Charles University
Faculty of Social Sciences
Department of Security Studies

HEALTH and SECURITY (JPM998)

"We don't know when the next global health threat will come. We don't know where it will come from. We don't know what pathogen it will be, but we are 100 % certain that there will be a next one." ~Dr.Tom Frieden

"What worries me the most is that we are going to miss the next emerging disease, that we're suddenly going to find a SARS virus that moves from one part of the planet to another, wiping out people as it moves along."~Dr. Peter Daszak (2004)

Winter semester 2021/2022

6 ECTS

Friday 11:00 – 13,50

Lecturer

prof. RNDr. Vanda Boštíková, Ph.D. (vanda.bostikova@unob.cz)

Office hours

Online Office Hours, coordinated via email

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Course requirements

The students' performance in the course will be assessed based on these criteria:

- Group presentation (20 %)
- Final essays (70 %)
- Attendance/Activity (10 %)

Group Presentations

The group presentations will take place during the final session.

The presentations should illustrate the problems of today's highly interconnected world. The risks that we face are many and varied. They include tipping points in the environmental system due to climate change or mass biodiversity loss, a natural global pandemic, also malicious or accidentally harmful, use of artificial intelligence or malicious use of, or unintended consequences from, advanced biotechnologies.

You will sign up for one of the following cases:

1) The knowledge acquired of pandemics, over the course of the 20th century.
2) As no country can face the consequences of a pandemic alone, look at the principles of international coordination of measures in the event of a pandemic.
3) The role of the government and state organs during the ongoing pandemic.
4) The question of the correct approach to the communication campaign in the event of an ongoing pandemic.
5) A number of outbreaks in recent time including SARS (China, 2002-2003), H1N1 (global, 2009-2010), MERS (Saudi Arabia, 2012 and South Korea, 2013), Ebola (West Africa, 2014-2015), and the Zika virus (Americas, 2015-2016) have illustrated painful shortcomings in the global capacity to predict and respond to outbreaks of unfamiliar or emerging diseases. Try to characterize the reasons.
6) Forced migration in response to climate stresses can also spread epidemic diseases. Describe the situation of recent years in Europe.
7) We need to keep in mind the fact that the former Soviet Union explored the Ebola virus as a possible biological weapon during the Cold war. Even in the 1990s, the Japanese sect

Aum Shinrikyo attempted to acquire and exploit this virus for bioterrorist purposes. Are biological agents a bioterrorist threat today?

8) Characterize the risk of ongoing Ebola outbreak in the Democratic Republic of the Congo at the national and regional levels, including at a global level.
9) Let's discuss the most recent pandemic situation – SARS-CoV-2 virus is affecting more than 200 countries and territories around world.
10) Social determinants and lifestyles – integrating environmental and public health perspectives

Each presentation must include a ppt presentation and 1-2 page long summary. Both must be sent to the tutor prior the presentation (vanda.bostikova@unob.cz).

Final Essay

The final essay must address one of the following themes:

- Is mandatory immunization (vaccination) for health care workers ethically justifiable?
- Does ethical dilemma of vaccination exist?
- Public Health as an economic value.
- Health, culture and stigma: Adding moral experience to stigma theory.
- What is self-rated health and why does it predict morality?
- Socioeconomic status and health.
- Markets in health care.
- Analyse the support required for sustainability of appropriate policies to address global health concerns as it relates to nursing.
- Highly dangerous infections are not only a medical issue.
- Risks of large-scale biological events in the European context.
- The role of the Ministry of Health in the field of crisis management and cooperation with other ministries.
- Epidemic modelling.
- The unified responses of the state to an event with a highly dangerous infection.
- The role of the WHO in the context of the SARS-CoV-2 pandemic.
- Should Europeans be afraid of Ebola too?

- Is health a commodity?
- Disasters in urban context.

Length: 3000 words (incl. references, excl. bibliography)

Students are advised to discuss the topic with the tutor.

The essay is due January 15, 2021 and must be sent to vanda.bostikova@unob.cz no earlier than on January 14 and no later than on January 15, 2021, 23:59. I kindly ask you to respect also the earliest possible submission deadline. The results (incl. overall course result) will be delivered to each student no later than in 15 working days after the submission deadline.

Attendance/Activity

All students are required to participate on sessions. One unexcused absence will be tolerated; more absences will be considered on an individual basis.

Marking Scale

General Grade	Grade Specification	Percentage
A - excellent	Excellent upper (1)	100 – 96
	Excellent lower (2)	95 - 91
B – very good	Very good upper (1)	90 - 86
	Very good lower (2)	85 – 81
C - good	Good upper (1)	80 – 76
	Good lower (2)	75 – 71
D - satisfactory	Satisfactory upper (1)	70 – 66
	Satisfactory lower (2)	65 – 61
E - sufficient	Sufficient upper (1)	60 - 56
	Sufficient lower (2)	55 - 51
F - fail		50 - 0

Course rules

The *Code of Study and Examination of Charles University in Prague* provides the general framework of study rules at the university. According to art. 6, par. 17 of this Code, "a student may not take any examination in any subject entered in his study plan more than three times, i.e. he shall have the right to two resit dates; no extraordinary resit date shall be permitted. (…) If a student fails to appear for an examination on the date for which he has enrolled without duly excusing himself, he shall not be marked; the provision of neither this nor of the first sentence shall constitute the right to arrange for a special examination date."

Any written assignment composed by the student shall be an original piece. The practices of plagiarism, defined by the Dean's Provision no. 18/2015, are seen as "a major violation of the rules of academic ethics" and "will be penalized in accordance with Disciplinarian Regulations of the faculty."

This instructor believes academic honesty is the foundation of the entire enterprise of a university. The personal integrity policy works for both students and teachers. Students can expect that the instructor will treat them in a fair, honest, and impartial manner. The instructor also expects students to deal with him and with one another honestly.

Plagiarism* and cheating are violations of academic honesty because they steal from the original creator of the work. In addition, they violate the relationship of honesty between student and teacher as the student attempts to pass off work as his or her own which was produced by another. Further, plagiarism and cheating violate the bond of honesty among students themselves. Students who produce their assignments through long, hard work are being violated by those taking a shortcut through the misappropriation of another's work or knowledge. Most sadly, students who violate academic honesty cheat themselves of the chance to learn. Only in an environment of honesty can genuine learning occur and good citizenship be fostered.

Because academic honesty is treated as a serious matter, the course policy is one of zero tolerance for academic dishonesty. Cheating and plagiarism will not be tolerated. If you are caught cheating at any point during the course, you will automatically fail the course.

*PLAGIARISM – "the unauthorized use or close imitation of the language and thoughts of another author and the representation of them as one's own original work."

Random House Unabridged Dictionary, 2nd ed. (New York: Random House, 1993).

Course description

In today's globalized world, infectious diseases with pandemic potential could speed around our hyper-connected world, threatening hundreds of millions, potentially billions of people. It is an epidemic extending over a wide geographic area, affecting whole continents. It involves the high incidence of a disease over a large territory over a specific period of time. Unfortunately, a number of epidemic and pandemic outbreaks in recent time including pandemic influenza, SARS-CoV-1, SARS-CoV-2, MERS, Ebola, and the Zika virus have illustrated painful shortcomings in the global capacity to predict and respond to outbreaks of unfamiliar or emerging diseases (several of which are also considered climate sensitive). Climate change is a current global concern. It seems likely that it will affect the incidence and prevalence of both residual and imported infections in Europe. Climate affects mainly the range of infectious diseases, whereas weather affects the timing and intensity of outbreaks. Climate change scenarios include a change distribution of infectious diseases with warming and changes in outbreaks associated with weather extremes. Forced migration in response to climate stresses can also spread epidemic disease. Visceral leishmaniasis is one example. It is a widespread parasitic disease with a global incidence of 500,000 new human cases each year. In Brazil, periodic epidemic waves of this disease have been associated with migrations to urban areas after long periods of drought. In the globalised world of just in time delivery and global supply chains, we are more vulnerable to disruption than ever before. And the secondary effects of instability, mass migration and unrest may be comparably destructive. If any of these events occurred, we would pass on a diminished, fearful and wounded world to our descendants. We need government to put more energy towards understanding the risks, and acting on that knowledge. It requires a whole of government. Framework with explicit strategies for understanding the types of risk we face, as well as their causes, impacts, probabilities and time scales. With this plan, government can chart more secure and prosperous for their citizens, even if the most catastrophic possibilities never come to pass.

Aims of the course

After the programme student will be able to:

- Appraise the role of health systems in terms of fundamental goals and functions.

- Identify population health problems, risk factors and determinants.
- Critically assess population health status.
- Influence effective policy-making and strategic planning concerning interventions aiming at improving public health, taking into account scientific evidence, good practice and local context.
- Analyse and translate research results into policy and practice.
- Appreciate how the context of law, media, business, and communities impacts public health and security.

Structure of the course

1. Introduction 5/11/2021

The introductory session will explain the aims and structure of the course and specify the requirements for passing the course.

The Ten Essential Public Health Services provide a "common ground" for professionals trained in the public health or the medical model, as well as grassroots workers and non-public health civic leaders, so all individuals can work collaboratively towards fulfilling the public health mission:

"To promote physical and mental health, and prevent disease, injury, and disability."

Learning Objectives:

- Understand the relevance of the specialty in the broader context of the essential services of public health.
- Recognize the diverse specialties.
- To recognize how methods and state and district public health professionals work.
- Historical examples in action (cholera outbreak 1854, smallpox, measles outbreak 2004).

Readings:

John Snow – Broad Street Pump Outbreak Case Study
http://www.sph.unc.edu/courses/john_snow

Measles Outbreak Information (Iowa specific)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5311a6.htm

2. Toolkit (Human Tools, Data and Technology Tools) 19/11/2021

Learning Objectives:

- Understand the significant roles of the human and technological elements of health practice.
- Recognize the diverse professionals within and beyond public health that contribute to the success of surveillance and investigations.
- Recognize key sources of data.
- Recognize ways in which professionals work with the media.
- Understand how the Centers for Disease Control and Prevention serves as a resource for training, technical support, and surveillance and reporting of epidemiological data.

Readings:

Centers for Disease Control and Prevention. Smallpox Response Plan Guide
http://www.bt.cdc.gov/agent/smallpox/response-plan

3. Descriptive and Analytic Methods 26/11/2021

Learning Objectives:

- Understand the distinction between descriptive and analytic methods, and their utility in surveillance and outbreak investigations.
- Know how to interpret data for measures of association and common statistical tests.
- Recognize the applications and limitations of current public health practices.

Readings:

Diomidus M. Epidemiological study designs. Stud Health Technol Inform. 2002; 65: 126-35

4. Public Health's Role in Investigating Outbreaks 3/12/2021

   Learning Objectives:

   - Be able to distinguish disaster, environmental, and forensic epidemiology specialties.
   - Appreciate how the context of law, media, business, and communities impacts practice.
   - Understand public health's role in investigating natural outbreaks of disease and that unusual findings in an investigation.
   - Understand the goals of public health and law enforcement officials and how these goals influence investigations.
   - Understand differences between a law enforcement investigation and a public health investigation.

Readings:

Centers for Disease Control and Prevention
(CDC).http://www.phppo.cdc.gov/od/phlp/ForensicEpi/ForensicEpi.asp

Jernigan D.B., Raghunathan P.L., Bell B.P., Brechner R., et al. Investigation of bioterrorism-related Anthrax, United States, 2001: Epidemiologic findings. Emerging Infectious Diseases 2002; 8:1019-28

5. Surveillance 10/12/2021

   Learning Objectives:

   - Introduction to Public Health Surveillance.
   - Understand the reciprocal pathways of data exchange through country, state, and federal surveillance efforts.
   - Recognize the major components of surveillance data analysis.

- Coronavirus update.

Readings:

Preliminary estimation of the basic reproduction number of novel coronavirus (2019-nCoV) in China, from 2019 to 2020: A data-driven analysis in the early phase of the outbreak. Int J Infect Dis. 2020; 92: 214-217

Novel coronavirus 2019-nCoV: early estimation of epidemiological parameters and epidemic prediction - Jonathan M. Read et al.
https://www.medrxiv.org/content/10.1101/2020.01.23.20018549v1.full.pdf

Readings:

Novel Coronavirus (2019-nCoV) situation reports - World Health Organization (WHO)
https://www.continuitycentral.com/index.php/news/business-continuity-news/4811-who-has-published-its-first-situation-report-concerning-the-novel-coronavirus-2019-ncov-outbreak

2019 Novel Coronavirus (2019-nCoV) in the U.S. -. U.S. Centers for Disease Control and Prevention (CDC)
https://www.cdc.gov/coronavirus/2019-ncov/index.html

Moghadami M. A Narrative Review of Influenza: A Seasonal and pandemic Disease. Iran J Med Sci. 2017; 42(1): 2-13.

Further readings:

CDC web site www.cdc.gov

CDC Division of Public Health Surveillance and Informatics, Epidemiology Program Office: http://www.cdc.gov/epo/dphsi

Hearne, S. et al (2004). Ready or Not? Protecting the Public's Health in The Age of Bioterrorism. Trust for America's Health Report.
http://healthyamericans.org/reports/bioterror04/BioTerror04Report.pdf

Henderson D.A. Bioterrorism as a public health threat. Emerg Infect Dis 1998;4:488-92

Moore J. Responding to biological threats: The public health system's communicable disease control authority. Health Law Bulletin 2001; 78:1-10

Treadwell, T. Epidemiologic clues to bioterrorism. Public Health Reports 2003; 118: 92-98

World Health Organization, www.who.int