MINISTRY OF HEALTH OF UKRAINE

ODESA NATIONAL MEDICAL UNIVERSITY

Department of simulation medical technologies

CONFIRMED by
Vice-rector for scientific and pedagogical work

_____ Eduard BURYACHKIVSKY

September 1, 2024

WORKING PROGRAM OF THE ACADEMIC DISCIPLINE «MEDICAL PRACTICE. IMPROVEMENT OF PRACTICAL SKILLS. SIMULATION TRAINING»

Level of higher education: second (master 's degree)

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

Educational and professional program: Medicine

2024

The working program is compiled on the basis of the educational and professional program "Medicine" for the training of specialists of the second (master 's degree) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Health care", approved by the Academic Council of ONMedU (protocol No. 10 of 27.06.2024).

Authors:
head of the department Oleksandr ROGACHEVSKYI
assistant of professor Olha YEHORENKO
associate professor, PhD Mykhailo PERVAK
associate professor, PhD Vasyl GLADCHUK
associate professor, PhD Ihor SHEVCHENKO
associate professor, PhD Yuriy PETROVSKIY
assistant of professor Viacheslav ONYSHCHENKO
assistant of professor Dmytro KARAKONSTANTYN

The working program was approved at the meeting of the department of simulation medical technologies
Protocol No. 1 of 28.08.2024

Head of the department _____ Oleksandr ROGACHEVSKYI

Approved by the guarantor of the
educational and professional program _____ Valeriia MARICHEREDA

Approved by the subject-cycle methodological commission for surgical disciplines of ONMedU
Protocol No. 1 of 30.08.2024

Head of the subject-cycle methodological commission for surgical disciplines of ONMedU

_____ Vasyl MISHCHENKO

Revised and approved at the meeting of the department of simulation medical technologies
Protocol No .__dated __/__/20__ .

Head of the department _____

Revised and approved at the meeting of the department of simulation medical technologies
Protocol No .__dated __/__/20__ .

Head of the department _____ _____

1. Description of the educational discipline:

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the academic discipline
The total number of: Credits of ECTS: 3 Hours: 90	Field of knowledge 22 "Health care" Specialty 222 "Medicine" Level of higher education second (master's degree)	*Full-time (day) education — elective discipline*
		Course: 5
		Semesters IX — X
		Lectures (0 hours)
		Seminars (0 hours)
		Practical classes (30 hours)
		Laboratories (0 hours)
		Individual work (60 hours)
		including individual tasks (0 hours)
		Final control form — test

2. The aim and tasks of the academic discipline, competencies, program learning outcomes

Aim: formation and improvement of the ability to provide emergency medical care to injured and sick people and the implementation of practical skills acquired during the study of previous disciplines.

Task:

1. Improving the ability to provide emergency medical care to the injured and sick.
2. Improving the ability to apply diagnostic methods that assist in decision-making regarding the management and treatment of emergency conditions.
3. Improving the ability to make decisions about the tactics of managing patients in emergency conditions, based on the principles of evidence-based medicine.
4. Mastering knowledge about the main classes of drugs used in emergency care, based on relevant clinical and pharmacological principles.

The process of studying the discipline is aimed at forming elements of the following **competencies:**

- **General (GC):**

GC1. Ability to abstract thinking, analysis and synthesis
GC2. Ability to learn and master modern knowledge
GC3. Ability to apply knowledge in practical situations
GC4. Knowledge and understanding of the subject area and understanding of professional activity
GC5. Ability to adapt and act in a new situation
GC6. Ability to make informed decisions
GC7. Ability to work in a team
GC8. Ability to interpersonal interaction
GC12. Determination and persistence in relation to assigned tasks and assumed responsibilities
GC16. Ability to make decisions and act in accordance with the principle of non-admissibility

- **Special (SC):**

SC1. Ability to collect medical information about the patient and analyze clinical data
SC2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results
SC3. Ability to establish a preliminary and clinical diagnosis of the disease
SC7. Ability to diagnose emergency conditions

SC8. Ability to determine tactics and provide emergency medical care
SC10. Ability to perform medical manipulations
SC11. Ability to solve medical problems in new or unfamiliar environments with incomplete or limited information, taking into account aspects of social and ethical responsibility, including an early intervention system
SC24. Adherence to ethical principles when working with patients and laboratory animals

Program learning outcomes (PLO):

PLO1. Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy
PLO2. Understanding and knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care
PLO4. Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2)
PLO5. Collect complaints, history of life and diseases, assess the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis (according to list 4), taking into account the age of the patient
PLO6. To establish a final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms, under the control of the managing physician in the conditions of the health care institution (according to the list 2)
PLO7. Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2)
PLO8. Determine the main clinical syndrome or symptom that determines the severity of the victim's condition (according to list 3) by making a reasoned decision about the person's condition under any circumstances (in the conditions of a health care facility, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time
PLO9. Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the patient's age, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to substantiate personalized recommendations under the control of the head physician in the conditions of a medical institution
PLO14. Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time conditions in accordance with existing clinical protocols and standards of treatment
PLO17. Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work on the basis of a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms

As a result of studying the academic discipline, the student of higher education must:

To know:

- Anatomical structure of organs and systems in adults and children of different ages
- Know the methods of general examination. Concepts of palpation, percussion and auscultation
- Pathological changes in organs and systems in adults and children of different ages
- Physiological features of blood circulation and breathing in adults and children of different ages
- Indications and contraindications, complications, methodology, algorithm and technique of cardiopulmonary resuscitation in adults and children of various ages
- Pharmacokinetics, pharmacodynamics and side effects of drugs used in emergency care
- Algorithms and protocols for the treatment of patients
- Principles of medical ethics
- Concepts, indications, contraindications, technique, algorithm and complications of manipulations:
    1. body temperature measurement
    2. restoration of airway patency
    3. basic cardiopulmonary resuscitation
    4. defibrillation using a manual automatic defibrillator-cardioverter
    5. registration of a standard ECG in 12 leads
    6. temporary stoppage of external bleeding
    7. primary surgical treatment of the wound, bandaging, removal of skin sutures, in particular in field conditions
    8. applying a bandage, incl. in field conditions
    9. installation of nasogastric and orogastric probes
    10. transport immobilization
    11. administration of medicinal substances (intravenous jet and drip, intraosseous), in particular in field conditions
    12. provision of peripheral venous and intraosseous access
    13. blood pressure measurement
    14. bladder catheterization with a soft probe
    15. clinical examination of mammary glands
    16. pleural puncture
    17. Larray's pericardial puncture
    18. laparocentesis
    19. bimanual examination of the pelvic organs of a woman
    20. examination of a woman's genital tract in mirrors
    21. external (Leopold techniques) obstetric examination
    22. cricothyreotomy
    23. Heimlich reception
    24. pulse oximetry
    25. assessment of pulse on peripheral arteries
    26. auscultation of the heart and blood vessels
    27. percussion and auscultation of the lungs
    28. palpation of the abdomen

Be able to:

- Orientate yourself in the anatomical structure of organs and systems in adults and children of different ages
- Be able to conduct a general examination (palpation, percussion, auscultation, blood pressure measurement, etc.)
- Name pathological changes in human organs and systems
- Orientate yourself in the physiological features of blood circulation and breathing in

adults and children of different ages
- Name the indications and contraindications, complications, methodology, algorithm and technique of cardiopulmonary resuscitation in adults and children of different ages
- Orientate yourself in dosages, pharmacokinetics, pharmacodynamics and side effects of drugs used in emergency care
- Determine the sequence of actions when providing emergency aid
- Perform the necessary manipulations
- Monitor the patient's condition after performing practical skills
- Provide psychological assistance to patients
- Solve deontological tasks related to professional activity
- Have professional communication skills

3. Content of the academic discipline

Topic 1. Obstetrics and gynecology. Scenario-oriented learning

Definition. Classification. Clinical examination of the mammary glands: concept, indications, contraindications, technique, algorithm and complications of manipulations. External obstetric examination (Leopold's maneuvers): concept, indications, contraindications, technique, algorithm and complications of manipulations. Emergency care for ectopic pregnancy. Emergency care for uterine bleeding. Physiological childbirth: clinical scenario. Emergency care for eclampsia. Determination of gestational age.

Topic 2. Surgical diseases. Scenario-oriented learning

Definition. Classification. Acute cholecystitis: clinical scenario. Acute appendicitis: clinical scenario. Cirrhosis of the liver, ascites: clinical scenario.

Topic 3. Emergency aid in case of trauma. Scenario-oriented learning

Definition. Classification. Pleural puncture: concept, indications, contraindications, technique, algorithm, complications. Polytrauma: clinical scenario.

Topic 4. Pediatrics and neonatology. Emergency conditions. Scenario-oriented learning

Definition. Classification. Emergency care for meningococcemia in children. Emergency care for febrile convulsions in children. Emergency care for hypovolemic shock/severe dehydration. APGAR score of the newborn. Emergency care for anaphylaxis in children of all ages. Emergency care for hypoglycemia in children of all ages. Emergency care for hyperglycemia in children of all ages.

Topic 5. Internal medicine. Emergency conditions. Scenario-oriented learning

Definition. Classification. Emergency care. Emergency care for anaphylaxis in adults. Emergency care for ACS. Emergency care for WPW syndrome. Sudden death syndrome. Emergency care for ventricular fibrillation. Emergency care for bronchial asthma. Emergency care for OPC poisoning. Emergency care for opioid poisoning.

Topic 6. Final lesson

4. The structure of the academic discipline

Names of topics	Number of hours					
	Total	including				
		lectures	seminars	practical classes	laboratories	Individual work
Topic 1. Obstetrics and gynecology. Scenario-oriented learning	18	0	0	8	0	10

Topic 2. Surgical diseases. Scenario-oriented learning	14	0	0	4	0	10
Topic 3. Emergency aid in case of trauma. Scenario-oriented learning	14	0	0	4	0	10
Topic 4. Pediatrics and neonatology. Emergency conditions. Scenario-oriented learning	16	0	0	6	0	10
Topic 5. Internal medicine. Emergency conditions. Scenario-oriented learning	16	0	0	6	0	10
Topic 6. Final lesson	12	0	0	2	0	10
Total hours	**90**	**0**	**0**	**30**	**0**	**60**

5. Topics of lectures/ seminars/ practical classes / laboratories

5.1. Topics of lectures

Lectures are not provided.

5.2. Topics of seminar classes

Seminar classes are not provided.

5.3. Topics of practical classes

№	Topic	Hours
1.	Topic 1. Practical lesson 1. Obstetrics and gynecology. Scenario-oriented learning	2
2.	Topic 1. Practical lesson 2. Obstetrics and gynecology. Scenario-oriented learning	2
3.	Topic 1. Practical lesson 3. Obstetrics and gynecology. Scenario-oriented learning	2
4.	Topic 1. Practical lesson 4. Obstetrics and gynecology. Scenario-oriented learning	2
5.	Topic 2. Practical lesson 5. Surgical diseases. Scenario-oriented learning	2
6.	Topic 2. Practical lesson 6. Surgical diseases. Scenario-oriented learning	2
7.	Topic 3. Practical lesson 7. Emergency aid in case of trauma. Scenario-oriented learning	2
8.	Topic 3. Practical lesson 8. Emergency aid in case of trauma. Scenario-oriented learning	2
9.	Topic 4. Practical lesson 9. Pediatrics and neonatology. Emergency conditions. Scenario-oriented learning	2
10.	Topic 4. Practical lesson 10. Pediatrics and neonatology. Emergency conditions. Scenario-oriented learning	2

11.	Topic 4. Practical lesson 11. Pediatrics and neonatology. Emergency conditions. Scenario-oriented learning	2
12.	Topic 5. Practical lesson 12. Internal medicine. Emergency conditions. Scenario-oriented learning	2
13.	Topic 5. Practical lesson 13. Internal medicine. Emergency conditions. Scenario-oriented learning	2
14.	Topic 5. Practical lesson 14. Internal medicine. Emergency conditions. Scenario-oriented learning	2
15.	Topic 6. Practical lesson 15. Final lesson	2
	Total	**30**

5.4. Topics of laboratories
Laboratories are not provided.

6. Individual work of the student

№	Topic	Hours
1.	Topic 1. Interpretation of the ECG in acute coronary syndrome, heart rhythm and conduction disturbances	15
2.	Topic 2. Gastroscopy: concepts, indications, contraindications, technique, algorithm and complications	15
3.	Topic 3. X-ray examination of the organs of the chest and abdominal cavity: concepts, indications, contraindications, technique, algorithm and complications	15
4.	Topic 4. Preparation for practical classes	15
	Total	**60**

7. Teaching methods

Practical classes: conversation, role-playing, solving clinical situational problems, practicing and controlling practical skills on simulation models and mannequins (according to list 5), passing simulation scenarios, solving test tasks.

Individual work: individual work with the recommended basic and additional literature, electronic information resources, individual work with the bank of Step-2 test tasks, preparation for practical classes.

8. Forms of control and evaluation methods (including criteria for evaluating learning outcomes)

Ongoing control: oral survey, testing, assessment of performance of practical skills on simulation models and mannequins, assessment of communication skills during simulation scenarios, solution of situational clinical tasks, assessment of activity in class.

Final control: test.

Evaluation of the current educational activity in a practical lesson:

1. Evaluation of theoretical knowledge on the subject of the lesson:
- methods: survey, solving a situational clinical problem
- the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
2. Evaluation of practical skills and manipulations on the subject of the lesson:

- methods: assessment of the correctness of the performance of practical skills
- the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

3. Evaluation of work with a patient simulator on the subject of the lesson:

- methods: assessment of: a) communicative skills of communicating with a patient simulator; b) correctness of appointment and assessment of laboratory and instrumental studies; c) compliance with the differential diagnosis algorithm; d) substantiation of the clinical diagnosis; e) drawing up a treatment plan;
- the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

The grade for one practical session is the arithmetic average of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

Criteria of ongoing assessment at the practical class

Rating	Evaluation criteria
Excellent "5"	The applicant takes an active part in the lesson; demonstrates deep knowledge, gives complete and detailed answers to questions. Thoroughly and comprehensively knows the content of theoretical issues, fluent in professional and scientific terminology. Thinks logically and constructs an answer, freely uses acquired theoretical knowledge when analyzing practical tasks. When solving a clinical problem, he correctly interprets the anamnesis data, the results of clinical, laboratory and instrumental studies, correctly answers all the questions and convincingly substantiates his point of view, can propose and justify an alternative version of the decision on individual issues. When solving a practical task according to the OSCE type, he correctly demonstrates the performance of practical skills on simulation models and mannequins, strictly adheres to the algorithm of their implementation
Good "4"	The acquirer participates in the class; knows the material well; demonstrates the necessary knowledge, but answers the questions with some errors. He knows the content of theoretical issues deeply and comprehensively, and has professional and scientific terminology. Thinks logically and constructs an answer, uses acquired theoretical knowledge when analyzing practical tasks. But when teaching some questions, there is not enough depth and argumentation, it makes insignificant mistakes, which are eliminated by the student himself when the teacher points them out. When solving a clinical problem, minor errors or inaccuracies are assumed in the interpretation of anamnesis data, results of clinical, laboratory and instrumental studies, he answers all the questions without significant errors, fully substantiates his point of view, but proposals for an alternative option cause difficulties. When solving a practical task according to the OSCE type, minor errors in the algorithm and technique of performing skills on simulation models and mannequins are corrected at the instruction of the teacher
Satisfactory "3"	The acquirer sometimes participates in the activity; partially speaks and asks questions; makes mistakes when answering questions. Possesses a basic amount of theoretical knowledge, uses professional and scientific terminology inaccurately. Experiences significant difficulties in constructing an independent logical answer, in applying theoretical knowledge in the analysis of practical tasks. There are significant errors in the answers. When solving a clinical problem, he interprets the history data, the results of clinical, laboratory and instrumental studies with errors, does not know individual details, allows inaccuracies in the answers to questions, does not adequately justify his answers and interprets the wording, experiences difficulties in completing tasks and proposing alternative options. When solving a practical task according to the OSCE type, significant errors are

	assumed in the algorithm and technique of performing skills on simulation models and mannequins
Unsatisfactory "2"	The acquirer does not participate in the lesson, is only an observer; never speaks or asks questions, disinterested in learning the material; gives incorrect answers to questions. Has not mastered the basic amount of theoretical knowledge, shows a low level of mastery of professional and scientific terminology. Answers to questions are fragmentary, inconsistent, illogical, cannot apply theoretical knowledge when analyzing practical tasks. There are a significant number of gross errors in the answers. When solving a clinical problem, he cannot interpret the received history data, the results of clinical, laboratory and instrumental studies, answer the questions, or makes significant mistakes in the answers; could not justify his decisions or does it unconvincingly. It does not offer alternative options. When solving a practical task according to the OSCE type, gross errors and errors in the algorithm and technique of performing skills on simulation models and mannequins will not be demonstrated or assumed

Test is given to the applicant who completed all tasks of the work program of the academic discipline, took an active part in practical classes, completed and defended an individual assignment and has an average current grade of at least 3.0 and has no academic debt.

Test is carried out: at the last lesson before the beginning of the examination session — at ribbon system teaching, on to the last occupation — with a cyclical system of education. The test score is the arithmetic mean of all components on a traditional four-point scale and has a value that is rounded using the statistical method with two decimal places after the decimal point.

9. Distribution of points, obtained by the students

The obtained average score for the academic discipline for applicants who have successfully mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

Conversion table of a traditional to multi-point scale

National score for the discipline	The sum of scores for the discipline
Excellent ("5")	185 – 200
Good ("4")	151 – 184
Satisfactory ("3")	120 – 150
Unsatisfactory ("2")	Less than 120

Multi-point scale (200-point scale) characterizes the actual success rate of each applicant in mastering the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3"

according to the traditional scale. Acquirers who have received grades of "FX" and "F" ("2") are not included in the list of ranked acquirers. The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is given to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

Conversion of the traditional evaluation and ECTS scores

Score on the ECTS scale	Statistical indicator
A	The best 10% students
B	Next 25% students
C	Next 30% students
D	Next 25% students
E	Next 10% students

10. Methodological support

- Working program of the academic discipline
- Syllabus of the academic discipline
- Methodological recommendations for the practical classes in the discipline
- Methodological recommendations for the individual work of students
- Simulation scenarios
- Mannequins and simulators

11. Questions for the final control

The list of practical skills that are learned during the study of the discipline (according to list 5):

1. body temperature measurement
2. restoration of airway patency
3. basic cardiopulmonary resuscitation
4. defibrillation using a manual automatic defibrillator-cardioverter
5. registration of a standard ECG in 12 leads
6. temporary stoppage of external bleeding
7. primary surgical treatment of the wound, bandaging, removal of skin sutures, in particular in field conditions
8. applying a bandage, incl. in field conditions
9. installation of nasogastric and orogastric probes
10. transport immobilization
11. administration of medicinal substances (intravenous jet and drip, intraosseous), in particular in field conditions
12. provision of peripheral venous and intraosseous access
13. blood pressure measurement
14. bladder catheterization with a soft probe
15. clinical examination of mammary glands
16. pleural puncture
17. Larray's pericardial puncture
18. laparocentesis

19. bimanual examination of the pelvic organs of a woman
20. examination of a woman's genital tract in mirrors
21. external (Leopold techniques) obstetric examination
22. cricothyrotomy
23. Heimlich reception
24. pulse oximetry
25. assessment of pulse on peripheral arteries
26. auscultation of the heart and blood vessels
27. percussion and auscultation of the lungs
28. palpation of the abdomen

12. Recommended literature

Main:

1. Surgery: textbook / O.Yu. Usenko, G.V. Bilous, G.Y. Putintseva. - 5th edition. - K.: VSV "Medicine", 2021. - 416 p.
2. Emergencies in the practice of a therapist and family doctor / under the editorship Yepishyna A.V. — ISBN: 978-966-673-122-0. Ukrmedknyga 2019 p. 380 pages
3. Emergencies in pediatrics: study guide (University I-II year) / R.I. Potsyurko, L.S. Leskiv, M.M. Monastyrska and others; under the editorship R.I. Rat — 6th ed., revised. and added Year: 2017, Number of pages: 200 + 2 color incl., ISBN: 978-617-505-557-1.
4. Pediatric Emergency Medicine, Second edition, illustrated clinical cases, © 2019 by Taylor & Francis Group, LLC / International Standard Book Number-13: 978-1-4822-3029-1 (Paperback) 978-1-138-34649-9 (Hardback). 436 pages.
5. Mechanical Ventilation in Emergency Medicine. by Susan R. Wilcox & Ani Aydin & Evie G. Marcolini. ISBN 978-3-319-98409-4 ISBN 978-3-319-98410-0 (eBook). https://doi.org/10.1007/978-3-319-98410-0/2019 . 122 pages.
6. Acute Medicine: A Practical Guide to the Management of Medical Emergencies, 5th Edition / David C. Sprigings (Editor), John B. Chambers (Editor) - ISBN: 978-1-118-64428-7. July 2017 Wiley-Blackwell, 784 Pages.

Additional:

1. Emergency situations in surgery (study guide) — L.M. Kovalchuk, K.M. Bobak, A.I. Bobak, V.V. Kyretiv et al., 2017
2. Anesthesiology, intensive care and intensive care: a study guide (University I-III) / A.A. Ilko - 2nd ed., revised. and add., "Medicine", Kyiv, 2018
3. The Complete First Aid Pocket Guide. by John Furst / ISBN 9781507208892 - Adams Media, 2018. 190 pages.
4. Manual of emergency medicine / editor, G. Richard Braen. — 6th ed. ISBN: 978-1-60831-249-8. May 23, 2011. 704 pages.

13. Electronic information resources

1. http://moz.gov.ua — Ministry of Health of Ukraine
2. https://www.cprguidelines.eu/ — European Resuscitation Council
3. https://www.c-tecc.org/our-work/guidance — Committee on Tactical Emergency Relief
4. https://zakon.rada.gov.ua/laws/show/z0356-22#n42 — Order of the Ministry of Health of Ukraine No. 441 dated 09.03.2022 "On approval of procedures for providing pre-medical assistance to persons in emergency situations"
5. http://www.nbuv.gov.ua/ — National Library of Ukraine
6. https://gmka.org/uk/category/dlya-medykiv/nevidkladna-hirugiya/ - Global Alliance for Medical Knowledge
7. www.ama-assn.org — American Medical Association

8. www.who.int — World Health Organization
9. www.dec.gov.ua/mtd/home/ — State Expert Center of the Ministry of Health of Ukraine
10. http://bma.org.uk — British Medical Association
11. www.gmc-uk.org — General Medical Council (GMC)
12. www.bundesaerztekammer.de — German Medical Association
13. https://emergencymanual.stanford.edu/downloads/ — Stanford Handbook of Emergency Medicine
14. https://www.futurelearn.com/courses/critical-care — University of Glasgow Handbook of Emergency Medicine