

**3<sup>rd</sup> International Scientific Conference**



**INTERDISCIPLINARITY OF  
HEALTH AND HEALTHCARE**

**15<sup>th</sup>-16<sup>th</sup> September 2022**

**ABSTRACT BOOK**

# ORGANISERS

**Faculty of Health Sciences, Medical University of Lodz**



## **Cooperation:**





Projekt: „InterDoktorMen – Budowanie nowej jakości i efektywności kształcenia w formule studiów doktoranckich dla menedżerów ochrony zdrowia na Wydziale Nauk o Zdrowiu Uniwersytetu Medycznego w Łodzi”, realizowanego w ramach Programu Operacyjnego Wiedza Edukacja Rozwój 2014-2020, współfinansowanego ze Środków Europejskiego Funduszu Społecznego (nr POWR.03.02.00-00-1027/16-00)

## HONORARY PATRONAGE



RECTOR OF THE MEDICAL UNIVERSITY OF LODZ

**PROF. RADZISŁAW KORDEK, MD, PHD**

## MEDIA PATRONAGE



International Journal of  
*Environmental Research  
and Public Health*

## CONFERENCE SCIENTIFIC COMMITTEE

**Michał Marczak – Chairperson**

*Medical University of Lodz, Faculty of Health Sciences*

**Izabella Łęcka – Vice Chairperson**

*University of Warsaw, Faculty of Management*

**Remigiusz Kozłowski – Vice Chairperson**

*University of Lodz, Faculty of Management*

**Paloma Cuchi**

*World Health Organization*

**Michał Krzyżanowski**

*Imperial College London*

**Dolors Rodríguez Martín**

*University of Barcelona*

**Anastasius MOUNTZOGLOU**

*President Hellenic Society for Quality & Safety in HealthCare*

**Joao Malva**

*University of Coimbra*

**Per Engelseth**

*Narvik Campus, School of Business and Economics, University of Tromsø*

**Sally Brailsford**

*University of Southampton, Southampton Business School*

**Jolanta Kujawa**

*Medical University of Lodz, Faculty of Health Sciences*

**Małgorzata Pikala**

*Medical University of Lodz, Faculty of Health Sciences*

**Ewelina Gaszyńska**

*Medical University of Lodz, Faculty of Health Sciences*

**Dorota Kilańska**

*Medical University of Lodz, Faculty of Health Sciences*

**Tomasz Czapla**

*University of Lodz, Faculty of Management*

**Jadwiga Suchecka**

*Pawel Wlodkowic University College in Plock*

**Iwona Konarzewska**

*University of Lodz, Faculty of Economics and Sociology*

**Józef Haczyński**

*University of Warsaw, Faculty of Management*

**Ewelina Nojszewska**

*SGH Warsaw School of Economics*

**Jadwiga Wójkowska-Mach**

*Jagiellonian University in Krakow*

**Dariusz Timler**

*Medical University of Lodz, Faculty of Health Sciences*

**Andrzej Śliwczynski**

*Satellite Campus in Warsaw, University of Humanities and Economics in Lodz*

**Zbigniew Wiśniewski**

*Lodz University of Technology*

**Anna Staszewska**

*Medical University of Lodz, Faculty of Health Sciences*

**Anna Rybarczyk-Szwajkowska**

*Medical University of Lodz, Faculty of Health Sciences*

**Petre Iltchev**

*Medical University of Lodz, Faculty of Health Sciences*

**Izabela Rydlewska-Liszkowska**

*Medical University of Lodz, Faculty of Health Sciences*

## **CONFERENCE ORGANIZING COMMITTEE**

**Anna Rybarczyk-Szwajkowska – Chairperson**

*Medical University of Lodz, Faculty of Health Sciences*

**Anna Staszewska - Vice Chairperson**

*Medical University of Lodz, Faculty of Health Sciences*

**Remigiusz Kozłowski**

*University of Lodz, Faculty of Management*

**Michał Marczak**

*Medical University of Lodz, Faculty of Health Sciences*

**Izabella Łęcka**

*University of Warsaw, Faculty of Management*

**Dorota Wójcicka**

*Medical University of Lodz, Faculty of Health Sciences*

**Klaudia Twardowska**

*Medical University of Lodz, Faculty of Health Sciences*

# CONFERENCE PROGRAMME

**15<sup>th</sup> September 2022 (Thursday)**

## **T: Medical and economic risk in healthcare under suddenly changing conditions**

### **10.00 – 12.00 Opening Speech**

(Chairwoman: Prof. Izabella Łęcka, Chairman: Prof. Michał Marczak)

Prof. Michał Marczak

*Suddenly changing conditions - variability of modeling and observation scales in Health Care. Introductory presentation*

Prof. Michał Krzyżanowski

*Addressing air pollution and health in the context of the European Green Deal*

Dr Paloma Cuchi

*Health and medical care condition of sudden change*

Prof. Sing Kai Lo

*Health and Wellbeing of Students and Teachers during Infectious Disease Outbreaks: A “Needs and Supports” Perspective*

**12.00 – 12.30 Coffee break**

### **12.30-14.00 I session**

(1) Prof. Duangpun Kritchanchai

*Logistics solutions in the health care system in Thailand during pandemic*

(2) Prof. Andrzej Śliwczyński

*Managing access to therapy in an emergency - own experience*

(3) Dr Anastasius Moutzoglou

*COVID-19 Outbreak in Greece: Challenges, Responses, and Opportunities*

(4) Dr Dolors Rodriguez Martin

*The role of nurses during COVID-19 in Spain*

Moderators: Prof. Tomasz Czapla

### **14.00-14.30 Lunch**

### **14.30-16.00 II session**

(1) Dariusz Kostrzewa

*The impact of selected health burdens of Covid-19 patients treated in the Temporary Hospital in Gdańsk on the risk of occurrence of severe course of the hospital phase of the disease*

(2) Tomasz Leśniak

*The model of health reconstruction procedure as an example of restricting expenditures resulting from the treatment of consequences of adverse events, the "secondary harm".*

(3) Mateusz Gajda

*Secondary bacterial infections in COVID-19 patients in University Hospital in Kraków*



(4) Prof. Rafał Kubiak

*Criminal liability for organizational malpractice of medical professionals*

Moderators: Prof. Ewelina Gaszyńska, Dr Aleksandra Sierocka

**16.00 – 16.30 Closing the first day of Conference**

(Chairwoman: Prof. Izabella Łęcka, Chairman: Prof. Michał Marczak)

**18.00 – 19.00** Guided tour *Magic Ksiezy Mlyn*

**19.00** Dinner – restaurant *Winoteka*

**16<sup>th</sup> September 2022 (Friday)**

**T: Good practices regarding management, risk and education in healthcare under suddenly changing conditions**

**9.45-10.00 Opening Speech**

(Chairman: Prof. Remigiusz Kozłowski)

**10.00 – 11.30 III session**

(1) Karolina Kamecka

*Telemedicine technologies partial selection for the posthospital patient care process after total hip arthroplasty – the use of Google Search tool in scientific research*

(2) Olga Barszczewska

*Dissemination of biosimilar drugs - examples of systemic solutions used in Europe*

(3) Maria Belcarz

*Nosocomial infections in the surgical ward - case report and literature review*

(4) Jakub Ratajczak

*Impact of COVID-19 pandemic on cancer treatment in urology*

Moderators: Prof. Dorota Kilańska, Dr Dolores Rodriguez Martin

**11.30-12.00 Coffee break**

**12.00-13.30 IV session**

(1) Monika Borzuchowska

*Is the Health Care System in Poland resilient to crisis situations? An analysis of the ICU personnel survey*

(2) Klaudia Migas

*Reorganization of dental services in the time of the COVID-19 pandemic*

(3) Kacper Wróbel

*Pro-health food register as a tool for evaluation of regulatory compliance level of dietary supplements introduced to the Polish market*

(4) Beata Zastawna

*Vaccination hesitancy- an increasing social problem.*

Moderators: Dr Anastasius Moumtzoglou, Dr Anna Rybarczyk-Szwajkowska

## **13.30-14.00 Lunch**

### **14.00-15.15 V session**

(1) Piotr Rościszewski

*The impact of the marketing strategy of the primary healthcare clinic on the acquisition and retention of patients*

(2) Agnieszka Zdęba-Mozoła

*The use of lean management tools to identify the causes of prolonged stays and propose solutions in the neurological department of the multi-specialist voivodship hospital*

(3) Małgorzata Timler

*Family medicine*

Moderators: Dr Anna Piechota, Dr Anna Staszewska

**15.15-15.30 Closing the Conference**  
(Chairman: Dr Anastasius Moumtzoglou)

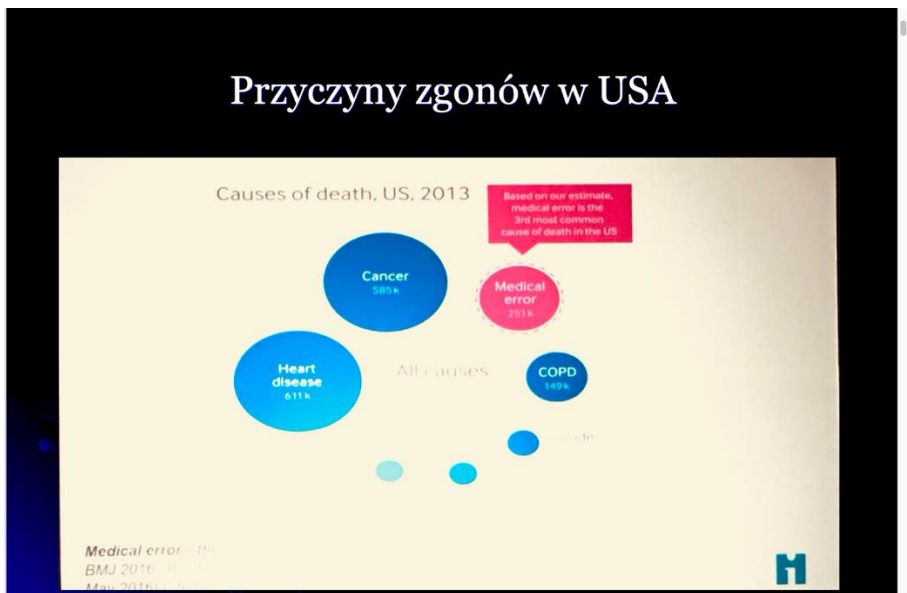
## ***Suddenly changing conditions - variability of modeling and observation scales in Health Care. Introductory presentation***

Issues presented during the 3<sup>rd</sup> International Science Conference "Interdisciplinarity of Health and Healthcare" include the issues of interdisciplinarity of medicine, health sciences and management sciences in the managing of changing scale of observations and sudden changes in the environment, that is:

- new, increasingly precise testing, diagnostic and rehabilitation procedures, e.g., the use of telemedicine in the planned post-hospital care process for patients who underwent hip replacement surgery (medical procedure: hip joint endoprosthesis), analysis of prognosticative significance of existing comorbidities which burden the population of patients after cardiac electrotherapy procedures.
- progress in molecular biology, nanotechnology, marking of cancer cells with nanoparticles are categories which are related to the increasingly precise application of the micro-scale and interdisciplinarity of medical sciences with basic science and with engineering.
- holistic approach, from the category of system, goals and sensitivity analysis (system resilience). Here we would like to mainly point out the "Green Deal", sudden and rapidly changing environmental contamination, management of risk (including averse events, with special care paid to hospital infections), logistics, and also other vision of indemnity claims with a health reconstruction programme. The detailed issues concern e.g., the use of various modern system management tools, including Lean Management (or Lean Healthcare) for the reduction of prolonged lengths of stay (pLOS).
- in the background, or rather as the foundation of the structure based on the model of sudden changes there is the COVID-19 pandemic and the risk of war.

Taking into account the methodological bases, it has been known for several decades that the impact of a single risk factor on the incidence of a given disease (its severity, morbidity) should not be researched. Optimised combinations of factors have to be taken into account, which do not have to individually provide statistically significant values of correlation coefficient with the analysed value, but e.g. display or visualise the dependency using such data exploration methods as gradestat.

We are also departing from analysis of mortality caused by individual diseases, replacing them with analysis of comprehensive causes.



An increasing amount of data shows a more detailed analysis, e.g. medical errors within a few years have moved from the 6<sup>th</sup> place in the US to the 3<sup>rd</sup> place.

And another rapid change. As a consequence of systemic aggregation, we are currently talking about mortality induced by smog, not by individual diseases (e.g. COPD).

Smog has an adverse impact on the following systems:

- respiratory,
- cardiovascular,
- reproductive,
- nervous.

The possible consequences of smog exposure include:

- pneumonia,
- bronchitis,
- cancers,
- ischaemic stroke,
- atheromatosis,
- hypertension.

Cardiologists have claimed a success: a decrease of the number of deaths (shorter time needed to reach the patient, more effective diagnostics and procedures), but looking at it from a systemic point of view, dieticians also were able to claim a share of this effect, stating that societies have changed in the recent years the manner and culture of nutrition.

In addition to environmental contamination, the category of sudden changes also includes COVID-19, mutations of the virus and the speed of its transmission. The classic method of testing medical procedures “before and after” modifications are introduced applied in stable conditions of healthcare may not be fully reliable. For example: we're looking for a solution to high mortality in a temporary hospital, caused by hospital infections (gram-negative bacteria). Several dozens of patients have died in the hospital in 2021. After introduction of significant changes (isolation rooms) in 2021 there were no deaths. However, this is not scientific evidence of the effectiveness of the introduced procedure. Another virus variant dominated and the condition of patients was not comparable to their condition in 2021.

When designing a risk management procedure at the stage of temporary hospital admissions it seems justified to use a survival rate describing the mortality level as a function of polymorbidity, the number of comorbidities to be more precise. Of all the diseases, COPD, CVD, cancers and diabetes had the highest impact, but in the risk analysis

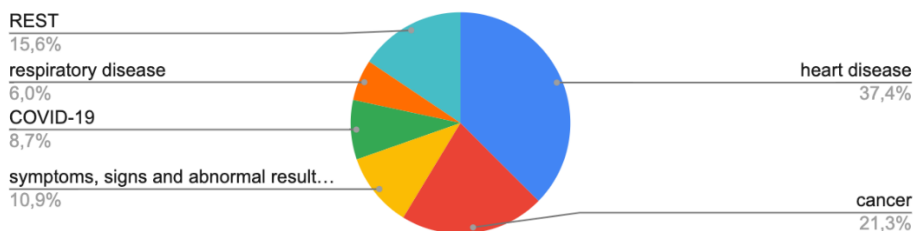
model (survival ratio) the hierarchical structure should be taken into account, in an appropriate order, doublets and triplets, from the diagnosed registry of multiple diseases.

Additionally, we do not analyse polypragmasia, and it might be necessary.

Whereas polypragmasia and adverse events caused by it are analysed for AEs when medication is administered. However, global research demonstrates that the problem also occurs with dietary supplements. Many countries have a system for reporting of adverse events for such supplements. Such a system is not present in Poland, though, and should be functionally designed. This is also what our research concerns.

One cannot fully avoid considering the issues of policy and communication of the systems of power with the society, issues of health communication, and even bioethics. We noticed significant differences in the effectiveness of different systems of power in reducing the impact of the pandemic. We shall however refer to a detailed problem, which is an analysis of current vaccination decisions of parents concerning their children and their position on vaccinations, and in particular HPV vaccinations.

As an example of political evolution of information about deaths we have attached data from Poland from the year 2020



Wishing you all wise exploration and deliberation of the issues of contemporary health care in a broad sense,

*Michał Marczak*

# ABSTRACTS

**Olga Barszczewska**

*Medical University of Lodz, Faculty of Health Sciences*

## **Dissemination of biosimilar drugs - examples of systemic solutions used in Europe**

Biosimilar drugs (biosimilars) are equivalents of original biological drugs (reference drugs) that meet certain similarity requirements. Since 2006, when the first such equivalent was registered, biosimilars, which are usually less expensive than the reference drug, have been a tool for managing healthcare expenditures. Their use generates savings for the system and, above all, increases the availability of therapies for patients. The aim of this research is to identify and present examples of systemic solutions applied in European countries to increase usage of biosimilars. To achieve the objectives, a review of European literature was conducted. The results showed that these solutions vary significantly between European countries. The article summarizes solutions used in other countries. It could serve as inspiration for health care decision makers on how to implement biosimilars in their strategies.



**Maria Belcarz, Monika Borzuchowska**

*Medical University of Lodz, Faculty of Health Sciences*

## **Nosocomial infections in the surgical ward - case report and literature review**

**Introduction:** Nosocomial infections have become one of the leading causes of modern infectious diseases and affect all hospitals around the world. They are a frequent cause of complications after a medical or nursing procedure. However, nosocomial infections do not spread only in hospitals, but also occur in doctor's offices and outpatient clinics. Striving to reduce the risk of their occurrence should be part of the primary as well as one of the main responsibilities of both the management and all personnel employed in each health care unit.

**Aim of the study:** The aim of the study is to analyse the incidence of nosocomial pneumonia after surgery and its impact on further therapeutic procedures.

**Material and methods:** Analysis of the patient's medical records and evaluation of data from the literature on postoperative complications based on articles published in the PubMed database

**Conclusions:** The current monitoring and compliance with the guidelines and procedures significantly reduces the percentage of cases of infections in the hospital.

**Monika Borzuchowska\***, Dorota Kilańska, Remigiusz Kozłowski,  
Michał Marczak

*\*Medical University of Lodz, Faculty of Health Sciences*

### ***Is the Health Care System in Poland resilient to crisis situations? An analysis of the ICU personnel survey***

Background. The main task of the Healthcare System is to maintain or improve the health of the society, as well as to extend longevity, or improve the quality of life. In recent years, due to the COVID-19 pandemic, among others, the Health Care System has been subjected to numerous turbulences and challenges which has made the System unstable and vulnerable. In order to ensure the resilience of the Health Care System, it is necessary, inter alia, to adapt to the changing environment, and to increase the accessibility and effectiveness of the System. During the pandemic, the demand for ICU beds has remarkably increased. The shortage of staff, problems with adapting the infrastructure to the existing needs, or the lack of PPE were also frequently dealt with. It was the time when the ICUs became a touchstone in the sense of assessing the resilience of the Health Care System. The purpose of the study was to show the resilience of the Health Care System in Poland on the example of ICU work organization, during the COVID-19 pandemic.

Material and method. Based on documents of the European Observatory on Health Systems and Policies at al.: *Strengthening Health Systems Resilience*, and Communication from the Commission: *On effective, accessible and resilient health systems*, the following elements have been assigned to the investigated standards:

- I. Good management*, assigned to managerial skills, preparedness and effective communication

*II. Sound risk adjustment methods*, assigned to epidemiological surveillance and prevention

*III. A health workforce of adequate capacity and with the right skills*, assigned to decision - making and response to shock

*IV. Information flows in the system*, assigned to information and communication between stakeholders

*V. Stable funding mechanisms*, assigned to public financing management

*VI. Adequate costing of health services*, assigned to health insurance

The survey was conducted in Poland in the professional group of ICU nurses, in the period from July, 2020 to April, 2022. Forty complete survey questionnaires were received *via* an electronic platform. Due to the COVID-19 pandemic and limited availability of respondents, the present survey was not representative.

Results. The preliminary results of the survey show that a significant role in the preparation and maintenance of ICU operations during the pandemic is played by: appropriately motivated human resources, the ability to adapt the ICU infrastructure to operate in the crisis situation, and unfettered access for personnel to PPE. Important elements of ICU management in the crisis situation are such managerial skills as a) multi-directional, between- and within-group, uninterrupted, straightforward and reliable communication, b) efficient decision making, and c) motivating staff to act.

**Mateusz Gajda\*, Anna Palka, Anna Kujawska, Barbara Żółtowska, Estera Jachowicz, Izabella Owsianka, Jadwiga Wójkowska-Mach**

\*Doctoral School of Medicine and Health Sciences, Jagiellonian University Medical College,

**Secondary bacterial infections in COVID-19 patients in University Hospital in Kraków**

*Background.* Bacterial antimicrobial resistance (AMR) poses a significant problem, which may increase due to COVID-19 pandemic and a greater chance of overuse or misuse of antimicrobial agents. The aim of the study was to analyse the type of infections with drug susceptibility testing in patients in temporary covid units

*Methods:* The study was conducted at the University Hospital in Krakow - a unit dedicated to patients with COVID-19. The samples were collected between May 1st, 2021 and January 31st, 2022. The bacterial healthcare-associated infection (HAI) cases were analyzed retrospectively using definitions from the Healthcare -Associated Infections Surveillance Network (HAI-Net). Only laboratory-confirmed cases qualified for the analysis; only the first isolate from each patient was selected for microbiological analysis, excluding subsequent cultures from the same patient and HAI case. Identification was performed by VITEK MS and drug susceptibility by VITEK 2, disc diffusion or E-test method.

*Results:* Of 2826 hospitalized patients 57.1% were in ICU. We identified 288 HAI infections with urinary tract infections as the most common (n=121, 41%). The HAI incidence was 13.8% in the ICU and 5.7% in non-ICUs and the incidence density was, 11.9 and 3.0 per 1000 pts. Carbapenem-resistant Enterobacteriaceae infection incidence was 24.8 cases per 10,000 hospitalizations (37.2 for the ICU and 8.3 for non-ICUs) and carbapenem-resistant Microorganisms (both,

Enterobacteriaceae and *A. baumannii*) infection incidence was 208.8 cases per 10,000 hospitalizations (359.7 for ICU and 8.3 for non-ICUs).

Conclusion: The COVID-19 pandemic posed serious challenges for health care system, significantly increasing the risk of HAI. In our study, there were 24.8 carbapenem resistance cases per 10,000 hospitalizations which is much higher than other parts of the world such as the 3.36-3.79 cases per 10,000 hospitalizations seen nationally in the United States (2018-2019 years). Thus, there is an understanding from providers at the need to optimize antibiotic prescribing and there are opportunities for educating the Polish public on antibiotic use expectations that can be channeled into programs that combine high quality antibiograms that inform empiric regimens with antimicrobial stewardship to combat antimicrobial resistance while improving patient outcomes.

**Karolina Kamecka\***, **Anna Rybarczyk-Szwajkowska**, **Remigiusz Kozłowski**

*\*Medical University of Lodz, Faculty of Health Sciences*

## **Telemedicine technologies partial selection for the posthospital patient care process after total hip arthroplasty – the use of Google Search tool in scientific research**

The growing importance of using telematic technologies in medicine challenges the necessity to select technology solutions that best meets the needs of healthcare processes' participants. The aim of the research is to present a technology selection possible to be used in posthospital patient care process after total hip arthroplasty by using Google Search tool for market research. In order to find the most accurate answers to research questions, keywords from three research areas (telerehabilitation, teleconsultations, telemonitoring) were chosen and introduced to the advanced Google Search tool as well as inclusion and exclusion criteria were established. The conducted research resulted in defining visual and wearable types of telemedicine technologies for original posthospital patient care process after THA as a result of Google Search. The results obtained from Google Search tool as gray literature source, can be used in further research and process implementation. Google Search tool can stand as valuable source of up to date information on most modern technologies. The full selection of technologies should be done for complete technologies selection basing on multi-source study.

**Dariusz Kostrzewa\*, Aleksandra Dorobek, Aleksandra Sierocka, Remigiusz Kozłowski, and Michał Marczak**

*\*COPERNICUS Medical Entity*

**The impact of selected health burdens of Covid-19 patients treated in the Temporary Hospital in Gdańsk on the risk of occurrence of severe course of the hospital phase of the disease**

The subject of this presentation is estimate of potential risk of severe SARS-Cov-2 infection among patients hospitalized at the Temporary Hospital in Gdansk. Similarities and differences regarding the patients' health status were identified in 2021, and the key elements of the therapy used in the next editions of the Temporary Hospital in 2022.

The study found a clear correlation between coexisting pathologies and their impact on the chances of surviving the infection. The extensive oxygen therapy (above 10 l/min), respiratory therapy in the Intensive Care Unit or death of the patient was considered to be serious in the inpatient stage of the disease.

Observations were made of 100 patients each, who were the first to be admitted to the hospital in successive periods of operation of the Temporary Hospital. Similar gender and age distributions of patients were observed among older patients in 2022. No spectacular effect of vaccination on patient survival was observed, but it should be noted that the study included only patients whose immunity was reduced.

A similar distribution characterized the presence of comorbidities complicating the course of the underlying disease in both periods. A significant impact on the severity of the infection course was found in respiratory pathologies, cardiovascular diseases, diabetes, and cancer.

Patients diagnosed with respiratory diseases were more likely to have a critical course of SARS-Cov-2. Regardless of the virus variant, about 40% of these patients died or required intensive treatment. The result was at a similar level for oncology patients.

The phenomenon of comorbidities was also analyzed. Scientific reports indicating that the occurrence of coexistence of more than one pathology increases the risk of a severe course of the disease or death were confirmed. When three of the analyzed pathologies were diagnosed, the risk of a critical course reached 40-50%. The risk of death among patients unburdened by comorbidities was significantly lower.

Analyzing the prognostic value of additional tests ordered for showed the key role of assessing the degree of lung damage in chest CT. When pulmonary airflow was less than 50%, the risk of life-threatening complications reached 80%.

Based on the results, it should be noted that in order to minimize mortality from Covid-19, special attention should be paid to those comorbidities, among which respiratory diseases and cancer are the most significant. Their decompensation often results in a severe course of SARS-Cov-2 virus infection and increased risk of death.



## **Duangpun Kritchanchai**

*Faculty of Engineering, Mahidol University, Nakhon Pathom, Thailand*

### **Logistics solutions in the health care system in Thailand during pandemic**

Since its outbreak in Wuhan, China in December 2019, the novel coronavirus disease shortly known as COVID-19 has been spreading to almost every part of the world. WHO declared that COVID-19 is a global pandemic and has caused so many issues and challenges. Without an exact cure, the situation depends more on medical supplies, especially for those health professionals who stand in the front line. Thailand is one of the countries that face the pandemic and the issues of the non-drug supply chain, and there was no system available to handle the issues. Therefore, after going through many works and with cooperation across both private and public sectors, the SmartMedSupply platform was introduced. This chapter aims to provide the details of how this SmartMedSupply platform was designed, developed, and implemented. The major contribution is the integration of the information across 6 systems plus Business Intelligence (BI), where the data was centralized and shared among the stakeholders to support decision making. Consequently, the SmartMedSupply platform helps to balance the demand and supply of medical supplies to achieve maximum benefits and is an innovative practice using COVID-19 as a case study that can be a lesson learned for future trends of integrated supply chain and emergent situation. Finally, collaborations among stakeholders are a must. In this kind of situation, both government and private sectors along with the research team need to build good cooperation and support, and the roles of each stakeholder need to be identified.

## **Michal Krzyzanowski**

*Visiting Professor, School of Public Health, Imperial College London*

### **Addressing air pollution and health in the context of the European Green Deal**

More than 400 thousand deaths per year can be attributed to air pollution in EU<sup>1</sup>. Most of this significant burden to health is due to fine particulate matter (PM<sub>2.5</sub>) and nitrogen dioxide (NO<sub>2</sub>) exposure. Combustion of various fuels is main source of these pollutants, as is the source of greenhouse gases, such as CO<sub>2</sub>, causing climate change.

European Union strategy “European Green Deal” aims at achievement of 55% reduction of CO<sub>2</sub> emissions by 2030 and plans carbon neutrality (zero emissions) in 2050<sup>2</sup>. Within this framework, the European Commission announced in May 2021 a EU Action Plan: “Towards Zero Pollution for Air, Water and Soil”<sup>3</sup>. One of its targets is a reduction of premature deaths due to air pollution by 55% by 2030. Implementation of this action plan must involve a wide range of economic sectors responsible for the pollution. However, also medical community has an important role to play providing evidence on health impacts of air pollution and supporting society efforts to reduce exposure. This evidence has grown significantly in the recent decade, showing that long term exposure to PM<sub>2.5</sub> and NO<sub>2</sub> increase the risk of cardiovascular and respiratory diseases, as well as lung cancer, even at relatively low concentrations. This evidence was used to update, in 2021, the World Health Organization Air Quality Guidelines<sup>4</sup>.

---

<sup>1</sup> Air quality in Europe. 2020 report. European Environment Agency 2020. doi:10.2800/786656

<sup>2</sup> <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/>

<sup>3</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_21\\_2345](https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2345)

<sup>4</sup> <https://apps.who.int/iris/handle/10665/345329>

According to the Global Burden of Disease study, ca. 14% of ischaemic heart disease deaths, 16% stroke, 17% of lung cancer and 22% of COPD deaths may be attributed to PM2.5 exposure in Poland<sup>5</sup>. Other impacts include reduction of birth weight and neurobehavioral development of children, as well as contribution to a decline in mental ability and dementia in older people. This evidence, and a prospect of significant improvement of health through exposure reduction is a compelling argument to implement clean air policy, contributing at the same time to a decrease of human impacts on climate.

---

<sup>5</sup> <https://vizhub.healthdata.org/gbd-compare/>

## **Rafal Kubiak**

*University of Lodz, Medical University of Lodz*

### **Criminal liability for organizational malpractice of medical professionals**

A medical error is the most frequently addressed issue in the medical-legal doctrine and court's jurisdiction. It results from not complying with proper medical standards of the current state-of-the-art. Organizational malpractice, however, is of a different kind as it may lead to medical errors per se. The root of organizational malpractice lies in disorganization of a healthcare process, which may result in adverse effects on the health and life of the patient. The literature finds this type of error especially grave. Organizational failures in the treatment may lead to the repetition of medical errors and subsequently pose a serious threat to the health and life of patients on a large scale. Unlike for strictly medical errors, a person held accountable for organizational malpractice may be in charge of the treatment, may be the head of the organizational unit at a healthcare institution, or manage the logistics of the process on a larger scale, e.g. across a given region or even the whole country.

The focus of the paper is to present the principles of liability for these types of errors. Next, the typology of medical errors is demonstrated, as a starting point for organizational malpractice analysis. Civil, professional, labour, and disciplinary liability may result when one is held accountable for organizational malpractice. However, if there is evidence of criminal liability, the perpetrator may have to answer criminal charges. Thus, the paper discusses the cases in which such liability results, the so-called general elements of a criminal offence. The notion of *inadvertence* is analysed in considerable detail. It is so

because unintentional actions lie behind harm to human life and health due to organizational malpractice of healthcare professionals. Next, the paper reviews the causes of medical organizational malpractice: understaffing, adverse technical and sanitary conditions as well as the lack of necessary procedures or not following them. All the issues are illustrated with actual examples of the malpractice in question, including the legal outcomes.

SARS-CoV-2 pandemic put the spotlight on the issues of medical organizational malpractice. Overburdening healthcare workers during that time highlighted problems with logistics and organization of the healthcare process. Thus, the second part of the paper proposes distinctive solutions concerning medical assistance during the pandemic. Therefore, the paper presents the provision under which no liability results for unintentional harm done during COVID-19 (the so-called Good Samaritan Law). The second part also discusses the principles of criminal liability in case of an erroneous choice of the patient in the need of the most urgent treatment. The paper also presents assessment criteria of such an error and circumstances that allow for its justification, and thus not resulting in liability.

**Klaudia Migas**

*Medical University of Lodz, Faculty of Health Sciences*

## **Reorganization of dental services in the time of the COVID-19 pandemic**

Changes, which were caused by the COVID-19 pandemic had impact on the dental sector. A reorganization of dental services had placed during the COVID - 19 pandemic. The aim of this study was to analyse changes in dental offices during the COVID - 19 pandemic and ways to optimized reorganization of dental services. Changes were observed not only during dental appointments, but also during booking appointments procedure and digital of dental services. During the COVID - 19 pandemic more and more important became digital services, which cross potential infections. In the perspective of future potential another pandemic it is so important to prepare earlier, with advantages for both sides: patients and dental staff.

**Tomasz Leśniak\*, Aleksandra Sierocka, Remigiusz Kozłowski,  
Michał Marczak**

*\*Lesta Law Firm*

**The model of health reconstruction procedure as an example of restricting expenditures resulting from the treatment of consequences of adverse events, the “secondary harm”.**

Adverse events, defined as: “harm to the patient’s health caused during the diagnostic and/or treatment, not related to the natural course of the illness or the patient’s condition, and also the risk of its occurrence” may occur on every stage of patient's treatment, and are impossible to completely eliminate. The increasing healthcare expenditures related to the need to treat the consequences of adverse events, as well as the number of claims filed by patients (or their families) and remuneration paid as their result mean that the interest in the subject of adverse event cost management is increasing. The adverse events also cause a series of negative consequences not only to the patient (and/or their family), but also to medical employees. They are also extremely expensive, e.g., through extension of hospitalisation, the need of repeated surgery, diagnostics, or the use of above-standard medication and materials. What's important, they are associated with additional social costs in the form of decreased productivity and decreased population health.

In their work, the authors have compared data concerning the issue of claims filed with one the provincial committees adjudicating on medical events in the years 2016-2019. Based on own research they have also estimated the costs of treatment of consequences of adverse events, which constitute a burden not only for medical entities, but for the entire healthcare system. The authors of the study have defined them as “secondary harm”, which they defined as: “medical condition which is not directly related to the original condition of the patient in contact with the healthcare system, but a secondary medical condition which

has occurred after the adverse event. The secondary harm is an event, which occurred not at patient's fault, but through a widely understood adverse event resulting from a diagnostic error, therapeutic error, administrative error or another fault on part of the healthcare system, caused by the medical facility's personnel, a specialised organisation, and by a system of private and public facilities serving the patient”.

All the aforementioned information and data also formed the basis for a model of health reconstruction procedure. The authors are of an opinion that in almost every case of occurrence of an adverse event, the injured party could be offered an individual treatment plan, appropriate supervision over the health restoration process and selection of appropriate specialists which increase e.g., the quality and effectiveness of the treatment implemented as a consequence. The main goals of the original model should include:

- coordinating and providing aid in the daily functioning of the victim and their family,
- access to high quality medical, psychological, financial, compensatory, legal and infrastructural care,
- preventing disabilities, social and professional exclusion (including professional diseases).

The indicated solution would be an example of a method for reducing the expenditures resulting from the treatment of adverse events, according to the authors.



## **Jakub Ratajczak**

*Medical University of Lodz, Faculty of Health Sciences*

### **Impact of COVID-19 pandemic on cancer treatment in urology**

The pandemic of COVID-19 tremendously changed day-to-day functioning of hospitals, practices and healthcare systems. This study retrospectively investigates the impact of pandemic on the urologic oncology in Poland. Based on The National Health Found registers, information on hospital urological procedures was retrieved. The analysed period includes past 5 years from 2016 to 2020. Analysis was based on patient billing groups and data on hospital discharges according to procedure codes published in Polish version of International Classification of Diseases, 9th Revision, disorders listed in International Statistical Classification of Diseases and Related Health Problems, 10th revision, and uniform billing groups. In 2020 compared to 2019, number of urologic surgeries significantly fell, resulting in 16% reduction of kidney cancer operations, 11% reduction in radical prostatectomies and 13% in transurethral resection of bladder tumours. On the contrary the number of radical cystectomies slightly increased by 5 %. Major drop of procedural performance was recorded in march of 2020 and remained at lower level throughout the year. In conclusion, managing the stream of oncology surgery in urology requires thoughtful approach, bearing in mind recommendations of international scientific societies and potential impact on treatment outcomes. Healthcare systems demand substantial reinforcement in terms of finance, administration and personnel. Cancer patients need special focus and must be provided with accessible and epidemiologically safe services.

**Piotr Rościszewski**

*Medical University of Lodz, Faculty of Health Sciences*

## **The impact of the marketing strategy of the primary healthcare clinic on the acquisition and retention of patients**

The healthcare sector is undergoing constant and dynamic changes, which has been accelerated by the digital transformation and the COVID-19 pandemic. These changes particularly affect primary healthcare units, because on one hand they are actually the only sector in healthcare that has not been closed and has not stopped seeing patients during the COVID-19 pandemic, and on the other hand has been subject to accelerated digital transformation - largely resulting from the needs and expectations of patients. These two factors got translated into a change in the image of primary healthcare, and thus increased the need for a marketing approach to management of primary healthcare units. Marketing management in healthcare, however, causes a lot of controversy, both in financial and ethical terms, and the debate on this topic has been going on since the 1970s. This is largely due to the lack of effective translation of the marketing concept into the specificity of the health sector. Moreover, the subject of marketing in healthcare is not well recognized in Poland - at the same time the increasing expectations of patients regarding the quality of health care and patients' awareness of possible preventive and therapeutic measures require assessment in the context of the Polish healthcare system. Therefore, the aim of the presentation will be to introduce the concept of medical marketing and define the key factors influencing the perception and assessment of the clinic and primary care staff by patients. The presented research was conducted in the form of an anonymous questionnaire using the CAWI internet interview method, among 500 adult inhabitants of Poland with the possibility of submitting

a primary healthcare facility (POZ) declaration. For the statistical analysis of the results, Microsoft Excel from the Microsoft Office 2010 suite and the Statistica v. 13.3 suite were used. The results of the research made it possible to define recommendations regarding the primary healthcare clinic marketing strategy in the classical marketing-mix approach - product, place, price, promotion, people, process and physical aspects.

## **Malgorzata Timler**

*Medical University of Lodz, Faculty of Health Sciences*

### **Family Medicine**

Family medicine is one of the youngest medical specializations in Poland. The family medicine specialization model is based on the primary healthcare in Great Britain and the Netherlands. The beginning of this specialization is related to the political changes in Poland initiated by the events of the Round Table in 1989. In a year, the family medicine specialization will celebrate its 25th anniversary in Poland. My personal professional path is closely related to the development of this specialization, up till now I run a General Practitioner clinic where I work. The aim of my presentation is to recall the key events important for primary healthcare in Poland and perhaps to try to ask the question how to protect such an important sector of public services against their negative impact.

## **Kacper Wróbel**

*Medical University of Lodz, Faculty of Health Sciences*

### **Pro-health food register as a tool for evaluation of regulatory compliance level of dietary supplements introduced to the Polish market**

The dietary supplements market is a dynamically developing sector in Poland. Its value reached almost 6 mln PLN in 2021 and is still growing. A large number of new products introduced to the market every day generate some obvious difficulties with control activities performed by official institutions, making it difficult or even impossible to verify the quality of every single product available on pharmacy shelves.

We performed a series of studies in which the common aim was to identify how the character of dietary supplements placed on the Polish market changed during the time and under the influence of other variables like the COVID-19 pandemic or the publication of scientific reports by the European Food Safety Authority and national Chief Sanitary Inspector. Besides those mentioned, we also tried to identify some potential dishonest market practices applied by dietary supplement producers. All research activities were based on data obtained from the national functional and pro-health food register. Besides the main goals, they were supposed to verify if the register can be used by manufacturers as a supporting tool in the activities required by the food safety management systems.

The results showed dietary supplement composition changed relevantly after the COVID-19 pandemic had been announced. What is even more important we have concluded that impact of the publication of scientific reports by European or national food safety bodies did not have a

relevant impact on newly registered products understood as changes in their composition. However, in some specific cases, we observed trends that we later qualified as potential dishonest marketing practices - we called them “product comebacks”. It applies to products potentially non-compliant with food law requirements and is about re-notifying the product concerning which the food safety body initiated an investigating procedure, without making any changes in its composition or labelling.

In general conclusion, we can point out that maintaining the official public dietary supplement register is a good practice. Despite all its imperfections, the register can be a valuable data source for food safety management systems, which dietary supplement manufacturers must have.

## **Beata Zastawna**

*Medical University of Lodz, Faculty of Health Sciences*

### **Vaccination hesitancy- an increasing social problem**

Introduction: Vaccinations are the most successful method to increase the diseases caused by infectious agents.

The success of vaccination programmes is based on a high uptake in the society, leading to the herd immunity and inhibiting the transmission of VPD ( vaccine- preventable diseases).

Although the vaccination is widely accepted in developed societies, the increasing phenomenon of vaccination hesitancy lead to the danger of return of forgotten diseases.

Research problem: The definition of vaccination hesitancy and various classification of attitudes towards immunisation are presented. The model of the factors affecting parental decision show the complexity of problem in different communities and and the demand of analysis of local approach to find the best solution.

The methods: The method of retrospective analysys of vaccination records to estimate vaccination hesitancy in aspect of decision to vaccinate children against HPV.

The method of the questionnaires which review parents' immunisation decisions in relation to their opinion and beliefs.

Summary. The increasing problem of vaccination hesitancy becomes universal, but, due to multifactorial model, the reasons and consequently the solutions can vary in different communities. It is essential to establish local determinants to choose the best action of prevention.

## **Agnieszka Zdeba-Mozola**

*Medical University of Lodz, Faculty of Health Sciences*

### **The use of lean management tools to identify the causes of prolonged stays and propose solutions in the neurological department of the multi-specialist voivodship hospital**

Introduction: The task of the healthcare sector is to solve health problems of the society or population. It is implemented through different processes within healthcare units, that lead to the creation of a public health service. A key element is the continuous improvement of the quality of the services provided, which is a challenge for many hospitals. This includes measures that improve both the treatment process and the effectiveness, efficiency and financial outcome.

Aim: The aim of the speech is to present the possibilities of applying Lean Management tools in the analysis and elimination of hospital waste in Poland and their impact on the process of organising a patient's stay in the ward and improving the quality of services offered.

Materials & Methods :. In the period from 01/02/2022, a study is carried out at the Provincial Specialist Hospital in Wrocław to verify the causes of prolonged stays of patients in the Department of Neurology. As part of the study, surveys were conducted among medical personnel to verify possible reasons for extended stays. The study used the methods of value stream mapping, 5xWhy to describe the diagnostic process inside the department and identify waste.

Results: The result of the study is the identification of wastes in the process of hospitalization and their impact on the financial result of the unit. In addition, solutions to the problems examined are being



developed, the implementation of which is to bring measurable effects in the form of shortening the stay of patients.