pandemic situation poses new challenges for research. Ethical issues might arise if especially vulnerable individuals expose themselves to a higher risk of infection for study purposes.

Research question: How is the feasibility, quality and acceptance of self-organised blood sample collections to measure anti-SARS-CoV-2 Spike IgG antibodies in persons with a high risk for a severe COVID-19 disease progression?

Methods: Persons with a high risk for a severe COVID-19 disease progression (immunocompromised, oncology or 80+ years) were recruited between January and September 2021 to send in blood samples (2.6 ml, 7.5 ml or 500 μ l EDTA tubes) one month and six months after their second COVID-19 vaccination. Participants were given the choice of drawing blood themselves (as capillary blood), with the research team, or in local practices or clinics. Participants were surveyed via a computer-assisted telephone interview in December 2021 and January 2022 about their choice of blood sampling methods, experiences, and influence of choice upon study participation.

Results: Data from 366 participants was collected via telephone follow-up. First, blood samples were collected by the participants themselves (35.8%), local practices or clinics (32.0%) and the research team (22.7%). Second blood samples were mostly collected in local practices or clinics (43.7%) followed by participants themselves (32.5%) and the research team (14.3%). Only 3.3% of blood samples were not sent back or analysable. One-fourth (26%) of participants stated that they would not have participated in the study if it would have been required to travel to the university hospital to give their blood sample.

Conclusion: Participants were able to self-organise blood collection, using several different blood sample methods. Nearly all blood samples were analyzable when self-collected and sent by post. One-fourth of the participants would not have participated in the study if required to give their blood samples at the study location.

KEYWORDS SARS-CoV-2; acceptability; feasibility; blood sample

PREVENTION, CLINICAL TOPICS & RESEARCH

Pneumococcal vaccination coverage and adherence to recommended dosing schedules in adults: A repeated cross-sectional study in the INTEGO morbidity registry

Arne Janssens, Chloé Abels, Barbara Merckx,
André Bento Abreu and Bert Vaes
KU Leuven, Leuven, Belgium

CONTACT ✉ arne.janssens@kuleuven.be

Background: Belgium's Superior Health Council (SHC) recommends pneumococcal vaccination for adults aged 16+ at high risk, 50–85 years with comorbidities, and healthy elderly aged 65–85 years, with specific vaccine administering sequence and timing (i.e. schedules). Currently, there is no publicly funded adult pneumococcal vaccination programme in Belgium.

Research question: This study investigated the seasonal pneumococcal vaccination trends, evolution of vaccination coverage rates (VCR) and adherence to SHC recommendations.

Methods: INTEGO is a general practice morbidity registry in Flanders (Belgium), representing 104 general practice centres and 226,793 patients in 2021. A repeated cross-sectional study for the period 2016–2021 was performed. To assess the association between (schedule adherent) pneumococcal vaccination status and patient characteristics (gender, age, comorbidity, influenza vaccination status and socio-economic status), adjusted odds ratios (aORs) were computed using multivariate logistic regression.

Results: Pneumococcal VCR in Flanders showed a seasonal trend with a PCV13 peak in November (together with seasonal flu vaccination) and a PPV23 rise in January. The VCR in the at-risk population increased from 18% in 2016 to 24% in 2021 (one-sided $P=2.2-16$). VCR was highest for high risk adults (29%), followed by the 50-to-85-year-olds with comorbidities (22%) and healthy elderly (15%). For persons with a lower socio-economic status, the aOR was 1.06 (95%CI 1.04;1.09) for immunisation and 1.23 (95%CI 1.18;1.28) for schedule non-adherence. The aOR for schedule non-adherence was 0.51 (95%CI 0.49;0.54) for the 50-to-85-year-olds with comorbidities, and 0.52 (95%CI 0.5;0.55) for healthy elderly compared to the high-risk group.

Conclusion: General practice data from Flanders showed that VCR of target groups is slowly increasing while displaying seasonal peaks. However, high-risk patients and adults with poor socio-economic status have lower odds of schedule adherence demonstrating the need for a publicly funded programme in Belgium to ensure equitable access and optimise the benefits of current recommendations for the target population.

KEYWORDS General practice; adult pneumococcal vaccination; coverage rate; equity

The SPICES cardiovascular risk assessment in general population: Quantitative data and implantation clues

Delphine Le Goff, Gabriel Perraud, Paul Aujoulat,
Jérémy Derriennic, Marie Barais and Jean Yves Le Reste

Faculté de médecine, Médecine Générale, Brest, France

CONTACT ✉ docteurdlegoff@gmail.com

Background: In 2015, cardiovascular diseases (CVD) caused 31% of the deaths worldwide. SPICES involves five countries in an international primary prevention implementation study. In France, the study was implemented in a rural, deprived region with an increased cardiovascular mortality. An assessment of CVD risk of individuals in general population was conducted at public events and places in the region in 2018. Screeners, stakeholders, and researchers experimented with barriers and facilitators to this assessment. The efficacy and the replicability of such a study were unknown.

Research question: Following the Non-Laboratory Interheart risk score (NL-IHRS), what are the characteristics of the individuals undergoing CVD risk assessment for SPICES? Which barriers and facilitators were experimented with by the whole screening team?

Methods: Implementation study combining a cross-sectional descriptive study with qualitative interviews. The NL-IHRS was completed voluntarily, recording age, gender, familial history of heart attack, diabetes, hypertension, smoking status, physical activities, dietary habits, psychosocial factors, and abdominal obesity. After the screening, groups of students, GP trainees, pharmacists, nurses, physiotherapists and members of the research team were interviewed until theoretical saturation of the data for each group. Thematic analysis was performed with double blind coding.

Results: From 15 April to 14 September 2019, 3374 assessments were undertaken in 64 places, 1582 individuals were at low CVD risk, 1304 at moderate risk, 488 at high risk. Stressed or depressed individuals were 39,8% and 24,4% of the population. Fifty qualitative interviews were conducted. Main facilitators were readiness of the population, trust between screeners and research team, media attention and word spread. Main barriers were lack of motivation and difficulties in handling the research software.

Conclusion: This recruitment was successful. Levels of diabetes and smokers were comparable to the French population, hypertensive and physical inactive were lower. Stress and depression were unexpectedly high. Training of screeners and ambulatory research software should be improved.

KEYWORDS Cardiovascular disease prevention; general population; implementation

Quality of life and physical activity in prefrail individuals over 70 years in primary care

Victoria Castell-Alcala, María Prieto-Aldana, Alicia Gutiérrez-Misis, Rosa Julian Viñals, Christine Schwarz, Marta Gálvez-Fernández, Ricardo Rodríguez-Barrientos and Elena Polentinos Castro
SERMAS (SERVICIO MADRILEÑO DE SALUD). Primary health care centre dr Castroviejo, Madrid, Spain

CONTACT  mariavictoria.castell@salud.madrid.org

Background: Frailty is an increasing problem among the elderly people and is more frequent in women. Literature reports that physical activity improves either the function and quality of life, but there is a lack of evidence regarding changes in pre-frailty individuals and differences between men and women.

Research question: Is there an association between health-related quality of life (HRQoL) and physical activity in a pre-frail population, and what is the role of gender?

Methods: Descriptive cross-sectional study of pre-frail individuals over 70 years old in 12 primary care health centres was carried out between June 2018 and 2020 March in Madrid, Spain. The variables studied were collected by clinical interview: Physical activity (Yale), HRQoL (EQ-5D-3L), sociodemographic and clinical variables (comorbidity, depression and pain). Descriptive analysis and multiple linear regression for the whole population and stratified by gender, using the quality of life as dependent variable. Funding: Grant PI 17/01887 (Carlos III Health Institute and FEDER)

Results: The study involved 206 pre-frail individuals (152 women) with an average age of 78. Women had less comorbidity (32.3% versus 55.6%) but more pain (60.5% versus 44.4%) than men, 55.9% of the physical activity realised by participants was attributable to relaxed walk; women did more physical activity than men ($p > .01$). Mean HRQoL was 0.74 (CI95%:0.72–0.77) in utility score and 68.1 (CI95%:65.9–70.3) in the EQ-VAS. To walk more than 5 hours a week was associated with better quality of life by EQ-5D utility score (0.08, 95%CI: 0.03 to 0.14), and by EQ-VAS score (5.38, 95% CI: 0.25 to 10.51) when adjusted by age, pain and depression.

Conclusion: Physical activity was associated with better quality of life in a pre-frail population of individuals older than 70. Women did more physical activity without finding differences in quality of life with men.

KEYWORDS Pre-frailty; quality of life; exercise, aged, primary health care, sex

Orthopaedic corticosteroid injection and risk of acute coronary syndrome: A case-control study

Katharine Thomas and Yochai Schonmann
Tel Aviv University Medical School, Department of Family Medicine, Tel Aviv, Israel

CONTACT  marshykd@gmail.com

Background: Intra-articular and soft tissue corticosteroid injection (CSI) is a standard treatment for musculoskeletal conditions and is considered safe with a low incidence of minor side effects. An association between musculoskeletal CSI and acute ischemic heart disease is not known.

Research question: Do musculoskeletal corticosteroid injections increase the incidence of acute coronary syndrome?

Methods: Data was reviewed from 41,276 patients aged 40 or older and hospitalised with Acute Coronary Syndrome (ACS) between January 2015 and December 2019. Each ACS case was allocated up to ten control patients, drawn from their primary care clinic and matched for age and sex. The incidence of an orthopaedic or rheumatological consultation, including a corticosteroid injection prior hospital admission, was compared between the case and control groups.

Results: A total of 413,063 patients was reviewed, 41,276 ACS cases and 371,787 controls. The mean age was 68.1 Standard deviation (SD) = 13.1, 69.4% male. In the week prior to hospital admission 118 injections were received by the ACS patients and 495 in the control group. Odds Ratio, [OR] = 1.95 (1.56–2.43). An association between ACS and prior CSI was strongest in the days immediately prior to hospitalisation: OR = 3.11 (2.10–4.61) for patients who were injected one day before ACS; OR = 2.33 (1.74–3.10) for patients injected in the three days prior to ACS. The statistical association between CSI and ACS gradually declined as the time between the injection and the hospitalisation increased, losing significance at 90 days, OR = 1.08 (0.98–1.18). The association between CSI and ACS remained robust when cardiovascular risk factors and a history of rheumatological disease were considered.

Conclusion: CSI for musculoskeletal conditions appears to substantially increase the risk of ACS in the days following the injection. Although the absolute risk of ACS is small, the effect size is clinically significant.

KEYWORDS Acute coronary syndrome; corticosteroid injections; intra-articular injections; orthopaedics; rheumatology

Towards de-identification of general practitioners' electronic medical records for secondary research

Johannes Hauswaldt, Roland Groh, Alireza Zarei, Knut Kaulke and Falk Schlegelmilch

University Medical Center Göttingen, Institute of General Practice, Göttingen, Germany

CONTACT  johannes.hauswaldt@med.unigoettingen.de

Background: Secondary use of GPs' routine data in a legal way is technically and organisationally feasible. Potentially identifying field content (PIF), especially free text entries, obstruct 'factual anonymisation' of a secondary data set (SDS) for scientific use.

Research question: Stepwise and systematically recognition of PIF in an exemplary SDS from structured routine data

using a mandatory software interface in a general practice management system. Data protection impact assessment (Art. 35 GDPR) for evaluation.

Methods: Studies were performed at four levels, (a) single field identifiers (variables, attributes), (b) their combination, (c) their field content (expressions, values), and (d) the data-set as a whole. Instruments for (a) and (b) were field type, relative frequencies, categories, GP's expertise, for (c) TextCrawler, (d) ARX. Results were evaluated as coincidence of a possible harm's severity with its probability of occurrence.

Results: A SDS from one German general practice, 1993 until 2017, covering 142,885 patients, was studied as csv-datafile with 5,918,321 data lines and three variables (order, field identifier, field content). PIF was discovered predominantly in 'permanent remarks' ('doctor's notes') and 'findings,' and were categorised as 'names,' 'toponymata,' 'phone numbers,' 'functional descriptors' and 'professions' but semantic text qualifiers were not implicit. 'Date of death' was considered harm of high impact to privacy protection with moderate occurrence probability – remedial was replaced by 'year of death.' The combination of temporal order, patient pseudonym and specific field contents increased the risk of re-identification within this SDS.

Conclusion: Studies for PIF have to be done on a defined and completed SDS. They require professional and appropriate expertise concerning data generation and framing background in general practice as well as meta-information about the primary data set. With reasonable effort, PIFs can be identified only to a certain imperfect extent. Recognising and assessing PIFs is a requirement prior to any de-identifying intervention.

KEYWORDS Electronic medical record; secondary research; privacy protection; de-identification; health services research

Evaluation of drug use status, rational drug use level and interaction status between drugs of patients who have a chronic disease and apply to the education family health centre (FHC) to prescribe drugs

Şems Azra Kaya Göktaş, Mücahit Göktaş and Seçil Arica

Cemil Taşçıoğlu City Hospital, İstanbul, Turkey

CONTACT ✉ semskaya0393@gmail.com

Background: Rational drug use (RDU) is the ability of patients to reach the drug that is suitable for their clinical needs, in the required dose, for the necessary time, and in a cost-effective way. As a result of irrational drug use, unnecessary health expenditures increase and many undesirable drug reactions can be seen.

Research question: Is the RDU level of the patients admitted to the FHC sufficient and what are the factors affecting it?

Methods: It was planned to include 252 individuals over the age of 18. A questionnaire and RDU scale, consisting of questions such as the participants' sociodemographic characteristics, chronic disease, drug use histories, etc. were administered face-to-face. Those who get 35 points and above on the scale we considered to have a sufficient RDU level. The data obtained from the study was analysed with the SPSS-25 statistical programme.

Results: 172 people have participated, 64.5% of the participants are women, 58.1% graduating from primary school and 83.1% are married. 48.8% of the individuals were using four or more drugs. When we look the drug interactions, 31.4% of them have high levels and 2.3% of them have very high levels of interactions. The RDU scores of 64% of the participants were 35 and above. The RDU scores of women were significantly higher than that of men ($p = .02$). The mean age of those with polypharmacy was significantly higher ($p = .01$). As the level of education increased, the RDU scores of the individuals increased significantly ($p = .00$) while the rate of polypharmacy decreased ($p = .07$). The results show no significant relationship between RDU score and marital status, monthly income and smoking ($p > .05$).

Conclusion: Polypharmacy and interactions between drugs were high in patients who applied to FHC. An inverse relationship was found between education and polypharmacy and a direct relationship was found between the level of RDU. Family physicians have a vital role in educating patients.

KEYWORDS Chronic disease; rational drug use; drug