Increased HIV Case Detection through Integration of HIV Testing in Georgian Hepatitis C Elimination Program Screening Activities

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Summary

In 2015 Georgia launched unprecedented National Hepatitis C Elimination Program, aiming to dramatically decrease HCV prevalence in the country by 2020. Currently seroprevalence of HCV infection in Georgia is 7.7%, based on the results of the population based cross-sectional household serosurvey, "Identify Persons infected with HCV" is one of the strategic directions of the 5-year Strategic Plan for The Elimination of Hepatitis C Virus in Georgia, developed in 2016. To increase the proportion of persons who know their HCV infection status, the HCV screening component has been added to the Hepatitis C Elimination program since June, 2016. Georgia announced free of charge screening for any citizen of Georgia who wants to know status, irrespective of risk factor. In addition, tandem testing on HIV infection was offered to every person willing to be tested for HCV. The tests were granted by the Global Fund to fight AIDS, TB and Malaria. Starting from November, 2015, any citizen of Georgia can obtain free HCV and HIV testing at the National Center for Disease Control and Public Health including its regional branch. Both HIV and HCV testing are performed by rapid immune chromatographic tests. 67,484 voluntary HCV testing and 29,765 HIV testing were performed at NCDC and its regional network. Rate of positive HCV test result was 18%. Rate of positive HIV test result was 0.3% (84 out of 29,765). Out of 84 volunteers who tested positive, further diagnostic procedures confirmed HIV in 42 and all of them are enrolled in the HIV treatment program. Considering the low prevalence of HIV in Georgia, extra cases found by the combined screening approach was significant contribution for early detection of asymptomatic HIV cases. Nationwide HCV elimination program appears to be an effective mechanism that can be used to increase case detection of HIV in Georgia and Integration of HIV testing within HCV screening should be maintained and expanded.

Abbreviations: *HCV -Hepatitis C virus; HBV- Hepatitis B virus; HIV- human Immunodeficiency Virus, DAA- Direct Acting Antivirals, PWID- persons who inject drugs, RT-PCR- Real Time Polymerization Chain reaction, CDC-US Centers for Disease Control and Prevention, NCDC-National Center for Disease Control and Public Health .*

Key words: *screening, Elimination, HIV.*

Introduction

Globally, there are an estimated 170 million people living with hepatitis C virus (HCV) and more than 700,000 people die every year of HCV-associated hepatic diseases. With an HCV prevalence of 7.7% and an estimated 150,000 persons living with chronic HCV infection, HCV transmission and mortality is considered epidemic in certain populations of the world. For instance, a concentrated epidemic is occurring in high-risk populations (e.g., persons who inject drugs [PWID]) in most developed countries (e.g., the United States and those in Western Europe) and is becoming a major source of infection in developing countries and those with transitional economies, accounting for 40% or more of cases globally .

Some countries with high HIV prevalence rates are also experiencing an HCV epidemic involving persons who are co-infected with HIV. Rates of HIV/HCV co-infection are highest in areas where injection-drug use is a major route of HIV transmission. The extent to which other countries are experiencing similarly high rates of HCV infection is unknown, as there is a dearth of reliable epidemiologic data globally; for some countries, there are no data available at all.

Georgia has one of the highest burdens of HCV infection in the world. Because of the acute infection is often asymptomatic, most persons remain unaware of their infection status until decades later, when they experience life-threatening complications.

In response to this HCV epidemic, the Government of Georgia committed to eliminating HCV in their country by 2020, defined as 90% reduction in infection prevalence, a goal that is now achievable due to the recent availability of highly effective, direct acting antivirals (DAAs) capable of curing >90% of persons treated. In addition, the country proposed additional elimination goals: a) testing 90% of HCV-infected persons for their infection; b) treating 95% of people with chronic HCV infection; and c) curing 95% of persons treated of their HCV infection.

Currently seroprevalence of HCV infection in Georgia is 7.7%, based on the results of the population based cross-sectional household serosurvey, conducted in 2015 by the

NCDC of Georgia in collaboration with the CDC to determine the prevalence of HCV and hepatitis B virus (HBV) infection in the country. "Identify Persons infected with HCV" is one of the strategic directions of the 5-year Strategic Plan for The Elimination of Hepatitis C Virus in Georgia, developed in 2016.

Coordinated by different programs depending on the target population, HCV testing had been conducted in Georgia before the start of the HCV Elimination Program in April 2015.

- ◊ National Safe blood program: free of charge HCV screening for all blood donors since 1997;
- ◊ The State HIV program has supported HCV testing among people living with HIV since 1997;
- ◊ Global Fund program covered HCV screening for people who has been injecting drugs since 2011;
- ◊ HCV related program in penitentiary system has being implemented since 2014;
- ◊ All military people go through the routine medical checkup including HCV testing first time before contracting and then once in every 4 years;
- ◊ All young Recruits are undergoing Medical examination including HCV screening.

After starting HCV Elimination program HCV Screening for pregnant women has been integrated into Mother and Children Health State Program since December, 2015
In May 2015, the Tbilisi Municipality launched an HCV testing program for all persons wanting to know their status regardless of their risk.
Data on HCV screening from self-referrals among people who paid out of pocket at facilities, not supported by specific HCV-related programs are not available. Overall, HCV testing coverage needs to be significantly expanded to accelerate detection of HCV cases.

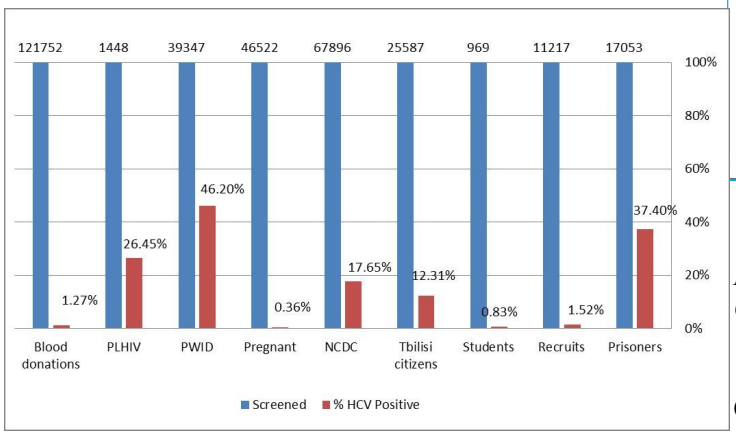

Figure 1. HCV screening statistic among different target groups (2015-Sep.2016)

To increase the proportion of persons who know their HCV infection status, the HCV screening component has been added to the Hepatitis C Elimination program since June, 2016. And at the same time Georgian Government released Decree on „ Improvement of technical regulations on high-risk medical activities" and according to this Decree from November 1st, 2016 hospitals are responsible to provide HCV screening of all hospitalized patients.

Georgia announced free of charge screening for any citizen of Georgia who wants to know status, irrespective of risk factor. In addition, tandem testing on HIV infection was offered to every person willing to be tested for HCV. The tests were granted by the Global Fund to fight AIDS, TB and Malaria.

The objective of this programmatic approach was to use the opportunity generated by HCV screening program to improve HIV case detection in general population by tandem testing strategies.

Methodology

Georgia has well-developed public health laboratory infrastructure, the nationwide Laboratory network of NCDC, that is spread throughout the country: National Reference Laboratory (Lugar Center) is located in Tbilisi, 2 Zonal Diagnostic Laboratories [ZDLs] are in Adjara (Batumi) and Imereti (Kutaisi) and Seven Laboratory Support Stations [LSSs] are located in different regions of Georgia: Kakheti, Shida Kartli, Samtskhe-Javakheti, Guria, Racha, Samegrelo – Zemo Svaneti regions and the port of Poti.

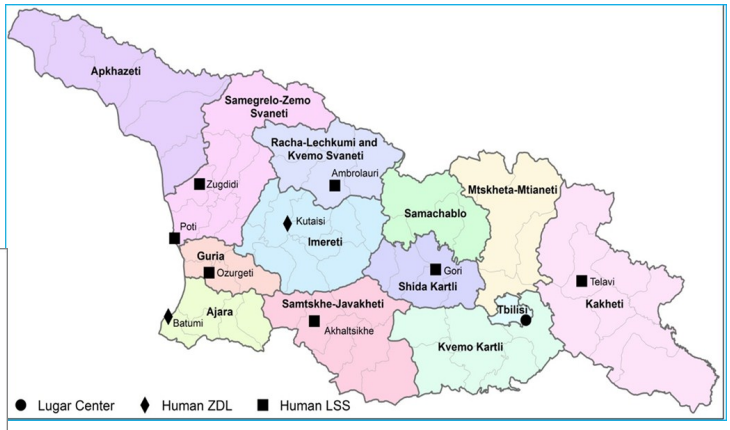

Figure 2. National public Health Laboratory Network of Georgia

Considering that NCDC laboratory network is very well equipped and staffed and has a significant outreach to every corner of the country, it is effectively used to conduct screening. Starting from November, 2015, any citizen of Georgia can obtain free HCV and HIV testing at the National Center for Disease Control and Public Health.

	HIV		
	Total	Positive	Positive (%)
Total	**29 765**	**84**	**0,3%**
Tbilisi	**5 473**	**12**	
Mobile laboratories	**2 974**	**11**	
Adjara	**2 837**	**6**	
Guria	**766**	**3**	
Imereti	**3 035**	**17**	
Kakheti	**1 520**	**1**	
Racha-Lechkhumi-kvemo Svaneti	**450**	**0**	
Samegrelo-Zemo Svaneti	**4 030**	**11**	
Samtskhe-Javakheti	**2 479**	**6**	
Sida Kartli	**2 839**	**10**	
Mtskheta-Mtianeti	**616**	**2**	
Kvemo Kartli	**2 746**	**4**	

Both HIV and HCV testing are performed by rapid immunochromatographic tests by different vendors (Biotech, Biotek, Intec). RT-PCR for HCV viral load was used for confirming active HCV disease and Immunoblot was used for HIV confirmation.

For the assessment of the results was used combination of quantitative and qualitative data.

Results:

Through November, 2016, 67,484 voluntary HCV testing and 29,765 HIV testing were performed at NCDC and its regional network.

Rate of positive HCV test result was 18%. All positive cases were referred to HCV treatment component of National Elimination Program

Figure 2. Hepatitis C Screening statistic conducted by NCDC (November, 2015 - November, 2016)

Rate of positive HIV test result was 0.3% (84 out of 29,765) which is well corresponds to the national estimates for HIV prevalence among the General population in the country – 0.26%.

Detection of HIV screening positive results in the regions within this program is aligned with the Geographic distribution of registered HIV cases in Georgia according to which the largest number of cases are detected in Tbilisi (35%) followed by Samegrelo-Zemo Svaneti region (13%), Imereti (13%) and Ajara (12%).

Out of 84 volunteers who tested positive, further diagnostic procedures confirmed HIV in 42 and all of them are enrolled in the HIV treatment program.

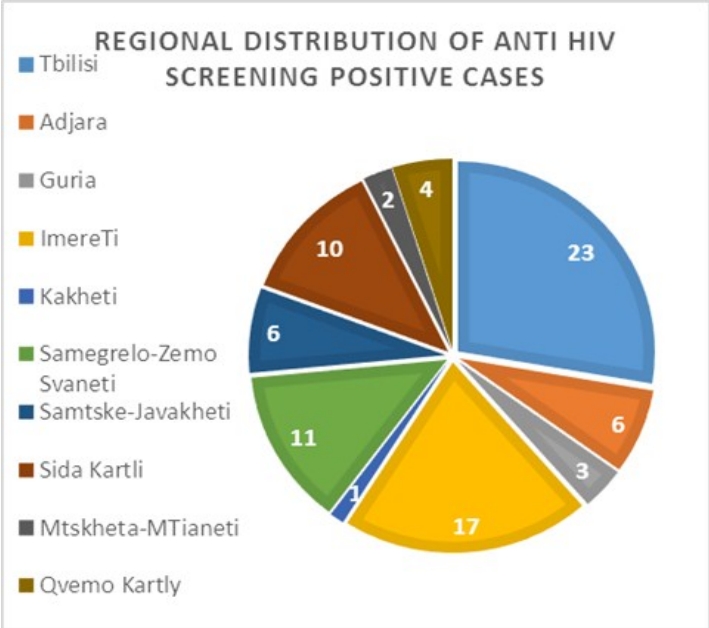

Figure 3. Regional distribution of anti HIV screening positive cases

Discussion:

Free of charge HIV testing was offered only for high-risk groups until 2015.

Preliminary results from combined testing indicates that HIV prevalence in general population remains low.

Considering the low prevalence of HIV in Georgia, extra cases found by the combined screening approach was significant contribution for early detection of asymptomatic HIV cases.

Nationwide HCV elimination program appears to be an effective mechanism that can be used to increase case detection of HIV in Georgia and Integration of HIV testing within HCV screening should be maintained and expanded.

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