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Meghan Griffin Date

A Tale of Two Countries: The HIV Epidemic in Georgia and Ukraine, two countries of the Former Soviet Union

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An abstract of A thesis submitted to the Faculty of the Rollins School of Public Health of Emory University in partial fulfillment of the requirements for the degree of Master of Public Health
in Global Health
2011

Abstract

A Tale of Two Countries: The HIV Epidemic in Georgia and Ukraine, two countries of the Former Soviet Union

By Meghan Griffin

Background: The collapse of the Soviet Union in the early 90's lead to numerous countries gaining independence and people gaining their freedom, however, it also lead to the collapse of many established services that had been provided by the Soviet government throughout the region including public health services. As the Soviet Union fell, port cities along the Black Sea became more accessible to opium distribution and drugs became more readily available, which led to an increase in injection drug use. As the rate of injection drug use began to grow, so did the rate of HIV infection as well as other blood-borne pathogens like hepatitis B and C. However, the epidemic took off in Ukraine that now has a generalized epidemic while it has not yet taken off in Georgia. Why these two countries have had such dramatically different epidemics remains largely unknown.

Objective: The purpose of this thesis is to describe the epidemiology of HIV in Ukraine and Georgia and hypothesize why the differences in the course of the HIV epidemic in these two countries. It will also put forth policy recommendations to Georgia to prevent the HIV infection rate from increasing as it did in the Ukraine.

Methods: Analysis of national surveillance data available from Georgia and Ukraine. Interviews were conducted with key opinion leaders in Georgia and Ukraine, and various international organizations to compile their points of view and opinions about HIV in these two countries.

Results: Both countries have had an HIV epidemic fueled primarily by injection drug use. However, Ukraine has seen a dramatic rise in HIV prevalence and now has a generalized epidemic with an HIV prevalence of 1.6% in 2007, while Georgia has experienced a much slower raise in cases and the epidemic remains largely concentrated among injection drug users with an HIV prevalence of around 0.1% in 2007 in the general population.

Discussion: Georgia and Ukraine share many similar characteristics in their countries and their HIV epidemics. In order to prevent the HIV/AIDS epidemic in Georgia from mirroring the epidemic in Ukraine policies must be changed. Aggressive policies need to be implemented to address drug use as a public health and not a criminal issue. Injection drug users need to be given access to rehabilitation services so that they can decrease their craving for drugs and needle exchange needs to be widely available. Antiquated health care systems in both Georgia and Ukraine have hindered their government's ability to properly find, treat, and prevent new cases of HIV and must be modernize in order to prevent HIV and other communicable and non-communicable diseases from affecting their citizens.

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"It was the best of times, it was the worst of times…" Charles Dickens

Introduction

The collapse of the Soviet Union, both positively and negatively affected the entire world throughout the 1990's. As the Soviet Union broke up and various countries transitioned into independent and self governing countries they also lost many of the functions of the government that they relied upon. Health care in the Soviet Union was run vertically. Each ailment was seen at a separate hospital with their own specialists. Patients with multiple ailments were often in a difficult position when they had to seek out and receive health care under the Soviet system. However, the fall of the Soviet Union did little to change the system of health care in many countries.

Although in various stages of healthcare reform, both, Ukraine and Georgia, still largely utilize the old Soviet inspired system of health care, which has lead to many limitations on their ability to confront emerging infectious diseases such as HIV/AIDS in their population. However, it is very difficult to obtain a clear picture of the HIV/AIDS epidemic in the Soviet Union before it fell. Outside reporting, to public health organizations such as the World Health Organization (WHO), was rare until the mid 90's, but the data suggests that Russia, Belarus, and Ukraine had the highest rates in Eastern Europe with 90% or all new cases reported after the fall (Tkeshelashvili-Kessler, Del Rio, Nelson, & Tsertsvadze, 2005). The extreme rise in cases has been attributed primarily to

the rise in access to and availability of illegal drugs for injection use in the former Soviet Union.

The collapse of the Soviet Union in the early 90's lead to numerous countries gaining independence and people gaining their freedom, however, it also lead to the collapse of many established services that had been provided by the Soviet government throughout the region. As the rate of injection drug use began to increase, so did the rate of HIV/AIDS (Booth, Lehman, Dvoryak, Brewster, & Sinitsyna, 2009). A lack of HIV/AIDS prevention services in the former Soviet Union also contributed to an increase in HIV prevalence. In addition, injection drug users were stigmatized and ostracized by society and, even today, the approach to injection drug use is mostly as a criminal issue rather than a health problem (Mimiaga, et al., 2010).

As the Soviet Union was collapsing, HIV/AIDS was finding its foothold in the region. Ukraine and Georgia are two countries that gained independence from the Soviet Union as HIV/AIDS was emerging yet they have seen two very different outcomes. Ukraine has seen one of the most dramatic rises in the prevalence of HIV in the region to the point that today it is a country with a generalized epidemic with an HIV prevalence of 1.6% in 2007 (see: http://hivinsite.ucsf.edu/global?page=cr03-up-00), while Georgia has experienced a much slower raise in cases and the epidemic remains largely concentrated among injection drug users with an HIV prevalence of around 0.1% in 2007 (see: http://hivinsite.ucsf.edu/global?page=cr03-gg-00). Why these two countries have had such dramatically different epidemics remains largely unknown.

Gender disparities also grew and changed when the Soviet Union collapsed. The Soviet Union encouraged equality of women by forcing them into workplace scenarios, but did little to change the attitudes of men, whose jobs they were taking. A culture of machismo in men and the relative passivity of women have long been in effect in the former Soviet Union. This disparity has made it extremely difficult for women to negotiate safer sex with man (Burruano & Kruglov, 2009).

Figure 1. Characteristics of Georgia and Ukraine

	Georgia	**Ukraine**
Area	69,700 sq km	603,550 sq km
Population	4,600,825 (July 2010 est.)	45,415,596 (July 2010 est.)
GDP	$4,800 (2010 est.)	$6,700 (2010 est.)
Living with HIV/AIDS	2,700 (2007 est.)	440,000 (2007 est.)
Prevalence	0.1% (2007 est.)	1.6% (2007 est.)
Pregnant Women Tested	>95% (2007 est.)	>95% (2007 est.)
Life Expectancy at Birth	55 (2008 est.)	68 (2008 est.)

Source: http://hivinsite.ucsf.edu/

Georgia was the first country of the former Soviet Union to establish HIV surveillance in 1984 and diagnosed its first case in 1989 (Tkeshelashvili-Kessler, et al., 2005). Since then, a total of 2,236 cases have been reported for an HIV prevalence of 0.1%. The majority of the cases reported are from Tbilisi, the capital city (875 cases) followed by cities along the Black Sea coast (~ 409 cases). Most cases are among persons between the ages of 25-40 years old. The largest risk group for HIV infection in Georgia include injection drug users (58.6% of cases), followed by those who acquired HIV infections through heterosexual contact (34.9% of cases), homosexual contact (2.6% of cases), mother to child transmission (2.3% of cases), and blood transfusion

transmission (0.6% of cases). While the majority of the cases reported have been amongst men, HIV rates have been found to be steadily growing amongst women in heterosexual relationships with injection drug users.

Ukraine diagnosed its first case in 1987, two years before Georgia, and maintained a low prevalence throughout the mid 90's (DeBell & Carter, 2005). However, HIV prevalence is now 1.63% with approximately 400,000 total cases (Kruglov, et al., 2008). Much like Georgia, the majority of cases are seen around the larger cities of Kiev and Odessa (Taran, Johnston, Pohorila, & Saliuk, 2010). Injection drug use has also been the major driver of the epidemic in Ukraine with 57% of cases occurring among injection drug users (Mimiaga, et al., 2010).

The purpose of this thesis will be to describe the epidemiology of HIV in Ukraine and Georgia and attempt to explain the dramatic differences in the course of the HIV epidemic in these two countries. It will also put forth public health actions and policy recommendations to Georgia to prevent the HIV prevalence from skyrocketing and prevent the epidemic from becoming generalized, as it did Ukraine. This thesis will look into social and economic circumstances of these two countries during the years after the fall of the Soviet Union and how these might have contributed to the spread of HIV. By analyzing surveillance data provided by the Infectious Disease, AIDS, and Clinical Immunology Research Center, located in Tbilisi, Georgia it will also be possible to see the pattern of opportunistic infections that are common in Georgia. This data will be compared with surveillance data on opportunistic infections in Ukraine. Interviews will

also be conducted with key opinion leaders in Georgia, Ukraine, and various international organizations to compile their points of view and opinions about HIV in these two countries.

Methods

A systematic review of current literature was conducted using the online databases Pub Med and CINAHL. The key search terms used were HIV, Georgia, Ukraine, and Former Soviet Union. Articles were read and evaluated for pertinent information.

Key informant interviews were used to validate the information found. Experts in HIV research in Georgia and Ukraine were contacted and asked for their expert opinion regarding the characteristics of the HIV epidemic in their respective country and how those characteristics differ from the rest of the former Soviet Union. They were also asked why there were differences and what they thought could explain these differences. Key informants were also helpful in supplying information regarding the latest research they have conducted and have used in their research.

Figure 2. Key Informants and their Roles

Country	Key Informant	Role
Georgia	Tengiz Tsertsvadze, MD, PhD	National AIDS Coordinator, Infectious Disease, AIDS, Clinical Immunology Research Center
Georgia	Nikoloz Chkhartishvili, MD, MS	Epidemiologist, Infectious Disease, AIDS, Clinical Immunology Research Center
Ukraine	Frederick L. Altice, MD	Professor of Medicine (AIDS), Yale School of Medicine
Ukraine	Tetiana Kiriazova, PhD,	Associate professor of the Odessa Regional Institute of Teachers Retraining, Deputy Chairman of the Regional HIV-servicing NGOs Coalition "Together for Life

Data were collected at the AIDS, Infectious Diseases, and Clinical Immunology Research Center as a part of Georgia's national HIV surveillance. Patients were registered into the national surveillance system as they came to the center for either testing or treatment in Tbilisi. Patients referred from testing and treatment centers outside of the capital city were also recorded. Demographic data, including date of birth, age at registration, gender, and home region were collected. Mode of transmission, CD4 count, viral load, and history of antiretroviral therapy were also collected. When available, laboratory results as well as information pertaining to opportunistic infections were also recorded. The data were analyzed using SAS 9.2. Surveillance data could not be collected from the national surveillance system of Ukraine; therefore analysis has been determined from the literature review and key informant interviews only.

Results

Demographics of Georgia and Ukraine

Source: CIA World Factbook

Georgia is located in the Caucuses region, between Russia, Turkey, Armenia, and Azerbaijan. Its Western border is a 300 Km long coastline with the Black Sea. The Black Sea has an area of 436,400 km^2. Georgia has a population of 4.6 Million with about 220,000-240,000 internally displaced people. The Black Sea forms in an east-west trending elliptical depression which lies between Bulgaria, Georgia, Romania, Russia, Turkey, and Ukraine and thus Georgia and Ukraine are both connected by the Black Sea. Georgia was part of the Soviet Union until the early ninety's when it declared its independence, but subsequently suffered through years of civil war ending in the mid 90s. This was then followed by a period of relative political stability, until 2008 when a war with Russia broke out in two Georgian regions.

Georgia recognizes two semi-autonomous regions, within its territory, and one separatist region. Abkhazia is located in the western region and has control of a large portion of Georgia's black sea coast. During the Soviet Union, this area was a huge economic advantage for Georgia, due to the fact that they contained some of the finest beaches and vacation spots, which many of the Soviet elites enjoyed during their leisure time. There was an uneasy truce with the breakaway government in this region for many years after the civil war, but when the war with Russia began they chose to accept the Russian forces into their territory and now are under Russian occupation according to the Georgian government. South Ossetia is the other region located in north central Georgia, which has also become a Russian occupied territory and political tensions remain high in this region. Although Georgia's government considers the people of Ossetia to be Georgian citizens they have also obtained Russian passports. The third semi autonomous region is Adjara, which is located on the southern edge of the coast with the Black Sea. They have a much closer tie with the Georgian government and consider themselves to be Georgian citizens. Political instability in the region is nothing new though. Some of Georgia's neighbors to the north in Russia include Dagestan and Chechnya so this area has known war or conflict for a very long time.

Georgia's GDP is $4800 US per capita, which is largely tied to international investment, which has seen rises and falls following the war with Russia in 2008 and the subsequent global economic downturn. The unemployment rate is 16.4% and 31% of the population live below the poverty line.

Source: CIA World Factbook

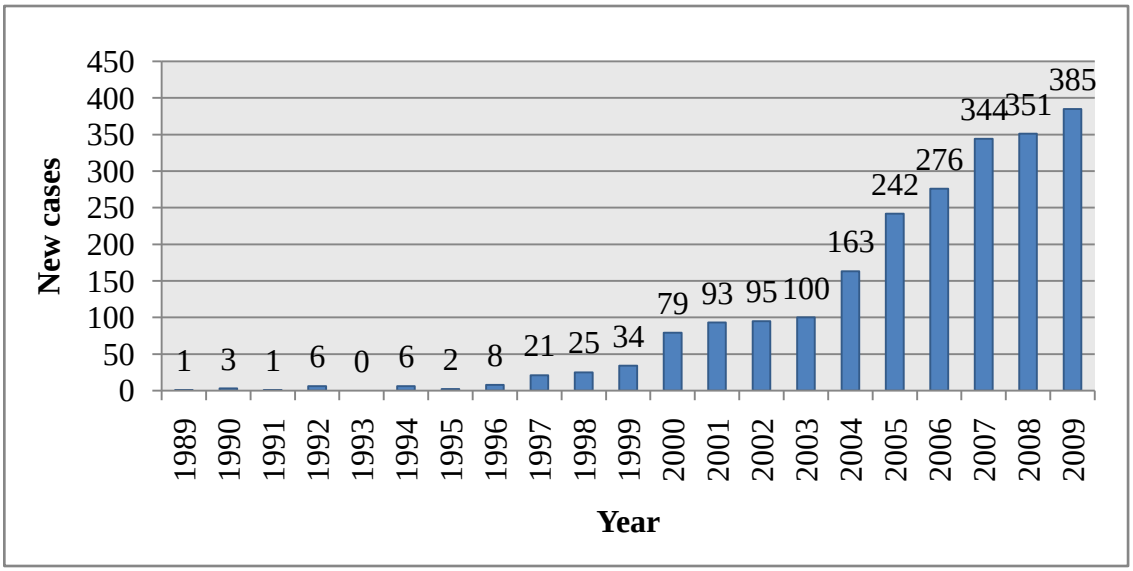
Ukraine is located south of the Russian Federation, just north of the Black Sea, with a population of 46.2 million. Ukraine also shares borders with Belarus, Poland, Slovakia, Hungary, Romania, and Moldova. Ukraine gained its independence from the Soviet Union in the earlier 90's and much like the other countries of the Former Soviet Union striving for independence, fell into a period of unrest and experienced a difficult transition. The collapse of the Soviet Union, loss of universal job security, and pensions lead to an increase of illicit drug use, especially small scale home made injection drugs (Hurley, 2010).

HIV in Georgia

Internal HIV/AIDS surveillance began in 1984, and the first case was officially reported in 1989 (Tkeshelashvili-Kessler, et al., 2005). External reporting to the WHO

began in 1995 after the civil war period ended. In 1997 true surveillance began taking place and all patients were registered in the National surveillance database at what is now the Infectious Disease, AIDS, and Clinical Immunology Research Center (IDACIRC) located in the capital, Tbilisi. Rates then began to rise as the influx of internally displaced people flooded Tbilisi and injection drug use (IDU) became more prevalent. As seen in table 1 the number of cases registered in Tbilisi were just a handful after the fall of the Soviet Union and the subsequent civil war. The number of cases began to steadily rise in the late 90's and have continued their climb ever since.

Figure 2. Number of new cases of HIV reported in Georgia by year



Source: IDACIRC

In response to the HIV epidemic, Georgia created the Infectious Disease, AIDS, and Clinical Immunology Research Center (IDACIRC) in 1989. This organization is comprised of a collection of infectious disease hospitals that have carried on with the Soviet style of health care. Each hospital focuses on a different part of the body and

illness. If a patient has multiple diagnosis and conditions then they must go to separate hospitals to receive their care.

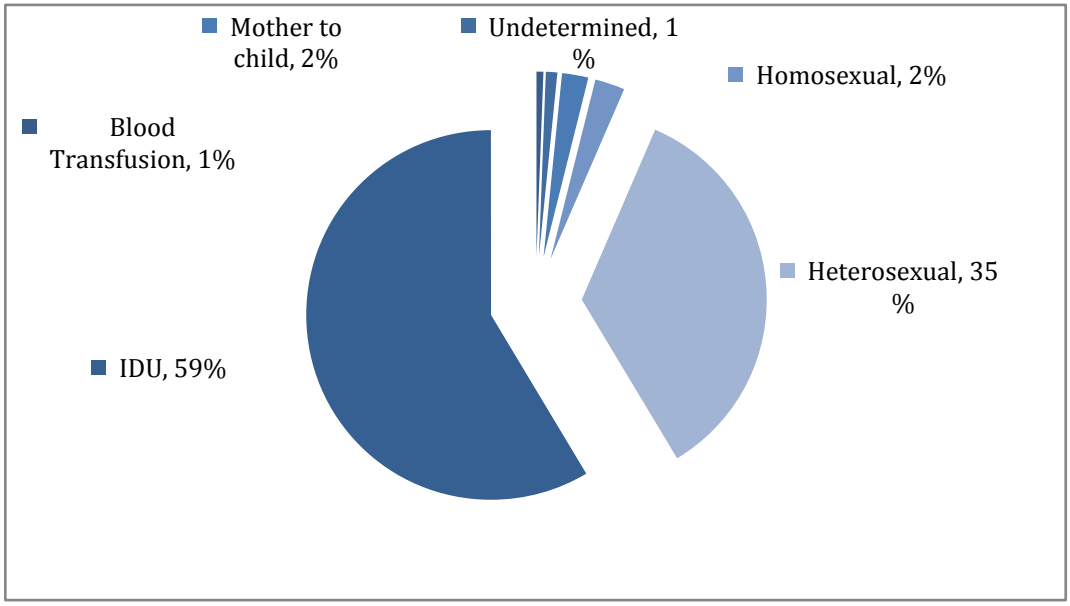
For example if you have HIV you go to one hospital, Tuberculosis (TB) dealt with in another location, gastrointestinal issues are seen at another and so on. This vertical system of silo care creates a strong disconnect between the highest risk groups and the treatment opportunities to address their multiple health problems and possible co-infections. In recent years, the health care system has been making strides to overcome this by combining all of the infectious disease hospitals on to one campus, except for TB that is cared for at the National Center for TB and Lung Diseases, which is located on the other side of the city from the Infectious Diseases hospital complex. In addition, many of the facilities are being renovated and modernized. However, there is still little cooperation between caregivers throughout the country. Health care outside of Tbilisi is covered by regional health care centers, which are overseen by hospitals in the capital. Each of the regional level health centers is capable of testing and providing treatment for HIV. The city of Sokhumi, located in Abkhazia, a Russian occupied territory, providers its citizens with health care within its borders, but supplies are limited. Russia is also said to provide free treatment for Russian passport holders, but it is unknown if anyone uses this option.

Patients are tested for HIV by the ELISA method and confirmed with a Western Blot Assay (Chokoshvili, Abutidze, Tsintsadze, Gatserelia, & Badridze, 2008). When a patient is tested for HIV and found positive they are registered in the national

database at the IDACIRC, and given a full comprehensive medical overview, which includes a complete examination and tests for viral hepatitis, syphilis and other HIV related diseases. They are also routinely checked every four months and a CD4 cell count and an HIV-1 viral load are obtained. Georgia is the only country in the former Soviet Union to conduct such a comprehensive examination of their patients.

Since 2005, with the support of the Global Fund, antiretroviral therapy is available free of charge to all registered Georgian citizens. All first line drugs are available for use with national guideline recommending two nucleoside/nucleotide reverse transcriptase inhibitors and one non-nucleoside reverse transcriptase inhibitor. Second line drugs include a protease inhibitor boosted with Ritonavir and two nucleoside/nucleotide reverse transcriptase inhibitors. Salvage regimens are available; the drugs currently available for salvage therapy include the fusion inhibitor, enfurvitide and the protease inhibitors Tipranavir or Darunavir but these drugs are highly regulated by IDACIRC, as they are quite expensive. A study conducted in 2008 found that 73% of treatment failure cases were due to drug resistance. This study was also able to show that while transmission of drug resistant strains was low the increasing access to antiretroviral drugs can increase the rate of drug resistance if the medication is not taken properly (Tsertsvadze, et al., 2008).

Figure 3. Routes of Transmission of HIV in Georgia, 2009



Source: IDACIRC

The majority of cases of HIV in Georgia are seen amongst injection drug users (59%), followed by heterosexual transmission (35%), these are mostly women who are the sexual partners of injection drug users. Although blood transfusion accounts for about 1% of cases, blood is now universally tested for HIV. Similarly, pregnant women are now routinely tested for HIV but only if they seek medical care or deliver at a state run maternity hospital or clinic.

Injection drug users are the group most at risk for HIV in Georgia. Opium and heroin are readily available in the larger cities, as is poppy straw, which is made from dried poppy flowers. The most worrisome development of drug abuse in Georgia has been the growing popularity for the use of Subutex; this is a methadone type drug, manufactured in the United Kingdom, which is used in the treatment of drug addiction.

Drug users prefer the use of Subutex because it is considered “safer and cleaner” than other illicit drugs even though it does not give as strong a high.

Among injection drug users needle sharing is common with over 70% of drug users reported sharing needles in multiple studies (Kuniholm, et al., 2008; Shapatava, et al., 2006), yet few places exist where needles can be exchanged or purchased. There is a strong distrust amongst the users against needle exchange programs because drug users fear they will be arrested for utilizing them. Drug dealers often load syringes and then shoot up multiple clients with the same syringe. There are also reports of “front-loading” from the dealers, which is when the dealer dilutes the drug in the syringe with their own blood during the mixing process. However, despite this, the prevalence of HIV infection among injection drug users in Georgia is relatively low with studies reporting seroprevalences between 1 – 2 % (Tkeshelashvili-Kessler, et al., 2005, Shapatava, et al, 2006).

As would be expected amongst IDU’s who share needles, the rates of Hepatitis C (HCV) are extremely high with 58% of IDU being co-infected with Hepatitis C. Hepatitis C rates were first reported in 1998 in a survey with commercial blood donors where 343 of 4970 (69%) donors tested were found to be positive for HCV antibodies. Subsequent surveys of drug users found that 58.2% of 926 tested positive for HCV antibodies. A 2008 survey of injection drug users, found that ~ 2/3 of the population are HCV seropositive (Stvilia, et al., 2006).

However, large disparities were found in the HCV seroprevalence amongst IDU depending on the type of drugs they used, the injection methods used, and the accessibility or availability of clean equipment. The low rate of HIV infection and high rate of HCV infections suggest that HCV is much more transmissible than HIV through needle sharing and are consistent with other studies done in Georgia (Stvilia, et al., 2006). The results are also very similar to those from other countries in the former Soviet Union as they began battling their own HIV epidemics (Stvilia, et al., 2006). Reducing risky behavior amongst IDU must remain a high priority in the prevention strategies to fight against HIV/AIDS in Georgia (Kuniholm, et al., 2008).

A recent study has shown that there are misconceptions amongst young people in Georgia as to the extent of the epidemic. A 2007 survey of high school aged children found that those who lived in rural settings believed only homosexuals could contract HIV and that condom use was shameful. Rural students were more likely to use condoms, while engaging in sexual activity, but they were also more likely to have admitted to using drugs (Goodwin, Kozlova, Nizharadze, & Polyakova, 2004). This shows that there is a strong disconnect between the health education children are receiving in schools and the truth about the HIV epidemic in Georgia. This study also showed that men believed that women were wrong to refuse the sexual advances of their partners, which could have an impact on the rising rates of heterosexual transmission amongst the overwhelmingly majority male IDU and their female sexual partners (Goodwin, et al., 2004).

The sampling of data provided from the AIDS, Infectious Diseases, and Clinical Immunology Research Center shows a cross section of the current HIV cases in Georgia. The 533 patients selected for this sample show similar trends of the disease when compared to the rest of the HIV population in Georgia. The majority of the patients (76.5%) are male between the ages of 29 and 40. The majority of cases are being seen in the capital city of Tbilisi, followed by the regions along the Black Sea. The overwhelming majority of patients are presenting with a pulmonary opportunistic infections followed by genital and oral herpes outbreaks as seen in table 1.

Table 1. Demographics sampling of the HIV epidemic in Georgia, 2010

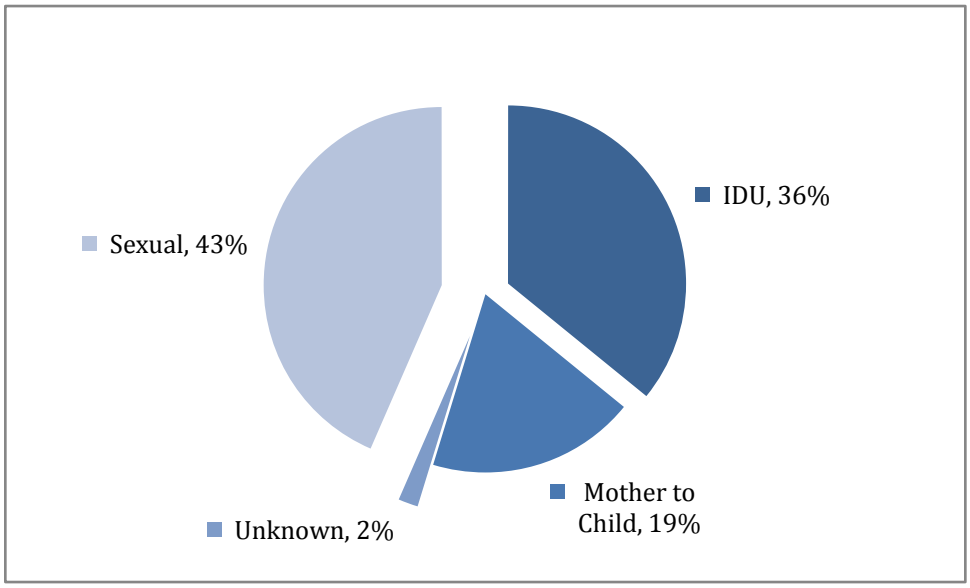
		N	Percent
Gender	Female	125	23.5%
	Male	408	76.6%
Region	Shida Kartli	18	3.4%
	Tbilisi (Capital City)	198	37.2%
	Adjara	56	10.5%
	Abkhazia	26	4.9%
	Poti	9	1.7%
	Guria	15	2.8%
	Imereti	72	13.5%
	Kakheti	32	6.0%
	Mtskheta Mtianeti	4	0.75%
	Kvemo Kartli	27	5.1%
	Racha Lechkhum	4	0.75%
	Samtskhe Javakheti	4	0.75%
	Samegrelo	65	12.2%
	Svaneti	1	0.2%
	Foreigners	2	0.4%
Opportunistic Infections	Pulmonary	168	43.3%
	Genital	9	2.3%
	Pulmonary (disseminated)	7	1.8%
	Pulmonary (MDR)	5	1.3%
	Oral	5	1.3%
History of Incarceration	Yes	56	10.5%
	No	447	89.5%

Source: IDACIRC

HIV in Ukraine

Mass screenings for HIV in Ukraine began during the Soviet Union period in the late 1980's; however, no more than 80 cases per year were recorded until the spring of 1995 when over 1000 IDU's tested positive in two of the Ukraine's largest cities (Cohen, 2010). Throughout the mid 90's warnings from UNAIDS were ignored and the HIV epidemic continued to explode in the Ukraine (Cohen, 2010). However, these numbers are considered to be highly theoretical due to the nature of counting cases in the former Soviet Union. The Ukraine only counts cases that have been officially registered as an IDU or prisoners. Men who have sex with men (MSM) are often ignored and overlooked (Cohen, 2010).

Figure 4. Modes of Transmission of HIV in Ukraine, 2009



Source: MOH Ukraine

Continued stigmatization and a lack of treatment options for IDU's from the Soviet Union times to the declaration of independence of Ukraine has lead to a significant rise in HIV rates in drug users alone. Studies of seroprevalence of HIV among IDU's suggest that current HIV prevalence among them is over 40% (Kruglov, et al., 2008). Ukraine subscribes to the "narcology" ideology, which believes that drug use must be combated through abstinence only. Criminalization of drug use is more common than providing treatment for it. The use of opiate substitution therapy (OST) has only begun to be used as a part of a comprehensive treatment package within the last few years (Bridge, Lazarus, & Atun, 2010). Methadone treatment continues to be illegal in the Russian Federation (Hurley, 2010), while the use of buprenorphine is becoming more prevalent due to the fewer interactions with antiretroviral drugs (Vlahov, Robertson, & Strathdee, 2010). However, doctors and other medical professionals are still being arrested by an overzealous police force and prosecuted as drug dealers for offering drug substitution therapy to legally registered drug users seeking help at rehabilitation clinics (Hurley, 2010).

Many of the Ukraine's hospitals are still following the Soviet system of health care, which separates all aspects of care into their own facilities. A few health care facilities have been trying to integrate systems which bring drug treatment centers into HIV clinics and provide better access to TB clinics, but they have been met with many obstacles and it is estimated that only about 5000 of the Ukraine's IDU are enrolled in therapy programs and receiving treatment (Cohen, 2010). There are currently 27 local

centers for AIDS prevention organized by the Ukrainian Center for AIDS Prevention located in Kiev (Burruano & Kruglov, 2009).

Treatment and hospitalization of patients with HIV are completed in clinics that are part of the municipal hospital systems. The Kiev AIDS Centre, located in the suburbs about10 km from the city, provides inpatient treatment for 25 patients and substitution therapy treatment for 354 clients (Hurley, 2010). Health care is state funded in Ukraine, although patients are expected to cover the costs of all tests and treatments except for HIV testing which is free. Bribes are expected due to the low salaries collected by state employed health care officials (Hurley, 2010). Clients who utilize the drug rehabilitation services at the clinic can also exchange needles and receive other services.

Due to the fact that the majority of funding is being funneled through non-governmental organizations (NGO) they are the main source of HIV prevention in Ukraine. HIV NGOs in Ukraine are often set up through peers of the most significantly affected so they are able to reach and gain the trust of the highest risk groups easier than governmental organizations which often only use police to reach out the affected communities (Hurley, 2010).

The Global Fund also supplies Ukraine with funding to fight the epidemic, however a 2004 grant that was awarded to the government, totaling $98 million over five years was put on hold due to a lack of transparency and other irregularities and was given instead to civil organizations (Hurley, 2010). Some of the problems appear to be

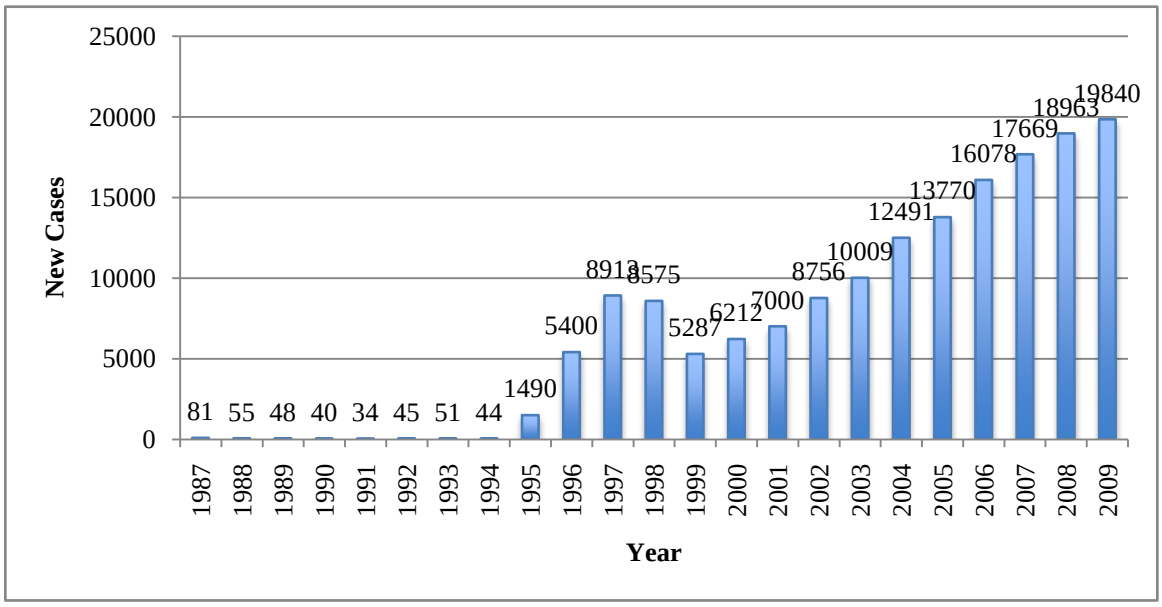
difficulty getting drugs that were made available from reaching the patients that needed them. One issue that has been raised is that it is difficult to get the patients to clinics where the drugs are available in order for them to take them (Cohen, 2010). UNAIDS predicts that by 2008 only 22% of those requiring antiretroviral therapy (ARV) in Central Asia and Eastern Europe were actually on it.

A lack of education and awareness amongst the most affected has lead to a deep mistrust of the organizations and clinics that are capable of delivering treatments for HIV and drug abuse victims. Close work with female sex workers in Ukrainian cities have found that few utilize services provided free of charge because they believe the treatments are dangerous or they do not acknowledge that they are ill enough to qualify for treatment. They are also leery of physicians who believe that they will fail in drug treatment due to past discretions. A delay in treatment has lead to an increase in the number of AIDS cases being identified at testing sites (Cohen, 2010).

Testing is open to all within Ukraine, however focus has been on drug addicts, sex workers, blood donors, prisoners, and foreigners. Pregnant women have long been the focus of testing, which has lead to reduction in the transmission of HIV from mother to child in the Ukraine. Patients who receive testing from regional AIDS prevention centers are provided with a referral to health care facilities to complete official registration only after they are seen by a physician. It is believed that only half of the patients originally tested at regional centers actually follow up for official registration with the State. In 2005, >162,000 tests had been found to be positive, while only

~89,000 were officially registered in national surveillance database (Burruano & Kruglov, 2009).

Figure 5. Newly Registered Cases in Ukraine 1987-2009



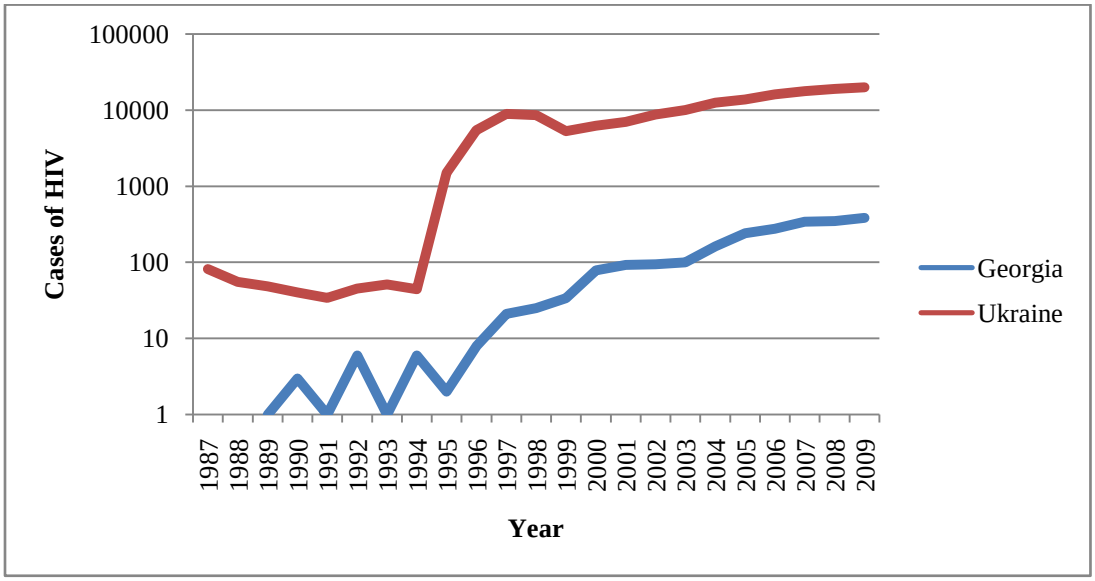
Source: MOH Ukraine

The lack of awareness of the public's knowledge of the HIV pandemic is confounded by the fact that the Ukrainian Ministry of Education places a low priority on the situation and relies heavily on foreign organizations to spread the word. However, with little government support foreign organizations can often only function as long as they have international donors to continually support them (Burruano & Kruglov, 2009).

When looking at the epidemics side by side, as seen in table 6, it is possible to see the difference between the two epidemics. The first cases in each country were both discovered in the late 80's, and began to decline slightly in Ukraine before making a large

increase in the mid 90's, while Georgia saw a fluctuating epidemic through the mid 90's and saw a steady increase in cases after that. The similarities and differences in these epidemics cannot easily be explained, but they can be used to prevent the epidemic in Georgia from reaching a critical stage as they have in Ukraine.

Figure 6. Total number of HIV cases in Georgia and Ukraine



Discussion

Georgia and Ukraine share many similarities as countries of the former Soviet Union and in the characteristics of their HIV epidemics. Additionally, although they do not technically share a border, they have geographic proximity as both border the Black Sea. After the fall of the Soviet Union Georgia and Ukraine took different routes toward independence. Civil war in Georgia ended in 1993 that resulted in a massive recession and an increase in poverty, much like Ukraine after the fall of the Soviet Union. After

Georgia's civil war came to a close, democracy has taken hold and currently a young and strong government has put Georgia on track towards economic development. Ukraine however, was much slower at obtaining their growth towards development.

Georgia and Ukraine's ports on the Black Sea have been major entry sites for illicit drugs entering the economy and finding a foothold amongst the community. Without constant vigilance toward the control of injection drugs and their use Georgia's epidemic could quickly mirror the epidemic of Ukraine. While the HIV epidemic in Georgia has been slow to develop, the epidemic of HIV in Ukraine has grown exponentially in a short amount of time. It is not clear why such differences in the epidemics among these two counties which are relatively close to one another in geography, culture, and politics.

There are clearly some similarities between the two epidemics. To start with, injection drug use has been the major risk factor for HIV transmission in both Georgia and Ukraine. Injection drug use is clearly a major public health problem for both countries, and dealing with this issue has been difficult for both. A lack of adequate treatment options in both countries has lead to an explosion of preventable cases. The lack of readily available drug treatment has kept injection drug users tied to their addiction and has increased their risk of contracting infectious disease such as HIV and hepatitis B and C.

Both countries rely heavily on international grants, donations, and organizations to provide medications and monitor the movement of funds into the countries. A reliance on foreign aid to support HIV prevention programs has helped alleviate some of the financial burden of the epidemic off the fledgling governments, but it has also removed some of the responsibility to those governments to care about the outcomes of the epidemic.

National HIV testing and treatment centers in both countries are located in major cities, however, they are not the easiest places to locate and attend. One of the factors limiting treatment seekers and those who require care is the fact that they cannot easily reach all of the health care facilities required for receiving their care. The health care system of the former Soviet Union is not conducive to the treatment of HIV. Multiple specialists and health care providers are required to coordinate care across numerous disciplines. Georgia has taken strides to overcome this issue by coordinating multi-provider care through IDACIRC, with the exception of the Tuberculosis hospital.

At the same time there are some clear differences in their approaches to the HIV epidemic. Georgia has shown important grains in dealing with the epidemic following mother to child transmission, while Ukraine still struggles with a 14% rate of disease. Georgia requires all of the women seeking maternal health at public clinics to undergo an HIV test and those women found to be infected are then offered treatment. This has almost eliminated the risk of mother to child transmission of HIV in Georgia. In addition, Georgia is now the only country in the former Soviet Union that has universal access to

antiretroviral therapy. However, the major difference between Georgia and other countries of the former Soviet Union including Ukraine has been leadership. Since its inception the Georgian AIDS and Clinical Immunology research Center has been under the leadership of Dr. Tsertsvadze and this has allowed for continuity and for the implementation of evidence-based public health approaches to HIV. Moreover, the leadership in HIV in Georgia has reached the highest levels of government. As an example is worth noting that the current First Lady, Mrs. Sandra Roelofs, is the Chairperson of the Georgian Country Coordinating Mechanism for the Global Fund.

Policy Recommendations

In order to prevent the HIV/AIDS epidemic in Georgia from mirroring the epidemic in Ukraine more needs to be done and public health policies must be changed. Attitudes toward high-risk groups, including IDU and MSM need to be changed at the individual and societal level. Stigmatization of these high-risk groups should not be allowed to continue and for that it is necessary to pass legislation that specifically protects the human rights of vulnerable populations. People who have engaged in injection drug use or MSM are often seen as those who have strayed from the "norm" of society and feel that they must hide who they are or how they contracted the disease for a fear of lack of employment or discrimination from their neighbors. Persons living with HIV/AIDS should be encouraged to live full lives and not hide in shame. Furthermore, the Orthodox Christian Church should continue to be invited to be a partner in these efforts as the church holds an important function in Georgian society. While one member

of the Georgian Country Coordinating Mechanism for the Global Fund is a priest and involved in the decision making process, the Church could use more of their influence in education and prevention efforts throughout the country. Education and outreach should be encouraged to help citizens find common ground with marginalized populations in the community. In addition the Church can play a critical role in promoting human rights and compassion for those who are suffering from discrimination because of a highly stigmatized disease. Lowering the stigma and discrimination of high-risk groups will also lower the risk of infection and will benefit the community as a whole.

Injection drug users need to be given a chance for rehabilitation and recovery from their addiction. Drug treatment and rehabilitation programs should be decriminalized and supported. Georgia's laws continue to be restrictive for injection drug users. While some initiatives have been presented to soften the laws, few steps have actually been taken. Ukraine's policy towards the treatment and prosecution of injection drug users should not be adopted in Georgia. Ukraine's policy of mistreatment of injection drug users has forced this population underground and encouraged the spread of HIV/AIDS. Injection drug users need to be provided with opportunities to treat their addiction and avoid persecution in the process. Controlling the injection drug epidemic will help to further control the HIV/AIDS epidemic in Georgia. Georgia should also implement safe injection policies and practices which will decrease the rates of HIV and Hepatitis C amongst the injection drug user populations.

Sexual education should be implemented in schools for school age children and adults, acting as educators, to keep the community informed of their risk of disease and create a safe place for conversation to take place regarding the misinformation and misconceptions that surround HIV. According to the United Nations General Assembly Special Session on HIV/AIDS, the curriculum developed by Georgia's Ministry of Education is optional and rarely taught due to the fact that it is left to the school administration to determine the necessity of teaching it (HIV/AIDS, 2008-2009). Educating the public can help reduce their fear of the disease and work towards lowering discrimination and stigmatization of the disease and those who have been diagnosed with HIV. Improving knowledge about the disease amongst health care workers can also help limit discrimination in health care facilities that often leads to a loss of confidentiality when a person with HIV/AIDS seeks care. The obligation to provide health care providers with seropositive status can limit the desire of those who more require care from seeking what they need out of fear of discrimination.

Georgia does not have to suffer the same fate as Ukraine. Ukraine's epidemic quickly grew out of the control of their public health system and has continued to grow. Control measures and policy changes can be made to prevent such events from negatively affecting Georgia. While the HIV prevalence in Georgia remains low there should be no reason for complacency. Rates of disease can remain low if steps are taken to ensure they do.

Ukraine also needs to implement a stronger HIV prevention and control program. The prevention of mother to child transmission should be a priority. All pregnant women who are seeking pre-natal care should be tested for HIV. Treatment of pregnant mothers has shown to greatly reduce the risk of passing the disease to the developing fetus. Georgia currently has strong Prevention of Mother to Child Transmission programs that have kept the rate of disease amongst pregnant women to 2% while Ukraine is still struggling with a 19% transmission rate.

Ukraine currently struggles with the recognition of the sexual nature of transmission of the HIV virus. While Ukraine has recognized that it is possible to pass HIV through sexual contact they do not record or take notice of the differences between heterosexual and homosexual transmission of the virus. Ukraine must work to overcome the stigmatization and discrimination against homosexuals. Lack of recognition of this aspect of the epidemic will cause continued spread and further put their citizens at risk for the disease. Societal prejudices could be overcome with education and correct information.

Antiquated health care systems in both Georgia and Ukraine have hindered their government's ability to properly find, treat, and prevent new cases of HIV from developing amongst their citizens. The vertical system of health care in Georgia needs to be adapted to better serve the needs of patients with multiple infections and diagnoses. There should be stronger ties between IDACIRC and the Tuberculosis hospital to ensure that continuity of care is held to the highest standards. The responsibility of the patient

for traveling between the health care facilities could be alleviated by the creation of a dedicated transportation system such as taxis, a van service, or supplying those who require it with fare supplementation. A reduction of the travel burden could prevent a loss or reduction of care for those who felt that they were not able to safely travel between the health care facilities.

Georgia can control their epidemic of HIV before it becomes like the epidemic of Ukraine. Ongoing efforts to control the epidemic need to continue but it is also the right time to take bold actions to address the growing epidemic of injection drug use with sound public health based policies. This will not be easy and will require bold leadership by many actors. Nevertheless, the control and prevention of diseases like HIV, Hepatitis B and C will benefit from such policies and will help stop these epidemics in their tracks. It will take, time and perseverance but it is possible.

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