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# Research on integrated community care: Focus on general practitioners, patients and the population. Selected abstracts from the 95th EGPRN conference Antwerp, Belgium, 20–23 October 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

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# Research on integrated community care: Focus on general practitioners, patients and the population. Selected abstracts from the 95th EGPRN conference Antwerp, Belgium, 20–23 October 2022

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

**KEYWORDS** Community care; research methods; integrated care; geriatics; telemedicine; disadvantaged groups

## Introduction to the theme of the conference: Research on integrated community care: Focus on GP, patients and population

People and populations are faced with diverse and complex problems nowadays. Society is changing with an ageing population, multiculturality, refugees, a pandemic, and a climate crisis. These changes have shown our healthcare systems' fragility and increased inequity within our society. This is a challenge for health and social care workers and society in general.

Traditionally family medicine and general practice focuses on individual patients and their health problems and needs. Increasingly, GPs are providing interdisciplinary care towards improved health and wellbeing of their patients. However, trends and challenges in our society demand an increase in interdisciplinary working – bridging the gap between health and social care, focusing more on the whole community and the determinants of their health and wellbeing, and working across sectors and with the stakeholders in the community. This means changes towards an integrated community care approach. It implies a shift from disease-oriented and problem-based care towards goal-based and patient-centred care. Co-development with individuals and communities is key, as well as the connection between health and social care to improve clinical outcomes in terms of efficiency, effectiveness, and patient satisfaction. Integrated community care needs interdisciplinarity to have a common understanding of the problems and to find solutions. This approach builds upon the local community and its defined population. The local community is the living environment of the population for which we care as GPs and other health care providers. Each local community has his own challenges in terms of population (demographics, health problems and vulnerability) but it also offers opportunities as a natural environment with sustainable resources and dynamics of health and social care providers.

What does this mean for research in primary care and general practice? First, the context of primary care research will shift from individual clinical practice to community- and population-based research. Therefore, other innovative research designs are necessary, such as mixed-methods research, case study research and realist evaluation research, to evaluate integrated community care programmes and participatory action research to support co-creation between fieldworkers, patients, and researchers. Research outcomes can be both on the individual patient and on the population and community level.

KEYNOTE LECTURES

## International keynote lecture: Models, theories, and frameworks for complex interventions: From concepts to application in primary care

Heather L. Rogers
Biocruces Bizkaia Health Research Institute, Barakaldo, Spain

**CONTACT** rogersheatherl@gmail.com

In an Opinion on the Organization of Resilient Health and Social Care, the European Commission Expert Panel on Effective Ways of Investing in Health proposed a multi-dimensional conceptual framework combining elements of previous models. Integrated social and community care is critical to this model. Throughout Europe, innovative complex interventions have been created to improve health and social care systems. Updated guidance for developing and evaluating complex interventions is now available from the UK Medical Research Council. Furthermore, methodologies espoused by the field of implementation science have been useful for testing and understanding the effectiveness of complex interventions. See more details at ImpRes – Implementation Science Research Development Tool Guide (King's Improvement Science, 2018).

In line with the meeting theme, this talk will provide an overview of available implementation science research designs and evaluation approaches. It will also illustrate how primary care professionals in Europe have applied these methods. Through the examples, it will (1) emphasise the relevance of separating the complex intervention from the strategies used to facilitate its uptake or dissemination, (2) demonstrate the value of examining processes as well as multi-level outcomes in its evaluation, and (3) highlight the importance of exploring contextual factors that influence the real-world effectiveness of complex interventions.

## National keynote lecture: General practice, primary healthcare and the community: linking the dots

Hilde Bastiaens

Universiteit Antwerpen, Antwerpen, Belgium

**CONTACT** hilde.bastiaens@uantwerpen.be

The enormous challenges in healthcare are well defined and include an ageing population, the rise of chronic conditions, changing expectations and needs, scientific innovations, increasing health inequality, shortage in health staff and rising budgets. Strong primary care is a cornerstone in addressing these challenges and in pursuing health and wellbeing for all. In their 'Vision for primary health care in the 21st century', WHO/UNICIF write that this future Primary Health Care (PHC) should entail three inter-related components: meeting people's health needs throughout their life course through integrated healthcare, addressing broader determinants of health via multisectoral policies and actions; and engaging and empowering individuals, families, and communities for increased social participation and enhanced self-care and self-reliance in health.

If we want to realise this ambitious concept of PHC, a shift in the organisation of primary (health)care is required, the role of general practice within this wider context will need to change and innovative primary care research is crucial to support this transformation. This lecture has sketched recent evolutions in the Belgian Healthcare Sector and will make the link with these challenges and evolutions within PHC, reflecting on the consequent needs in primary care research and illustrating this with concrete examples from research practice.

POSTER PRIZE WINNER

## COVID-19 pneumonia in the outpatient setting in Italy: A population-based observational study

Alice Serafini, Giulia Ugolini, Lucia Palandri, Peter Konstantin Kurotschka, Marina Scarpa, Maria Stella Padula, Davide Fornaciari, Martina Lavenia, Matteo Morandi, Francesco Bellelli, Maria Rita Sabattini, Chiara Giansante, Elena Righi and Silvia Riccomi

Azienda Unità Sanitaria Locale di Modena, Local Health Authority of Modena, Modena, Italy

**CONTACT** alice.serafini@hotmail.it

**Background:** Around 80% of symptomatic SARS-CoV-2 infections are characterised by mild to moderate respiratory symptoms, two out of ten patients develop severe disease, with pneumonia being the most common clinical outcome. Little is known about the prevalence and the patient management of SARS-CoV-2-related pneumonia in Italian general practices.
**Research question:** To describe the clinical features of outpatients with SARS-CoV-2 related pneumonia and the management strategies of Italian general practitioners (GPs) in Modena (Italy).
**Methods:** Retrospective study of SARS-CoV-2 infected adult outpatients managed by their GPs from March to May 2020 to April 2021. Data on GPs' monitoring and treatment strategies, patients' clinical and sociodemographic characteristics, hospitalisation and death, were extracted from the GPs' electronic medical records and were analysed using descriptive and bivariate statistics.
**Results:** In the analyses, 5340 patients from 46 GP practices were included and among these 1457 (27%) developed pneumonia with (12%) or without (15%) respiratory failure. Among these, 940 (66 %) were managed entirely in the outpatient setting by GPs. A total of 59% patients received paracetamol, 33 % NSAID, 59% antibiotics, 37% corticosteroids, 47% LMWH, 14% oxygen and 3% hydroxychloroquine. Significant differences were observed in prescription patterns between the first and subsequent waves. Patients with pneumonia (921, 63%) received active monitoring while 611 (42%) were visited at home; this percentage remained stable despite the exponential increase in the overall number of cases and the resulting GPs' workload. A total of 114 (8%) patients with pneumonia died, mostly (96%) with acute disease and 27 (24%) of deaths occurred in the outpatient setting.
**Conclusion:** The study quantifies the vital contribution of Primary Care to the management of COVID-19 outpatients with pneumonia in Italy and describes the variation of therapeutic and management strategies between the first and subsequent waves.

**KEYWORDS** COVID-19; pneumonia; Italy; primarycare; observational study; electronic health record

SELECTED ABSTRACTS
Themed topics

## Pulled in two directions: The tensions between implementation and established methods to evaluate in the same project, with marginalised communities

Harm Van Marwijk, Tom Grice-Jackson, Elizabeth Ford, Geofrey Musinguzi, Linda Gibson, Anne Van Marwijk and Hilde Bastiaens

Brighton and Sussex Medical School, Brighton, United Kingdom

**CONTACT** H.VanMarwijk@bsms.ac.uk

**Background**: This paper addresses ways of evaluating implementation approaches with vulnerable communities, such as (remote) health coaching by community health workers for lifestyle improvement. We describe the tensions we experienced between implementation and the use of qualitative, pragmatic evaluation methods or rigid randomised trial structures in 'Scaling-up Packages of Interventions for Cardiovascular disease (CVD) prevention in sites in Europe and Sub-Saharan Africa' (SPICES) during COVID-19.
**Methods**: We reflected on method choices, mainly when working with 'vulnerable' groups, and particularly on how to share power with them in an international intermediate CVD-risk prevention study. We discussed six SPICES projects in five countries and two continents to demonstrate tensions we faced when opening the research toolbox while working with vulnerable communities.
**Results**: All tensions were linked to power differentials and how these impact implementation and research in such complex marginalised settings. Tension 1 was in choosing between more or less participative evaluation methods. Tension 2 was to distinguish between 'strategies' and 'interventions.' Tension 3 was between short-term evaluation purposes and longer-term actual implementation/-change. Tension 4 was about 'evidence': what is it, who defines it, how would we generate it, and who interprets it and how? Most participants from the South with high CVD 'risk' receive no CVD care, so we included them 5; and 6, 'vulnerability': entire countries are deprived in the South, versus particular areas in the North, 7 was the COVID-19 pandemic.
**Conclusion**: We advise co-designing projects early on, particularly in marginalised settings, including who sets the research questions and the research/implementation agenda.

**KEYWORDS** Implementation science; community health workers; mixed methods; lifestyle advice; cardiovascular risk; marginalisation

## A search for relevant contextual factors in intervention studies, a stepwise approach with online information.

Michaël Van Der Elst, Birgitte Schoenmakers, Jos Schols, Gertrudis Kemplen, Jan De Lepeleire and D-Scope Consortium
General Practice, ACHG – KU Leuven, Leuven, Belgium

**CONTACT** michael.vanderelst@kuleuven.be

**Background:** In the D-SCOPE project, a complex intervention through home visits was set up to improve access to tailored care in three municipalities (Ghent, Knokke-Heist, and Tienen). The present study aims to describe a stepwise approach to study which contextual factors might moderate the effect of healthcare interventions and test the feasibility of this approach within the D-SCOPE project.
**Research question:** Are there relevant standardised web-based public data available in these three municipalities? How can the contextual factors most likely to interact with the intervention and moderate its outcomes be determined?
**Methods:** The present study was an exploratory case study, one designed and tested an approach including five steps: (1) a theoretical/conceptual discussion of relevant contextual factor domains was held; (2) a search was done to find appropriate web-based public datasets which covered these topics with standardised information; (3) a list of all identified contextual factors was made (inventory); (4) to reduce the long list of contextual factors, a concise list of most relevant contextual factors were developed based on the opinion of two independent reviewers; and (5) a Nominal Grouping Technique was applied.
**Results:** Three public web-based datasets resulted in an inventory of 157 contextual factors. After the selection by two independent reviewers, 41 contextual factors were left over and presented in a Nominal Grouping Technique which selected 10 contextual factors. The NGT included seven researchers, all familiar with the D-SCOPE intervention, with various educational backgrounds and expertise and lasted approximately one hour.
**Conclusion:** The present study shows that a five-step approach is feasible to determine relevant contextual factors that might affect the results of an intervention study. Such information may be used to correct the statistical analyses and interpret the outcomes of intervention studies.

**KEYWORDS** Context; online information; complex intervention; frailty; method

## Advance care planning among older people of Turkish origin in Belgium: an exploratory interview study

Hakki Demirkapu, Lieve Van Den Block, Stéphanie De Maesschalck, Aline De Vleminck, F. Zehra Colak and Dirk Devroey
Vrije Universiteit Brussel, Jette, Belgium

**CONTACT** hakki.demirkapu@vub.be

**Background:** Despite widespread recognition of the importance of future medical needs and end-of-life care, ethnic minorities show low engagement in advance care planning (ACP).
**Research question:** This study aimed to examine how seniors of Turkish origin in Belgium view ACP and identify facilitators and barriers to ACP in this population.
**Methods:** Employing a qualitative study design, a constant comparative analysis of semi-structured interview responses was conducted. A cohort of 33 adults who were 65–84 years old (mean, 71.7 years; median, 74.5 years) and of Turkish origin living in Belgium completed the study.
**Results:** Although participants were unfamiliar with the term ACP, some had engaged in aspects of ACP. Respondents recognised that ACP was helpful and was willing to discuss it. The most frequently mentioned ACP facilitator was the availability of community-adapted information. Other facilitators mentioned included active concerns about future care needs, respondents' children being aware of the advantages of ACP,

and respondents' desire not to burden their children. The most frequently mentioned barrier was a lack of knowledge about ACP. Additionally, respondents expressed that ACP may be hindered by limited fluency with the national language, a lack of urgency, reliance on family, and worries about discussions of mortality upsetting their families and themselves.

**Conclusion:** ACP engagement among seniors of Turkish origin in Belgium may be facilitated by providing tailored ACP information, the availability of linguistic interpreters, and programmes promoting awareness of the importance of ACP to the community, including to the adult children of the elderly when appropriate.

**KEYWORDS** Advance care planning; older adult; ethnicity; minority group; qualitative study

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## Family conferences facilitating shared prioritisation and deprescibing in frail elderlies with polypharmacy cared for at home. Results from a pragmatic cluster randomised trial in primary care

Achim Mortsiefer, Stefan Wilm, Susanne Löscher, Anja Wollny, Manuela Ritzke, Eva Drewelow, Petra Thürmann, Veronika Bencheva, Jens Abraham, Gabriele Meyer, Birgitt Wiese, Andrea Icks, Joseph Montalbo and Attila Altiner

Institute of General Practice, Chair of General Practice II and Patient-Centredness in Primary Care, Department of Medicine, Faculty of Health, University Witten/Herdecke, Witten, Germany

**CONTACT** achim.mortsiefer@uni-wh.de

**Background:** For patients with geriatric frailty syndrome, reducing polypharmacy is a promising therapeutic option. Deprescribing is a challenge for communication between the different parties involved, such as patients, relatives, nursing staff, and general practitioners.

**Research question:** This study aimed to investigate what effects family conferences on joint prioritisation and deprescribing can achieve in frail outpatients with polypharmacy.

**Methods:** Cluster-randomised, controlled intervention study with 114 GPs and 623 non-hospitalised patients with frailty and polypharmacy. Study physicians in the intervention group received three trainings on applying a deprescribing guideline, including communication training. Three family conferences were conducted over six months with the involvement of family caregivers and/or nursing services. Primary endpoint was the hospitalisation rate after 12 months. Secondary endpoints included the number of medications and parameters of geriatric assessments. Analysis using descriptive statistics and multilevel regression models.

**Results:** Intention-to-treat analysis ($n = 510$) showed no statistically significant difference in the adjusted mean number of hospitalisations between intervention group (0.98 (SD =1.72)) and control group (0.99 (SD =1.53)). In the per-protocol population ($n = 385$), the number of medications taken evolved from 8.98 (SD =3.56) to 8.11 (SD =3.21) at six months and 8.49 (SD =3.63) at 12 months in the intervention group and from 9.24 (SD =3.44) to 9.32 (SD =3.59) at six months and to 9.16 (SD =3.42) at 12 months in the control group, with a statistically significant difference at six months in the mixed-effect Poisson regression model ($p = 0.001$).

**Conclusion:** The mean number of hospitalisations did not differ between the intervention and control group. After six months, the number of medicines taken per patient decreased by 0.87 in the intervention group remaining about the same in the control group. This is quite a powerful effect compared to other pragmatic deprescribing studies. However, this intervention effect was no longer significantly detectable after 12 months.

**KEYWORDS** Polypharmacy; shared decisionmaking; frailty; family conferences; cluster randomised trail

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## A geriatric assessment intervention in primary care provided by a nurse or a general practitioner (CEPIA): a cluster-randomised trial

Veronique Orcel, Julie Fabre, Sylvie Bastuji-Garin, Vincent Renard, Emmanuelle Boutin, Philippe Caillet, Elena Paillaud, Leon Banh, Claude Attali, Etienne Audureau and Emilie Ferrat

Paris-Est Creteil University, Saint Maur Des Fosses, France

**CONTACT** veronique.orcel@laposte.net

**Background:** Comprehensive geriatric assessment (CGA) is a multidimensional holistic assessment of the health status of elderly people. Although its benefit is known in hospital care, its impact is uncertain in primary care.

**Research question:** We hypothesised that a complex intervention including a CGA adapted to primary care, educational training and specialised geriatric hotline to support GPs would be more effective on the morbimortality of over-70s with chronic conditions than usual care in primary care. The primary objective was to assess the 1-year morbimortality with a composite criterion combining all-cause mortality, emergency visits, hospitalisations, and institutionalisations.

Secondary objectives were assessed on each component of the composite criterion, quality of life, autonomy, polypharmacy, and care actions delivered.

**Methods:** The CEPIA study is a cluster randomised trial in 3 parallel arms between May 2016 and November 2017 in France. Inclusion criteria were: patients over 70, with a long-term illness scheme or hospitalisation in the past three months. In arm 1, a systematic CGA (adapted to primary care) was provided by a nurse and in arm 2 a case-by-case basis CGA (adapted to primary care) was implemented by GPs. Arm 3 was usual care (control group). Patients were followed up for 12 months, with 3 assessments (baseline, 6-month, 12-month). Cluster randomisation was at the GP practice level.

**Results:** A total of 39 practices (89 GPs) included 634 patients: 231 in arm 1, 190 in arm 2 and 213 in arm 3. In ITT analysis, after adjusting and multiple imputations, arm 2 was close to the significancy threshold, with $p = 0.055$ (adjusted OR [IC95%] = 0.64 [0.41–1.01]). Arm 1 was not statistically significant.

**Conclusion:** This study shows the potential of an adapted CGA in primary care when provided by GPs. Delegation of tasks to nurses, with no real collaborative work, could explain the failure of the arm 1.

## How does 'home health services' training during family medicine residency influence the medical practice of the physicians?

Pemra C. Unalan, Ezgi Yigit Ercan, Memnune Çigdem Apaydin Kaya and Kübra Temel

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

**CONTACT** pcunalan@gmail.com

**Background:** Family physicians who have a key role in providing Home Health Services (HHS) are considered to take part in this service delivery according to the basic discipline characteristics they are expected to provide. However, training on this topic does not have a standard during residency and there is no data yet on how physicians train on HHSs, or whether the training is effective in practice.

**Research question:** What kind of training is received during residency, what are the family physicians' perceptions and how did it contribute to their daily practice?

**Methods:** Qualitative research with audio recordings of focus group and face-to-face structured in-depth interviews between September 2021 and February 2022. Snowball sampling was used to recruit the family physicians with HHS training during residency. A total of 64 family medicine specialists were reached; 25 did not meet the inclusion criteria and 22 did not accept to participate in the study, a total of 16 were interviewed.

**Results:** Physicians talked about their achievements, positive and negative experiences during residency training and providing HHS in their practice. Physicians' main argument was the HHS training is an opportunity to learn the basic principles and approaches of Family Medicine discipline. It is irreplaceably important in professional development, professional satisfaction, and motivation. The training methods and curriculum arrangements of Home Care training must be reviewed and best conditions must be integrated. They mentioned negative experiences; the technical, structural, and organisational problems during the consultation and referral, security concerns and physical difficulties experienced were emerging categories.

**Conclusion:** HHS practising physicians mention that HHS, Social Services and Family Medicine/Primary Care are a whole and a unique area to practice comprehensive and biopsychosocial care. Not only effective training during residency but also collaboration during practice are essential components.

**KEYWORDS** Home Health Services; home care; education; experience; family medicine; practice

## Understanding Trustful Relationships between Community Health Workers and Vulnerable Citizens during the COVID-19 Pandemic: A Realist Evaluation

Dorien Vanden Bossche, Sara Willems and Peter Decat

Ghent University, Ghent, Belgium

**CONTACT** dorien.vandenbossche@ugent.be

**Background:** Community health workers (CHWs) are an essential public health workforce defined by their trustful relationships with vulnerable citizens. However, how trusting relationships are built remains unclear.

**Research question:** This study aimed to understand how and under which circumstances CHWs will likely build trust with their vulnerable clients during the COVID-19 pandemic.

**Methods:** We developed a programme theory using a realist research design. Data were collected through focus groups and in-depth interviews with CHWs and their clients. Using a grounded theory approach, we aimed to unravel mechanisms and contextual factors determining the trust in a CHW programme offering psychosocial support to vulnerable citizens during the COVID-19 pandemic.

**Results:** The trustful relationship between CHWs and their clients is rooted in three mental models: recognition, equality, and reciprocity. Five contextual factors (adopting a client-centred attitude, coordination, temporariness, and link with primary care practice (PCP)) enable the programme mechanisms to work.

**Conclusion:** CHWs are a crucial public health outreach strategy for PCP and complement and enhance trust-building by primary care professionals. In building trustful relationships between CHWs and clients, different mechanisms and contextual factors play a role in the trusting relationship between primary care professionals and patients. Future research should assess whether these findings also apply to a non-covid context, to the involvement of CHWs in other facets of primary healthcare (e.g., prevention campaigns, etc.), and a low- and middle-income country (LMIC) setting. Furthermore, implementation research should elaborate on the integration of CHWs in PCP to support CHWs in developing the mental models to build trust with vulnerable citizens and establish the required conditions.

**KEYWORDS** Community health workers; primary healthcare; vulnerable populations; trust; COVID-19; realist evaluation; grounded theory

## Health Kiosk: Development and implementation of a low threshold community health literacy hub

Caroline Masquillier, Hilde Bastiaens, Naomi Aerts and Kathleen Van Royen

Faculty of Medicine, Primary and Interdisciplinary Care, Wilrijk, Belgium

**CONTACT** caroline.masquiller@uantwerpen.be

**Background:** Being health literate is important to get sufficient health information, navigate the health system, access appropriate care and be able to self-manage health. As such, it is a key determinant of health. There is a need for innovative measures to improve health literacy among people living in socioeconomically vulnerable circumstances. In response to this need, a low threshold community health literacy hub was developed and implemented in a vulnerable neighbourhood in Antwerp, within a broader project on the prevention of cardiovascular diseases (H2020 SPICES project).
**Research question:** This contribution aims to describe the Health Kiosk guided by the principles underpinning the Integrated Community Care (ICC) framework—designed by the Transnational Forum on Integrated Community Care (i.e., TransForm).
**Methods:** A qualitative descriptive approach was taken using in-depth interviews with implementers (founder, coordinator, intern). Interviews were audiotaped, transcribed and thematic analysis was guided by the ICC framework. The research team was closely involved in all the steps of developing the Health Kiosk and was able to document the process from a participatory point of view. These observations and documents, such as meeting notes, were used as additional data.
**Results:** Several core ingredients of the Health Kiosk are important to stimulate health literacy among socioeconomically vulnerable groups, namely: (1) working in a community-based, outreaching way; (2) providing accessible health information and support to act on that knowledge and (3) working flexibly and independently to adapt to local needs. As such, the Health Kiosk forms a community health literacy hub with low-threshold access for people living in socioeconomically vulnerable circumstances.
**Conclusion:** To be able to focus on the core activity of the Health Kiosk—i.e., stimulating healthy living and health literacy—community building and considering the spatial environment of the neighbourhood formed a fundamental basis.

**KEYWORDS** Health Kiosk; health literacy; socioeconomically vulnerable groups; outreach working

## What are the determinants of older people adopting communicative e-health services? A meta-ethnography

Ayse Aslan, Jo Armes, Freda Mold and Harm Van Marwijk
University of Surrey, Guildford, United Kingdom

**CONTACT** a.aslan@surrey.ac.uk

**Background:** Over the years, society has shifted to the online world, with COVID-19 highlighting digital inequalities across the population. The largest group of individuals who may experience digital inequalities are older adults. Additionally, older adults are more likely to need medical appointments than their younger counterparts; therefore, with the increased digitalisation of healthcare, this could impact older adults' access. Communicative e-health services within this research refers to any service a patient receives or seeks online, actively interacting with a human/clinician.
**Research question:** What are older adults' experiences or opinions on communicative e-health services? What are their facilitators and barriers to using them?
**Methods:** A meta-ethnography was conducted to qualitatively synthesise the literature around older adults and communicative e-health services. A systematic search, with terms relating to 'older adults', 'e-health', 'technology' and 'communication', was conducted on six databases. A date range was implemented on the search, with only literature after January 2014 being eligible. The search yielded a total of 10 eligible studies for synthesis.
**Results:** Despite over half of the papers having participants who had not used communicative e-health services, the findings produced similar interpretations with topics such as support networks, authenticity, difficult interface, convenience, awareness, and physical health commonly spoken about.
**Conclusion:** These preliminary findings highlight the potential usefulness of the research and guidance on how we can make communicative e-health services more inclusive to older adults and the wider population, such as having the appropriate support and spreading awareness of services available to individuals. Additionally, many older adults struggled with the set-up and usage of the applications and emphasised the need for clear, easy-to-read instructions.

**KEYWORDS** Older adults; e-health; digital technology

## Is self-triage by patients using a symptom checker safe?

Andreas Meer and Jacopo Demurtas
in4medicine Bern, Bern, Switzerland

**CONTACT** j.demurtas@in4medicine.ch

**Background:** Symptom-Checker-Apps have recently come on the market, helping users with self-triage through an interactive medical assessment and providing guidance on the urgency of the clinical picture presented. To be safe and effective, these tools should identify the right time to treat and point of care, avoiding potential situations of hazardous undertriage.
**Research question:** What is the probability of an undertriage resulting in a risk to life or health (potentially hazardous undertriage) for patients using a symptom-checker?
**Methods:** Single-centered, prospective, non-randomised, non-placebo-controlled clinical trial comparing the patient's self-triage using the Symptom Checker, with the assessment of the urgency made by three interdisciplinary panels of physicians (panels A, B and C). The urgency assessment encompassed the appropriate time-to-treat (T2T) and the adequate point-of-care (PoC). Cases that were adjudged to be undertriaged by panels A and B were assessed for a risk to health or life by panel C. Potentially hazardous undertriage was defined as a case where panel C reaches a consensus that it is 'rather likely' or 'likely' that the self-triage could

have led to a hazardous undertriage. To analyse it, Clopper–Pearson confidence bound was chosen. We assumed that to confirm the symptom-checkers safety, the upper confidence bound should lie below 1%.

**Results:** None of the 2529 cases available for the analysis reached the pre-specified criterion for a potentially hazardous undertriage. This resulted in an upper 95% confidence bound for the probability of a potentially hazardous undertriage of 0.1184%.

**Conclusion:** Using the available data symptom-checkers's safety seems to be confirmed. Further studies investigating the risk of overtriage and its consequences are ongoing.

**KEYWORDS** Triage; safety; telemedicine; symptom checkers

## The impact of remote and telemedicine visits on family physicians' workload

Shlomo Vinker, Avivit Golan Cohen, Ilan Green, Eugene Merzon and Ariel Yehuda

Leumit Health Services, Family Medicine, Ashdod, Israel

**CONTACT** vinker01@gmail.com

**Background:** During the COVID-19 pandemic, face-to-face visits to family physicians reduced dramatically. In Leumit Health Services (LHS) about two-thirds of visits became remote, using correspondence, telephone, or video consultations. Later, patients resumed face-to-face visits while continuing to use remote modalities; non-face-to-face visits stayed at about 40%.

**Research question:** To evaluate the interchangeability between face-to-face visits and remote visits, we calculated the AADT (Accumulated Annual Duration of Time) of visits and the impact of the incorporation of remote medicine on workload.

**Methods:** A cross-sectional study based on the electronic medical records of all patients of LHS who had at least one visit with their primary care physician in 2020 and 2021 ($n = 562{,}758$ patients). Patients were classified into (A) remote medicine utilizers (RMU) – patients who used video or telephone visits. (B) Correspondence utilisers (CU) – patients who used correspondence without video or telephone. And (C) non-Remote utilisers (NRU) – patients with only face-to-face visits. For each patient, we calculated AADT and figured the average AADT in each category of patients. We excluded all COVID-19 patients in 2020–2021 from the analysis.

**Results:** The AADT increased by 56% among the 45,200 patients who were NRU and became RMU in 2021. AADT increased by 38% among the 38,300 patients who were CU and became RMU in 2021. The ADDT was reduced by 25% among patients who were RMU and became NRU in 2021. Patients in the same category in 2020 and 2021 stayed almost at the same ADDT. The AADT of the entire cohort had a net increase of 5% in 2021 compared to 2020.

**Conclusion:** The new remote visit modalities were additive visits and increased workload. Stakeholders should be acknowledged that this extra time spent with the patients increases costs and burnout, yet without any proven outcome benefits.

**KEYWORDS** Telemedicine; workload; correspondence; face-to-face

Clinical topics

## Are immigrants living in France more reluctant to receive vaccines than native-born French citizens? Findings from the national health Barometer study

Sohela Moussaoui and Nicolas Vignier

Sorbonne University, Paris, France

**CONTACT** moussaoui.sohela@gmail.com

**Background:** France is one of the world's most vaccine-hesitant countries, and vaccine hesitancy (VH) is considered one of the world's leading threats to global health. However, little is known about VH in immigrant populations in France. Using data from the 2016 Health Barometer, we examined VH among newcomers, more established immigrants, and the native-born population in France.

**Research question:** What is the prevalence of VH among immigrants in France? Is the length of time since the first arrival in France associated with attitudes towards vaccination?

**Methods:** Data were collected from French-speaking individuals aged 15–75 years old, residing in France. Individuals were selected through randomly generated landline and mobile phone numbers. Vaccine hesitancy was assessed through four questions and a 'time spent in France' variable was created, using the year of arrival in France. Associations were studied using logistic regression.

**Results:** A sample of 15,216 participants residing in France included 1524 foreign-born immigrants and 13,692 native-born individuals, with a mean age of 46 years. Most participants (75.7%) reported being favorable to vaccination regardless of country of origin but immigrants were less hesitant toward vaccinations than the host population. Foreign-born immigrants from North Africa had the most favourable views whereas those from sub-Saharan Africa held most unfavourable views on vaccination. With time spent in France, the opinions towards vaccination became more negative (aOR =0.57, 95 %CI [0.40–0.79], $p = 0.001$) and the risk of vaccine refusal (aOR =2.34, 95 %CI [1.45–3.78] $p = 0.001$) and reluctant acceptance of vaccines increased (aOR =1.89 95 %CI [1.20–2.99], $p = 0.006$). Foreign-born individuals with the most extended residency in France had more negative opinions than native-born individuals, regardless of region of origin.

**Conclusion:** Immigrants were less hesitant toward vaccinations than the host population but vaccine hesitancy increased with time spent in France.

**KEYWORDS** Hesitancy; vaccine; immunization; migrants

## Breastfeeding mothers' experiences with community physicians in Israel: A qualitative study

Elia Blitman, Aya Biderman, Ilan Yehoshua and Limor Adler

Israel Association of Family Physicians, Sde Yoav, Israel

**CONTACT** adler_l@mac.org.il

**Background:** The guidelines of all leading professional organisations recommend providing adequate support and education regarding breastfeeding, yet many mothers feel that they receive inadequate information from their healthcare providers in the primary care setting.

**Research question:** To expand our understanding of the breastfeeding-related experiences of mothers with primary care physicians (PCPs).

**Methods:** In this qualitative study, we interviewed breastfeeding mothers in Israel in the first six months after delivery. The interviews were conducted between December 2020 and May 2021. We used thematic analysis to explore women's attitudes and experiences with their PCPs regarding breastfeeding concerns.

**Results:** We interviewed 13 women aged 24–37. We identified four main themes. The first of these was physicians' inconsistent attitudes toward breastfeeding. Some were indifferent, while others related to breastfeeding solely in the context of infant development. Some were supportive, while others opposed breastfeeding. Several women revealed physicians' inappropriate and disturbing attitudes to breastfeeding. The second theme was physicians' lack of knowledge regarding medical treatment for breastfeeding issues. This theme included lack of knowledge, incorrect treatment of breastfeeding problems, and contradictions among HCPs. The third was mothers' preference for alternative resources, including individualised breastfeeding counselling, maternity and childcare nurses, mothers' groups (in person or online), and family and friends over medical treatment for breastfeeding problems. The fourth theme involved mothers' suggestions for PCPs highlighting the importance of communication, prenatal physician-initiated dialogue on breastfeeding, expanding professional knowledge on breastfeeding, and increasing the availability of treatment for breastfeeding problems.

**Conclusion:** The women in this study reported unsatisfactory breastfeeding support by PCPs and incorrect or inadequate treatment of breastfeeding-related medical problems. We believe that physicians should expand their knowledge of breastfeeding medicine and education programmes for improving knowledge and skills in breastfeeding issues should be implemented throughout the medical training.

**KEYWORDS** Breastfeeding; primary care; qualitative research; ante-natal care; postpartum care

## Clinical prediction rule for acute appendicitis in children in primary care

Guus Blok, Huib Burger, Johan Van Der Lei, Marjolein Berger and Gea Holtman

University Medical Center Groningen, Harlingen, Netherlands

**CONTACT** cghblok@outlook.com

**Background:** Recognising acute appendicitis in children presenting with acute abdominal pain in primary care is challenging. General practitioners (GPs) may benefit from a clinical prediction rule.

**Research question:** To develop and validate a clinical prediction rule for acute appendicitis in children presenting with acute abdominal pain in primary care.

**Methods:** A retrospective cohort study of data retrieved from GP electronic health records included in the Integrated Primary Care Information database was performed. We assigned children aged 4–18 years presenting with acute abdominal pain ($\leq 7$ days) to development (2010–2012) and validation (2013–2016) cohorts, using specialist-reported acute appendicitis as the outcome. Multivariable logistic regression was used to develop a prediction model based on clinical features from existing rules used in secondary care. We then performed internal and external temporal validation before deriving a point score with cut-offs for low-, medium-, and high-risk groups based on pre-defined sensitivity and specificity criteria.

**Results:** The development and validation cohorts included 2041 and 3650 children, respectively, of whom 95 (4.6%) and 195 (5.3%) had acute appendicitis. The model included male sex, symptom duration (24–48, $< 24$, $> 48$ hours), nausea/vomiting, elevated temperature ($\geq 37.3\,^{\circ}$C), abnormal bowel sounds, right lower quadrant tenderness, and peritoneal irritation. Internal and temporal validation showed good discrimination (C-statistics: 0.93 and 0.90, respectively) and excellent calibration. In the low-, medium-, and high-risk groups, the risks of acute appendicitis were 0.5%, 7.5%, and 41%, respectively.

**Conclusion:** Combined with further testing in the mid-risk group, the prediction rule could improve clinical decision making and outcomes.

**KEYWORDS** Clinical decision rule; appendicitis; children

## Antibiotic use in ambulatory care for acutely ill children in high-income countries: A systematic review and meta-analysis

Ruben Burvenich, Hannelore Dillen, Nhung Trinh, Joseph Freer, Laure Wynants, Stefan Heytens, An De Sutter and Jan Y. Verbakel

**Background:** Childhood infections are common. Inappropriate antibiotic prescribing leads to antimicrobial resistance with associated healthcare costs.

**Research question:** To determine the rate and appropriateness of antibiotic prescribing for acutely ill children in ambulatory care in high-income countries.

**Methods:** On 10 February 2021, we systematically searched articles published since 2000 in MEDLINE, Embase, CENTRAL, Web-Of-Science, and grey literature databases. We included cross-sectional and longitudinal studies, time series analyses, randomised controlled trials and non-randomised studies of interventions with acutely ill children up to and including 12 years of age in ambulatory care settings in high-income countries. Pooled antibiotic prescribing and appropriateness rates were calculated using random-effects models. Meta-regression was performed to describe the relationship between the antibiotic prescribing rate and study-level covariates.

**Results:** We included 86 studies comprising 11,114,863 children. We found a pooled antibiotic prescribing rate of 45.4% (95% confidence interval [CI] 38.2–52.8) for all acutely ill children, and 85.6% (95% CI 73.3–92.9) for acute otitis media, 37.4% (95% CI 30.9–44.3) for respiratory tract infections, and 40.4% (95% CI 29.9 to 51.9) for other diagnoses. Differences in diagnoses can only partly explain considerable heterogeneity. The overall pooled appropriateness rate is 68.5% (95% CI 55.8–78.9, $I^2 = 99.8\%$; 19 studies, 119,995 participants), 38.3% of all prescribed antibiotics were aminopenicillins.
**Conclusion:** Antibiotic prescribing rates for acutely ill children in ambulatory care in high-income countries remain high. Differences in diagnoses can only partly explain large differences in prescription rates between studies. Better registration and further research are needed to investigate patient-level data on diagnosis and appropriateness.

**KEYWORDS** Anti-bacterial agents; antimicrobial resistance; drug prescriptions; primary health care; outpatients; ambulatory care; general practice; general practitioners; paediatrics; emergency medicine

## Mild severity COVID-19 mental health implications for patients in Greece: A qualitative study

Despoina Symintiridou, Ilias Pagkozidis, Stavroula Mystakidou, Charis Birtsou, Stella Ploukou, Stavroula Begou, Martha Andreou, Michael Dandoulakis, Elias Theodoropoulos, Chrysanthi Manolaki, Ioanna Avakian, Efthymia Makridou, Christina Avgerinou, Dimitra Iosifina Papageorgiou and Emmanouil Smyrnakis
Aristotle University Primary Health Care Research Network (Auth.phc.rn.), Thessaloniki, Greece

**CONTACT** authphcrn@gmail.com

**Background:** Patients infected with COVID-19 who were quarantined and socially isolated and those surrounded by incorrect information and misinformation were more susceptible to unpleasant emotions such as panic and terror. The psychological repercussions of quarantine were aggravated by the detrimental effects of restricted physical activity and nutritional modifications among quarantined individuals.
**Research question:** How was the mental wellbeing of COVID-19 patients affected during the isolation?
**Methods:** This is a qualitative study. Adult patients with mild COVID-19 and confined at home participated in semi-structured interviews between weeks 2 and 3 after the diagnosis. Prior to participant enrolment, written informed consent was obtained. The interview guide focused on the illness, the management of the isolation weeks, the participants' knowledge and perceptions and suggestions for improvement. Interviews were audio-recorded, verbatim transcribed and analysed with thematic analysis.
**Results:** Data saturation was achieved after 37 interviews. A commonly reported negative feeling is fear. Participants report fear and insecurity about their condition and possible illness consequences (short-term and long-term complications, relapse, need for hospitalisation and death), the fear of infecting others especially vulnerable family members in combination with a sense of guilt, and concerns about the economic impact of their illness on their family. Feelings of loneliness caused by isolation and concerns about social stigma were also reported. Fear sometimes emerges with somatic symptoms such as insomnia, panic attacks and anxiety disorders. Participants indicate that receiving timely medical evaluation, psychological assistance and access to reliable sources of information could alleviate these concerns.
**Conclusion:** Fear, insecurity, and manifestations such as sleep and anxiety disorders in mild COVID-19 patients harm their mental wellbeing. Primary healthcare interventions in coordination with mental health services, delivered even to mild Covid-19 patients, could significantly assist in the management of long-term psychological consequences.

**KEYWORDS** COVID-19; mental health; primary health care; Greece

## Sociodemographic characteristics and cardiovascular events in patients with severe mental disorders

Noemí Olona Tabueña, María Isabel Fernández San Martín, Javier Molero Calafell, Jordi Real Gatius, Miguel Castillo Sanchez, Susana González Tejon and Luis Miguel Martin Lopez
Idiap Jordi Gol, Unitat Suport Recerca Barcelona ciutat, Barcelona, Spain

**CONTACT** mifsanmartin.bcn.ics@gencat.cat

**Background:** The prevalence of cardiovascular morbidity and mortality are more elevated in patients with severe mental disorders (SMD) than in the general population
**Research question:** Our main objective is to estimate the incidence rates of cardiovascular events (CVE) in patients with SMD and to determine the associated sociodemographic factors.
**Methods:** Retrospective longitudinal study of a cohort of patients having SMD. Patients between 35 and 74 years assigned to primary care teams of the Catalan Institute of Health and who have been attended between 2007 and 2010 had been included. Exclusion criteria: history of CVE at baseline, lipid-lowering treatment at baseline. Sociodemografic baseline measurement from the anonymised database SIDIAP: gender, age, socioeconomic level according to geographic area, rural/urban area. At 12 years follow-up, CVE (coronary heart disease: CHD; and stroke) were collected.
**Results:** A total of 22,747 SMD patients who met the selection criteria were included: 46.7% had schizophrenia, 27.8% had bipolar disorder and 25.5% had other psychotic disorders. 49.1% were women, the average age was 47.9 years (SD:10). Incidence rates of CVE per 1000 person-years: Global CVE 3.74 (IC95%: 3.46–4.03); CHD 1.79 (95%CI: 1.60–2.00); stroke 1.82 (95%CI: 1.62 - 2.25). CVE rates are higher in men, primarily in the case of CHD. In all cases the incidence rates of CVE increase with age. The incidence rates of CVE are

higher in the bipolar group, especially due to stroke. There are no differences in the incidence rates of CVE by socioeconomic level or rurality.

**Conclusion:** The incidence of CVE in the SMD population is high and higher than the general population. There are differences in CVE rates according to gender and diagnostic groups. It is necessary to adjust according to cardiovascular risk factors to assess which ones are more relevant in each diagnostic and gender group.

**KEYWORDS** Severe mental disorders; cardiovascular incidence; sociodemografic factors

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## Real life HbA1c variability profiles and association with ASCVD risk in T2DM

Alon Lapidus and Limor Adler

Maccabi Healthcare Services, Lehavim, Israel

**CONTACT** alon.lap@gmail.com

**Background:** Hyperglycemia correlates with the risk of atherosclerotic cardiovascular disease (ASCVD) in patients with T2DM. However, unequivocal correlations between HbA1c levels and the development of ASCVD have not been demonstrated.

**Research question:** We examined the association between intrapersonal dynamics in HbA1c and the development of ASCVD, hypothesising that higher variability is associated with greater ASCVD risk.

**Methods:** A retrospective observational study on T2DM patients in the electronic registry of Maccabi HCS diagnosed between 1 January 2005 and 31 December 2019. Inclusion criteria required: $>3$ years of follow-up, with at least four discrete HbA1c measurements per every 3 years. Prior ASCVD were excluded. The clinical endpoint was the development of ASCVD. Intrapersonal HbA1c variables were calculated, and descriptive statistics and Cox multivariate regression models were used to determine hazard ratios (HR).

**Results:** Of 59,364 patients included, 4670 patients (7.9%) developed ASCVD with a follow-up of $7.1 \pm 2.8$ years (cardiovascular (CV) cohort). The majority (63%) had an intrapersonal HbA1c profile of mean $<7\%$ & standard deviation $(SD) < 1$. The basic Cox regression showed increased HRs for increased HbA1c mean and baseline CV risk factors but not for rise in HbA1c SD. A second Cox regression model analysing the highly variable (HbA1c SD $>1$) sub-population showed significantly increased HRs for increase in intrapersonal HbA1c mean range (HbA1c mean $>8\%$, HR 5.3, $p = 0.004$) and SD $>2$ (HR 1.17, $p < 0.05$). Finally, 2959 patients developed ASCVD within 3 years, and were excluded.

**Conclusion:** We identified three patterns of ASCVD in diabetes. First, ASCVD within 3 years, not included and deserves further investigation. Second, stable and well-managed glycemic control (63% of CV cohort), suggests that baseline risk factors are paramount in developing ASCVD, regardless of optimal glycemic management. For the remainder, both HbA1c mean and SD is ASCVD risk factors. Baseline risks notwithstanding, the more variable the intrapersonal HbA1c measurements are, the greater the risk of developing ASCVD.

**KEYWORDS** Diabetes millitus; HbA1c; variability profiles; ASCVD

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## Implementation of a lifestyle programme in primary care among cancer survivors: Lessons learned so far

Famke Huizinga, Nico-Derk Lodewijk Westerink, Annette J. Berendsen, Annemiek M. E. Walenkamp, Mathieu H. G. De Greef, Geertruida H. De Bock, Marjolein Y. Berger and Daan Brandenbarg

University Medical Center Groningen, Groningen, Netherlands

**CONTACT** f.huizinga@umcg.nl

**Background:** Lifestyle receives increasing attention in the clinical care of chronic diseases. Participation in lifestyle programs is generally low, especially for cancer survivors. They prefer a program that is accessible and close to home. However, there is little evidence on implementing lifestyle programmes in primary care and the related barriers and facilitators.

**Research question:** To implement and evaluate a physical activity (PA) programme for cancer survivors in 15 general practices.

**Methods:** In this participatory action research, we include patients aged $\geq 18$ years who finished cancer treatment $\geq 6$ months ago. The intervention comprises six coaching sessions with the practice nurse (PN) over nine months, seeking to increase PA in daily activities using an activity tracker for goalsetting and feedback. The RE-AIM framework is used to evaluate implementation. Patient measurements include fatigue (FACT-F), depression and anxiety (HADS), weight, number of steps, aerobic endurance (step-test), lower limb strength (sit-to-stand-test), and self-reported PA (IPAQ), at baseline and after 12 weeks.

**Results:** Currently, 82 of 344 invited patients participated in the programme (24%). Participants were often female ($p = 0.034$) and lower educated ($p = 0.006$) than non-participants. Effectiveness: after 12 weeks, participants improved on number of steps ($p = 0.007$), the step-test ($p < 0.001$) and IPAQ-vigorous activities ($p = 0.042$), and reduced weight ($p = 0.041$). Many patients indicated that the PA programme gave them more energy (45%). Frequent perceived barriers of patients were skin irritability of the Fitbit. Adoption: 15 of the 110 invited general practices participated (14%). General practitioners (GPs) and PNs indicated that the PA programme is of added value and suits their daily practice. Barriers to GPs and PNs were a lack of time and personnel.

**Conclusion:** These preliminary results show that participants improved PA and aerobic endurance and rate the programme positively. GPs and PNs experience the program as valuable added care.

**KEYWORDS** Lifestyle; physical activity; cancer survivors; primary care; implementation

# Identifying and prioritising do-not-do recommendations in Dutch general practice

Jako Burgers, Simone Van Dulmen and Tijn Kool

Dutch College of General Practitioners, Utrecht, Netherlands

**CONTACT** j.burgers@nhg.org

**Background:** Low-value care provides minimal or no benefit for the patient, wastes resources, and can cause harm. Efforts have been undertaken worldwide to identify these low-value care practices. The Dutch College of General Practitioners (GPs) runs a longstanding guideline programme including do-not-do recommendations.

**Research question:** To identify and prioritise do-not-do implementation recommendations to reduce low-value care.

**Methods:** We used a mixed-method design in Dutch primary care. First, we identified do-not-do recommendations through a systematic assessment of 92 Dutch guidelines for GPs, resulting in 385 do-not-do recommendations. Second, we selected 146 recommendations addressing highly prevalent conditions. Third, a random sample of 5000 Dutch GPs was invited for an online survey to prioritise recommendations based on the prevalence of the condition and low-value care practice, potential harm, and potential cost reduction on a scale from 1 to 5/6. Total scores could range from 4 to 22. Recommendations with a median score $>12$ were included. In total, 440 GPs completed the survey.

**Results:** The selection process led to a list of 30 prioritised recommendations. These covered drug treatments ($n = 12$), diagnostics ($n = 10$), referrals to other healthcare professions ($n = 5$), and non-drug treatment ($n = 3$). Examples are not to prescribe antibiotics in children with acute otitis media, not to request imaging in patients with non-specific low back pain, not to refer to a (orthopaedic) surgeon for epicondylitis, and not to treat warts longer than three months with cryotherapy.

**Conclusion:** The list of 30 high-priority do-not-do recommendations can raise awareness of low-value care among GPs and facilitate quality improvement projects. As the recommendations are supported with the latest evidence from international studies, GPs and policy makers in other countries can use the list to validate it in their context and design strategies to reduce low-value care.

**KEYWORDS** Family practice; Netherlands; clinical practice guidelines; low-value care; de-implementation