

2st Scientific Conference on

**INTERDISCIPLINARITY OF
HEALTH AND HEALTHCARE**

6th-7th July 2020

ABSTRACT BOOK



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University of Warsaw**



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International Journal of
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CONFERENCE PROGRAMME

Day 1: 6TH JULY 2020 MONDAY

ARTIFICIAL INTELLIGENCE IN HEALTH AND HEALTH CARE

9:30 Opening of the conference by:

Professor Alojzy NOWAK – Rector elect of University of Warsaw

Professor Michal MARCZAK – Medical University in Lodz

Mr. Frédéric BILLET – Introductory speech by the Ambassador of the Republic of France

Introductory speech of a representative of the Ministry of Digital Affairs
RP

10:30 Dr.-Ing. Matthieu-P. SCHAPRANOW

Scientific Manager Digital Health Innovations

Digital Health Center @ Hasso Plattner Institute, Potsdam, Germany.

“Potentials of AI in Medicine”

11:00 Emilie CHOUZENOUX, PhD.

OPIS Inria project team (OPTimization Imaging and Health); Winner of an ERC Starting Grant worth €1.5 million over 5 years; France.

“Reflexions on the project: “ScanCovid IA”

11:20 Anna JEZIERSKA, PhD.

Polish Academy of Sciences, Systems Research Institute, Department of Modelling and Optimization of Dynamical Systems, Warsaw, Poland & Research Associate at the Gaspard Monge Computer Science Laboratory (LIGM), France.

"Computer vision and signal processing for health-care system"

11:40 Professor Mirosław KWAŚNIEWSKI

- Head of the Bioinformatics and Data Analysis Center Medical University of Białystok, Poland.

"Personalized Prevention - new approach for population health"

12:10 Paweł KORNETA, PhD.

Director of Strategy and Development at the Corten Medic Medical Center, Warsaw, Poland

"Reactions of medical entities in Poland to the epidemic conditions of covid-19"

12:40-13:15 DISCUSSION

13:15-13:45 Professor Pierre-Antoine GOURRAUD

University professor and hospital practitioner of the Faculty of Medicine of the University of Nantes (France)

"Reflexions on the project: Clinique de données, MS Bioscreen and Data Santé: a multidisciplinary research programs held in Nantes"

13:45 - 14:15 Professor Piotr H. SKARŻYŃSKI

Medicus Hearing and Speech Center in Kajetany, the Institute of Physiology and Pathology of Hearing in Warsaw and the Medical University of Warsaw & Director of Science and Development at the Institute of Sensory Organs; Winner of Polish edition *Supertalents in medicine 2019*; Poland.

"Reflexions on the project: National Teleaudiology Network (network of cooperating centers in 19 Polish cities and 7 abroad (in Ukraine, Belarus, Kyrgyzstan, Kazakhstan and Senegal))"

14:15-14:45 DISCUSSION

14:45 -15:15 Professor Liliana DUMITRACHE

University of Bucharest, Faculty of Geography, Bucharest, Romania

"Smart and connected healthcare. Opportunities, challenges and barriers".

15:15 - 15:45 K.S.T. KANANKEGE, PhD.

College of Veterinary Medicine, University of Minnesota, USA

"Reflexions on the team project: Identifying opportunities to improve the effectiveness in rabies control in Thailand using geographical analysis"

15:45 - 16:15 Profesor Ewelina NOJSZEWSKA, Agata SIELSKA, PhD.

Department of Applied Economics, College of Management and Finance, Warsaw School of Economics, Poland

Indicators enabling the introduction of VBHC into the health care system

16:15 -16:30 DISCUSSION AND CLOSING KEYNOTE SPEAKERS DAY

Day 2: 7TH JULY 2020 TUESDAY

10:00-12:00 SESSION: QUALITY MANAGEMENT

moderator: Prof. Józef Haczyński

**Anna RYBARCZYK-SZWAJKOWSKA¹, Ewa KANIECKA²,
Oktawia KONARSKA³, Anna STASZEWSKA⁴**

¹Department of Management and Logistics in Health Care, Medical University of Lodz, Poland

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“The quality of health care services, as perceived by heads of primary health care”

Jacek SIENKIEWICZ, Kamila SIENKIEWICZ

InterDoktorMen Medical University of Lodz, Poland

“Trends and the importance of the restructuring process in the healthcare sector ”.

Muhammad KAMRAN¹, Tomasz OCHINOWSKI²

¹Alcide De Gasperi University of Euroregional Economy Jozefow, Poland

² Faculty of Management, University of Warsaw,

“ Spirituality and Work-Wellness in Vocational Training of Information Technology Professionals”.

Kamila SIENKIEWICZ, Jacek SIENKIEWICZ

InterDoktorMen Medical University of Lodz, Poland

„Direct patients reporting of adverse drug reactions – importance in safety monitoring process.”

Olga BARSZCZEWSKA, Anna PIECHOTA

InterDoktorMen Medical University of Lodz, Poland

“Drug prices when new biosimilars arrive - analysis of adalimumab, infliximab and trastuzumab markets”

Jakub RATAJCZAK

InterDoktorMen Medical University of Lodz, Poland

“Kidney stone disease: cost and structure of hospital treatment and work absence in Poland”

Aleksandra SIEROCKA, Michal MARCZAK

InterDoktorMen Medical University of Lodz, Poland

„Example of adverse event risk management - own experience”

12:30-14:00 SESSION: HEALTH – eHEALTH – INTERNATIONAL PERSPECTIVE

moderator: Prof. Izabella Łęcka

Mariana NAE, Liliana DUMITRACHE

University of Bucharest, Human Geography and Economic Department,
Romania

"The Romanian health care system behind the screen: narratives and experiences of online users"

Katarzyna BYSZEK

Department of Social Insurance, Warsaw School of Economics, Poland

'Impact of eHealth on cross-border healthcare"

Kamila ZIÓŁKOWSKA-WEISS

Institute of Geography, Pedagogical University of Krakow, Poland

"Assessment of the Selected Health Factors by Polonia in the Greater Toronto Area in the Context of Quality and Standard of Living"

Ana-Maria TALOȘ, Florin-Alexandru ZAHARIA

Human Geography and Economic Department, University of Bucharest, Romania

"Analyzing housing conditions and their consequences on population health in the Biosphere Reserve of the Danube Delta"

Maria BELCARZ

InterDoktorMen Medical University of Lodz, Poland

"Health tourism in Poland

- an opportunity to develop the potential of health facilities".

Anna RÓŻAŁSKA, Tomasz OCHINOWSKI, Izabella ŁĘCKA

Faculty of Management, University of Warsaw, Poland

" Historiographic antecedents of integrated paediatric patient care.

An example of the "Karol and Maria Hospital" in Warsaw 1913- 1939"

14:30 - 16:00 SESSION: TELEMEDICINE – EDUCATION – PREVENTION

moderator: Prof. Tomasz Ochowski

Karolina KAMECKA¹, Anna STASZEWSKA², Remigiusz KOZŁOWSKI³

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³Faculty of Management, University of Lodz

"Improvement of the posthospital process in patient care at home after hip arthroplasty as a result of the use of telemedicine technologies"

**Daniel WÓJCIK, Katarzyna SZCZECHOWIAKA,
Małgorzata PIKALA**

InterDoktorMen Medical University of Lodz, Poland

"The use of virtual reality and artificial intelligence in patients with Alzheimer's disease and their informal caregivers' education"

Beata ZASTAWNA¹, Piotr SZYNKIEWICZ²

¹InterDoktorMen Medical University of Lodz, Poland

²Prometriq Management Academy

"Awareness and effectiveness of education of parents during the prophylactic programme of HPV vaccination in Gdynia, Poland"

**Beata ZASTAWNA, Agnieszka OGONOWSKA, Anna
OWCZAREK, Roman ZAŁUSKA, Agnieszka ZDEBA- MOZOŁA**

InterDoktorMen Medical University of Lodz, Poland

Prometriq Akademia Zarządzania

*"Selected prophylactic actions applied by physicians
for prevention of infectious agents"*

Riyam L. KHALAF, Elham M. AHMED, Thikra H. MATHOR

Department of Chemistry, University of Baghdad, Iraq

*Rapid synthesis of silver nanoparticles using L. Rosa flowers extracts:
Thermodynamic and kinetic studies of inhibition effects of nanoparticles
on creatine kinase activity*

16:00 SUMMARY & CLOSING CEREMONY

ABSTRACTS

Liliana DUMITRACHE

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"Smart and connected healthcare. Opportunities, challenges and barriers"

Abstract: This presentation discusses new models of health care delivery as well as opportunities, challenges and barriers in the development of smart healthcare. Changing how the medical care is organized, practiced and delivered, changing the patient-physician relationship, emerging of new industry players are just some aspects that should be considered. In the same time, information systems and data architecture, the ethical dimension of different approaches are the main challenges.

Artificial Intelligence (AI), Machine learning, and Systems engineering will enable health authorities to address this area and to improve citizens health while minimizing costs. However, technology is an enabler, not the solution and population health outcomes dependent on many interactions.

In order to improve population health as well as the quality of life, a more sophisticated approach, which integrates health care and other social determinants of health, is needed.

**Kaushi. S.T. KANANKEGE¹, A. WIRATSUDAKUL²,
O. PRASARNPHANICH³,
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***"Identifying opportunities to improve the effectiveness in rabies
control in Thailand using geographical analysis"***

Abstract: We used a geographical analysis approach that incorporate human/animal rabies in relation to underlying risk factors leading to rabies in Thailand. Publicly available data and records from Department of Livestock Development (DLD) and Bureau of Epidemiology of Thailand were used for the analysis. The zero-inflated Poisson (ZIP) regression was used to determine the statistically significant variables ($p < 0.05$) and the Conditional autoregressive models were used to account for the spatial dependence between districts while accounting for the significant variables, and perform the geographical analysis. The developed maps are presented at district level depicting high-risk areas for rabies. Our results suggest that sharing country borders, number of Buddhist temples, number of dog bites/attacks, number of garbage dumps, and the total number of owned and un-owned dogs are the key

factors to be considered when allocating resources for rabies control by district. The CAR models were cross-validated by dividing data over time and resulted in 0.77 Area under the receiver operating characteristic curve (AUC) with model sensitivity and specificity of 0.84 and 0.47 at the best risk threshold, respectively. While subjected to limitations, we believe that this work could be used as a guide when planning risk-based management approaches to improve current rabies control efforts in Thailand including the distribution of human Post Exposure Prophylaxis (PEP) and anti-rabies vaccines for animals. The risk maps may be useful to improve the current dissemination of dog vaccination, and planning One Health System Mapping Tool Kit (OH-SMART) approach which intends to bring the relevant organizations involved in public health, animal health, infrastructure, and financial aid aspects of rabies control together to discuss integrated approaches of rabies control at the sub-district level, in Thailand.

Ewelina NOJSZEWSKA¹, Agata SIELSKA²

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***"Indicators enabling the introduction of VBHC
into the health care system"***

Abstract: The situation in health care in Poland and other countries makes it necessary to discuss how to solve the problems and introduce changes that would work in two directions: they would focus on improving health and the costs of obtaining this improvement. The solution that currently raises hope around the world is the approach called VBHC. To be able to introduce VBHC, a set of domain-specific

KPIs must be developed that will provide indicators that allow rational decisions to be made. The article proposes areas and indicators assigned to them that will enable the use of VBHC in the health care system. The meaning of such a set is that it contains a lot of factors determining the results obtained.

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“The quality of health care services, as perceived by heads of primary health care”

Abstract: Background: The effectiveness of all areas of managerial activities is determined by managerial knowledge and skills, as well as a profound understanding of the goals of management. The aim of the present study was to determine the perception of health service quality by primary health care facility managers.

Methods: A total of 145 heads of primary health care centers in the Lodz region were surveyed using a questionnaire designed for the study.

Results: The prevailing perception of healthcare quality concerned attempts to meet patients' expectations and to satisfy them (44%). The majority of respondents (76%) stated that the competences possessed by medical staff affect the quality of services provided by their facility. In addition, 52% of the respondents believe that a staff incentive system stimulates improvements in health services quality. Satisfaction surveys, conducted in 67% of studied institutions, are a source of information

about errors or deficiencies in outpatient clinics. Over 74% of respondents noted that the quality of health services in their clinics is affected by treatment standards.

Conclusion: To ensure effective and efficient primary care, there is a need to develop a clear-cut definition of health service quality by primary health care facility heads, and to change their understanding, perception and treatment of the issue.

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***"Trends and the importance of the restructuring process
in the healthcare sector "***

Abstract: Restructuring is defined in subject's literature as a significant modification affecting the way that organization works. It is widely reckoned as extraordinarily complex and difficult process, affecting a strategic fields of the organization's functioning, which is chiefly a response to the particularly challenging situation in which organization finds itself or a consequence of will to change an organization in order to i.e. gain competitive advantage. In order to initiate the restructuring process it is indispensable to be aware of a situation in which organization finds itself and a necessity of change which precedes diagnosis of both the situation and the organization, design corrective actions mainly in respect of resources, processes and structures, and then implementing them. Trends have recently been observed in the context of the restructuring of entities from the healthcare sector, which include i.e. consolidation or sub-specialization. Implication of properly conducted restructuring of an entity is i.e. readjustment to new external

conditions, improvement its functioning, establishment of competitive superiority and its survival. The aim of the presentation is to present restructuring as a tool enabling improvement of the situation of entities from the healthcare sector.

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"Spirituality and Work-Wellness in Vocational Training of Information Technology Professionals"

Abstract: The role of spirituality is growing area of research in the management and organizations. The key objective of this article is to discuss the relationship between spirituality and work wellness in the vocational training of Information and Communication Technology (ICT) professionals. The literature clearly shows relationship between meaning in life (spirituality) and psychological well-being. In the current study, the researcher has explored the potential relationship between the meaning in life and various aspects of work wellness. The author has explored work wellness from a spiritual framework developed by David Hay. The biological model of spirituality founded by David Hay, and adopted by him in management as well, is used in this research article. Hay's biological model of spirituality contains awareness sensing, mystery sensing, and value sensing as spiritual dimensions. The paper has used qualitative methodology, and instruments for data collection are biographical in-depth interview. Initial results show the preliminary picture of the relationship between

spirituality (meaning in life) and work-wellness i.e. a person's sense of meaning in life plays an important role to improve work-wellness in vocational training of IT professionals.

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***„Direct patients reporting of adverse drug reactions
– importance in safety monitoring process”***

Abstract: Data related to drug safety presented by future Marketing Authorization Holder during obtaining first authorization of medicinal product are based on preclinical and clinical data. Clinical data are limited mainly due to number of trial participants, lack of data related to some populations (e.g. pregnant women, elderly patients, people with disorders i.e.kidney or liver failure). All medicinal products authorized in European Union are the subjects of constant drug safety monitoring process. It is organized in pharmacovigilance system which is designed to human health and life protection by detection, analysis and minimalization of adverse drug reactions and other drug related problems. Main role of aforementioned system is collection and analyzing of adverse drug reaction reports. Legislation introduced several years ago let patients, their legal representatives and caregivers to report adverse drug reactions what makes that people are additional source of safety data.

In this publication we present data on Eudravigilance adverse drug reactions reports collected from patients, their legal representatives and

caregivers, as well as those obtained from healthcare professionals related to different therapeutic group of medicines.

The aim of this publication is to determine the influence of this new legislation on drug safety monitoring process.

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“Drug prices when new biosimilars arrive – analysis of adalimumab, infliximab and trastuzumab markets”

Abstract: Biosimilars are cheaper than original drugs, and are thus widely used. The aim of this article is to assess the benefits of introducing more than one biosimilar for the same substance (active pharmaceutical ingredient – API). The hypothesis is that the higher the number of biosimilars, the lower the prices will get. The study focuses on the variability of drug prices depending on the successive arrival of new biosimilars. 3 drugs were chosen: 2 from the same therapeutic group (adalimumab and infliximab) and 1 drug from another class which have at least 3 reimbursed biosimilars on the market (trastuzumab). The following data was measured: the price variation after the introduction of the 1st biosimilar, the 2nd and 3rd, as well as the average price reduction for all 1st biosimilars, 2nd and 3rd. Additionally, a systematic review of the literature was conducted. Results showed that the 1st biosimilar is associated with the biggest price reduction. The 2nd and the 3rd biosimilar for the same substance do not seem to reduce the price significantly. The article might be helpful for healthcare decisions regarding pricing and reimbursement for new biosimilars.

Jakub RATAJCZAK¹, Taras HLADUN²

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“Kidney stone disease: cost and structure of hospital treatment and work absence in Poland”

Abstract: Prevalence of urolithiasis increases due to changes in the environment, lifestyle and rising comorbidities in modern societies. This analysis aims to estimate cumulative cost of urolithiasis treatment in hospitals and absence at work resulting from the disease. Improved understanding of its complex economic burden may indicate effective treatment and prevention options.

Material and methods: This observational study uses retrospective data obtained from two major public healthcare institutions in Poland: National Health Fund and Social Insurance Institution. Statistical registers and reports from 2016 to 2019 were included in analysis.

Results: Estimated cost of hospital treatment of urinary stones was \$53,2 mln in 2018, accounting for 64313 admissions. Average cost of stay was \$827. Number of days absent from work due to urolithiasis was 759071, resulting in approximate annual loss of \$ 130,9 mln in gross domestic product in 2019.

Conclusion: Kidney stones disease has substantial economic impact on economy and public healthcare. Consideration of cumulative cost of medical interventions and absenteeism in cost-effectiveness may affect disease management.

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„Example of adverse event risk management - own experience”

Abstract: Adverse events, referred to in medical terminology as: "damage to the patient's health caused during diagnostics and / or treatment, not related to the natural course of the disease or the patient's state of health, as well as the risk of its occurrence" may occur at any stage of hospitalization - from the moment of admission to the hospital until his discharge. There are many examples of adverse events occurring in healthcare systems around the world, but their actual number is not exactly known and there is a lack of reliable statistics on this subject. The vast majority of medical events, however, do not result from a lack of knowledge or competence of the medical staff themselves, but rather from systemic failure and errors. Creating an effective system for monitoring and controlling adverse events allows to minimize their occurrence in the long term. Systems for reporting adverse events Reporting and Learning Systems (RLS) are valuable only when the identified events are subject to detailed analysis and the medical personnel participating in them receive full feedback.

Material and methods. The aim of the work was to identify, catalog and then hierarchize adverse events (taking into account risk, frequency and generated costs) that occurred in the examined departments using the "black points" method. Retrospective analysis covered 12,805 medical records and other documentation related to patients' stay in the following departments: Anesthesiology and Intensive Care, Gynecology and Obstetrics, Neurology, General Surgery, Newborn Physiology and

Pathology, Orthopedic, Cardiology and Ophthalmic Surgery and Internal Medicine Poland.

Results. An analysis of medical records has identified a total of 483 hospitalizations during which adverse events were identified (3.8%). Then they were prioritized in terms of significance for the patient and the hospital, thus identifying the most important threats so-called black points on III levels of significance. On this basis, a number of preventive and corrective actions were developed, which, together with the results of the analyzes, were forwarded to the managements of the hospitals examined.

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"The Romanian health care system behind the screen: narratives and experiences of online users"

Abstract: Health systems, with all their forms and structures, are very dynamic and subject to societal changes. Countries with transitional economies implemented large-scale health care reforms. Recent studies indicated that many expectations from the privatisation and management of health care were not fulfilled. Coping with structural and institutional shortcomings, political and financial realities, the Romanian health system is part of a much deeper reaching process. The extraordinary potential of the Internet as an essential tool in research is undeniable. Advanced Internet technology and different apps provide information on health issues and health caregiving. The paper explores the narratives and discursive understandings of health among online users using an adaptive ethnographic technique. Narratives for analysis were obtained by using

the Google search engine and multiple searches to get publicly postings of people related to the health care system and reform via snowball sampling. The documentary corpus (150 articles and the subsequent selection of 100 discourses) was analysed in an iterative analytic process. The stages of coding were manually conducted. The processing of the data was partly carried out using open source software for qualitative data such as Wordalyzer 1.5 and voyant.tools.org. The findings provide an understanding of the shared experiences of users as patients, of the people's everyday experience of reality, in great detail, to gain a reflection of the phenomenon in question: the malfunction of the health care system. The recurring themes of discourse analysis are structured around the system's malfunctions, the organisation of health care system, the progress of health reform, the practice of bribes, and the privatisation of emergency medical services. The poor organization of hospitals and the inadequate management of their budgets have ultimately affected the quality of services and health care. New health policies could be implemented to improve the responsiveness of the Romanian health system.

Katarzyna BYSZEK

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“Impact of eHealth on cross-border healthcare”

Abstract: This presentation outlines an overview of the current development of cross-border healthcare in Poland and the European Union. It also provides insights about ongoing digitalization of health systems and the introduction of patient data exchange across borders. The presentation is based on data provided by the Polish payer, the European Commission, examples from the Member States, and a review of the subject literature

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"Assessment of the Selected Health Factors by Polonia in the Greater Toronto Area in the Context of Quality and Standard of Living"

Abstract: Colloquially speaking, a quality of life constitutes an indicator of well-being, satisfaction or happiness resulting from one's existence. It is often referred to as a standard of living. In general, it is contentment with fulfilment of one's needs. The main objective of the article is to describe the selected components of the living standards and quality of life within the Polish community of the Greater Toronto Area which includes four regions: Halton, Peel, York and Durham. The model of mutually affecting objective factors (standard of living) and subjective factors (quality of life) created by an author will be presented in the paper. The specific factors (demographic, social, cultural, economic, legal, educational, geographical and health-related), included in the field studies among the respondents and based on the assigned indices influencing the quality of life in the Polish community of the Greater Toronto Area will be demonstrated. The major goal of the paper is to present assessment of the aspects related to the health factors, both in terms of the objective factors (standard of living) and subjective ones (quality of life) by Polonia living in the Greater Toronto Area. The results will be shown on the basis of the survey questionnaire completed by 583 respondents. The questions have included, among others, access to the healthcare system, competence of the medical staff and access to sports facilities. The respondents have also evaluated their satisfaction with their general health, both physical and mental one as well as possibility of practising sports, which is associated with healthy lifestyle.

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"Analyzing housing conditions and their consequences on population health in the Biosphere Reserve of the Danube Delta"

Abstract: Housing is a major element of people's material living standards. It is essential to meet basic needs, such as for shelter from weather conditions, and to offer a sense of personal security, privacy and personal space (OECD, 2009). There is a direct relationship between health and housing conditions, namely related to infrastructure, services, comfort and quality. In other words, inadequate living conditions can increase the risk of disease among the inhabitants. The present study focuses on evaluating the relationship between housing conditions and population health status by using qualitative and quantitative methods. In order to analyze the impact of socio-economic factors on the population health care state in the Danube Delta were calculated specific indicators (housing comfort index, housing development index, housing quality index, mortality due to infectious diseases, health services index, health index) that have emphasized territorial differences in the population health status in relation to living conditions. The statistical data were completed by a health survey carried out in sample localities. The health survey brought up a series of specific issues such as villages with no wells with drinking water, lack of access to running water and lack of water supply and/or bathroom. The authors concluded that preliminary results showed a significant relation between sanitation and housing quality and that education level, housing conditions and (un)employment explain the existing territorial inequalities.

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"Health tourism in Poland – an opportunity to develop the potential of health facilities"

Abstract: The constantly growing interest in health tourism is undoubtedly one of the most important phenomena on the tourist services market. This is related to the increasing public health awareness as well as demographic changes. The quality of services rendered in medical facilities, staff qualifications and very low prices of medical services affect the selection of Polish medical facilities. Contemporary social trends indicate a dynamic increase in interest in this form of trips. By medical tourism we mean treatments related to plastic and aesthetic surgery, dentistry, cosmetic and therapeutic procedures as well as interventional treatment, orthopaedic surgery and rehabilitation. Polish clinics are increasingly appreciated internationally, they do not differ from those in larger European countries, but they are definitely cheaper and more patient-friendly.

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"Historiographic antecedents of integrated paediatric patient care. An example of the Karol and Maria Hospital in Warsaw 1913- 1939"

Abstract: Over the past decades, nearly 180 definitions, concepts and many theories have tried to explain what integrated care is. One of the reasons for ambiguity is the interdisciplinary nature of the concept important from the point of view of medical sciences, but also public administration, social science, management and public health, as well as geography and medical anthropology. Also, various stakeholders expect solutions called integrated care (or coordinated care and seamless care) from different perspectives. Multi-threaded debate, however, is increasingly under pressure to improve effective medical care for chronically ill patients, while maintaining a certain rationality of expenses and to the comfort of the patient who will be a conscious participant in prolonged therapy. Therefore, considering this palette of views on integrated care, three groups of definitions can be distinguished: 1) A process-based definition used by many national governments in order to understand the different components of integrated care - seen as a mechanistic set of behaviors and procedures of the healthcare system; 2) A user-led definition that supports a defining narrative and purpose for integrated care strategies at all levels of the system - the focus is on the narrative of the patient and his caregivers; 3) A health system-based definition as used by WHO Regional Office for Europe - confirming that integrated care is achieved by unifying all functions of the healthcare system and effective change management by a coordinated multidisciplinary team of providers working across settings and levels of care; manage effectively to ensure optimal results and appropriate use of resources based on the best evidence available.

Here we come to a bit more emphasizing the momentous contemporary achievements of medicine Evidence Base Medicine (EBM), which concept is used in the sense as evidence-based practice or evidence-based health care. EBM refers to the application of the best available

research to clinical care, which requires the integration of evidence with clinical expertise and patient values and its effectiveness is much better proven in the case of diseases / emergencies than in relation to the care of a chronically ill patient. At the same time, it is a method that decision-makers gladly refer to, speaking to their use of research evidence to inform, their decision-making as a declaration of legitimacy.

As the most stressed problem in healthcare in Central and Western countries are the dominance of chronic diseases, requiring a way of organizing the service process other than emergency cases, it is integrated care that is increasingly desirable to improve the operation of medical care. Coordinated Health Care has been widely spread in the United States thanks to its effective management concept, and its elements are visible in healthcare systems in Great Britain, Germany, Spain, Switzerland, Hungary, Australia and Southeast Asia. In Poland the most serious approach to healthcare improvement was in 2015 when the oncology set has been developed.

There are a number of allegations in relation to EBM, including one of the most important allegations of failure to take into account the importance of social determinants of health and the local context - it points to "MacDonaldization of medicine". Evidence is context sensitive, so both global and local evidence need to be combined in the development of usable recommendations for clinical decision making. This local evidence should be combined with 'expert knowledge', which should be distinguished from 'expert opinion'. By 'expert knowledge' we mean data-based knowledge (i.e. not a simple opinion or feeling) that helps experts better understand local conditions.

This paper discusses the concept of integrated patient care based on the "Historiographic antecedents of paediatric care" practiced in the "Karol and Maria Hospital" in Warsaw 1913- 1939 in the most modern facility on the European scale, with 9 pavilions with internal, infectious, observation and isolation, surgical, orthopaedic and outpatient

departments. The hospital was a benchmark in comparison to Europe and beyond. The concept of the functioning of "The Karol and Maria Hospital" was based on helping patients depending on the diagnosis or co-morbidities. This example shows that using the cognitive apparatus of historiography organization is the most useful to cater to the needs of management by a reflective manager who thereby seeks inspiration for his/her own practice improvement.

The case study may constitute such a "local context" in the EBM concept; in the case of the integrated care concept refer to the model management of a healthcare center. "Karol and Maria Hospital" itself adapted its operations to the requirements of both urgent cases (including infectious diseases) and chronic diseases, and focused on the demanding, but "silent" patient children.

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"Improvement of the posthospital process in patient care at home after hip arthroplasty as a result of the use of telemedicine technologies"

The importance of the use of telematics technologies in medicine around the world has been growing for many years, and it turned out to be a particularly important issue, even essential for conducting some medical procedures during the SARS-CoV-2 coronavirus pandemic, where direct contact and supervision of medical staff over the patient is difficult. The existing possibilities of technology are not fully used,

among others due to the fact that the implementation of technology requires knowledge of at least several scientific disciplines. In the case raised in the article, the knowledge in areas such as medicine, management, IT, electronics and telecommunications is needed. In practice, it is necessary to create interdisciplinary teams that would design and implement improved procedures using telemedicine tools. The aim of the article is to identify possible improvements in the postoperative care process after hip arthroplasty as a result of the use of telemedicine technologies by the patient at home. Within InterDoktorMen project, an interdisciplinary team was created, consisting of the authors of this article, who dealt with the creation of a postoperative care project after hip arthroplasty using tools used in telemedicine. In the study, possibilities of using electronic bands informing among others about the patient's falls and the possibility of remote patient contact with medical staff, were analyzed. The process that will be the subject of analyzes takes place in the patient's home. As a result of the application of an improved, original project of the postoperative care process after hip arthroplasty, patient's safety will be increased and risk associated with postoperative complications reduced.

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“The use of virtual reality and artificial intelligence in patients with Alzheimer’s disease and their informal caregivers’ education”

Abstract: Along with the worldwide elderly population growth and lifespan extension, the number of patients with dementia rises exponentially. The main cause of dementia is still incurable Alzheimer’s disease, manifested in symptoms such as memory loss, disorientation, decreased ability to solve problems and control emotions, presenting changes in personality and behavior. The 2016 World Alzheimer Report estimates that the number of people with dementia worldwide (46.8 million) will almost double every 20 years, and it is expected to rise to 131,5 million by 2050.

The recent scientific data including various medical rehabilitation studies show that due to the rapid development of technologies such as virtual reality and programs based on artificial intelligence, the focus in patient’s diagnosis, therapy, cognitive training, and education of informal caregivers, shifted to the technology field. Nowadays, the main aim of the researchers is to improve the development of person-centered assessments and interventions by incorporating the novel theories of dementia and cognitive decline to virtual reality and artificial intelligence technologies. The data suggest that interventions based on virtual reality can be useful in improving cognition (e.g. memory, dual tasking, and visual attention) and psychological functioning (e.g. reduction of anxiety, higher levels of well-being, increased use of coping strategies) in neurocognitive disorders such as Alzheimer’s disease. On the other hand, there is indirect evidence that machine learning can be also helpful in predicting the conversion from mild cognitive impairment to dementia in patients with Alzheimer’s disease. Furthermore, computer-based interventions appear to be successfully targeting caregiver support in several aspects, including burden, depression, and anxiety. However, there is still little information

regarding the use of virtual reality in dementia-related education for informal caregivers.

This paper summarizes the available evidence and guide further research on mentioned topics, showing the range of use of virtual reality and artificial intelligence in patients with Alzheimer's disease and their informal caregivers.

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"Awareness and effectiveness of education of parents during the prophylactic programme of HPV vaccination in Gdynia, Poland"

Abstract: Cervical cancer is still an important problem of public health in Poland. Screening cytology tests introduced as secondary prophylaxis programme have not reduced morbidity of cervical cancer to a satisfactory level. New possibilities appeared with the vaccination against the most frequent oncogenic types of Human Papilloma Virus (HPV) as the primary prophylaxis. Local health programmes consisting of free HPV vaccination of girls (or girls and boys) should apart of immunisation increase awareness and knowledge about methods of cervical cancer prevention.

Research problem: Analysis of basic knowledge of parents who registered their daughters to prophylactic programme of HPV vaccination in Gdynia (2019-2020) and the evaluation of health

education provided to the parents during registration and vaccination appointments.

Material /Methods: Data for the analysis were derived from the questionnaires, filled by parents of girls (born 2004-2006) as the registration pre test and post tests, filled during the last vaccination visit. The questionnaires have been accepted by The Agency for Health Technology Assessment and Tariff System (Agencja Oceny Technologii Medycznych i Taryfikacji) as the part of health programme Prophylaxis of HPV infections at 13 and 14 years old girls in Gdynia. The results were subjected to statistical analysis.

Results: A number of 1178 girls were registered to the vaccination programme and by 25.02.2020 only 202 have completed the programme and filled the post tests. The time interval between the registration moment and the last vaccination is, due to course of injections, at least 6 months. The inquiries in the questionnaires concern basic knowledge about the human papilloma virus, the HPV vaccinations and the prophylaxis of cervical cancer.

Discussion: Awareness of risks and of the possibility of prevention by vaccination is important but not the only factor in parental decision to vaccinate children against HPV. The level of basic knowledge of parents registering their daughters to the prophylactic programme was high in subject of Human Papilloma Virus and cervical cancer and during the programme the knowing about the course of vaccination increased. Health education provided during the programme does not achieve the assumed results regarding knowledge about the role of secondary prophylaxis.

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"Selected prophylactic actions applied by physicians for prevention of infectious agents"

Abstract: Prevention of infectious microbes is extremely important to medical staff because of numerous interactions with infected patients. There is possibility of contracting a disease and the risk of transmitting the infection to other patients. The knowledge about prophylaxis among physicians should result in increased awareness of procedures, vaccination and appropriate use of personal protective equipment.

Research problem: Analysis of doctors' attitude to prophylactic activities, which can be implemented to decrease the professional risk caused by infections.

Materials/Methods: Material used in the study is obtained from an anonymous on-line survey, presented in the Internet on doctors' forums and as well as it's paper version, filled by physicians from a few hospitals located in different regions of Poland. The answers are collected between 5th March 2020 and 5th June 2020 - during the escalating crisis caused by virus SARS-Cov2 pandemic.

Results: The inquiries refer to previous and current attitude of the respondents towards protective vaccinations – both personal and their families. Their knowledge about application of protective equipment and isolation procedures imposed to patients coming from different epidemic areas.

Discussion: Awareness of prophylactic methods, preventing doctors from the risk of contagion does not lead to the implementation of the solutions in their everyday practice. Usually they take vaccinations recommended for medical staff (Hepatitis B, Influenza). It is common they prescribe the immunisation to younger relatives more often than for themselves.

The risk of epidemic infection increases the importance and profitability of prevention methods and willingness of taking actions for self-protection for example vaccination against virus SARS Cov2, also in course of clinical research.

Physicians' diseases resulting from the absence of immunisation or lack or misuse of the adequate equipment are great and expensive losses in the public health system, especially in time of more frequent infections and deficiency of medical staff.

Conclusions: Increasing the role of prophylaxis against infections among medical staff is important not only for them and their families but it's also a serious public health concern.

Danger of epidemic influences physicians to adapt more preventive behaviour than before. Growth of vaccinations in medical staff can be gained by financing the costs of vaccines by employers or institutions and by immunisation availability at work.

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“Rapid synthesis of silver nanoparticles using L. Rosa flowers extracts: Thermodynamic and kinetic studies of inhibition effects of nanoparticles on creatine kinase activity”

Abstract: The present work investigates the rapidly synthesis of silver nanoparticles by biological method using *L. Rosa* flower extract and silver nitrate as precursor. Optimum conditions of synthesis were studies us (pH, temperature, concentration of extracts, concentration of silver nitrate and stability with time). The detailed characterization of the AgNPs was carried out using U.V-visible, spectroscopy, Scanning

Electron Microscopy, X-Ray Diffraction, Fourier transform infrared, and Transmission Electron Microscopy. The biosynthesized AgNPs exhibited inhibitory effects on creatine kinase muscular bond activity in sera of patients with myocardial infraction compared with control subjects, thermodynamic and kinetic studies of creatine kinase muscular bond were performed. Further studies on other biological activities are required to exploit AgNPs full potential.