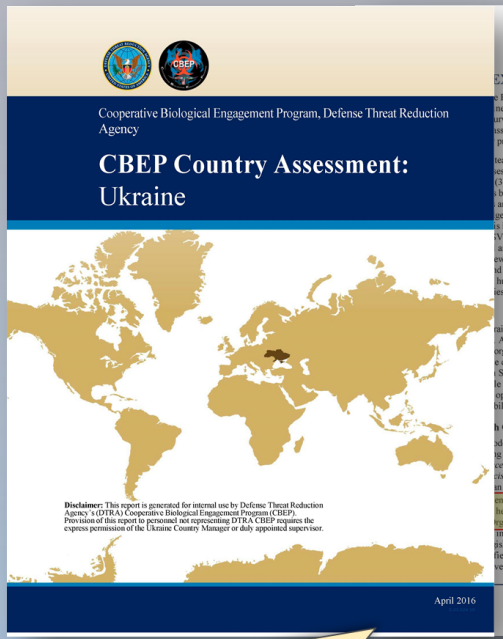
State of health, veterinary and biosecurity in Ukraine

Доклад DTRA в рамках Программы совместного биологического взаимодействия по оценке систем здравоохранения и ветеринарии, биобезопасности, связанных с ними процессов и недостатков



Cooperative Biological Engagement Program, Defense Threat Reduction Agency

CBEP Country Assessment:
Ukraine

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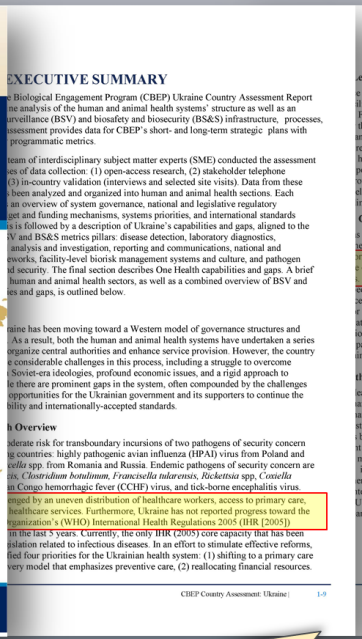
April 2016



EXECUTIVE SUMMARY

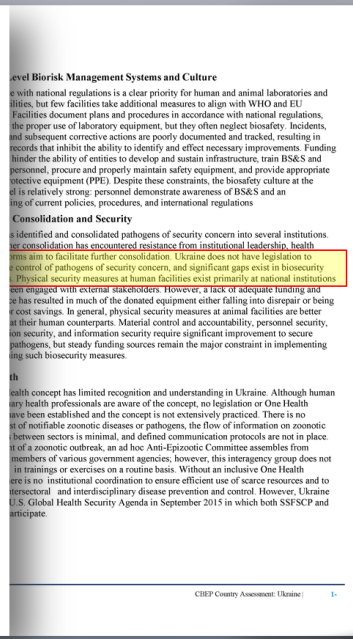
Biological Engagement Program (CBEP) Ukraine Country Assessment Report
ne analysis of the human and animal health systems' structure as well as an
urveillance (BSV) and biosafety and biosecurity (BS&S) infrastructure, processes,
ssessment provides data for CBEP's short- and long-term strategic plans with
programmatic metrics.

team of interdisciplinary subject matter experts (SME) conducted the assessment
es of data collection: (1) open-access research, (2) stakeholder telephone
(3) in-country validation (interviews and selected site visits). Data from these
been analyzed and organized into human and animal health sections. Each
an overview of system governance, national and legislative regulatory
get and funding mechanisms, systems priorities, and international standards
is followed by a description of Ukraine's capabilities and gaps, aligned to the
V and BS&S metrics pillars: disease detection, laboratory diagnostics,
analysis and investigation, reporting and communications, national and
eworks, facility-level biorisk management systems and culture, and pathogen
d security. The final section describes One Health capabilities and gaps. A brief
human and animal health sectors, as well as a combined overview of BSV and
es and gaps, is outlined below.

aine has been moving toward a Western model of governance structures and
As a result, both the human and animal health systems have undertaken a series
organize central authorities and enhance service provision. However, the country
considerable challenges in this process, including a struggle to overcome
Soviet-era ideologies, profound economic issues, and a rigid approach to
e there are prominent gaps in the system, often compounded by the challenges
opportunities for the Ukrainian government and its supporters to continue the
bility and internationally-accepted standards.

Overview

derate risk for transboundary incursions of two pathogens of security concern
countries: highly pathogenic avian influenza (HPAI) virus from Poland and
ella spp. from Romania and Russia. Endemic pathogens of security concern are
is, Clostridium botulinum, Francisella tularensis, Rickettsia spp, *Coxiella*
n Congo hemorrhagic fever (CCHF) virus, and tick-borne encephalitis virus.
enged by an uneven distribution of healthcare workers, access to primary care,
healthcare services. Furthermore, Ukraine has not reported progress toward the
rganization's (WHO) International Health Regulations 2005 (IHR [2005])
in the last 5 years. Currently, the only IHR (2005) core capacity that has been
islation related to infectious diseases. In an effort to stimulate effective reforms,
ied four priorities for the Ukrainian health system: (1) shifting to a primary care
very model that emphasizes preventive care, (2) reallocating financial resources.



evel Biorisk Management Systems and Culture

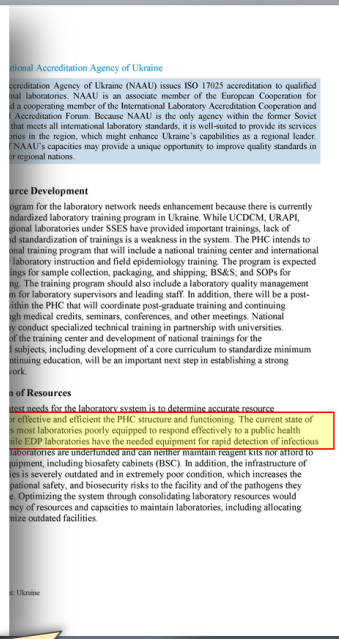
e with national regulations is a clear priority for human and animal laboratories and
ilities, but few facilities take additional measures to align with WHO and EU
Facilities document plans and procedures in accordance with national regulations,
the proper use of laboratory equipment, but they often neglect biosafety. Incidents,
and subsequent corrective actions are poorly documented and tracked, resulting in
records that inhibit the ability to identify and effect necessary improvements. Funding
hinder the ability of entities to develop and sustain infrastructure, train BS&S and
personnel, procure and properly maintain safety equipment, and provide appropriate
otective equipment (PPE). Despite these constraints, the biosafety culture at the
el is relatively strong: personnel demonstrate awareness of BS&S and an
ng of current policies, procedures, and international regulations

Consolidation and Security

s identified and consolidated pathogens of security concern into several institutions.
er consolidation has encountered resistance from institutional leadership, health
ms aim to facilitate further consolidation. Ukraine does not have legislation to
control of pathogens of security concern, and significant gaps exist in biosecurity
. Physical security measures at human facilities exist primarily at national institutions
een engaged with external stakeholders. However, a lack of adequate funding and
e has resulted in much of the donated equipment either falling into disrepair or being
f cost savings. In general, physical security measures at animal facilities are better
at their human counterparts. Material control and accountability, personnel security,
ion security, and information security require significant improvement to secure
pathogens, but steady funding sources remain the major constraint in implementing
ing such biosecurity measures.

h

alth concept has limited recognition and understanding in Ukraine. Although human
ary health professionals are aware of the concept, no legislation or One Health
ave been established and the concept is not extensively practiced. There is no
t of notifiable zoonotic diseases or pathogens, the flow of information on zoonotic
between sectors is minimal, and defined communication protocols are not in place.
t of a zoonotic outbreak, an ad hoc Anti-Epizootic Committee assembles from
members of various government agencies; however, this interagency group does not
in trainings or exercises on a routine basis. Without an inclusive One Health
re is no institutional coordination to ensure efficient use of scarce resources and to
ntersectoral and interdisciplinary disease prevention and control. However, Ukraine
U.S. Global Health Security Agenda in September 2015 in which both SSFSCP and
articipate.



ional Accreditation Agency of Ukraine

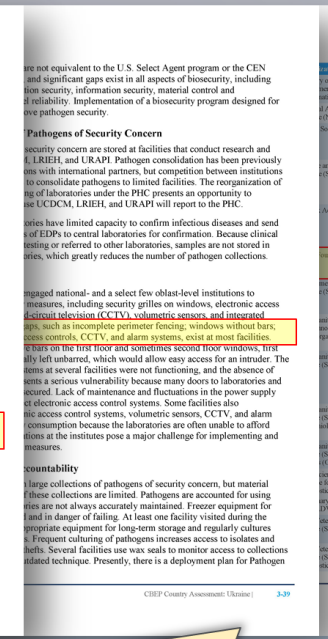
ccreditation Agency of Ukraine (NAAU) issues ISO 17025 accreditation to qualified
nal laboratories. NAAU is an associate member of the European Cooperation for
d a cooperating member of the International Laboratory Accreditation Cooperation and
Accreditation Forum. Because NAAU is the only agency within the former Soviet
that meets all international laboratory standards, it is well-suited to provide its services
ries in the region, which might enhance Ukraine's capabilities as a regional leader.
NAAU's capacities may provide a unique opportunity to improve quality standards in
r regional nations.

urce Development

ogram for the laboratory network needs enhancement because there is currently
ndardized laboratory training program in Ukraine. While UCDCM, URAPI,
ional laboratories under SSES have provided important trainings, lack of
d standardization of trainings is a weakness in the system. The PHC intends to
onal training program that will include a national training center and international
laboratory instruction and field epidemiology training. The program is expected
ings for sample collection, packaging, and shipping; BS&S; and SOPs for
ng. The training program should also include a laboratory quality management
m for laboratory supervisors and leading staff. In addition, there will be a post-
within the PHC that will coordinate post-graduate training and continuing
gh medical credits, seminars, conferences, and other meetings. National
y conduct specialized technical training in partnership with universities.
of the training center and development of national trainings for the
l subjects, including development of a core curriculum to standardize minimum
ntinuing education, will be an important next step in establishing a strong
work.

n of Resources

test needs for the laboratory system is to determine accurate resource
r effective and efficient the PHC structure and functioning. The current state of
s most laboratories poorly equipped to respond effectively to a public health
ile EDP laboratories have the needed equipment for rapid detection of infectious
laboratories are underfunded and can neither maintain reagent kits nor afford to
uipment, including biosafety cabinets (BSC). In addition, the infrastructure of
es is severely outdated and in extremely poor condition, which increases the
pational safety, and biosecurity risks to the facility and of the pathogens they
e. Optimizing the system through consolidating laboratory resources would
ncy of resources and capacities to maintain laboratories, including allocating
mize outdated facilities.



re not equivalent to the U.S. Select Agent program or the CEN
and significant gaps exist in all aspects of biosecurity, including
tion security, information security, material control and
l reliability. Implementation of a biosecurity program designed for
ove pathogen security.

Pathogens of Security Concern

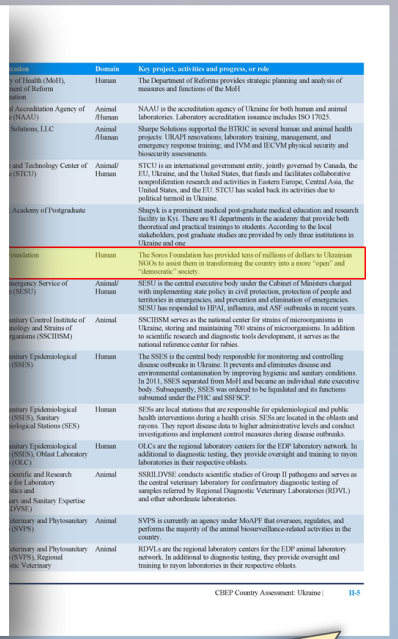
security concern are stored at facilities that conduct research and
, LRIEH, and URAPI. Pathogen consolidation has been previously
ons with international partners, but competition between institutions
to consolidate pathogens to limited facilities. The reorganization of
of laboratories under the PHC presents an opportunity to
se UCDCM, LRIEH, and URAPI will report to the PHC.

ories have limited capacity to confirm infectious diseases and send
s of EDPs to central laboratories for confirmation. Because clinical
testing or referred to other laboratories, samples are not stored in
ories, which greatly reduces the number of pathogen collections.

ngaged national- and a select few oblast-level institutions to
measures, including security grilles on windows, electronic access
d circuit television (CCTV), volumetric sensors, and integrated
ups, such as incomplete perimeter fencing, windows without bars,
cess controls, CCTV, and alarm systems, exist at most facilities.
e bars on the first floor and sometimes second floor windows, first
lly left unbarred, which would allow easy access for an intruder. The
tems at several facilities were not functioning, and the absence of
ents a serious vulnerability because many doors to laboratories and
secured. Lack of maintenance and fluctuations in the power supply
ct electronic access control systems. Some facilities also
nic access control systems, volumetric sensors, CCTV, and alarm
consumption because the laboratories are often unable to afford
tions at the institutes pose a major challenge for implementing and
measures.

countability

large collections of pathogens of security concern, but material
f these collections are limited. Pathogens are accounted for using
ries are not always accurately maintained. Freezer equipment for
l and in danger of failing. At least one facility visited during the
propriate equipment for long-term storage and regularly cultures
s. Frequent culturing of pathogens increases access to isolates and
hefts. Several facilities use wax seals to monitor access to collections
dated technique. Presently, there is a deployment plan for Pathogen



ration	Domain	Key project, activities and progress, or ride
y of Health (MoH), ment of Reform ation	Human	The Department of Reforms provides strategic planning and analysis of measures and functions of the MoH
l Accreditation Agency of (NAAU)	Animal /Human	NAAU is the accreditation agency of Ukraine for both human and animal laboratories. Laboratory accreditation issuance includes ISO 17025.
Solutions, LLC	Animal /Human	Sharpe Solutions supported the HTRIC in several human and animal health projects: URAPI renovations; laboratory training, management, and emergency response training; and IVM and IECVM physical security and biosecurity assessments.
and Technology Center of e (STCU)	Animal/ Human	STCU is an international government entity, jointly governed by Canada, the EU, Ukraine, and the United States, that funds and facilitates collaborative nonproliferation research and activities in Eastern Europe, Central Asia, the United States, and the EU. STCU has scaled back its activities due to political turmoil in Ukraine.
Academy of Postgraduate		Shupyk is a prominent medical post-graduate medical education and research facility in Kyi. There are 81 departments in the academy that provide both theoretical and practical trainings to students. According to the local stakeholders, post graduate studies are provided by only three institutions in Ukraine and one.
undation	Human	The Soros Foundation has provided tens of millions of dollars to Ukrainian NGOs to assist them in transforming the country into a more "open" and "democratic" society.
ergency Service of e (SESU)	Animal/ Human	SESU is the central executive body under the Cabinet of Ministers charged with implementing state policy in civil protection, protection of people and territories in emergencies, and prevention and elimination of emergencies. SESU has responded to HPAI, influenza, and ASF outbreaks in recent years.
nitary Control Institute of nology and Strains of ganisms (SSCIISM)	Animal	SSCIISM serves as the national center for strains of microorganisms in Ukraine, storing and maintaining 700 strains of microorganisms. In addition to scientific research and diagnostic tools development, it serves as the national reference center for rabies.
nitary Epidemiological (SSES)	Human	The SSES is the central body responsible for monitoring and controlling disease outbreaks in Ukraine. It prevents and eliminates disease and environmental contamination by improving hygienic and sanitary conditions. In 2011, SSES separated from MoH and became an individual state executive body. Subsequently, SSES was ordered to be liquidated and its functions subsumed under the FHC and SSFSCP.
nitary Epidemiological (SSES), Sanitary ological Stations (SES)	Human	SESs are local stations that are responsible for epidemiological and public health interventions during a health crisis. SESs are located in the oblasts and rayons. They report disease data to higher administrative levels and conduct investigations and implement control measures during disease outbreaks.
nitary Epidemiological (SSES), Oblast Laboratory (OLC)	Human	OLCs are the regional laboratory centers for the EDP laboratory network. In additional to diagnostic testing, they provide oversight and training to rayon laboratories in their respective oblasts.
cientific and Research Institute of Laboratory stics and ary and Sanitary Expertise (DVSE)	Animal	SSRILDVSE conducts scientific studies of Group II pathogens and serves as the central veterinary laboratory for confirmatory diagnostic testing of samples referred by Regional Diagnostic Veterinary Laboratories (RDVL) and other subordinate laboratories.
terinary and Phytosanitary (SVPS)	Animal	SVPS is currently an agency under MoAPF that oversees, regulates, and performs the majority of the animal biosurveillance-related activities in the country.
terinary and Phytosanitary (SVPS), Regional ns Veterinary	Animal	RDVLs are the regional laboratory centers for the EDP animal laboratory network. In additional to diagnostic testing, they provide oversight and training to rayon laboratories in their respective oblasts.

"...Ukraine has not shown progress in implementing WHO international health regulations (from 2005) for the past five years...".

"...There is no legislation on the control of highly dangerous pathogens and there are significant biosecurity deficiencies..."

"...The current state of resources makes it impossible for laboratories to respond effectively to public health emergencies..."

"...Gross violations, such as unlocked perimeter fencing systems, unlatched windows, broken or inactive access control and alarm systems, are common in most institutions..."

"...the Soros Foundation... has contributed to the development of an open and democratic society..."

Pentagon contractors' interest in Ebola pathogen research

Ebola epidemic in West Africa in 2014

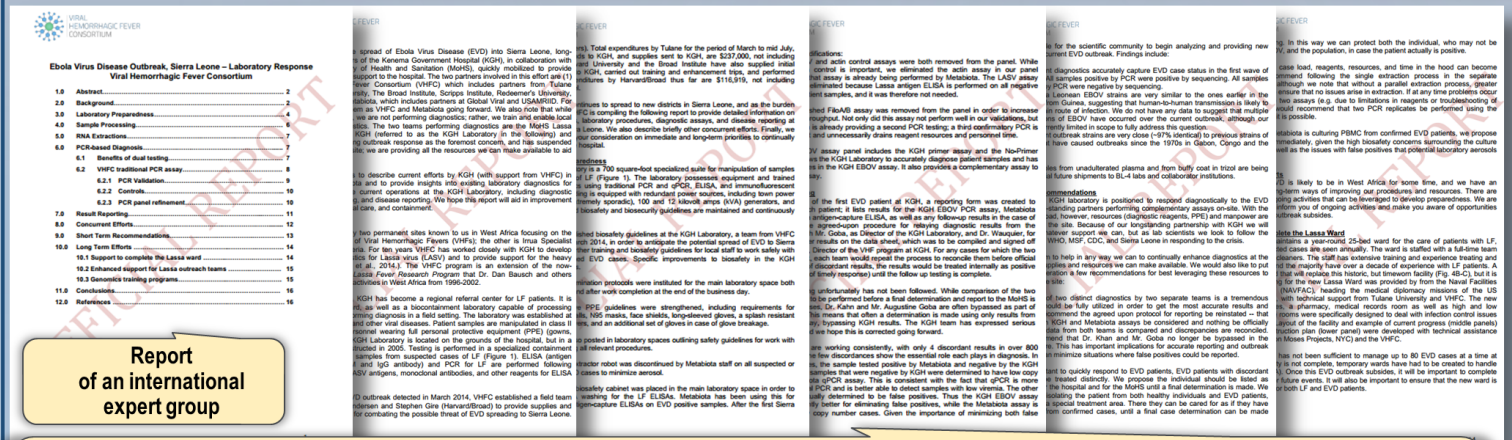
28,000 sick people

more than

11,000 deaths

METABIOTA

The Government of Sierra Leone and the World Health Organization appeal for Metabiota's help in the wake of the Ebola outbreak in West Africa in late March 2014
(https://www.kqed.org/futureofyou/124506/san-francisco-based-metabiota-bungled-ebola-response-ap-finds)

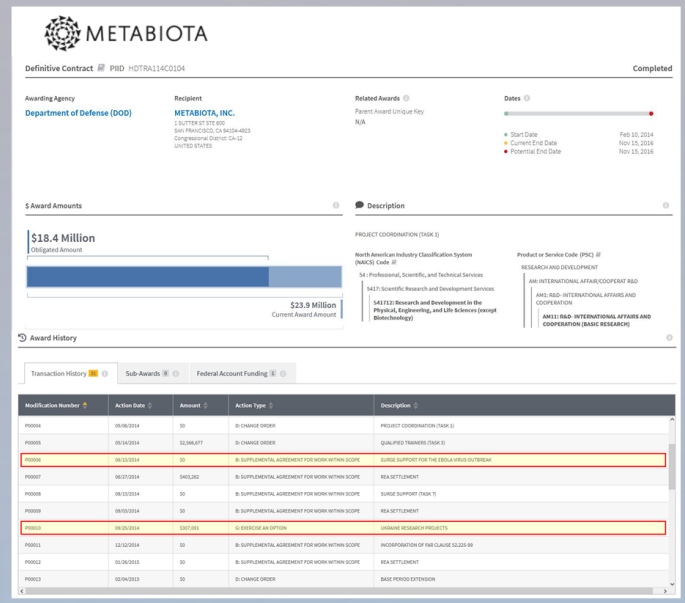


VIRAL HEMORRHAGIC FEVER CONSORTIUM

Ebola Virus Disease Outbreak, Sierra Leone – Laboratory Response
Viral Hemorrhagic Fever Consortium

Report of an international expert group

"...If Metabiota does cultivate blood cells from patients with confirmed Ebola virus disease in the laboratory, we suggest that such activities be stopped immediately, particularly given the high biosafety concerns associated with culturing live Ebola virus cells and the existing problems with false positives that potential laboratory airborne contacts can generate..."



METABIOTA

Definitive Contract | PIID HDTRA114C0104 | Completed

Awarding Agency: Department of Defense (DOD)
Recipient: METABIOTA, INC.
1 SUTTER ST STE 600
SAN FRANCISCO, CA 94104-4923
Congressional District: CA-12
UNITED STATES
Related Awards: Parent Award Unique Key: N/A
Dates: Start Date Feb 10, 2014; Current End Date Nov 15, 2016; Potential End Date Nov 15, 2016

$ Award Amounts
$18.4 Million
Obligated Amount
$23.9 Million
Current Award Amount

Description
PROJECT COORDINATION (TASK 1)

North American Industry Classification System (NAICS) Code
54 | Professional, Scientific, and Technical Services
5417 | Scientific Research and Development Services
541712 | Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)

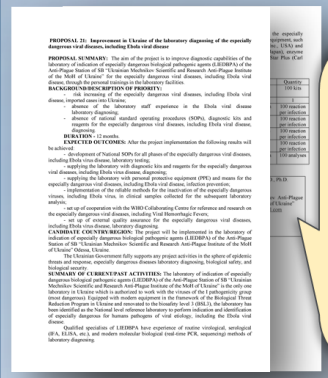
Product or Service Code (PSC)
RESEARCH AND DEVELOPMENT
AM | INTERNATIONAL AFFAIR/COOPERAT R&D
AM1 | R&D- INTERNATIONAL AFFAIRS AND COOPERATION
AM11 | R&D- INTERNATIONAL AFFAIRS AND COOPERATION (BASIC RESEARCH)

Award History

Transaction History | Sub-Awards | Federal Account Funding

Modification Number	Action Date	Amount	Action Type	Description
P00004	05/08/2014	$0	D: CHANGE ORDER	PROJECT COORDINATION (TASK 1)
P00005	05/14/2014	$2,566,677	D: CHANGE ORDER	QUALIFIED TRAINERS (TASK 3)
P00006	06/13/2014	$0	B: SUPPLEMENTAL AGREEMENT FOR WORK WITHIN SCOPE	SURGE SUPPORT FOR THE EBOLA VIRUS OUTBREAK
P00007	06/27/2014	$403,282	B: SUPPLEMENTAL AGREEMENT FOR WORK WITHIN SCOPE	REA SETTLEMENT
P00008	08/13/2014	$0	B: SUPPLEMENTAL AGREEMENT FOR WORK WITHIN SCOPE	SURGE SUPPORT (TASK 7)
P00009	09/03/2014	$0	B: SUPPLEMENTAL AGREEMENT FOR WORK WITHIN SCOPE	REA SETTLEMENT
P00010	09/25/2014	$307,091	G: EXERCISE AN OPTION	UKRAINE RESEARCH PROJECTS
P00011	12/12/2014	$0	B: SUPPLEMENTAL AGREEMENT FOR WORK WITHIN SCOPE	INCORPORATION OF FAR CLAUSE 52.225-99
P00012	01/26/2015	$0	B: SUPPLEMENTAL AGREEMENT FOR WORK WITHIN SCOPE	REA SETTLEMENT
P00013	02/04/2015	$0	D: CHANGE ORDER	BASE PERIOD EXTENSION

Project to improve laboratory diagnosis of highly dangerous pathogens in Ukraine, including Ebola



PROPOSAL 21: Improvement in Ukraine of the laboratory diagnosing of the especially dangerous viral diseases, including Ebola virus disease

PROPOSAL SUMMARY: The aim of the project is to improve diagnostic capabilities of the laboratory of indication of especially dangerous biological pathogenic agents (LIDBPA) of the Anti-Plague Station of SB "Ukrainian Mechnikov Scientific and Research Anti-Plague Institute of the MoH of Ukraine" for the especially dangerous viral diseases, including Ebola viral disease, through the personal trainings in the laboratory facilities.

BACKGROUND/DESCRIPTION OF PROJECT(S):
- risk increasing of the especially dangerous viral diseases, including Ebola viral disease, imported cases into Ukraine.
- absence of the laboratory staff experience in the Ebola viral disease diagnosing;
- absence of national standard operating procedures (SOPs), diagnostic kits and reagents for the especially dangerous viral diseases, including Ebola viral disease, diagnosing.

DURATION - 12 months.

EXPECTED OUTCOMES: After the project implementation the following results will be achieved:
- development of National SOPs for all phases of the especially dangerous viral diseases, including Ebola virus disease, laboratory testing;
- supplying the laboratory with diagnostic kits and reagents for the especially dangerous viral diseases, including Ebola virus disease, diagnosing;
- supplying the laboratory with personal protective equipment (PPE) and means for the especially dangerous viral diseases, including Ebola viral disease, infection prevention;
- implementation of the reliable methods for the inactivation of the especially dangerous viruses, including Ebola virus, in clinical samples collected for the subsequent laboratory analysis;
- set-up of cooperation with the WHO Collaborating Centre for reference and research on the especially dangerous viral diseases, including Viral Hemorrhagic Fevers;
- set up of external quality assurance for the especially dangerous viral diseases, including Ebola virus disease, diagnosing.

CANDIDATE CONTRIBUTIONS: The project will be implemented in the laboratory of indication of especially dangerous biological pathogenic agents (LIDBPA) of the Anti-Plague Station of SB "Ukrainian Mechnikov Scientific and Research Anti-Plague Institute of the MoH of Ukraine" Odessa, Ukraine.

The Ukrainian Government fully supports any project activities in the sphere of epidemic threats and response, especially dangerous diseases laboratory diagnosing, biological safety, and biosecurity.

SUMMARY OF CURRENT/PAST ACTIVITIES: The laboratory of indication of especially dangerous biological pathogenic agents (LIDBPA) of the Anti-Plague Station of SB "Ukrainian Mechnikov Scientific and Research Anti-Plague Institute of the MoH of Ukraine" is the only one laboratory in Ukraine which is authorized to work with the viruses of the I pathogenicity group (most dangerous). Equipped with modern equipment in the framework of the Biological Threat Reduction Program in Ukraine and renovated to the biosafety level 3 (BSL3), the laboratory has been identified as the National level reference laboratory to perform indication and identification of especially dangerous for humans pathogens of viral etiology, including the Ebola viral disease.

Qualified specialists of LIDBPA have experience of routine virological, serological (IFA, ELISA, etc.), and modern molecular biological (real-time PCR, sequencing) methods of laboratory diagnosing.

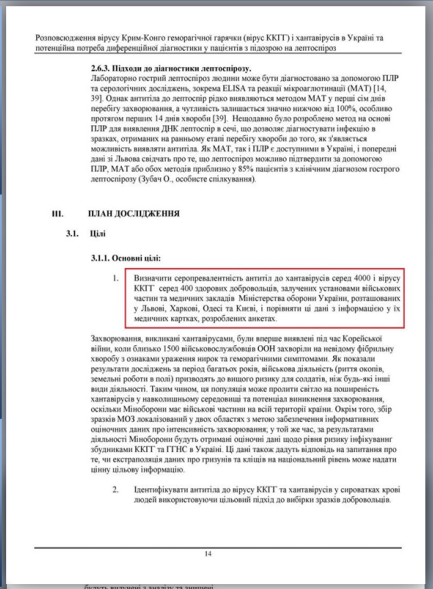
"...The project aims to improve the diagnostic capabilities of the Especially Dangerous Pathogens Laboratory at the Anti-Plague Station of the Mechnikov Anti-Plague Institute of the Ministry of Health of Ukraine to detect particularly dangerous viral diseases, including Ebola..."

Pentagon and Bundeswehr study on the spread of highly dangerous pathogens

Project UP-8

Study on the prevalence of Crimean-Congo haemorrhagic fever virus and hantaviruses

Implementation period: 2017-2019



Розповсюдження вірусу Крим-Конго геморагічної гарячки (вірус ККГГ) і хантавірусів в Україні та потенційна потреба диференційної діагностики у пацієнтів з підозрою на лептоспіроз

2.6.3. Підходи до діагностики лептоспірозу.

Лабораторно гострий лептоспіроз людини може бути діагностовано за допомогою ПЛР та серологічних досліджень, зокрема ELISA та реакції мікроаглютинації (МАТ) [14, 39]. Однак антитіла до лептоспір рідко виявляються методом МАТ у перші сім днів перебігу захворювання, а чутливість залишається значно нижчою від 100%, особливо протягом перших 14 днів хвороби [39]. Нещодавно було розроблено метод на основі ПЛР для виявлення ДНК лептоспір в сечі, що дозволяє діагностувати інфекцію в зразках, отриманих на ранньому етапі перебігу хвороби до того, як з'являється можливість виявляти антитіла. Як МАТ, так і ПЛР є доступними в Україні, і попередні дані зі Львова свідчать про те, що лептоспіроз можливо підтвердити за допомогою ПЛР, МАТ або обох методів приблизно у 85% пацієнтів з клінічним діагнозом гострого лептоспірозу (Зубач О., особисте спілкування).

III. ПЛАН ДОСЛІДЖЕННЯ

3.1. Цілі

3.1.1. Основні цілі:

1. Визначити серопревалентність антитіл до хантавірусів серед 4000 і вірусу ККГГ серед 400 здорових добровольців, залучених установами військових частин та медичних закладів Міністерства оборони України, розташованих у Львові, Харкові, Одесі та Києві, і порівняти ці дані з інформацією у їх медичних картках, розроблених анкетах.

Захворювання, викликані хантавірусами, були вперше виявлені під час Корейської війни, коли близько 1500 військовослужбовців ООН захворіли на невідому фібрильну хворобу з ознаками ураження нирок та геморагічними симптомами. Як показали результати досліджень за період багатьох років, військова діяльність (рити окопів, земельні роботи в полі) призводять до вищого ризику для солдатів, ніж будь-які інші види діяльності. Таким чином, ця популяція може пролити світло на поширеність хантавірусів у навколишньому середовищі та потенціал виникнення захворювання, оскільки Міноборони має військові частини на всій території країни. Окрім того, збір зразків МОЗ локалізований у двох областях з метою забезпечення інформативних оціночних даних про інтенсивність захворювання; у той же час, за результатами діяльності Міноборони будуть отримані оціночні дані щодо рівня ризику інфікування збудниками ККГГ та ГГНС в Україні. Ці дані також дадуть відповідь на запитання про те, чи екстраполяція даних про гризунів та кліщів на національний рівень може надати цінну цільову інформацію.

2. Ідентифікувати антитіла до вірусу ККГГ та хантавірусів у сироватках крові людей використовуючи цільовий підхід до вибірки зразків добровольців.

14

будуть вилучені з аналізу та знищені.

3.5. Процедури на випадок відхилення від протоколу

Весь медичний персонал, що проводить відбір зразків крові та персонал лабораторій Служби превентивної медицини МО України, який бере участь у лабораторних процесах, до початку дослідження проходитиме навчання з процедур та етики проведення досліджень, суб'єктом якого є людина. У разі ненавмисного включення осіб, що не відповідають критеріям включення, біологічні зразки від них не повинні відбиратися, будь-які зібрані мають бути вилучені з аналізу та знищені, а особа має бути проінформовано про це. Якщо зразки для лабораторних досліджень від осіб, що не відповідають критеріям включення, вже були відібрані, вони будуть вилучені, а особа – проінформована про це.

У цілому, про відхилення від протоколу, що не впливають на здоров'я учасників, буде повідомлено під час поточного перегляду протоколу та/або в остаточному звіті. Про відхилення від протоколу або неочікувані ситуації, що можуть вплинути на здоров'я, безпеку або благополуччя учасників дослідження, буде негайно повідомлено головному досліднику / менеджеру зі збору даних, українському комітету з біоетики та Агентству зменшення загроз Міністерства оборони США (АЗЗ). Про незначні інциденти слід повідомляти протягом 72 годин, а про серйозні, включаючи випадки смерті – протягом 24 годин. Усі випадки смерті суб'єктів дослідження, підозрювані або відомі як такі, що пов'язані з процедурами дослідження, повинні бути доведені до відома комітетів із біоетики в США та Україні. Про будь-які відхилення від протоколу або неочікувані ситуації, які викликають занепокоєння щодо наукової обґрунтованості продовження дослідження, також буде негайно повідомлено головному досліднику, головному співдосліднику, українському комітету з біоетики та АЗЗ.

Якщо очікується відхилення від протоколу, головний дослідник та головний співдослідник попередять комітет з біоетики в Україні, а також зазделегідь запросять дозвіл на винятки з протоколу у АЗЗ. Усі зміни в протоколі та згоді повинні бути схвалені комітетами з біоетики в Україні до початку їх впровадження.

TEXAS A&M UNIVERSITY

Texas A&M University, College Station, USA

UP-8 research programme

Project 68727 EN 02761868

Study of Congo-Crimean haemorrhagic fever pathogens and hantaviruses

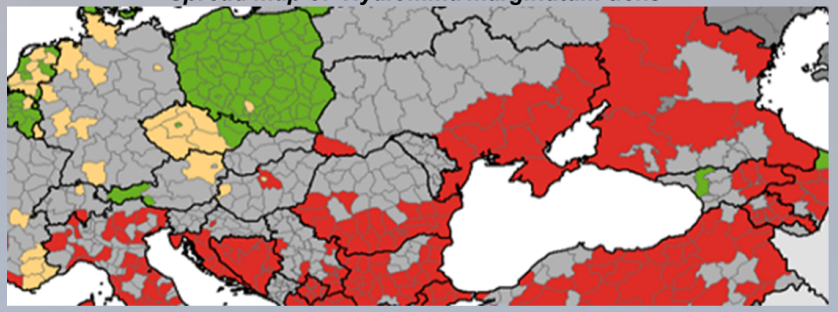
Implementation period: 2018–2019

Institut für Mikrobiologie der Bundeswehr

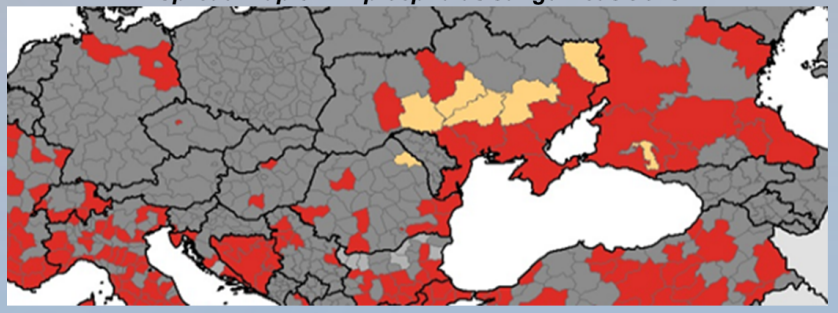
Institute for the Microbiology of the Armed Forces of the Federal Republic of Germany

Tick spread areas

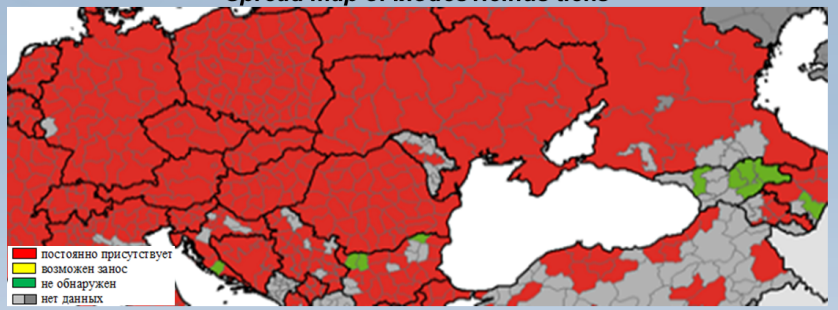
Spread map of Hyalomma marginatum ticks



Spread map of Rhipicephalus sanguineus ticks



Spread map of Ixodes ricinus ticks



Ukrainian projects to study economically significant infectious diseases

TO1 Veterinary TAP-3

Analysis of the risks of spreading African swine fever and swine flu virus among wild pigs in Ukraine

TO4 Veterinary TAP-6

Risk analysis of the spread of African swine fever virus in wildlife in Ukraine: improving diagnosis, detection and prevention

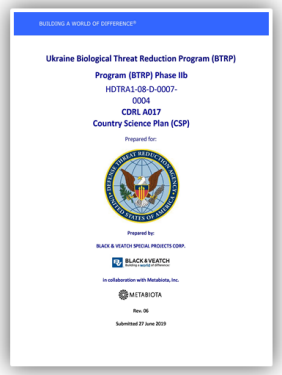
Employees of the Institute for New Pathogens at the University of Florida studied wild boar populations in Volyn, Rovnoe, Zhitomir and Chernigov regions of Ukraine and in the areas bordering Russia and Belarus

UF UNIVERSITY of FLORIDA

University of Florida (Gainesville, USA)

Epizootic situation of African swine fever in 2007-2022

Biological Threat Reduction Programme Summary Report for Ukraine (27.06.2019)



Ukraine Biological Threat Reduction Program (BTRP)

Program (BTRP) Phase IIb

HDTRA1-08-D-0007-0004

CDRL A017

Country Science Plan (CSP)

Prepared for:

Prepared by:

BLACK & VEATCH SPECIAL PROJECTS CORP.

In collaboration with Metabiota, Inc.

Rev. 06

Submitted 27 June 2019

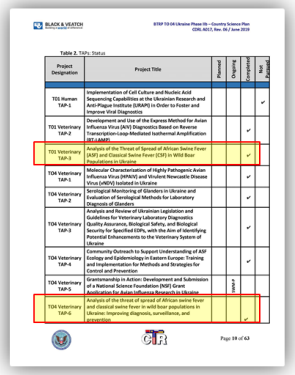
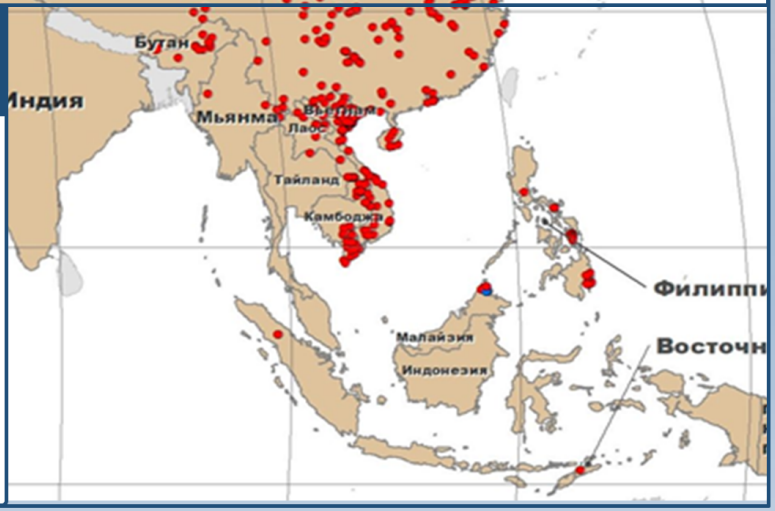
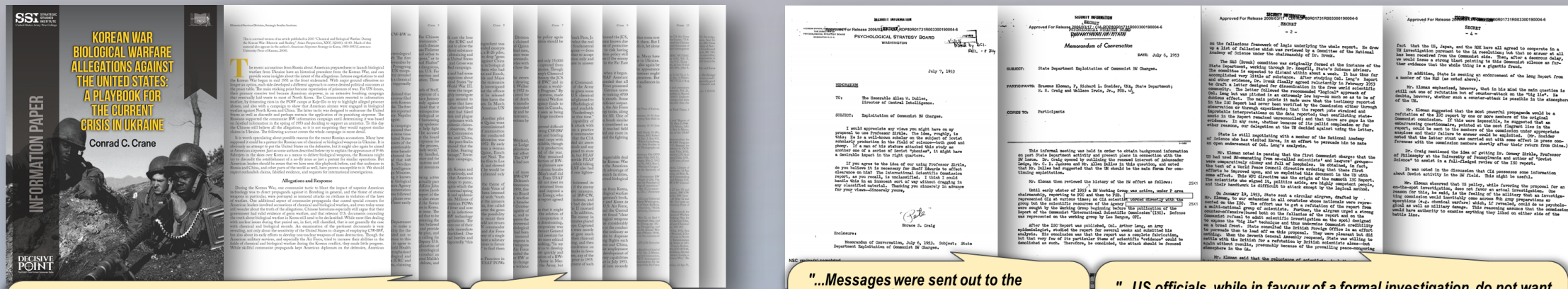


Table 2. TAPs Status

Project Designation	Project Title	Planned	Ongoing	Completed	Not Funded
TO1 Human TAP-1	Implementation of Cell Culture and Nucleic Acid Sequencing Capabilities at the Ukrainian Research and Anti-Plague Institute (URAPI) in Order to Foster and Improve Viral Diagnostics				✓
TO1 Veterinary TAP-2	Development and Use of the Express Method for Avian Influenza Virus (AIV) Diagnostics Based on Reverse Transcription-Loop-Mediated Isothermal Amplification (RT-LAMP)			✓	
TO1 Veterinary TAP-3	Analysis of the Threat of Spread of African Swine Fever (ASF) and Classical Swine Fever (CSF) in Wild Boar Populations in Ukraine			✓	
TO4 Veterinary TAP-1	Molecular Characterization of Highly Pathogenic Avian Influenza Virus (HPAIV) and Virulent Newcastle Disease Virus (vNDV) Isolated in Ukraine			✓	
TO4 Veterinary TAP-2	Serological Monitoring of Glanders in Ukraine and Evaluation of Serological Methods for Laboratory Diagnosis of Glanders			✓	
TO4 Veterinary TAP-3	Analysis and Review of Ukrainian Legislation and Guidelines for Veterinary Laboratory Diagnostics Quality Assurance, Biological Safety, and Biological Security for Specified EDPs, with the Aim of Identifying Potential Enhancements to the Veterinary System of Ukraine			✓	
TO4 Veterinary TAP-4	Community Outreach to Support Understanding of ASF Ecology and Epidemiology in Eastern Europe: Training and Implementation for Methods and Strategies for Control and Prevention			✓	
TO4 Veterinary TAP-5	Grantsmanship in Action: Development and Submission of a National Science Foundation (NSF) Grant Application for Avian Influenza Research in Ukraine		Closed		
TO4 Veterinary TAP-6	Analysis of the threat of spread of African swine fever and classical swine fever in wild boar populations in Ukraine: Improving diagnosis, surveillance, and prevention				✓



US denial of the use of chemical and biological weapons in the Korean War

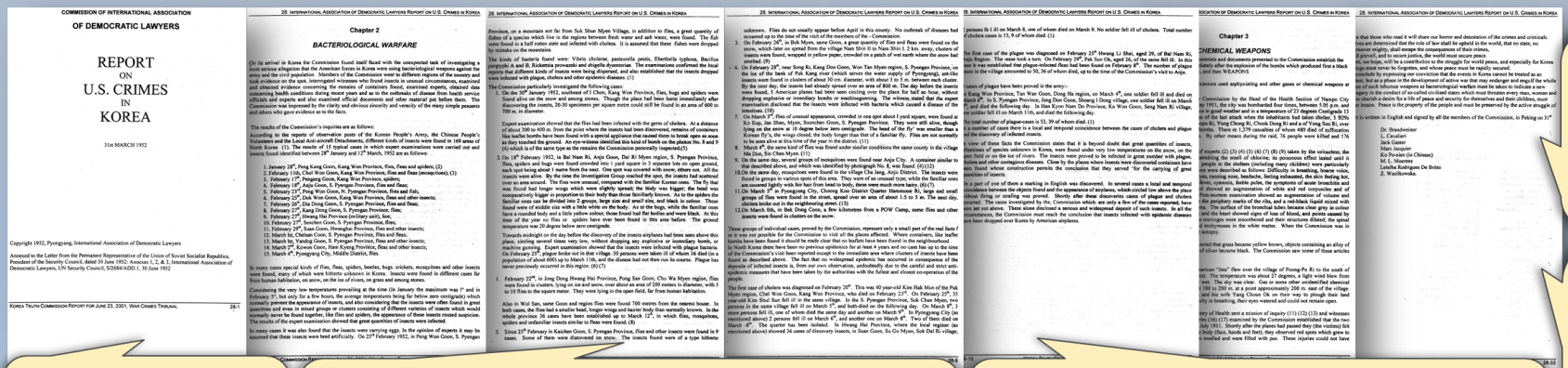


"...the US Air Force secured additional funds to purchase large quantities of chemical and biological munitions, obtained a test range for them in Canada and did extensive conceptual work on their use..."

"...to strike at Soviet grain crops..."

"...Messages were sent out to the embassies of all the countries whose scientists had submitted the report. This was done in order to persuade some of the members of the International Commission to retract their statements...".

"...US officials, while in favour of a formal investigation, do not want an actual investigation. One reason for this is the Pentagon's expectation that the investigation will surely reach the 8th Army involved in chemical weapons. If their activities are revealed, it will cause psychological and military harm...".



"...a large number of fish of a species that lives in regions between fresh and salt water were found on a mountain near Maya Suk Shun village, in addition to flies. The fish were found in a half-decayed state and infected with cholera. It is suspected that these fish were mistakenly dumped in the mountains..."

"...different species of insects have been found in 169 areas of North Korea..."

"...Special species of flies, fleas, spiders, beetles, bedbugs, crickets, mosquitoes and other insects, many of which were hitherto unknown in Korea, were found. Insects have been found on various occasions away from human habitation, on snow, on the ice of rivers, on grass and among rocks..."

"...insects were often found in large numbers and even in mixed groups or clusters consisting of different species of insects that would normally never meet together, such as flies and spiders..."

"...The following species of bacteria were found: Vibrio cholerae, pasteurella pestis, Eberthella typhosa, Bacillus paratyphi A and B, Rickettsia prowazekii and shigella dysenteriae. The examination confirmed local reports that different species of insects had been dispersed and also found that the dumped insects were contaminated with plague, cholera and other epidemic diseases...".

Results of blood samples from Ukrainian POWs

US Department of Defense Threat Reduction Agency (DTRA)

Black&Veatch Special Projects Corp.

Ukrainian Ministry of Defence

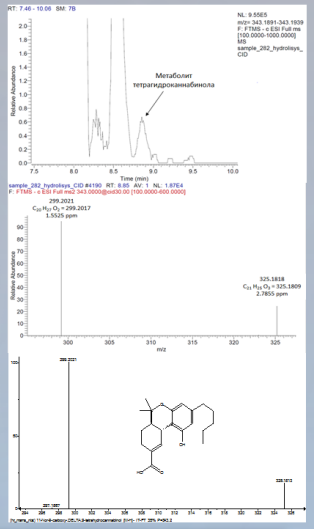
UP-8 Project

Crimean-Congo haemorrhagic fever virus and hantavirus prevalence study in Ukraine (2017-2020)

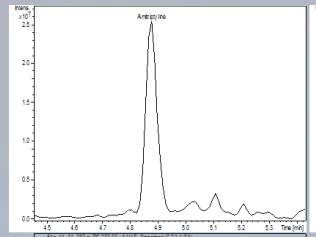
$ 1,658,236

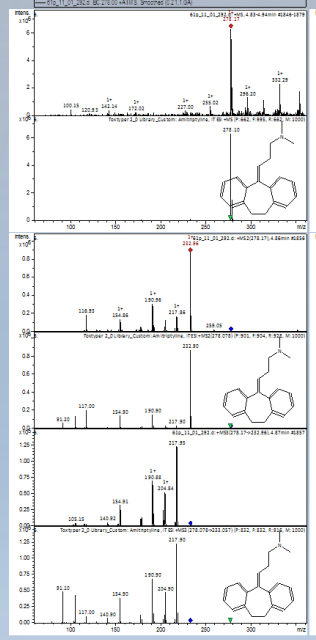
Analysis of samples revealed traces of narcotics, stimulants, antibiotics

Metabolite of tetrahydrocannabinol

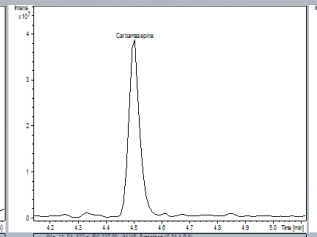


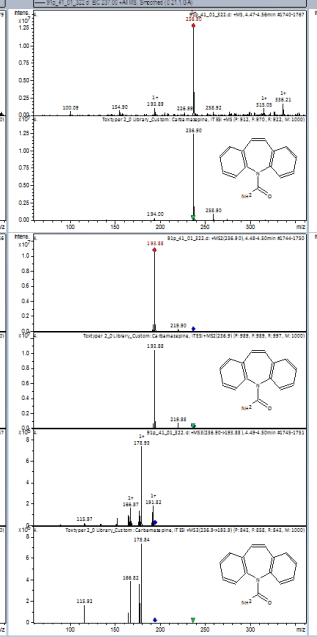
Amitriptyline



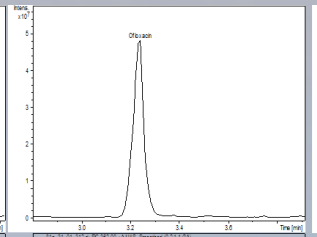


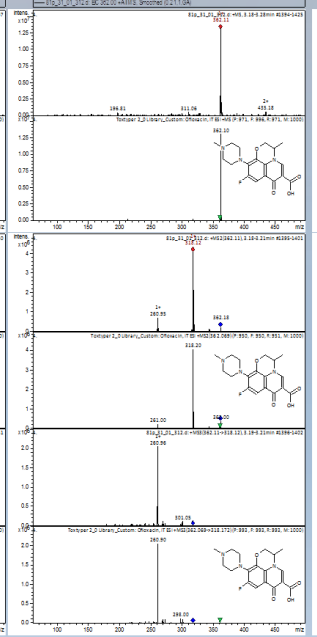
Carbamazepine



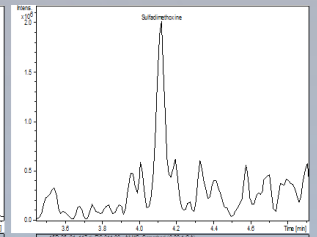


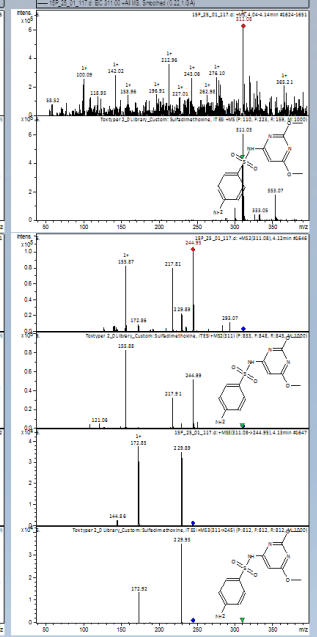
Ofloxacin





Sulfadimethoxine





Number of sick and previously outnumbered Ukrainian military personnel:

- fever with kidney syndrome – **4** %
- West Nile fever – **20** %
- hepatitis A – **33** %