

ASSESSMENT OF VIRAL HEPATITIS IN KOSOVO¹



Mission Report: 25–28 March 2019



¹All references to Kosovo in this document should be understood to be in the context of United Nations Security Council Resolution 1244 (1999)

Assessment of viral hepatitis in Kosovo¹

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Abstract

The first assessment of viral hepatitis in Kosovo² took place in Pristina and Prizren, from 25 to 28 of March 2019. The objective of this mission was to evaluate the existing structures for prevention, diagnosis, staging, treatment, continuum of care and control of viral hepatitis in the area; interview key stakeholders and collect reports from public health authorities and local facilities; and conduct situation analysis to provide recommendations for developing a strategic plan. The mission also aimed to identify opportunities for expansion of linkages and synergies between the HIV and hepatitis C responses. The mission comprised experts from the Joint Tuberculosis, HIV and Viral Hepatitis Programme (WHO Regional Office for Europe); the Community Development Fund; the Robert Koch Institute and the WHO Office, Pristina.

Keywords

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Abbreviations

AMR	antimicrobial resistance
CDF	Community Development Fund
DAA	direct-acting antiviral
EAP	Action Plan for the Health Sector Response to Viral Hepatitis in the WHO European Region
ELISA	enzyme-linked immunosorbent assay
HAI	health-care associated infections
HBsAg	hepatitis B surface antigen
HCV	hepatitis C virus
HUSK	Clinic for Infectious Diseases of the University Clinical Centre of Kosovo ³
IBBS	Integrated Biological and Behavioural Surveys
IPC	infection prevention and control
IPH	Institute of Public Health
NGO	nongovernmental organization
OST	opioid substitution therapy
PCR	polymerase chain reaction
PWID	people who inject drugs
PWUD	people who use drugs
RDT	rapid diagnostic test
STI	sexually transmitted infection
TPHA	Treponema pallidum particle agglutination assay
UCCK	University Clinical Centre of Kosovo ³

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Executive summary

Acknowledging an urgent need to evaluate the burden of viral hepatitis and strengthen the response in the context of the global goal of eliminating hepatitis as a public health problem by 2030, nongovernmental organizations (NGOs) and public health authorities of Kosovo⁴ requested that the WHO Regional Office for Europe conduct a mission to be carried out in the area. The purpose of the mission was to review the current hepatitis response in Kosovo⁴, including prevention, diagnosis and treatment; assess strategic information related to hepatitis B virus (HBV) and hepatitis C virus (HCV) infection; and provide recommendations for developing the action plan to combat viral hepatitis.

The WHO Regional Office for Europe conducted an assessment mission in Pristina and Prizren, Kosovo⁴, on 25–28 March 2019. The assessment was carried out in collaboration with the Robert Koch Institute (Berlin, Germany) and Community Development Fund (CDF), and with the support of local public health authorities. The mission included field visits to various institutions involved in the response to viral hepatitis and interviews with key stakeholders.

Main findings

The mission team noted an increasing awareness and recognition of hepatitis as a potential threat to public health by many of the public health authorities and NGOs in Kosovo⁴. Commitment of public health authorities is clearly demonstrated with many stakeholders already engaged in the response – regional hospitals, haemodialysis centres, blood transfusion stations, NGOs and donors – albeit limited by the current structure of centralized testing and availability of strategic inputs such as laboratory reagents.

Kosovo⁴ has no baseline scenario and no plan for the prevention and control of viral hepatitis, and the overall response is currently fragmented. The area has no clear and empowered focal point, nor well-defined and functioning lines of responsibility for proper planning and decision-making with respect to prevention and control of viral hepatitis.

Due to a testing infrastructure limited to the Institute of Public Health (IPH) in Pristina, surveillance of viral hepatitis in Kosovo⁴ is centralized by default, relying mostly on a spreadsheet system, offering little integration with other notified health issues and statistics, and limiting the potential for monitoring and evaluation of the continuum of care.

Most of the data entry for the surveillance system is performed by the IPH laboratory workers, based on HCV antibody (anti-HCV) and hepatitis B surface antigen (HBsAg) test results; without the implementation of case definitions and often without the participation of private laboratory facilities. All data collected through the MedList software and is shared with a focal point at the IPH, who is responsible for reporting and consolidating figures for the statistics authority.

Despite its singular and centralized structure for confirmatory testing, at least eight different routes for potential diagnosis were identified during this mission. Each one of these routes presents different patterns for coverage of expenses, depending mostly on the baseline diagnosis and entry point: 1) blood donors at regional blood stations; 2) blood donors at the central blood station; 3) pregnant women in antenatal care; 4) haemodialysis patients prior to the start of haemodialysis and every six months; 5) inpatient/outpatient/emergency departments; 6) people with disabilities

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with a social security voucher; 7) clients of NGOs attending to people who inject drugs (PWID); and 8) incarcerated people.

Procurement and supply management remains a continuous challenge in the task of ensuring timely provision of high-quality and effective pharmaceuticals and health products for the appropriate response to viral hepatitis. Kosovo⁵ has had a long-term shortage of laboratory reagents for confirmation of chronic HCV infection (HCV-RNA testing) and state-funded treatments are based only on pegylated interferon and ribavirin.

The division of responsibility for health expenses is still under discussion – for example, whether acquisition for medications and consumables should be regional or centralized. Out-of-pocket payments still play an important role in health expenses and are comparable to the budget of public health authorities dedicated to medicines and other medical items, covering 33.3–40.0% of total health spending. (1,2)

During the mission, the team became aware that public health authorities were updating a list of essential medicines (the Essential Drugs List), yet none of the stakeholders interviewed was aware of any applications for direct-acting antivirals (DAAs), be it fixed-dose combination treatments or not, to the Chamber of Pharmacists of Kosovo⁵, or suggested their inclusion in the Essential Drugs List. At the moment, the Chamber holds the applications for the combination of sofosbuvir/ledipasvir and sofosbuvir/velpatasvir.

Some access to DAAs has been reported, albeit restricted to a few patients who purchased the generic treatments themselves. Details about the prices and method (authorized compassionate use or not) are still unclear.

Kosovo⁵ is not eligible for procurement through United Nations agencies, although public health authorities have mentioned a memorandum of understanding with the United Nations Children's Fund (UNICEF) that allows procurement and supply of vaccines.

With respect to prevention measures, harm reduction programmes are available in at least three centres in the area, one of which was visited, run by an NGO sponsored by the Global Fund to Fight AIDS, Tuberculosis and Malaria. Yet, the coverage of opioid substitution therapy (OST) is quite low if compared to the estimates of PWID in the area (280 clients/month out of 5000 estimated PWID).

Additionally, gaps were identified in infection prevention and control (IPC), related primarily to the unusually high prevalence of anti-HCV in haemodialysis patients, despite reports of appropriate cleaning and sterilization of dedicated equipment. In the last six months, the Nephrology and Haemodialysis Clinic in Pristina had four new anti-HCV positive cases among previously anti-HCV negative patients. Poor compliance with basic IPC measures may be a consequence of an insufficient supply of consumables for hand hygiene and other factors. An additional mission to assess how IPC is implemented in haemodialysis facilities is highly recommended.

Regarding prevention through immunization, the area reported high coverage rates of hepatitis B vaccine at birth (98%) and of third dose (100%) in 2017–2018. (3) However, hepatitis B vaccination of risk populations, such as PWID, prisoners, men who have sex with men, people

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living with HIV, patients at risk of liver decompensation (e.g. patients with chronic hepatitis C infection), haemodialysis patients and health workers is not routinely recommended and provided.

Main recommendations and next steps for public health authorities

- Establish a dedicated focal point for leading and coordinating the hepatitis response, preferably within the centralized authority, to ensure strong leadership.
- Establish an interdisciplinary strategic technical working group that would include the key stakeholders and partners, identifying roles, responsibilities and opportunities for improvements.
- Consider the development and endorsement of an action plan, aligned with the Action Plan for the Health Sector Response to Viral Hepatitis in the WHO European Region and adapted to the local context. (4)
- Review available data sources and synthesize baseline estimations for viral hepatitis in order to guide future actions and plan medical expenses.
- Revise the existing viral hepatitis surveillance system, including case definitions for acute and chronic viral hepatitis, aligned with WHO recommendations.
- Implement systematic immunization of health-care workers and risk groups (e.g. haemodialysis patients and PWID).
- Consider prevention and awareness campaigns (i.e. World Hepatitis Day).
- Address the hepatitis C issue in haemodialysis centres and conduct a thorough assessment of the implementation of the core components of IPC at all levels and health-care facilities, establishing clear testing pathways and addressing all core components of IPC in line with WHO guidelines.
- Strengthen harm reduction programmes, to increase coverage to PWID of a comprehensive package services, including OST, needle and syringe programmes, testing for viral hepatitis and other infections, and linkage to care.
- Consider using harm reduction services for sentinel surveillance for viral hepatitis.
- Resume HCV-RNA quantitative testing at a central level.
- Include DAAs in the Essential Drugs List.
- Ensure access to low-cost DAAs, prioritizing treatment for those most in need (e.g. haemodialysis patients).
- Develop and publish viral hepatitis testing guidelines, including a testing strategy and diagnostic algorithm, strategies to ensure referral and linkage to care, and definition of the target population.

- Secure the supply chain for test reagents and consumables, including necessary and safe materials for rapid testing.
- Consider rapid diagnostic tests to facilitate decentralization of services.
- Develop and publish viral hepatitis treatment guidelines.
- Secure the monitoring and evaluation system for the continuum of care and implement a digital system when possible.
- Develop educational programmes for laboratory specialists on quality control for laboratory diagnostics.
- Ensure a stringent certification process for diagnostic test systems that enter the market.

Introduction

Viral hepatitis is a global public health threat, which until recently had not received adequate attention. An estimated 15 million people in the WHO European Region are living with chronic hepatitis B virus (HBV) infection and 14 million with chronic hepatitis C virus (HCV) infection. In addition, about 171 000 people die from viral hepatitis-related causes in the Region every year.

In September 2016, the 66th session of the WHO Regional Committee for Europe endorsed the first ever Action Plan for the Health Sector Response to Viral Hepatitis in the WHO European Region (European Action Plan, EAP) – in order to accelerate the response to the viral hepatitis epidemics at all levels and contribute to the regional and global efforts to eliminate viral hepatitis as a public health threat by 2030. The goals and targets are aligned with the 2030 Agenda for Sustainable Development, the global health sector strategies on HIV and viral hepatitis for 2016–2021, and Health 2020, the European policy framework for health and well-being. (4)

Since its adoption, the EAP has served as the basis for an accelerated response in the Region, with the development and implementation of strategies and action plans. Unprecedented reductions in the price of medicines for the treatment of chronic hepatitis over the last few years have triggered a rapid increase in access to these life-saving drugs. This has created the demand for policy revision and optimization of service delivery models that would allow expanding coverage with the prevention, testing and treatment interventions necessary to achieve the ambitious goals of elimination.

Kosovo⁶, with 1.8 million inhabitants, has one of the youngest populations in the European Region, with an average of approximately 27 years of age, and one of the lowest expenditures on health in the Region.

The health-care system in the area has undergone several reforms since 1999, (5) with normative documents adopted in 2008, 2012 and 2014. Yet, the health-care system continues to face significant struggles in policy implementation, (6) monitoring and evaluation, procurement and supplies, and financing. (7,8)

Kosovo⁶ is regarded as low prevalence for HIV, with only 122 cases of HIV and 47 AIDS-related deaths reported since 1986, although the low number of inhabitants and unrefined surveillance system limit any analysis. Kosovo⁶ is also recognized for other social determinants of health, such as unemployment and poverty, and increasing numbers of key populations (e.g. people who inject drugs (PWID) and sex workers). (9)

Public health authorities, health-care providers, specialists and other stakeholders do not consider the current HIV figures to be an accurate portrait of the HIV situation in the area and believe it to be an underestimation of the actual burden of the infection. (3)

For viral hepatitis, knowledge is restricted to Integrated Biological and Behavioural Surveys (IBBS) and the serological surveys performed at haemodialysis centres, prisons and blood collection stations. Historically, haemodialysis centres have reported 22.3–91.1% anti-HCV prevalence.

Although coverage of childhood immunization for hepatitis B has been reported to be high in the recent past for the birth and third dose (respectively 98% and 100% in 2017–2018), the preventive measures are not implemented for all health-care workers and other population groups at higher

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risk of acquiring the infection, raising concerns about transmission for those not vaccinated during early childhood.

In the context of the global pursuit to eliminate viral hepatitis and intent to overcome the public health challenges, (10) local authorities and stakeholders have acknowledged an urgent need for assessment of the viral hepatitis situation in the area and have collectively requested assistance.

The Robert Koch Institute, as one of the leading global technical public health agencies, and the Global Fund to Fight AIDS, Tuberculosis and Malaria, through its principal recipient, the Community Development Fund (CDF), a nongovernmental organization (NGO) acting in the post-conflict area for 20 years, participated in the mission to provide expertise in situation analysis and synthesis for recommendations of future actions.

The mission assessed the situation of viral hepatitis, and the existing structure for prevention and control, diagnosis, staging, treatment and continuum of care. The mission also aimed to identify opportunities for expansion of linkages and synergies between the HIV and viral hepatitis responses in the area.

Methodology of assessment

The assessment comprised a number of activities, both before and during the visit; these included a range of field visits and interviews with key informants in Kosovo⁷, as listed below:

- desk review of relevant publications and reports prior to arrival;
- review of health policies and status of their implementation;
- field visits to the following:
 - WHO Office, Pristina
 - Community Development Fund
 - Blood Transfusion Centre of Kosovo⁷
 - University Clinical Centre of Kosovo⁷ (UCCCK)
 - Clinic for Infectious Diseases (HUSK)
 - Nephrology and Haemodialysis Clinic
 - Institute of Public Health (IPH)
 - Chamber of Pharmacists of Kosovo⁷
 - Prizren General Hospital “Prim. Dr Daut Mustafa”
 - Prizren Regional Blood Transfusion Centre
 - Labyrinth NGO;
- interviews with the following key informants:
 - Afrim Q Avdaj, General Director, Prizren General Hospital
 - Albana Sahiti, Official for Monitoring and Implementation of Family Medicine
 - Ardita Tahirukaj, Liaison Officer, WHO Office, Pristina
 - Arsim Qavdarbasha, Director of the Department for Health Services
 - Bukurije Raça, Director of Pristina Transfusiology Clinic
 - Brikenë Bunjaku, Psychologist, Labyrinth NGO
 - Edona Deva, HIV Programme Manager, CDF
 - Gazmend Zhuri, WHO Office, Pristina
 - Laura Shehu, HIV Programme Coordinator
 - Luljeta Gashi, Chief of Unit for HIV/AIDS/STIs
 - Milazim Gjocaj, Director of the Prison Health Department
 - Murat Mehmeti, HIV/AIDS Specialist, HUSK
 - Naim Bardiqi, Secretary General
 - Pashk Buzhala, Chief of Division for the Special Services
 - Safet Blakaj, Executive Director, Labyrinth NGO
 - Salih Ahmeti, Hepatitis Specialist, HUSK
 - Xhevat Jakupi, Director of the Department of Microbiology, IPH
 - Arianit Jakupi, President of the Chamber of Pharmacists of Kosovo⁷

The mission team comprised the following members:

- Antons Mozalevskis, WHO Regional Office for Europe
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- Ruth Zimmerman, Robert Koch Institute.

The WHO Regional Office for Europe coordinated preparation of this report, with the support of the WHO Office, Pristina and the CDF.

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Findings and recommendations

The findings of the mission team and related recommendations are grouped under nine main headings: 1) coordination and programme management; 2) strategic information for policy and action; 3) prevention of transmission; 4) blood safety; 5) infection prevention and control in haemodialysis settings; 6) harm reduction; 7) diagnosis and linkage to care; 8) treatment and care; 9) access to medicines for hepatitis C treatment.

Coordination and programme management

Good coordination and programme management are most important for the implementation of health policies. Task sharing, responsibility, accountability and communication are essential for such policies to be effective and efficient.

It is expected that every level of care has the necessary infrastructure and human resources, and effective collaboration and communication with other relevant health programmes. This is not just a matter of system performance, but is also about significant cost saving.

Programmes and strategies should be constructed based on the best available data generated by strategic information systems. The process should allow input from all key stakeholders – including civil society – on policy development, service planning and resource allocation – and should ensure coordination and alignment of the viral hepatitis response with the broader health sector. Commitment to sustained financing and ownership is also key.

Findings

The mission team noted an increasing awareness and recognition of hepatitis as a potential threat to public health by many of the public health authorities, regional hospitals, haemodialysis centres, blood transfusion stations, NGOs and donors. Commitment of public health authorities is clearly demonstrated by the request for this mission and the engagement of multiple stakeholders in the response.

However, regardless of the level engagement, it is also clear that the hepatitis response is fragmented. There is no baseline scenario, plan or focal point for the coordination of policies dedicated to prevention and control of viral hepatitis in Kosovo⁸. Individual efforts in blood safety, maternal health, immunization, health in prisons and infection prevention and control (IPC) are not synchronized, leading to poor interaction between health policies and information systems.

Despite the area having a centralized testing facility, the mission team identified eight different routes for potential diagnosis of hepatitis: 1) blood donors at regional blood stations; 2) blood donors at the central blood station; 3) pregnant women in antenatal care; 4) haemodialysis patients; 5) inpatient/outpatient/emergency departments; 6) people with disabilities with a social security voucher; 7) clients of NGOs; and 8) incarcerated people. Additional details regarding these categories can be found in “Diagnosis and linkage to care”.

Centralization was also found in treatment, with one facility dedicated to the treatment of all patients in Kosovo⁸. The protocols in place were outdated, with pegylated interferon-based regimens, with excessive needs for HCV-RNA quantitative tests (HCV viral load) and were not

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synchronized with the relevant health authorities and stakeholders at all. During the mission, the team was able to recommend the inclusion of direct acting antivirals (DAAs) in the Essential Drugs List – additional details can be found in “Treatment and care” and “Access to medicines for hepatitis C treatment”.

Immunization, HIV and blood safety have appointed focal points at the highest level of the health authorities. Such a focal point would be of great benefit to the hepatitis response.

Recommendations

- Establish a dedicated focal point for leading and coordinating the response to viral hepatitis, preferably within the central acting authority in public health.
- Establish an interdisciplinary strategic technical working group that would include the main stakeholders, including NGOs and civil society.
 - As a group, discuss the situation analysis and define priorities for actions with the focal point.
 - Establish a clear definition of roles, responsibilities and opportunities for improvements.
- Consider the need for a dedicated action plan with appropriate funding and targets, adopted from the EAP. (4)

Strategic information for policy and action

Accurate data enable policy-makers and decision-makers at all levels to understand the burden of disease caused by viral hepatitis and to develop prevention and control strategies accordingly. Viral hepatitis surveillance systems are needed to detect outbreaks; monitor trends in incidence and risk factors; assess the burden of chronic hepatitis, sequelae (e.g. cirrhosis and liver cancer) and deaths; monitor treatment coverage and its impact on chronic liver disease; and evaluate the efficacy of interventions to prevent, control and treat viral hepatitis.

Implementing surveillance systems for viral hepatitis aligns with the International Health Regulations (2005) in strengthening disease detection. (11) Furthermore, a viral hepatitis surveillance system can improve overall performance in numerous other synergistic areas, such as water and sanitation, blood safety, injection safety, and surveillance of other communicable diseases.

Findings

The reporting system for epidemiological surveillance of viral hepatitis is unclear. Existing data comprises essentially HBsAg and anti-HCV laboratory results manually entered in MedList by the central laboratory staff and the focal point for surveillance at the IPH in Pristina.

Kosovo⁹ is currently working on implementing case definitions for all communicable diseases in a project supported by the Robert Koch Institute. Meanwhile, cases of hepatitis B and C are still wrongly identified as acute cases, pending confirmation with HCV-RNA viral load. Moreover, there could be a significant amount of information missing due to the use of private laboratories

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and out-of-pocket payments for health expenses – despite the absence of molecular biology equipment in the private sector.

The mission team were informed about the implementation of the policy to offer testing for HIV, viral hepatitis and syphilis to all incarcerated people. This is a welcome change following the transfer of responsibility for health in prisons from an institution for corrections and law enforcement to a public health authority.

However, it is clear that the number of tests performed for viral hepatitis and the admissions in prisons and correctional facilities do not match, indicating that a significant number of incarcerated individuals may not be tested as intended. In 2003–2018, only 119 cases of viral hepatitis were registered in correctional facilities, the total number of people tested and the segregated figures for hepatitis B and C are not known.

Treatments for viral hepatitis available through public funds are centralized at HUSK, with treatment regimens based on pegylated interferon, which require a high number of HCV-RNA viral load tests in follow-up. Yet, there is no system for quick recovery of medical information, and the waiting list for patients for future treatments is not well defined. Additionally, surveillance of sequelae and mortality is inadequate.

Priority recommendations

- Adopt case definitions for acute and chronic viral hepatitis B and C.
 - The case definitions and implementation of the improved surveillance should be aligned with the latest WHO recommendations or European Centre for Disease Prevention and Control (ECDC) case definitions. (12)
- Produce and agree reliable and credible estimates.
 - Estimates can be calculated using appropriate surveillance, applying the recent WHO tools devised for strategic information. (13)

Other recommendations

- Build a functioning hepatitis surveillance system to improve data quantity and quality – in line with new WHO recommendations.
- Assess mortality attributed to viral hepatitis, possibly through the use of sentinel sites.
- Establish an electronic health information system to monitor the hepatitis response.
- Consider the usefulness of integrating reporting from the private sector.

Prevention of transmission

Preventing new cases of infection remains the basis of any public health programme, including viral hepatitis, even in the presence of effective and accessible medication. Public health authorities and health-care providers have a responsibility to prevent transmission of infection to populations using all available means, including provision of vaccinations; safe injections and safe

medical interventions; safe blood and blood products, tissues and organs; and harm reduction services for PWID.

The hepatitis B vaccine remains one of the most effective public health tools to prevent infection and – in the final analysis – millions of deaths due to liver cancer worldwide. Collaboration, integration and linkage between hepatitis services and other health programmes – for example, HIV, tuberculosis and substance use disorder – can strengthen health systems and improve overall efficiency.

Integration of prevention, treatment and care services is of particular relevance to Kosovo¹⁰, given the young population, centralized care and intent to provide universal health coverage.

Findings

The area has conducted newborn vaccination for hepatitis B since 2004, and although vaccine coverage values in the first years are currently unknown, the historical coverage for measles, the elimination of neonatal tetanus in 1997 and the achievement of polio-free status in 2002 would suggest a good start. (14) By 2017, the coverage of children aged 12–23 months that had received the third dose of hepatitis B vaccine before their first birthday was estimated at 94%. (15)

The coverage for the birth dose was reported at 98% and third dose at 100% in 2017–2018. Other vaccines with multiple doses also present equal rates for coverage, according to the IPH.

Yet, there is still no systematic vaccination of health-care workers or monitoring of their coverage. During the mission, the team was able to identify facilities that had promoted hepatitis B vaccination for their staff, but at their own expense.

The team also identified a lack of systematic vaccination for population groups at risk of infection (e.g. PWID, prisoners, men who have sex with men, haemodialysis patients) or those at risk of decompensated liver disease (e.g. patients with hepatitis C, people living with HIV).

Harm reduction and IPC have been assigned sections of their own in this report.

Priority recommendations

- Conduct systematic immunization of health-care workers and risk groups.
- Consider prevention and awareness campaigns (i.e. World Hepatitis Day).

Other recommendations

- Secure reliable estimates for vaccination coverage in the general population, risk populations and health-care workers.

Blood safety

Blood safety is crucial for the prevention of transmission of not only viral hepatitis, but also HIV and other blood borne infections. The EAP reiterates that in order to achieve elimination of viral hepatitis by 2030, it is imperative to ensure the safety of blood products – by testing 100% of donations in a quality-assured manner.

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Only two distinct papers related to blood safety in Kosovo¹¹ have been published to date, both in 2009. The first study is based on analysis of serological testing results of 70 348 samples from blood donors from Gjakova, Gjilan, Peja, Pristina and Prizren during 2000–2003, of which 2939 were positive for HBsAg (4.18%), 192 for anti-HCV (0.27%) and 14 for both (0.2%). (16) The second study, performed during an unknown period with 75 patients with haemophilia A or B living in Kosovo¹¹, revealed 29 patients positive for anti-HCV (38.7%) and 2 for HBsAg (2.7%). (17)

During this mission, the team visited two facilities dedicated to blood collection – Pristina Transfusiology Clinic and Prizren Regional Blood Transfusion Centre. The team also met with representatives of these facilities and collected additional information on the protocols in place to secure blood safety in the area and figures on tests for viral hepatitis.

Findings

Significant changes in blood safety have taken place in the area since the initial reforms in public health in 1999. Voluntary blood donors and family replacement donors represented, respectively, 10.5% and 89.5% of blood donations in 2000. Although the percentages are somewhat approximate for 2002–2007, it seems that it was only in 2008 that this scenario began to shift, with voluntary blood donors consolidating themselves as main source of blood donations for the next 10 years, leading to the welcome mark of 82.5% of all blood donations in 2018 in Kosovo¹¹ (Table 1).

Table 1. Blood donations in Pristina Transfusiology Clinic, 2008–2018

Type/year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
VBD (%)	57.1	53.1	58.3	62.0	63.8	65.6	75.5	72.3	77.5	76.7	82.5
FRD (%)	42.9	46.9	41.7	38.0	36.2	34.4	24.5	27.7	22.5	23.3	17.5
Total	21 12	19 28	21 00	23 13	24 98	25 58	24 67	25 88	26 41	27 32	27 52
	8	8	3	0	6	9	7	4	1	0	0

VBD = voluntary blood donors; FRD = family replacement donors.

Source: Adapted with permission from Dr Bakurije Raça.

There are seven regional blood stations: Ferizaji, Gjakova, Gjilani, Mitrovica, Peja, Prizren and Vushtri; and one centre in Pristina – the Blood Transfusion Centre of Kosovo¹¹. According to the representatives interviewed, there is significant variability between the structure and resources available to the blood stations and the ones provided to the centre – with blood products being mostly stored in Pristina until they are needed in regional hospitals elsewhere.

At the moment, blood collection is decentralized and samples of candidates for blood donation are sent to Pristina for testing for anti-HCV, HBsAg, HIV and syphilis (*Treponema pallidum* particle agglutination assay (TPHA)) at the Blood Transfusion Centre of Kosovo¹¹. The results are available to other facilities within 24 hours, with records in both physical and digital media available for secondary checks and backup. Additionally, the digital system allows the retrieval of past results and the identification of whether there was a change in the candidate's serological status.

Reports on the characteristics of donors are performed every 3, 6, 9 and 12 months. These reports comprise segregated figures for several indicators required for a successful blood transfusion and others related to blood safety, such as test results for HIV, HBV, HCV and syphilis (TPHA).

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During 2018, 589 blood samples were refused, 1 tested positive for HBsAg and only 4 tested positive for anti-HCV in the seven blood stations. Pristina did not present any cases of anti-HCV. Table 2 presents the consolidated figures.

Table 2. Prevalence of transfusion transmitted infection in blood donors in Pristina, 2008–2018

Test/year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
HBV (%)	2.680	3.080	1.690	1.660	1.340	1.300	1.220	0.890	0.870	0.760	0.560
Anti-HCV (%)	0.340	0.550	0.210	0.110	0.080	0.050	0.030	0.049	0.030	0.046	0
HIV (%)	0	0	0	0.007	0	0.006	0	0	0	0	0
TPHA (%)	0.020	0.080	0	0.030	0.020	0.030	0.020	0.020	0.050	0.017	0.020

Source: Adapted with permission from Dr Bakurije Raça.

There is no policy for financial reward for blood donation, although those who donate blood are entitled to a day off work. A donor pre-assessment questionnaire is provided to all candidates – being the same version since 2005.

Recommendations

Despite centralization, the testing and storage framework seems functional to the current needs. The immediate point of concern is to secure effective logistics and strategic stock in the hospitals for emergency transfusions.

- Assure a strategic stock of blood products in reference hospitals.

Infection prevention and control in haemodialysis settings

Infection prevention and control is a universally relevant component of all health systems and affects the health and safety of both those who use services and those who provide them. When effective, it proves itself a key strategy in dealing with infectious public health threats, particularly viral hepatitis – comprising activities such as safe injections, medical procedures and waste management.

There are four studies on viral hepatitis in haemodialysis patients in Kosovo¹², performed at different times over the last 14 years. The first study was conducted with 66 haemodialysis patients and 452 non-haemodialysis patients in Peja Regional Hospital during 2004–2007. It revealed 5 haemodialysis patients positive for HBsAg (8%) and 57 positive for anti-HCV (86%), the latter in contrast to a 1% rate in non-haemodialysis patients ($p < 0.0001$). (18)

The second study was performed in 2008 and covered 583 haemodialysis patients in six haemodialysis centres in Kosovo¹² – Gjakova, Gjilani, Mitrovica, Peja, Pristina and Prizren. The study revealed that 38.78% of patients tested positive for anti-HCV and 24.24% tested positive for HBsAg; and that duration of dialysis and number of transfusions were risk factors. (19)

¹² All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

The third study is a study for prevalence of hepatitis C, with enzyme-linked immunosorbent assay (ELISA) anti-HCV confirmed by HCV-RNA qualitative test followed by genotyping. It was conducted in January to March 2013, and comprised 668 patients in all seven haemodialysis centres. Positivity for anti-HCV among the centres ranged from 22.3% to 91.1% – totalling 354 patients tested positive (53%), whereas 69.2% to 97.4% of samples had confirmation for HCV-RNA – resulting in 323 patients with hepatitis C (48.35%). The most common genotypes found were 1a (171 samples) and 4d (91), with 1b (11) and 2c (2) in distant third and fourth places, respectively. (20)

The fourth and last study was developed as a phylogenetic investigation of the genotype 4d, uncommon for the area, and involved 437 individuals, among them haemodialysis patients, other patients and PWID. The genetic analysis showed several introductions of the subtype with transmission among dialysis units. (21)

For this particular mission, we focus our recommendations on how to adequately address IPC in haemodialysis settings.

Findings

During the mission, the team visited the largest facility dedicated to haemodialysis, the Nephrology and Haemodialysis Clinic at UCCK. The team also met with representatives of the clinic and collected information on the protocols in place. Dr Luljeta Gashi, Chief of Unit for HIV/AIDS/STIs at the IPH, provided additional figures.

The clinic has 36 working haemodialysis machines. There is a separate entrance for patients, quite accessible to those with physical impairment, and a dedicated room and machinery for patients who are tested positive for hepatitis B, hepatitis C or HIV. Patients are tested for hepatitis B, HIV and anti-HCV prior to the start of haemodialysis and then every six months. Tests are performed free of charge. Ideally, the tests are performed at the laboratory in the IPH, with results added to MedList and made available to the Chief of Unit for HIV/AIDS/STIs, who is in charge of surveillance and reporting to the public health authorities of Kosovo¹³. When kits and reagents are not available, the tests are forwarded to the diagnostic centre at the IPH.

Although protocols for IPC seem to have been adopted by the facility and staff, the team witnessed significant gaps in IPC, leading to unnecessary exposure of staff and patients to infections and other hazards. The mission team also identified several opportunities for improvement of IPC policies and measures already in place, particularly the immunization of staff for hepatitis B, currently available only through out-of-pocket payments.

Regarding the most recent data on viral hepatitis, a report collected from the digital database revealed that out of the 206 patients undergoing haemodialysis treatment in Pristina and tested for viral hepatitis in January 2019, 53 tested positive for anti-HCV (25.73%) and 12 for HBsAg (5.82%). Additionally, four new cases of seroconversion for anti-HCV took place in the last six months.

The collected data and our assessment indicate a high probability of continuous health-care associated transmission of viral hepatitis in haemodialysis settings in Kosovo¹³, despite dedicated machinery for patients with anti-HCV and efforts in IPC implementation. Specific questions arose

¹³ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

regarding the high prevalence of hepatitis among haemodialysis patients (e.g. which machine to assign patients to who are currently on antiviral treatment for hepatitis C).

Priority recommendations

- Address the problem of HCV in haemodialysis as a public health emergency.
 - Conduct a comprehensive assessment of the implementation of IPC core components in haemodialysis settings.
 - Establish clear testing pathways.
 - Consider prioritization of hepatitis C treatment with DAAs for haemodialysis patients in order to achieve elimination of HCV in the population group.
- Provide immunization for hepatitis B to health-care workers and patients, assigning utmost priority to those located in haemodialysis settings.

Other recommendations

- Support implementation of IPC guidelines. Education and training of the relevant health-care workers on the guidelines and monitoring of adherence with them should be undertaken to achieve successful implementation.
- Carry on regular education and training of the health workforce.
- Conduct surveillance of health-care associated infections (HAI). HAI surveillance should be performed to guide IPC interventions and detect outbreaks, including antimicrobial resistance (AMR) surveillance, with timely feedback of results to health-care workers.
- IPC activities should be implemented using multimodal strategies to improve practices and reduce HAI and AMR.
- Regular monitoring/audit and timely feedback on health-care practices should be undertaken according to IPC standards to prevent and control HAIs and AMR at the health-care facility level.
- In order to reduce the risk of HAI and the spread of AMR, health-care worker staffing levels should be adequately assigned according to patient workload.
- At the facility level, patient care activities should be undertaken in a clean environment that facilitates practices related to the prevention and control of HAI, as well as AMR, including all elements around water and sanitation infrastructure and services and the availability of appropriate IPC materials and equipment.

Harm reduction

Injection drugs accounts for a substantial proportion of the transmission of HCV infection worldwide and in the WHO European Region. The population groups of PWID and people who use drugs (PWUD) are well known for being at risk of blood borne infections and high prevalence of HIV and viral hepatitis.

Harm reduction strategies have been proven in public health to lessen the burden and prevent transmission of blood borne pathogens, without compelling people to abstain from drug use.

There are many different actions involved in harm reduction, such as needle and syringe programmes, opioid substitution therapy (OST) with buprenorphine or methadone, overdose prevention by provision of naloxone and safe consumption facilities (consumption rooms), peer support, community mobilization, rights protections, and policy reforms.

Historically, different organizations and United Nations agencies have engaged in the development of harm reduction in Kosovo¹⁴. This had a modest beginning, with condom distribution in 2001, (22) the advent of the NGO “Labyrinth” in 2002 (23) and the first harm reduction programme implemented in 2005. (24)

Despite such advances, OST was only introduced in 2012 (25) and it was not available to prisoners until the responsibility of health in prisons was transferred from corrections and law enforcement to a public health institution in 2012.

A 2018 study estimated that Kosovo¹⁴ had a population of 4973 PWID, with a 23.8–48.0% positivity for anti-HCV. (26) Two other studies have recorded instances of drug risk behaviour and noted poor information about the transmission of hepatitis and the provision of harm reduction services. (27, 28)

The mission team visited the only provider of harm reduction services – the NGO “Labyrinth” and met with its representatives in order to assess the services delivered, their structure and current coverage.

Findings

Despite harm reduction being acknowledged in the strategy and action plan against narcotics in Kosovo¹⁴, it is still inadequately financed. International donors fund the services delivered to clients but there is still no participation from public funds at the moment.

Labyrinth has four offices: in Gjilan, Peja, Pristina and Prizren. The organization assists approximately 835 people. No harm reduction services are available in the north of Kosovo¹⁴ despite concerns that Mitrovica is becoming a hotspot for drug trafficking and use. During the mission, the team visited the Labyrinth office in Pristina, strategically located close to shooting galleries, thus easily accessible by the population of interest. The NGO provides the following services (opening hours 10:00–17:00):

- distribution of condoms and auto-disable syringes on a need basis, unrestricted;
- OST, assisting 108 people per day with methadone, out of 220 clients in total (low coverage);
- outreach programme, performed by peers and social worker, with:
 - distribution of kits with condoms, auto-disable syringes, alcohol swabs, distilled water and needles for three days, and a storage pouch;
 - collection of used needles and syringes in special containers – later delivered to a health facility for destruction;
 - mapping of hotspots/shooting galleries;
- information, education and counselling;

¹⁴ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

- cooperation with law enforcement, with good sensitization through routine trainings and memorandum of cooperation;
- HIV and hepatitis rapid testing services at the offices with agile referral for confirmation, although safety lancets were unavailable at the time of mission;
- narcotics testing (urine), free testing for opioids for OST clients, other narcotics can be tested with out-of-pocket payments;
- comprehensive approach with a multidisciplinary group comprising peer, nurse, psychiatrist, psychologist and social worker;
- agile referral from the NGO to specialized medical care/infectious disease specialist.

During a roundtable of discussions about the services delivered and the structure in place, the mission team was informed of significant constraints in the provision of harm reduction, particularly for clients that live in areas too far from the offices and outside the scope of any health facility. Further, safety lancets were unavailable at the time of mission and needles for injection were used to collect capillary blood for rapid testing.

The mission team collected the following additional information:

- Labyrinth assists only 835 clients in all of its three offices.
- There is an alternative path to acquire methadone in the private sector at expensive prices, with or without a medical prescription (statement supported by other interviews).
- In the Labyrinth office in Pristina, 24 clients have been tested positive for anti-HCV and 2 clients tested positive for HBsAg so far.
- Patients who test positive for viral hepatitis or HIV are referred to HUSK, but very few have received treatment. Due to negative experiences with treatment with interferon and stigma related to drug use clients refuse to go to the university hospital.
- When clients are detained or imprisoned, law enforcement contacts Labyrinth to confirm the status of OST clients, so therapy can be maintained during incarceration.
- When clients are released from incarceration, it is up to them to contact the NGO to continue any OST initiated or maintained during incarceration.
- There is no hotline or printed material for awareness and prevention of viral hepatitis.
- Labyrinth has no consumption rooms in any of its three premises.
- Naloxone is only available at hospital emergency departments, and not in the harm reduction centres.
- There are concerns about the increasing consumption of cocaine, amphetamine and methamphetamine and easy access to benzodiazepines without prescription.
- Clients are offered a family doctor's consultation in the facility three times a week.
- Data collection heavily relies on physical media (medical charts, test results, methadone planning) and provision of estimates takes time.

Recommendations

Considering the estimated numbers of PWID in the past, it is quite likely that the services provided by Labyrinth are not sufficient in reach and quantity to assist the entire area of Kosovo¹⁵. Moreover, the limitation of being funded by an international donor and not by a public organization does no good for the accountability and ownership of the awareness, prevention, diagnosis and follow-up provided by the NGO.

The recommendations on harm reduction are as follows:

¹⁵ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

- Maintain/increase needle and syringe programme coverage.
- Increase OST coverage.
- Increase/target information, education and communication for hepatitis.
- Continue to raise awareness among clients.
- Continue the developments in staff training.
- Maintain a routine offer of hepatitis tests with rapid diagnostic tests (RDTs).
- Improve referral to hepatitis treatment (providing support and information to clients so that they do not fear treatment).
- Provide hepatitis B vaccination for PWUD, staff and clients.
- Ensure appropriate planning and availability of consumables.
- Consider harm reduction services for sentinel surveillance for hepatitis.
- Upgrade the information system from paper to digital media.

Diagnosis and linkage to care

Confirmation and retention in appropriate care is the second step in the continuum of care for viral hepatitis. It is essential that this process is completed with the patient fully aware of their status and the outcomes of the chronic infection, while trusting competent, sensitive and well-trained staff regardless of the entry point.

WHO has published and will regularly update guidelines for diagnosis of hepatitis B and C. It is most important that the recommendations in those documents are closely followed.

Findings

Serological testing in the public sector is only available centrally in Pristina (HUSK and the IPH). The process of confirmation of hepatitis C by HCV-RNA is also centralized at the IPH laboratory in Pristina. The tests are performed in a single Hamilton Roche Cobas x480 System, though the reagents required for tests have not been purchased in the last three years, limiting the usefulness of the device.

Access to the device, when it is operational, is variable. During the assessment, the team was able to identify at least eight different routes for the diagnosis of hepatitis B and C through the public system. Each one of these routes presented different patterns for coverage of expenses and depended mostly on the baseline diagnosis and entry point:

1. Blood donors at regional blood stations:

- The samples are sent for testing with ELISA for HBsAg and anti-HCV at the Blood Transfusion Centre of Kosovo¹⁶ with results delivered in 24 hours.
 - It has been reported that candidates for blood donation might travel to Pristina to have the tests performed there.
2. Blood donors at the central blood station (Pristina):
 - The samples are tested with ELISA for HBsAg and anti-HCV at the Blood Transfusion Centre of Kosovo¹⁶.
 3. Pregnant women in antenatal care:
 - All pregnant women should be provided with decentralized blood collection for hepatitis B testing at no cost, though this is not always the case in practice. Testing for hepatitis C is not routinely performed, but if performed, it does not involve out-of-pocket payments.
 4. Haemodialysis patients:
 - All patients are tested for HBsAg and anti-HCV prior to starting haemodialysis and then every six months and no out-of-pocket payments are involved. Patients who test positive are referred to the Infectious Disease Clinic in Pristina for medical evaluation and confirmation of hepatitis C at the IPH laboratory.
 5. Inpatient/outpatient/emergency departments:
 - These involve out-of-pocket payments most of the time. The price for HBsAg and anti-HCV testing in HUSK is 5 euro.
 6. People with disabilities with a social security voucher;
 7. Clients of NGOs:
 - RDTs are provided for free at first appointment and during follow-up. Confirmation is still required and patients are referred to the Infectious Disease Clinic in Pristina at their own cost.
 - In the case of Labyrinth, safety lancets were not available at the time of mission.
 8. Incarcerated people:
 - RDTs are offered for free when the person is incarcerated and later annually. Confirmation is still required and patients are referred to the Infectious Disease Clinic in Pristina at no cost.

Additionally, people directly or indirectly involved in the armed conflict may be granted free access to primary and secondary care services. (29)

Access to tests through the private sector is also possible, save for molecular biology/polymerase chain reaction (PCR). There is no information about the external quality assurance for these settings.

Nevertheless, once hepatitis C is confirmed, genotyping would be performed with the same equipment in the laboratory at the IPH.

At the moment, there are no guidelines on screening nor a diagnostic algorithm/pathway for viral hepatitis.

Priority recommendations

- Secure a constant supply of reagents, including those required for PCR, and other consumables, so that diagnosis and confirmation are not compromised.

Other recommendations

- Decentralize serological testing, where appropriate.

¹⁶ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

- Consider RDTs in different settings, where appropriate.
- Adapt WHO testing guidelines, including:
 - definition of target populations (in this particular case, prioritizing PWID and haemodialysis patients);
 - a straightforward and effective diagnostic algorithm, with clear instruction on how to test and which tests to be used;
 - strategies to ensure referral and linkage to care.

Treatment and care

Effective clinical management with treatment and cure is the desired outcome for all patients with hepatitis B and C and those involved in the care. At the moment, there are several antivirals that can provide a cure for hepatitis C (DAAs) or substantial control of hepatitis B, mitigating the damage to the liver (tenofovir and entecavir).

Since 2012, DAAs have replaced interferon and pegylated interferon/ribavirin in the treatment of hepatitis C. To date, DAA-only regimens, be it fixed-dose combination or not, are not only highly effective, but safe and appropriate to all HCV genotypes. However, access to these expensive medications can be limited on the grounds of affordability, in the absence of free-access campaigns.

During the mission, the team met with infectious diseases specialists of both the UCCK and Prizren General Hospital, and collected additional information about the procedures in place and recommendations followed for treatment and care of people living with hepatitis B and/or hepatitis C.

Findings

- Treatment for hepatitis C is centralized at HUSK in Pristina.
- DAAs are not the standard treatment provided by public funds or accessed privately. Treatment for hepatitis C in the area is still performed with pegylated interferon and ribavirin. From diagnosis to treatment, the patient is submitted to five HCV-RNA quantitative tests, aggravating the medical expenses during treatment and care.
- The recommendations for treatment of hepatitis C that are available in Albanian and are followed by staff are severely outdated, and the recommend treatment regimens include drugs that have already been replaced elsewhere by more successful options or discontinued due to adverse events and poor results (boceprevir and telaprevir). (30)
- There is no access to low-cost WHO-recommended treatment for hepatitis C (additional information regarding access is provided in “Access to medicines for hepatitis C treatment”).
- Entecavir is not available.
- DAAs and entecavir are not featured in the essential medicines list (Essential Drugs List).
- There is a significant gap in the information about demand for hepatitis C treatment, with little to no information about the current waiting list of patients for hepatitis C treatment, their clinical status and how treatments have been prioritized.

- A significant share of patients have acquired generic versions of DAAs, though the methods used for importation and details about the suppliers are not entirely known.
- Despite all treatments for hepatitis B and C being centralized in Pristina, there is no data system for medical information, mortality and treatment outcomes.
- Patients who reach HUSK for treatment often present with late-stage liver disease. If these patients present with hepatocellular carcinoma, they are followed-up by the oncology department of the hospital, and if liver transplantation is needed, patients have to travel abroad.

Priority recommendations

- Include DAAs in the Essential Drugs List.

Other recommendations

- Adapt WHO recommendations for treatment and care of viral hepatitis.
- Ensure access to low-cost DAAs and prioritize treatments for those most in need (e.g. haemodialysis patients).
- Consider alternate paths for procurement of medication, such as:
 - direct negotiation with manufacturers to have access to low-cost licensed generic versions of DAAs through expanded access programmes either by donation or lowest price;
 - collaboration with humanitarian and medical organizations with hepatitis C related projects worldwide;
 - verifying procurement through organizations not related to the United Nations;
 - joint procurement with other public health authorities active in other locations.
- Secure monitoring and evaluation, with measures such as:
 - consistent use of clinical indicators and other information through the continuum of care;
 - measuring the effectiveness of DAA-based treatment regimens, adverse events and outcomes of liver disease;
 - developing a database to assist in future decision-making for treatment and care of viral hepatitis.

Access to medicines for hepatitis C treatment

Access to DAAs has been considerably improved with alternate paths for procurement and expanded access campaigns. A brief consultation reveals that Kosovo¹⁷ would be entitled to lower prices offered by brand and licensed generic manufacturers solely based on its income category and power of purchase by the general population.

¹⁷ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

Yet, Kosovo¹⁸ may remain ineligible for procurement through the United Nations agencies due to UN Security Council Resolution, the only exception for this being the procurement of vaccines through the United Nations Children's Fund (UNICEF).

Findings

During the mission, the team met with the Chamber of Pharmacists of Kosovo¹⁸ and collected the following information:

- Intellectual property/patent rights for medications are not applied by public health and regulatory authorities.
- Both sofosbuvir and ledipasvir (SOF/LED) and sofosbuvir and velpatasvir (SOF/VEL) have applications for the Essential Drugs List.
- Only medications featured in the Essential Drugs List can be registered and procured by public health authorities.
- Application for registration at the Chamber of Pharmacists of Kosovo¹⁸ takes 30–200 days.
 - The lead time depends mainly on the availability of registration at the European Medicines Agency (EMA) or if the medication is already registered in a selected group of countries.
 - Applications for medications manufactured in low- and middle-income countries require 200 days.
 - Immunosuppressant medications and vaccines can only be purchased from EMA licensed manufacturers.
- Intermediaries and advocacy groups are welcome to support the initial contact between the Chamber of Pharmacists of Kosovo¹⁸ and manufacturers.
- Unregistered medications can be donated for humanitarian purposes or individually purchased as out-of-pocket payments for compassionate use – special documents for customs are mandatory.
- There is no regulatory document for clinical trials yet.
- The Chamber of Pharmacists of Kosovo¹⁸ does not regulate the commercial price of medications in the private sector.
- The Chamber of Pharmacists of Kosovo¹⁸ cannot request procurement through the United Nations, although other organizations and institutions have not been approached yet.

¹⁸ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

Conclusion and next steps

WHO, the Robert Koch Institute and the Global Fund through its principal recipient, the CDF, have observed a considerable commitment from stakeholders actively participating in the response to viral hepatitis in Kosovo¹⁹. The burden of the disease seems to be relatively low considering the wide range of public health challenges, and concentrated enough that efforts can be focused for the best results.

The mission team suggests the following next steps:

- In order to better understand the burden of viral hepatitis and plan future expenses accordingly, it is wise to develop reliable estimates through a competent surveillance system, using WHO-recommended case definitions. The sensitization of all health-care workers involved would be key to this process.
- It is imperative to replace the inconsistent laboratory network for confirmation of viral hepatitis, as well as optimize the use of resources by decentralizing testing and conducting it at the point of care whenever applicable.
- The haemodialysis situation must be considered a public health emergency and addressed as such – with immediate review of IPC protocols and identification of sources of infection.
- Diagnosis and treatment protocols can be adapted from existing WHO guidelines. These documents have been devised by public health specialists with elimination of viral hepatitis under the framework of universal health coverage as the primary objective.
- DAAs should be added to the Essential Drugs List and registration of affordable pan-genotypic regimens should be prioritized.
- Public health authorities must step up their responsibilities in harm reduction and scale up services so they match the estimated numbers of PWID.
- The coordination and implementation of the aforementioned activities could be vastly improved with the designation of a focal point at a central public health institution.

¹⁹ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

References

1. Qosaj FA, Froeschi G, Berisha M, Bellaqa B, Holle R. Catastrophic expenditures and impoverishment due to out-of-pocket health payments in Kosovo²⁰. *Cost Effectiveness and Resource Allocation*. 2018;16(26) (<https://resource-allocation.biomedcentral.com/articles/10.1186/s12962-018-0111-1>, accessed 5 August 2019).
2. Kosovo²⁰ Progress Report 2018. Strasbourg: European Commission; 2018 (<https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20180417-kosovo-report.pdf>, accessed 5 August 2019).
3. Annual Bulletin of Infectious Diseases. Pristina: Institute of Public Health; 2017.
4. Action Plan for the Health Sector Response to Viral Hepatitis in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2017 (<http://www.euro.who.int/en/health-topics/communicable-diseases/hepatitis/publications/2017/action-plan-for-the-health-sector-response-to-viral-hepatitis-in-the-who-european-region-2017>, accessed 5 August 2019).
5. Shuey DA, Qosaj FA, Schouten EJ, Zwi AB. Planning for health sector reform in post-conflict situations. *Health Policy*. 2003;63:299–310. doi: 10.1016/S0168-8510(02)00121-5.
6. Moore JE, Uka S, Vogel JP, Timmings C, Rashid S, Gülmezoglu AM, et al. Navigating barriers: two-year follow up on recommendations to improve the use of maternal health guidelines in Kosovo²⁰. *BMC public health*. 2016;16(987) (<https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3641-5>, accessed 5 August 2019).
7. Health statistics 2016. Series 5: social statistics. Pristina: Agency of Statistics; 2016.
8. Kosovo²⁰ in figures 2017. Pristina: Agency of Statistics; 2018.
9. Report on epidemiological situation of HIV/AIDS/STI in Kosovo²⁰. Pristina: Institute of Public Health; 2019 (in Albanian).

²⁰ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

10. Mustafa M, Berisha M, Lenjani B. Reforms and challenges of post-conflict Kosovo²¹ health system. *Materia socio medica*. 2014;26(2):125–8. doi: 10.5455/msm.2014.26.125-128.
11. International Health Regulations (2005). Third edition. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/bitstream/handle/10665/246107/9789241580496-eng.pdf;jsessionid=4C67324C25138ACF7F419BD56A45A3A8?sequence=1>, accessed 6 August 2019).
12. Technical considerations and case definitions to improve surveillance for viral hepatitis: technical report. Geneva: World Health Organization; 2016 (https://apps.who.int/iris/bitstream/handle/10665/204501/9789241549547_eng.pdf?sequence=1, accessed 6 August 2019).
13. Consolidated strategic information guidelines for viral hepatitis: planning and tracking progress towards elimination. Geneva: World Health Organization; 2019 (<https://www.who.int/hepatitis/publications/strategic-information-hepatitis/en/>, accessed 6 August 2019).
14. Second Millennium Development Goals report for Kosovo²¹. Pristina: United Nations Development Programme and Riinvest Institute; 2007 (<http://www.muon-dev.com/wp-content/uploads/2016/04/English.pdf>, accessed 6 August 2019).
15. Kosovo²¹ multiple indicator cluster survey 2013–2014. Key findings. Pristina: Kosovo²¹ Agency of Statistics; 2014.
16. Fejza H, Telaku S. Prevalence of HBV and HCV among blood donors in Kosovo²¹. *Virology Journal*. 2009;6(21). doi: 10.1186/1743-422X-6-21.
17. Zhubi B, Mekaj Y, Baruti Z, Bunjaku I, Belegu M. Transfusion-transmitted infection in haemophilia patients. *Bosnian Journal of Basic Medical Sciences*. 2009;9(4):271–7. doi: 10.17305/bjbms.2009.2777.
18. Quaglio GL, Pattaro C, Ramadani N, Bertinato L, Elezi Y, Dentico P, et al. Viral hepatitis, HIV, human herpes virus and *Treponema pallidum* infection in haemodialysis patients from Kosovo²¹, 2005. *Euro Surveill*. 2009;14(49):pii:19439 (<https://www.ncbi.nlm.nih.gov/pubmed/20003903>, accessed 6 August 2019).

²¹ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

19. Telaku S, Fejza H, Elezi Y, Bicaj T. Hepatitis B and C in dialysis units in Kosova²². *Virology Journal*. 2009;6(72). doi: 10.1186/1743-422X-6-72.
20. Jakupi X, Mlakar J, Lunar M, Seme K, Rudhani I, Raka L, et al. A very high prevalence of hepatitis C virus infection among patients undergoing hemodialysis in Kosovo²². *BMC Nephrology*. 2018;19(304). doi: 10.1186/s12882-018-1100-5.
21. Mlakar J, Jakupi X, Lunar MM, Seme K, Rudhai I, Vince A, et al. Genotypic diversity of HCV in Kosovo²² with an emphasis on phylogenetic investigation of subtype 4d. *Virus Evolution*. 2018;4. doi: 10.1093/ve/vey010.039.
22. Health Action in Kosovo²² No. 51. Copenhagen: WHO Regional Office for Europe; 2002 (<https://reliefweb.int/report/serbia/health-action-kosovo-no-51>, accessed 6 August 2019).
23. Labyrinth [website] (<http://labirinti-ks.org>, accessed 1 April 2019).
24. Kosovo²² (under UNSCR 1244/99): country overview 2010. Lisbon: European Monitoring Centre for Drugs and Drug Addiction; 2011 (http://www.emcdda.europa.eu/system/files/publications/667/TD311137564C_en_319696.pdf, accessed 6 August 2019).
25. Hatzakis A, Van Damme P, Alcorn K, Gore C, Berkane S, Buti M, et al. The state of hepatitis B and C in the Mediterranean and Balkan countries: report from a summit conference. *Journal of Viral Hepatitis*. 2013;20(2):1–20. doi: 10.1111/jvh.12120.
26. Jakupi X, Lunar MM, Mlakar J, Matković I, Tavakoli NP, Ivanovska BZ, et al. HCV infection among injecting drug users in Prishtina, *Hepatitis Monthly*. 2018;18(10):e80189 (<http://hepatmon.com/en/articles/80189.html>, accessed 6 August 2019).
27. Brisson A, Arenliu A, Platais I. Psychoactive substance use in Kosovo²²: rapid assessment and response with youth, injecting drug users and prisoners. Pristina: UNICEF, UNFPA, WHO Regional Office for Europe; 2009. doi: 10.13140/RG.2.1.3731.0166.
28. IBBS among PWID, MSM and SWs in Kosovo²², 2018. Institute of Public Health; 2019.
29. Goebbels K, Farnsworth N, Ajeti R. Access to healthcare in Kosovo²². Pristina: Kosovo²² Women's Network; 2016

²² All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

(https://www.researchgate.net/publication/322143964_Access_to_Healthcare_in_Kosovo²³, accessed 7 August 2019).

30. Mauss S, Ahmeti S, Berg T, Rockstroh J, Sarrazin C, Wedemeyer H. Udhërrëfytyesi i shkurtër i Hepatitit C. Pristina: The Flying Publisher; 2012.

²³ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

Annex 1. Mission agenda

Day 1 (Monday 25 March)	
09:00–09:30	Meeting with Dr Ardita Tahirukaj and Dr Gazmend Zhuri
09:30–10:30	Visit to Clinic for Infectious Diseases (HUSK)
11:00–13:00	Commemoration of World Tuberculosis Day
13:30–14:30	Meeting with Dr Xhevat Jakupi, Director of Department of Microbiology, Institute of Public Health (IPH)
14:30–15:30	Meeting with Dr Luljeta Gashi, Chief of Unit for HIV/AIDS/STIs

Day 2 (Tuesday 26 March)	
08:30–09:00	Visit to Nephrology and Haemodialysis Clinic
09:00–12:00	Meeting with Dr Pashk Buzhala, Chief of Division for the Special Services; Dr Arsim Qavdarbasha, Director of the Department for Health Services; and Dr Laura Shehu, HIV Programme Coordinator
12:00–13:00	Lunch
13:00–15:00	Meeting with Dr Naim Bardiqi, Secretary General; and Dr Albana Sahiti, Official for Monitoring and Implementation of Family Medicine
15:00–15:30	Meeting with Dr Milazim Gjocaj, Director of the Prison Health Department

Day 3 (Wednesday 27 March)	
09:00–12:00	Visit to Prizren General Hospital “Prim. Dr Daut Mustafa” and Prizren Regional Blood Transfusion Centre
12:00–13:00	Lunch
14:00–15:00	Meeting with Dr Edona Deva, HIV Programme Manager, Community Development Fund (CDF)
15:00–16:00	Visit to Labyrinth nongovernmental organization
16:00–17:00	Meeting with injection drug user focus groups in coordination with Labyrinth

Day 4 (Thursday 28 March)			
08:00–09:00	Visit to Pristina Transfusiology Clinic		
09:15–12:00	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; vertical-align: top;"> Roundtable on hepatitis C <ul style="list-style-type: none"> • Introduction about global health sector strategies on viral hepatitis and the European Action Plan • WHO recommendations on viral hepatitis testing and treatment </td> <td style="width: 40%; vertical-align: top;"> Dr Antons Mozalevskis, WHO Regional Office for Europe (15 min) Dr Marcelo Naveira, CDF (15 min) </td> </tr> </table>	Roundtable on hepatitis C <ul style="list-style-type: none"> • Introduction about global health sector strategies on viral hepatitis and the European Action Plan • WHO recommendations on viral hepatitis testing and treatment 	Dr Antons Mozalevskis, WHO Regional Office for Europe (15 min) Dr Marcelo Naveira, CDF (15 min)
Roundtable on hepatitis C <ul style="list-style-type: none"> • Introduction about global health sector strategies on viral hepatitis and the European Action Plan • WHO recommendations on viral hepatitis testing and treatment 	Dr Antons Mozalevskis, WHO Regional Office for Europe (15 min) Dr Marcelo Naveira, CDF (15 min)		

	<ul style="list-style-type: none"> • WHO recommendations on viral hepatitis surveillance and monitoring and evaluation, 10 core indicators • Short overview of hepatitis C virus (HCV) in the area <p>Questions and general discussion</p>	<p>Dr Ruth Zimmermann, Robert Koch Institute (15 min)</p> <p>Dr Xhevat Jakupi, IPH (15min)</p> <p>Discussion</p>
12:00–13:00	Lunch	
13:00–14:00	Meeting with Mr Arianit Jakupi, President of the Chamber of Pharmacists of Kosovo ²⁴	
14:00–15:00	Debriefing on initial HCV mission findings with public health authorities and other stakeholders	

²⁴ All references to Kosovo in this document should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

The WHO Regional Office for Europe

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