GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 11 (344) ноябрь 2023

ТБИЛИСИ - NEW YORK

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press. Published since 1994. Distributed in NIS, EU and USA.

GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

GEORGIAN MEDICAL NEWS
No 11 (344) 2023

Содержание:

Stepanyan Lusine, Papoyan Varduhi, Galstyan Alina, Sargsyan Diana.
THE PROBLEM OF COMPETENCIES MODELING IN THE SOCIAL-PSYCHOLOGICAL CRISIS CONDITIONS…….....……6-12

Biduchak A, Mararash H, Mohammad Wathek O Alsalama, Chornenka Zh, Yasinska E.
ORGANIZATIONAL AND FUNCTIONAL MODEL OF IMPROVEMENT OF THE SYSTEM OF PREVENTION OF CONFLICT SITUATIONS IN THE FIELD OF HEALTHCARE…….....……..13-18

Shalabh Kumar, Sanjay Kumar Yadav, Komal Patel, Renuka Jyothi. R, Bhupendra Kumar, Vikram Patidar.
EARLY IMPLANT OUTCOMES IN ADULTS WITH DENTAL DECAY TREATED WITH PHOTODYNAMIC TREATMENT…..……19-26

M. Zubiashvili, N. Kakauridze, P. Machavariani, T. Zubiashvili.
THE SIGNIFICANCE OF CIRCULATING SURFACTANT PROTEIN D(SP-D) AND DYSLIPIDEMIA IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD), CORONARY HEART DISEASE (CHD) AND THEIR COMBINATION……...……..27-33

Mohamed Hamdi Mohamed Elgawadi, Yasser Abdel Fattah Radwan, Sherif Abdel Latif Othman, Ahmed Samir Barakat, Ahmed Omar Sabry, Abdallu Mohamed Ahmed.
RANDOMIZED COMPARATIVE STUDY OF DEFINITIVE EXTERNAL FIXATION VERSUS ORIF IN PILON FRACTURES: AN EARLY CLINICAL OUTCOME REPORT…….....……34-38

Salome Glonti, Megi Inaishvili, Irina Nakashidze.
EVALUATION OF SOME LABORATORY PARAMETERS IN PATIENTS WITH MORBID OBESITY AFTER BARIATRIC SURGERY…….....……..39-42

Balbeer Singh, Soubhagya Mishra, Rajnish Kumar, Devanshu J. Patel, Malathi.H, Bhupendra Kumar.
IMPLICATION OF THREAT FACTORS AND PREEXISTING DISORDERS IN DIFFERENT ISCHEMIC STROKE SUBGROUPS IN ELDERLY PEOPLE: A SYSTEMATIC STUDY…….....……43-46

Liubov Bilyk, Neonila Korylchuk, Dmytro Maltsev, Mykola Rudenko, Olena Kozeratska.
TRANSFORMATION OF UKRAINIAN HEALTHCARE TO THE NEW CONDITIONS OF DEVELOPMENT: RISKS, SOLUTIONS, MODERNISATIONOPTIONS…….....……47-52

Kozak N.P, Stakhova A.P.
A CASE REPORT OF EOSINOPHILIC GRANULOMATOSIS WITH POLYANGIITIS…….....…….53-56

Amandeep Singh, Pravesh Kumar Sharma, Ashok Kumar Singh, Chhaya Agarwal, Geetika M. Patel, Kavina Ganapathy.
RELEVANCE FOR DIAGNOSIS, THERAPY, AND STRATEGIES OF GUT MICROBES DYSBIOSIS IN CHRONIC KIDNEY DISEASE: A SYSTEMATICREVIEW…….....……57-63

Sharadze D. Z, Abramov A. Yu, Konovalov O.E, Fomina A.V, Generalova Yu.A, Kakabadze E. M, Bokova E. A, Shegai A.V, Kozlova Z.V, Fokina S.A.
MEDICAL AND SOCIAL ASPECTS OF PREVENTING SPORTS INJURIES AMONG CHILDREN AND ADOLESCENTS……...…64-71

Hisham A. Ahmed, Abdulhameed N. Aldabagh, Abdulsattar S. Mahmood.
COMPARISON BETWEEN PRE- AND POST-OPERATIVELY BOTOX INJECTION IN SECONDARY WOUNDS HEALING…..……72-76

Pantus A.V, Rozhko M.M, Paliychuk I.V, Kutsyk R.V, Kovalchuk N.Y.
EFFECTIVENESS OF THE APPLICATION OF THE DEVELOPED BIOPOLYMER FIBROUS MATRIX WITH CENOBONE® BIOGEL FOR THE RECONSTRUCTION OF BONE TISSUE DEFECTS OF THE JAWS……77-84

Sherif W. Mansour, Nesrin R. Mwafi, Nafe' M. AL-Tawarah, Bayan Masoud, Hamzah A. Abu-Tapanjeh, Ibraheem M. Alkhawaldeh, Mohammad S. Qawaqzeh, Raghad Amro, Sulieman B. Mazahreh.
PREVALENCE OF LEFT/RIGHT CONFUSION AMONG MEDICAL STUDENTS IN MUTAH UNIVERSITY- JORDAN…....……85-89

Sadhanandham S, Preetam K, Sriram V, B Vinod Kumar, Pulkit M, TR Muralidharan.
SEVERITY OF MITRAL REGURGITATION AND ITS ASSOCIATION WITH LEFT VENTRICULAR DYSFUNCTION AND BRAIN-NATRIURETIC PEPTIDE LEVELS IN PATIENTS WITH ACUTE DECOMPENSATED HEART FAILURE…….....……90-93

Ahmed J. Ibrahim, Niam Riyadh.
EVALUATION OF MIDPALATAL SUTURE MATURATION IN THREE AGE GROUPS IN 10-25 YEARS USING CONE-BEAM COMPUTEDTOMOGRAPHY….....……94-100

Mohammed J. Mohammed, Entedhar R. Sarhat, Mossa M. Marbut.
HEPCIDIN AND IRON BIOMARKERS MODULATED IN HEMODIALYSIS PATIENTS…….....……101-105

Hussein A. Ibrahim, Ammar L. Hussein.
ESTIMATION OF VON WILLEBRAND FACTOR IN PATIENTS CARDIAC DISEASES…….....……106-110

Mohammed L. Abdulateef, Nihad N. Hilal, Mohammed M. Abdul-Aziz.
EVALUATION OF VITAMIN D SERUM LEVELS AND THYROID FUNCTION TEST IN HYPOTHYROIDISM IRAQI PATIENTS…….....……..111-113

Mohammed N. Mahmmod, Entedhar R. Sarhat.
HEPCIDIN AND FERRITIN MODULATED IN OBESE MALE……114-118

Nato Gorgadze, Manana Giorgobiani, Jumber Ungiadze, Vera Baziari, Leila Axvlediani.
EFFECTS OF MATERNAL BLOOD LEAD IN THE PRENATAL PERIOD ON NEWBORNS AND THE SPECIFICS OF THE CONDITION ATBIRTH……119-123

Harith S. Aziz, Ammar L. Hussein, Mohamed G. Zakari.
MYELOPEROXIDASE AND COENZYME Q10 MODULATED IN THE CHRONIC KIDNEY DISEASE PATIENTS…..……124-128

Arnab Sain, Shilpi Awasthi, Oluwafunmilola UKOH (Adeyemi), Kanishka Wattage, Ahmed Elkilany, Adhish Avasthi.
SAFE USE OF FLUOROSCOPY AND PERSONAL PROTECTION EQUIPMENT IN TRAUMA & ORTHOPAEDICS……129-132

Azzam A. Ahmed.
SUTURED VERSUS SUTURELESS CONJUNCTIVAL AUTOGRAFT FOR PRIMARY PTERYGIUM…….…133-136

Osmolian V, Avsievich Al, Parandiy Va, Okhman Ol, Loginova N.
FORENSIC AND LEGAL SIGNIFICANCE OF HYPNOSIS DURING A CRIMINAL INVESTIGATION….….137-146

Loqman J. Tawfiq, Ali K. Durib, Esraa S. Jameel.
CONCENTRATION OF MALONDIALDEHYDE IN WIVES INFECTED WITH TOXOPLASMA GONDII WHICH CORRELATES WITH INTRAUTERINE INSEMINATION IN BAGHDAD'S POPULATION COUPLES……147-151

Georgi Tchernev, Naydekova N.
MELANOMA AND DYSPLASTIC NEVI DEVELOPMENT AFTER RANITIDINE/RILMENIDINE/MOXONIDINE, LERCANIDIPINE, ROSUVASTATIN AND VERAPAMIL/TRANDOLAPRIL- NEW DATA/CASE SERIES. THE POTENTIAL ROLE OF NITROSAMINE/ NDSRIS CONTAMINATION IN POLYMEDICATION AS SUBSTANTIAL SKIN CANCER TRIGGERING FACTOR……152-158

Qutaiba A. Qasim.
HEPARIN-INDUCED THROMBOCYTOPENIA (HIT) SYNDROME AMONG HEMODIALYSIS PATIENTS AND DISEASE MANAGEMENTSTRATEGY……159-170

Oleg Batiuk, Iryna Hora, Valeriy Kolesnyk, Inna Popovich, Antonina Matsola.
MEDICAL AND FORENSIC IDENTIFICATION OF PERSONS WHO HAVE BECOME VICTIMS OF WAR CRIMES OF THE RUSSIAN WAR AGAINST UKRAINE……171-179

F. Kh. Umarov, Ju.D. Urazbaev.
PATIENT-RELATED FACTORS AFFECTING THE RISK OF COMPLICATIONS AFTER PRIMARY TOTAL HIP ARTHROPLASTY……180-186

Arnab Sain, Ahmed Elkilany, Arsany Metry, Marina Likos-Corbett, Emily Prendergast, Kanishka Wattage, Adhish Avasthi.
OCCUPATIONAL HAZARDS IN ORTHOPAEDIC PROCEDURES-A NARRATIVE REVIEW OF CURRENT LITERATURE…..…187-190

Dhanya R.S, Pushpanjali K.
IMPACT OF CULTURAL FACTORS ON THE DENTAL HEALTH STATUS AND BEHAVIOUR OF FEMALES IN THEIR GESTATION PERIOD……191-195

Georgi Tchernev.
MULTIPLE KERATINOCYTIC CANCERS AFTER ENALAPRIL/LOSARTAN INTAKE: POTENTIAL LINKS TO DRUG MEDIATED NITROSOGENESIS/ CARCINOGENESIS: MELOLABIAL ADVANCED FLAP AND UNDERMINING SURGERY AS OPTIMAL THERAPEUTIC APPROACH…….196-199

Subhrajeet Chakraborty, Ankur Khandelwal, Rashmi Agarwalla, Limalemla Jamir, Himashree Bhattacharyya.
ARTIFICIAL INTELLIGENCE: CREATING NEW PARADIGMS IN THE MANAGEMENT OF NON-COMMUNICABLE DISEASES……200-202

VILCAPOMA URETA LIZVE, AYALA GUEVARA KAREN JANET, JUNCHAYA YLLESCAS VILMA AMPARO, PARIAJULCA FERNANDEZ ISRAEL ROBERT.
COMPARISON OF THE EFFICACY OF TRAMADOL AND DICLOFENAC IN RELIEVING POSTOPERATIVE PAIN OF LAPAROSCOPIC CHOLECYSTECTOMY…….203-206

GEORGIAN MEDICAL NEWS
No 11 (344) 2023

TRANSFORMATION OF UKRAINIAN HEALTHCARE TO THE NEW CONDITIONS OF DEVELOPMENT: RISKS, SOLUTIONS, MODERNISATION OPTIONS

Liubov Bilyk[1], Neonila Korylchuk[2], Dmytro Maltsev[3], Mykola Rudenko[4], Olena Kozeratska[5].

[1]PhD in Pedagogy, Vice-rector for Scientific-Pedagogical Work and Postgraduate Education, Associate Professor of the Department of Natural Sciences, Cherkasy Medical Academy, Cherkasy, Ukraine.

[2]PhD in Medicine, Associate Professor, Department of Therapy and Family Medicine, Faculty of Medicine, I.YA. Horbachevsky Ternopil National Medical University of the Ministry of Health of Ukraine, Ternopil, Ukraine.

[3]PhD in Medicine, Head of Immunology and Molecular Biology Laboratory, Experimental and clinical medicine Institute, O'Bogomolets National Medical University, Kyiv, Ukraine.

[4]PhD in Medicine, Head of the Department, M. Amosov National Institute of Cardiovascular Surgery of the National Academy of Medical Sciences, Associate Professor, Department of Public Administration, Interregional Academy of Personnel Management, Kyiv, Ukraine.

[5]Doctor of Medicine, Chief Forensic Psychiatric Expert of The Department of Forensic Psychiatric Examination of State Institution "Institute of Forensic Psychiatry of the Ministry of Health of Ukraine", Kyiv, Ukraine.

Abstract.

Objective: This article analyses the transformation of Ukrainian healthcare in the context of the new digital healthcare. The study highlights the risks faced by Ukraine's healthcare system and proposes solutions and modernization options to improve the situation.

Subject & Methods: The article conducts a narrative synthesis of related literature with a cross-sectional analysis to analyse the development of Ukrainian telemedicine and its current state in European countries. Risks, such as insufficient financial support, lack of personnel, corruption, and inaccessibility of medical services to the population, are considered.

Results: The article goes on to propose solutions to overcome these risks, including attracting additional investment in the healthcare system, improving working conditions for healthcare professionals, and reducing corruption. The article also discusses options for modernization, including the introduction of electronic medical records, the development of telemedicine, and ensuring access to quality healthcare services for all segments of the population. The paper also describes the mechanisms associated with new information and communication technologies, of which telemedicine is a part, to illustrate the potential of this new technology to transform traditional organizational forms of medicine. A brief overview of the role of telemedicine in the Ukrainian healthcare system is presented. An analytical approach is proposed along with a description of five different aspects for the effective use of telemedicine.

Conclusion: The conclusion of the article is that the transformation of Ukrainian medicine to the new conditions of digital development requires a comprehensive approach and joint efforts of the government, medical professionals, and the public. Through risks and challenges, there is an opportunity to improve the medical system and provide quality healthcare services to all citizens of Ukraine, especially in regions with active hostilities.

Key words. Transformation, telemedicine, remote consultations, digital medicine.

Introduction.

In the context of war, technical innovations in the healthcare sector have become key and necessary for the Ukrainian healthcare system. The tragic events that take place every day in civilian life have demonstrated the link between the digitalisation of healthcare and better health and safety outcomes for the population [1]. Digitalised healthcare is a cornerstone of strengthening healthcare systems and is essential for effective care for the population [2]. In order for Ukrainian healthcare to become fit for purpose, it needs to improve its resource allocation efficiency, technical and service delivery effectiveness, improve efficiency and effectiveness of medical care, accessibility, quality of care, and develop/strengthen its built-in monitoring and accountability system [3].

The new conditions for the development of Ukrainian healthcare are the creation of a political and social environment conducive to innovation for service delivery. Today, all developing countries, as well as developed countries, are strengthening their healthcare systems through various innovations to make the most efficient use of limited resources to reach all people in need and minimise costs, waste, and inefficiency [4]. Sustainable human resource capacity in Ukrainian healthcare is also important for improving the healthcare system in the long term. The COVID-19 pandemic, and subsequently the war, have highlighted the need for changes in the workforce management of medical personnel during health emergencies [5-8]. The war has demonstrated to the world the urgent need to restore a healthcare system based on comprehensive transformations. The use of the latest technologies in the healthcare system, namely telemedicine, is becoming a real salvation in critical situations. Thanks to high-speed telecommunication networks, telemedicine opens up new opportunities for medical practice and the organisational forms that support and structure it [9]. For Ukraine, this new technology could allow remote medical teams to share clinical information and coordinate treatment for the same patient. Such a system could allow for better service to remote regions with active hostilities and improve access to secondary and tertiary care while reducing risks and costs through fewer patient transfers.

This paper aims to demonstrate how new technologies are transforming traditional medical structures. The scientific literature shows that telemedicine projects are the most favourable techniques for transforming medicine in times of war, but there are risks to their self-sustainability.

The paper also describes the mechanisms associated with new information and communication technologies, of which telemedicine is a part, to illustrate the potential of this new technology to transform traditional organisational forms of medical care and hospitals. A brief overview of the role of telemedicine in the Ukrainian healthcare system is presented.

Materials and Methods.

This paper presented an analysis of the world experience, for which the empirical results of a study of the deployment of telemedicine projects with a description of their benefits for Ukraine were mobilised. The cross-sectional analysis enabled the analysis of patterns observed in the scientific literature, looking for contrasts and similarities. This approach is well suited to the main objective of our analysis, which is to understand the nature of technological restructuring and determine its impact on the organisational forms of Ukrainian medicine. The basis was 31 publications in the search databases PubMed, Google Scholar, Scopus. The choice of the relevant scientific literature under study offered an interesting analytical perspective.

General Background.

Firstly, the European experience presents, from both technological and medical perspectives, models that are both similar and different in terms of the use of telemedicine in the organisation of medical work were analysed. The mechanism of tele-expertise was evaluated, since this type of network, designed to provide remote medical care, is the most commonly used in telemedicine and is particularly suitable for organising the work of medical professionals in war conditions. The search methodology involved searching three databases - PubMed, Google Scholar, and Scopus - to find relevant scientific literature on the deployment of telemedicine projects and the benefits of telemedicine for Ukraine. The specific search terms used in the search were: transformation, telemedicine, remote consultations, digital medicine. Then a cross-sectional analysis of the literature was conducted. This analysis involved examining patterns observed in the scientific literature, looking for contrasts and similarities in the experiences of different countries regarding the use of telemedicine.

Data analysis.

The narrative synthesis was used in the work. This approach was chosen because it was well suited to the main objective of the analysis, which was to understand the nature of technological restructuring and its impact on the organisational forms of Ukrainian medicine. The analysis of the literature involved examining the empirical results of the studies included in their analysis and mobilizing them to provide a comprehensive analysis of the evolution of telemedicine in Ukraine and its present state in European nations. Then a comparative analysis was conducted in order to identify an integrative model that highlighted the conditions for the use of telemedicine in Ukraine. The employed systematic search methodology by searching three well-known databases and conducting a rigorous analysis of the literature allowed providing a comprehensive understanding of the topic.

Results.

Like all other sectors of activity, the healthcare sector has to be transformed by introducing new digital tools (shared medical records, database exploitation, predictive models, dematerialisation, etc.) and new methods such as 3D printing or DNA testing [10]. The potential use of these technologies is very broad, especially for digital technologies, which are considered one of the pillars of healthcare transformation.

Despite the war in Ukraine, compared to other European countries, the digitalisation of the healthcare system has been and is still being carried out in a very progressive manner [11]. In Ukraine, it is possible to make an appointment with a doctor in one click, and there are many relevant smartphone health apps available. The digitalisation of healthcare starts with the organisation of the healthcare system, which means that the maturity of technologies and the development of databases, the emergence of new needs and challenges (Table 1).

All this gives a new impetus to the use of new technologies in the healthcare sector. Of course, in the context of the transformation of Ukrainian healthcare to new development conditions, there are always risks that require solutions and options for modernisation (Table 2).

Thus, we focus on the options for modernising Ukrainian medicine, namely telemedicine.

The results of the analysis of the related literature show that the characteristics of tele-expertise require a complex restructuring to create an appropriate system capable of supporting the coordination of remote medical practice [12]. This technology, which aims to overcome spatial barriers, requires a more complex infrastructure than just the actions of the project participants involved in its implementation. The ability to harness the potential of this technology and to be able to coordinate medical practice remotely requires a sophisticated infrastructure, as well as a complex system that involves a deep restructuring of professional and organisational processes [13].

After all, overestimation of the capabilities of technology and, as a result, underestimation of the restructuring required to reorganise medical practice explain the complexity of creating telemedicine networks and their low efficiency, despite their stated benefits.

Tele-expertise requires the creation of a network of technical and human connections that goes beyond the technical installation that is the core of telemedicine deployment efforts. This network is “richer” than the simple technical network associated with telemedicine and aims to enhance the interaction between two systems or two parts of the same system [14]. This inter-organisational linkage, which encourages closer integration between organisations that are very loosely connected, should be deployed simultaneously with the tele-assessment technology platform to enable effective communication between organisations that are very loosely connected [15].

Our analysis allowed us to identify five different aspects for the effective use of telemedicine. Each connection must provide a satisfactory solution to the five constraints associated with the

Table 1. *Needs and challenges of Ukrainian healthcare in the context of digitalization.*

Healthcare organisations	Regulated professions, management of the system by the state authorities and health insurance, transfer of information at the doctor-doctor, doctor-patient level, information on vaccination and visiting your general practitioner, the possibility to receive medical advice during self-isolation and the need for access to medical care in regions with active hostilities
Social changes	Increasing the ability to use digital tools, trust, democracy in healthcare
Industrial change	Some innovative treatments will be linked, individualised, and possibly produced locally for the most vulnerable populations
Transforming professions and practices and developing new ways of collective and interprofessional organisation	Integration of professional development pathways

Table 2. *Risks, solutions, and options for modernizing Ukrainian healthcare.*

Risks	Financing. Insufficient funding for healthcare can lead to inadequate healthcare facilities, low salaries for healthcare workers, and limited opportunities to introduce new technologies. Human resources issues. Insufficient human resources, including insufficient numbers and low qualifications of healthcare professionals, may limit the quality and accessibility of healthcare. Infrastructure. Old and outdated medical facilities and limited access to modern equipment and technology can make it difficult to provide quality healthcare.
Solutions	Increase funding. More financial resources need to be raised for the development of the healthcare system, in particular by increasing public funding and attracting investment. Healthcare system reform. An effective healthcare system that ensures accessibility, quality, and efficiency of medical care needs to be developed and implemented. Human resource development. It is necessary to attract and support highly qualified healthcare professionals by improving working conditions, training, and professional development.
Modernisation options	Implementation of an electronic medical system. The use of modern technologies, such as electronic medical records and telemedicine, can improve the availability and quality of healthcare services.

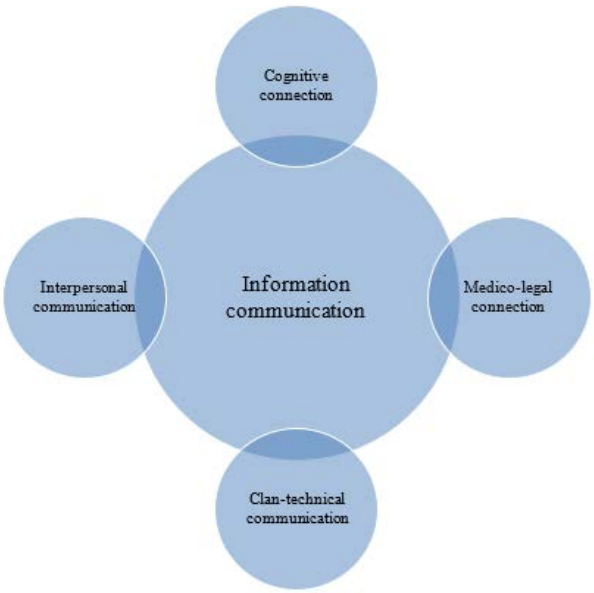

Figure 1. *Information Communication.*

implementation of tele-expertise. These constraints arise from new coordination challenges posed by real-time interactivity (time barrier) and distance (spatial barrier) between medical teams (spatial barrier) between medical teams that must now work together. These are as follows (Figure 1).

Information communication.

Information communication refers to the ability of a technical network to transmit clinical information in various formats (text, sound, graphics, images). In a tele-examination situation, the consulting physician is displaced and no longer has access to his or her usual sources of information, i.e., the patient. The technological challenge is to create a virtual patient who, through the transmission of electronic information, will be able to assess the patient's clinical condition in order to be able to provide an informed medical opinion. Such delocalisation and, as a result, inaccessibility to the usual sources of information are the main barriers to the use of electronic health records.

Admittedly, in the field of telemedicine, hospitals are still organisations that have little clinical data in electronic format: a format that can more easily overcome the usual spatial barriers than paper. Hospitals are still organisations based on paper-based information systems. A good example of this is the patient's medical record, a paper document that contains all the necessary information about the patient's health.

In decentralised healthcare, a doctor can get all the necessary information about a patient's health but needs to consult on-site.

In the context of delocalised medical intervention, paper becomes a physical barrier. Clinical data in electronic form would be more appropriate, as the consultant can access this data remotely and process it at his or her discretion.

The ability of a telemedicine system to provide information communication is based on two important characteristics of information and communication technologies: connectivity and sharing [16]. Connectivity represents the ability of people to communicate with each other. The smartphone is a good example of a technology with a very high level of connectivity. The smartphone is a widespread technology, and everyone has one or more phone numbers. Thus, it is easy to communicate -

to get in touch - with that person, as well as with other people. The second characteristic is commonality. This is the ability to exchange data remotely. The commonality is based on the ability of individuals to contribute to, access and use collective databases. Collaboration poses serious challenges between organisations that have not established a common infrastructure for communication and data sharing. Continuing with our example, the smartphone offers a high degree of connectivity and commonality, as people need to share information with each other [17]. People need to exchange information verbally and through video messaging and real-time. The capabilities of a smartphone for communication are increased tenfold as it can transmit text, images, and graphics as well as voice.

In order for tele-examination to provide effective information communication, it requires a high degree of connectivity and collaboration.

The information component remains the cornerstone of the telemedicine system, as shortcomings at this level increase the difficulty of mastering the other three links that we will now describe: cognitive, interpersonal, and medico-legal links.

Cognitive connectivity and asymmetry of expertise.

As highlighted, the low level of information sharing limits the ability to describe the patient's clinical condition. The consultant physician, having lost direct access to the patient and the information contained in his or her medical history, depends on the attending physician, who, thanks to his or her knowledge of the patient's clinical condition, can describe it [18]. It becomes the main, if not the only, source of information for the displaced consultant. Thus, the human system must compensate for the low technical performance of the system.

In this context, the level of medical competence of the doctor becomes important. The GP becomes a critical factor influencing the quality of the medical decision made by the remote specialist. The doctor must select the right information, explain it well, and answer the patient's questions with clarifying questions from the consultant. A sufficient connection between the experience of two doctors communicating remotely becomes necessary. In this context, the further apart the respective expert opinions of the two doctors are, the greater the uncertainty, which makes the task of consulting physician even more difficult. The lack of commonality in the telemedicine system thus creates a paradox, as this situation requires the expertise of both doctors.

The goal of tele-expertise is to help doctors solve complex cases. In this context, the technology becomes counterproductive, as it limits the intended use of medical consultation.

From a technical point of view, there is an inverse relationship between the level of technical sophistication of the tele-examination platform and the level of medical expertise: the less technically advanced the platform, the higher the level of expertise required from the doctor conducting it.

Interpersonal connection and mutual trust.

As mentioned above, the purpose of tele-examination is to achieve remote coordination between doctors with different levels of expertise. Typically, a physician conducting a tele-examination will seek advice from a colleague with experience that he or she does not have. In these cases, a prior relationship of trust is helpful, but not necessary.

This situation follows the usual model of medical referral. Trust in an expert implies respect for the opinions expressed by an expert with superior competence. Tele-expertise introduces another type of trust - interpersonal trust [19].

Medical-legal connection.

This fourth type of communication is largely dependent on the three previous types. Tele-expertise creates a new context for the practice of medical consultation, which is a consequence of the restructuring of the respective responsibilities of the treating and consulting physicians. In the absence of telemedicine, the respective responsibilities of each doctor are clear and separate [20]. During a teleconsultation, the responsibility of the attending physician increases, as does the responsibility of the consulting physician. In addition, the responsibility is divided between two doctors who communicate remotely [21]. On the one hand, the consulting physician, on the one hand, assumes increased responsibility, as he or she becomes responsible for gathering the information necessary for the consulting physician to provide a medical opinion. On the other hand, the legal liability of the consulting physician also increases, as he is responsible for ensuring that his clinical opinion is based on reliable information.

Clinical and technical communication.

Tele-examination, or remote intervention, can provide better access to specialised care. This is certainly a good thing. However, its effectiveness in eliminating patient referrals remains limited due to the severity of the cases being reviewed. Still, this is one of the benefits that is being actively promoted. It is important to understand that we are dealing with inter-hospital networks and that despite their remoteness from major urban centres, these hospitals still benefit from highly qualified medical teams. Consequently, it is the seriously ill patients who are most likely to require sophisticated diagnostic or therapeutic equipment that is not widely available in remote hospitals.

Therefore, telemedicine cannot avoid transferring such patients to a tertiary centre.

Thus, the effectiveness of telemedicine in reducing the number of patient transfers is not based on its technical efficiency alone [22,23]. The nature of the medical equipment available where the patient is located affects the quality of clinical interaction between healthcare teams. This communication must therefore take this into account if we are to optimise the utility of telemedicine. This raises the question of the equipment that remote hospitals should have in order to minimise patient transfers.

Discussion.

The results showed that tele-examination is still a complex system, and that this complexity seems to elude those responsible for its deployment. Tele-examination remains a sociotechnical system whose success depends on the necessary integration of a wide range of technical and human systems [24]. However, only those that are essentially telecommunication links, which is specific to telemedicine, are in focus. Three other networks are left out: the technical network that provides access to clinical information useful to physicians, the technical network of diagnostic and therapeutic capabilities offered by medical equipment distributed among, and the human network

consisting of physicians, technical and administrative staff. It is important to be able to rely on sufficiently tight integration, both technical and human, without which the new system will not be able to function properly. Establishing the various links on which this integration is based represents a major organisational restructuring [25].

They are so important that, in our opinion, they are an impetus that can radically change the organisational form of Ukrainian medicine. It is these transformations at the level of Ukraine that are of interest in this paper.

First, weaknesses in information communication are a known problem, and networked applications are currently being deployed. The Ministry of Health of Ukraine has initiated a major effort to provide a richer environment for telemedicine.

Secondly, Ukraine has been trying for several years to create regional departments of general medicine, a trans-organisational professional structure that goes beyond traditional hospital organisations [26]. However, in times of war, these structures are not very active. Telemedicine is likely to change doctors' opinions about the value of such a structure. We believe that, as and when the information communication described above improves, inter-organisational patient exchanges will intensify, and clinical information exchange will become denser [27]. The result will be a revival of inter-organisational medical activities.

In this context, the new Ukrainian medicine offers a favourable organisational environment suitable for medical activities that will be developed within the framework of telemedicine. This is especially true in times of war [28]. Doctors will invade this organisational space by consolidating inter-hospital medical structures.

Thus, scholars foresee three types of restructuring: the emergence of medical structures that go beyond the traditional organisational boundaries of hospitals. Telemedicine brings with it the need for standardisation of medical practice and information exchange, which encourages the emergence of cross-border medical organisational structures, the increase in the size of structural units (clinical departments and services), and the association of doctors into groups. In accordance with the mechanism described in the previous paragraph, clinical services, and clinical departments will include services and departments of hospitals with telemedicine networks and the formalisation of “natural networks.” Natural networks are networks based on interpersonal relationships that GPs use to obtain medical advice and refer their patients. These networks evolve into visible institutionalised networks [29].

Two types of connections are driving these structural changes: cognitive connections and interpersonal connections. Physicians from different organisations who exchange patients and information through formalised technical systems will feel the need to develop common administrative structures to foster relationships based on expertise and personal trust. This should lead to standardisation of specialist consultation networks and care practices.

In the long term, it is possible that the new inter-hospital structures will replace the current intra-organisational medical structures, i.e., clinical services and departments.

However, there is a risk that these links will extend beyond the hospital environment to other healthcare organisations with which the hospital exchanges patients and therefore information [30].

In this aspect, scholars’ postulate that the restructuring of medical structures described in this paper can also occur in administrative structures. This is the emergence of joint administrative structures. In the context of serving the same patients by different hospitals, the administrative management of these patients will less and less become the prerogative of a single hospital.

It is more likely to become a collective responsibility of hospitals that share patients, which will then seek to integrate their admission structures [31].

Telemedicine, therefore, involves a significant restructuring of Ukrainian medicine.

Scientists are putting forward the concept of a single virtual hospital, but it raises questions about the development of medical practice and healthcare costs [9].

Overall, the cumulative effect of the various restructurings that we have deduced from the analysis of the communication mechanisms required for telemedicine is that we can foresee the emergence of a new organisational configuration in the healthcare system: the network hospital. The concept of a networked organisation implies that the independent and autonomous organisations that each hospital in a network is today transformed.

Constant contact through telecommunication networks will gradually lead to a single, larger organisational structure.

In this type of organisation, the coordination of Ukrainian healthcare will rely mainly on advanced information and communication technologies. It should be noted that a network organisation is a different organisational configuration from an inter-organisational network, adopted by most healthcare networks in different countries.

Conclusion.

A narrative synthesis of the related literature has identified a number of conditions that a telemedicine system must meet if it is to support the medical practice performed by a remote team. These conditions correspond to a number of technical and human connections. Telemedicine is unlikely to overcome existing time and space barriers without

spatial barriers without the introduction of new organizational and professional relationships that go far beyond a simple technical telecommunications network specific to telemedicine. The technical network for telemedicine should be closely integrated with three other networks: a broader technical system that provides access to clinical data available in other healthcare facilities and a human system consisting of physicians, consisting of physicians, technical and administrative staff who communicate remotely.

The cross-sectional analysis allowed us to consider the prospects of Ukrainian medicine in the context of digitalization.

The emergence of the hospital network seems to us to be the organizational form to which the traditional hospital is being restructured in the 21st century. Traditional hospitals will be restructured as the links necessary for remote medical coordination. This new organizational form challenges existing

models of planning and resource allocation based on regional schemes. The network organization offers a new form of resource coordination at the level of the healthcare system.

REFERENCES

1. United Nations High Commissioner for Refugees. Ukraine situation flash update. 2022.
2. Who. Surveillance System for Attacks On Health Care (SSA). Who.int. 2023.
3. Kalinina IV, Kupriienko VM, Shulhan II, et al. Legality of applying coercive medical measures in criminal law. Cuest Pol. 2021;39:126-46.
4. World Bank Group. Russian invasion to shrink Ukraine economy by 45 percent this year. World Bank Group. 2022.
5. USAID Health Reform Support U. Telemedcine Market Assessment Rapid Assessment of Telemedicine in Ukraine. 2023.
6. Diachenko I, Kalishchuk S, Zhylin M, et al. Color education: A study on methods of influence on memory. Heliyon. 2022;8:e11607.
7. Semenets-Orlova I, Klochko A, Shkoda T, et al. Emotional intelligence as the basis for the development of organizational leadership during the covid period (educational institution case). Estud Econ Apl. 2021;39.
8. Tsekhmister Y, Stepanenko V, Konovalova T, et al. Pharmaco economics analysis of COVID-19 vaccines in Ukraine. J Pharm Res Int. 2021;140-7.
9. Ilina-Stohniienko V, Malets M. Regarding the modernisation of medical care system for victims of armed conflicts (Ukrainian experience). FM. 2022;1:30-42.
10. Electronic services: experience, trust, accessibility [Internet]. United Nations Development Programme. 2023.
11. Kolisnyk K, Deineko D, Sokol T, et al. Application of modern internet technologies in telemedicine screening of patient conditions. In: 2019 IEEE International Scientific-Practical Conference Problems of Infocommunications, Science and Technology (PIC S&T). IEEE; 2019.
12. Zhukovska A, Brechko O, Zheliuk T, et al. Information system and technologies in the health care management. In: 2022 12th International Conference on Advanced Computer Information Technologies (ACIT). IEEE. 2022;249-254.
13. Pawlowski G, Zaklad Handlowo-Uslugowy BHP, Barabash O, et al. Legal aspects of information security in telemedicine in Ukraine. Path Sci. 2022;8:1011-7.
14. Poberezhets V, Demchuk A, Mostovoy Y. How Russian-Ukrainian war changed the usage of telemedicine: A questionnaire-based study in Ukraine. Ank Med J. 2022;22:305-18.
15. Slepchenko N, Mostovoy Y, Tsymbaliuk N, et al. Do technologies make a difference in adherence to treatment: instant messaging application use? In: m-Health/e-health. European Respiratory Society. 2020;56:1359.
16. Skarżyński PH, Świerniak W, Ludwikowski M, et al. Telefitting between Kajetany and Odessa, Ukraine for cochlear implants. J Int Soc Telemed eHealth. 2019;7.
17. Mohammad H, Bondarenko N, Vf Z, et al. Using telemedicine for providing supportive and palliative care patients with advanced cancer during the COVID-19 pandemic in Ukraine. 2021.
18. Burianov stepwiselyuk YO, Omelchenko TM, et al. Telemedicine step-wise consultation of a patient with multiple gunshot fractures of the long bones in recovery treatment system: A case report. Telehealth Med Today. 2020;5.
19. Ministry of health of Ukraine. Ukrainians can get a free medical consultation through the contact center of the Ministry of Health. 2023.
20. Alrifai A, Alyousef T, Fanari Z. Tele-cardiology in the Syrian war. J Am Coll Cardiol. 2018;71:698-9.
21. Doarn CR, Latifi R, Poropatich RK, et al. Development and validation of telemedicine for disaster response: The north Atlantic treaty organization multinational system. Telemed J E Health. 2018;24:657-68.
22. Patel SY, Auerbach D, Huskamp HA, et al. Provision of evaluation and management visits by nurse practitioners and physician assistants in the USA from 2013 to 2019: cross-sectional time series study. BMJ. 2023;382:e073933.
23. Patel SY, Mehrotra A, Huskamp HA, et al. Variation In Telemedicine Use And Outpatient Care During The COVID-19 Pandemic In The United States: Study examines variation in total US outpatient visits and telemedicine use across patient demographics, specialties, and conditions during the COVID-19 pandemic. Health Aff (Millwood). 2021;40:349-58.
24. Shaw SE, Hughes G, Wherton J, et al. Achieving spread, scale up and sustainability of video consulting services during the COVID-19 pandemic? Findings from a comparative case study of policy implementation in England, Wales, Scotland, and Northern Ireland. Front Digit Health. 2021;3:754319.
25. British Medical Association. COVID-19 tracker survey wave 5. 2023.
26. Stolyarenko O. Data privacy reform in Ukraine: What's new?. Connect On Tech. 2021.
27. Haleem A, Javaid M, Singh RP, et al. Telemedicine for healthcare: Capabilities, features, barriers, and applications. Sens Int. 2021;2:100117.
28. Liu J, Liu S, Zheng T, et al. Physicians' perspectives of telemedicine during the COVID-19 pandemic in China: Qualitative survey study. JMIR Med Inform. 2021;9:e26463.
29. Maltsev D, Bokova S. Innovative Development of the Health Care Sector of the Future in the Conditions of Modern Challenges of the Covid-19 Coronavirus Infection in Ukraine. FM. 2022;1:4-16.
30. Kaminskyy V, Viesova O. Innovative activities in healthcare institutions of the future: models for overcoming dilemmas. FM. 2022;1:17-26.
31. Yuryk O, Barabanchyk O, Malets M. Innovations in medicine: modern challenges, future definitions: A narrative review. FM. 2022;1:23-30.