

ABSTRACT

The Virus that Could Kill a Nation: An Analysis of the Impact of HIV/AIDS on the Russian Population and Factors Preventing Successful Intervention and Control

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The dissolution of the Soviet Union in December of 1991 sparked the largest collapse in public health in the history of the industrialized world during peacetime, and is only rivaled in the Euro-Slavic world by the Black Death. Predictions indicated that the Russian population could plummet to as low as 80-90 million people by 2050 – which would be the smallest population the Russian Federation has seen in more than two centuries. If true, the Russian population would shrink more in 60 years than any country in the Northern Hemisphere had in all of recorded human history, including during wartime. The profound impact of the collapse of the Soviet healthcare system combined with the uncertainties of the post-Soviet era sparked one of the fastest-spreading HIV epidemics in history. The Russian Federation is one of the only countries in the world where the rate of HIV infection is increasing, rising by a predicted 10-15% each year. The country plays a prominent role in the epidemiology of HIV on a global scale, and is estimated to account for 69% of the total number of people living with HIV globally. The first case of HIV was officially reported in 1987, but the rapid spread of HIV did not begin until 1995 when Ukrainian injection drug users migrated to industrialized regions of the Russian Federation looking for work after the dissolution of the Soviet Union – bringing along the scourge of injection drug use and HIV with them. Injection drug use quickly became the primary means by which the virus spread throughout the country. HIV then spread to commercial sex workers, men who have sex with men, prisoners, and the heterosexual population – largely due to individual identification or close interaction with one or more of these groups. Each of these groups faces stigmatization and discrimination by Russian society at-large, making accessing prevention services and treatment extremely difficult, as well as generating detrimental effects on the mental health of these individuals. Additionally, the Russian government has shown both an inability and an unwillingness to address the epidemic in accordance with the recommendations of the international health community thereby inadvertently promoting the spread of HIV throughout the country. When these factors are considered together, it is clear that the Russian Federation has a bleak future if appropriate actions are not taken to mitigate the spread of HIV and to provide treatment and prevention services to those in need.

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HIV/AIDS ON THE RUSSIAN POPULATION AND FACTORS PREVENTING
SUCCESSFUL INTERVENTION AND CONTROL

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INTRODUCTION

Unlike most countries, especially countries which are considered to be high-income, the Russian Federation is unique in that its HIV/AIDS epidemic is growing by an estimated 10-15% each year. Experts predict that over 250 people contract the virus every single day, with the highest infection rates being amongst injection drug users (IDUs), men who have sex with men (MSM), prisoners, and commercial sex workers. In fact, the Russian Federation has experienced one of the fastest-spreading HIV/AIDS epidemics in any single country in history – and the World Bank estimates that by 2020 the Russian Federation will lose 20,000 people per month to AIDS-related illnesses.¹ In 2017, 14,630 people died of AIDS-related illnesses between the months of January and June.² When combined with the fact that the rate of HIV infection grows by 10-15% each year, this puts the Russian Federation well on-track to meet or even exceed the World Bank's estimate.

To develop a holistic understanding of the gravity of the Russian HIV/AIDS epidemic and the public health threats it poses to the Russian population requires the consideration of several questions. Firstly, a comprehensive understanding of the virological and immunological properties of HIV must be developed. Secondly, the means through which HIV arrived within the borders of the Russian Federation and spread rapidly throughout the population needs to be examined. Thirdly, key populations

¹ "Russia: Death By Indifference," Pulitzer Center, July 2, 2013, <https://pulitzercenter.org/reporting/russia-death-indifference>.

² "HIV and AIDS in Russia," Avert, March 31, 2017, <https://www.avert.org/professionals/hiv-around-world/eastern-europe-central-asia/russia>.

which are disproportionately affected by the virus should be identified, and the impact the condition has had on their mental stability as well as their ability to receive treatment and support explained. Lastly, the severity epidemic begs the question “how could the government have let it get this far?”

In order to answer the questions posed in the previous paragraph, an extensive literature review of over 60 peer-reviewed articles and books written on the topic was performed. This typically included an analysis of the results reported by each source, followed by the consolidation and integration of the information and synthesis of new perspectives. Articles were gathered from several sources in several disciplines including psychosocial science, virology, immunology, political science, and public health.

In chapter one, several topics related to the nature of the virus, its route of transmission, and its impact on the health of the host will be delineated. Unlike many other sexually-transmitted diseases, HIV/AIDS has no cure, is extremely efficient in its mode of transmission, and will invariably lead to death without medical intervention. This is made possible by introduction through exposure of bodily fluids to abrasions of the mucosal membrane or directly into the bloodstream, and then the subsequent infection and death of CD4⁺ T cells – leading to an inability of the host immune system to fight off opportunistic infections that will eventually kill the host. This information is important to understand, as it makes clear how an HIV/AIDS epidemic stands apart from epidemics of other infectious diseases.

In chapter two, the means through which HIV/AIDS was able to cross the borders of the Russian Federation and spread rapidly throughout the country will be examined. The first officially-reported case of HIV in the Russian Federation was in 1987, although

it is possible that it was circulating prior to this. However, the virus did not begin to spread rapidly until after the Dissolution of the Soviet Union in 1991 and the subsequent movement of Ukrainian IDUs to industrial regions of the Russian Federation.

Additionally, in the post-Soviet era, prostitution went from a cottage industry to a multinational, multibillion dollar industry in the Russian Federation, the grandest healthcare system on the face of the planet collapsed, and widespread lack of information on HIV/AIDS created the perfect conditions for HIV/AIDS to decimate the Russian population.

Next, the distinct subsets of the Russian population that are at the greatest risk of both contracting HIV and subsequently dying of AIDS-related illnesses will be identified, the reasons behind this delineated, and the impact the virus has had on each of them explored. This will include an examination of the psychological and psychosocial implications of an HIV-positive test result, how these factors affects willingness and ability to initiate treatment, as well as systemic barriers to accessing treatment such as labyrinthine bureaucratic processes, extrajudicial action by the police, and police brutality.

Finally, the position the Russian government has taken on the issue and the political context within which this position has been generated must be studied. The Russian government has historically taken a conservative stance on issues of sexual health and sexual education, often finding itself aligned with the views of the Russian Orthodox Church. Even in the context of the Russian Federation's current demographic struggle, these views have not changed – and key prevention services such as sex education, syringe exchange, and opioid substitution therapy are still frowned upon by

members of the Russian political elite. However, the threat of a Russian Federation in which ethnic Russians are no longer the majority has inspired Russian leaders to address the problem, although often inefficiently, with limited funding, and without the help of the international global health community.

The history and defining characteristics of the Russian HIV/AIDS epidemic are often frustrating, shocking, and bleak. At times, it may seem as though the virus was given repeated opportunities to spread uninhibited throughout the Russian population with little attention given to the epidemic by groups other than those most heavily afflicted. With these factors in mind and the general roadmap of this thesis laid out, we can begin our discussion by examining how HIV functions and infects its host, how it made the jump from non-human primates to humans, and how the virus impacts the overall health of those afflicted by it.

CHAPTER ONE

What is HIV and How Does it Work?

The human immunodeficiency virus (HIV) belongs to a special class of viruses termed retroviruses, which are characterized primarily by the unique way in which their genetic information is used to produce viral products. Retroviral genomes are single-stranded, positive-sense RNA molecules that replicate through a double-stranded DNA intermediate.¹ More specifically, within the broader category of retroviruses, HIV belongs to the lentivirus subfamily. The lentiviral subfamily generally includes viruses responsible for diseases with slow progression that eventually become chronic conditions, and tend to have longer latent periods than viruses of other subfamilies.²

Nine different genes are responsible for producing HIV viral particles, three of which are common to all retroviruses. These genes are *gag*, *env*, and *pol* which encode viral structural proteins, envelope glycoproteins and CD4 receptors, and the various viral enzymes respectively.³ In addition to the three common retroviral genes, HIV also has several genes that encode additional regulatory proteins. These genes are: *tat*, *rev*, *nef*, *vif*, *vpr*, and *vpu*. Within the viral genome, these genes often overlap or are read in different reading frames. The Tat (transactivator protein) and Rev (RNA splicing-regulator) proteins are used by the virus in the initial stages of viral replication, whereas Nef (negative regulating factor), Vif (viral infectivity factor), Vpr (virus protein r), and Vpu

¹ Gary L Buchschacher, "Introduction to Retroviruses and Retroviral Vectors," n.d., 11.

² Bryan R Cullen, "Human Immunodeficiency Virus as a Prototypic Complex Retrovirus," *J. VIROL.*, n.d., 4.

³ Cullen.

(virus protein unique) are important not only for viral replication, but also for budding and pathogenesis.⁴

HIV can be divided into two groups: HIV-1 and HIV-2.⁵ These distinct groups have many characteristics in common, including the arrangement of viral genes in their genomes, their replication pathways, as well as their clinical progression to acquired immunodeficiency syndrome (AIDS). However, HIV-2 is typically characterized by reduced potential for transmission and development of AIDS⁶, which may be due to the substitution of the Vpu protein with Vpx (virus protein x).⁷ For these reasons, HIV-2 is found primarily in in West Africa, whereas HIV-1 is responsible for the global epidemic.⁸

HIV is suspected to have originated as a result of transmission of simian immunodeficiency virus (SIV) from primates to humans in West and Central Africa, likely during the process of capturing primates for bushmeat and exotic pets.⁹ Multiple rounds of transmission between primates and humans generated multiple groups of HIV-1 and HIV-2, which is due in part to the fact that different primate species carry species-specific forms of SIV.¹⁰ HIV is thought to have made the jump from nonhuman primates

⁴ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood', "Human Immunodeficiency Virus (HIV)," *Transfusion Medicine and Hemotherapy* 43, no. 3 (2016): 203–22, <https://doi.org/10.1159/000445852>.

⁵ Samuel Nyamweya et al., "Comparing HIV-1 and HIV-2 Infection: Lessons for Viral Immunopathogenesis: Comparisons between HIV-1 and HIV-2 Infection," *Reviews in Medical Virology* 23, no. 4 (July 2013): 221–40, <https://doi.org/10.1002/rmv.1739>.

⁶ Nyamweya et al.

⁷ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood', "Human Immunodeficiency Virus (HIV)."

⁸ Nyamweya et al., "Comparing HIV-1 and HIV-2 Infection."

⁹ Joris Hemelaar, "The Origin and Diversity of the HIV-1 Pandemic," *Trends in Molecular Medicine* 18, no. 3 (March 2012): 11, <https://doi.org/10.1016/j.molmed.2011.12.001>.

¹⁰ Avelin F. Aghokeng et al., "Extensive Survey on the Prevalence and Genetic Diversity of SIVs in Primate Bushmeat Provides Insights into Risks for Potential New Cross-Species Transmissions," *Infection, Genetics and Evolution* 10, no. 3 (April 2010): 386–96, <https://doi.org/10.1016/j.meegid.2009.04.014>.

to humans between the years of 1853 and the early 1900s based on estimates of time to the most recent common ancestors (tMRCAs) and HIV evolutionary rates¹¹, with HIV-1 group M thought to be the oldest HIV lineage in humans.¹²

HIV-1 group M is primarily responsible for the global HIV-1 epidemic and is directly derived from SIVcpz contained in *Pan troglodytes troglodytes* in Western and Central Africa.¹³ The global epidemic of HIV-1 group M is thought to have originated in the Democratic Republic of the Congo (DRC) and was spread initially by the Congo river to urban centers, and then globally from those urban centers.¹⁴ This is further supported by the fact that the genetic diversity between the different HIV-1 groups, circulating recombinant forms (CRFs), and unique recombinant forms (URFs) of the virus in the DRC is similar to that found on the global scale, indicating that HIV-1 has been circulating in this region for a longer period of time than in regions with less viral diversity.¹⁵

Both forms of HIV, HIV-1 and HIV-2, have high rates of mutation and recombination during viral replication that further contributes to the significant diversity between different groups of the virus, as well as allows for evolutionary selection pressures to act within the host.¹⁶ The enzyme relied upon by HIV to replicate its genome through a double-stranded DNA intermediate, reverse transcriptase, does not have a proof-reading mechanism and thereby increases the rate of mutation and recombination

¹¹ B. Korber, "Timing the Ancestor of the HIV-1 Pandemic Strains," *Science* 288, no. 5472 (June 9, 2000): 1789–96, <https://doi.org/10.1126/science.288.5472.1789>.

¹² Joris Hemelaar, "The Origin and Diversity of the HIV-1 Pandemic."

¹³ Feng Gao et al., "Origin of HIV-1 in the Chimpanzee *Pan Troglodytes Troglodytes*" 397 (1999): 6.

¹⁴ B. F. Keele, "Chimpanzee Reservoirs of Pandemic and Nonpandemic HIV-1," *Science* 313, no. 5786 (July 28, 2006): 523–26, <https://doi.org/10.1126/science.1126531>.

¹⁵ Joris Hemelaar, "The Origin and Diversity of the HIV-1 Pandemic."

¹⁶ Joris Hemelaar.

within the viral genome.¹⁷ The high error rate combined with the high rates of viral replication leads to significant individual diversity, with viral sequences varying by up to 10% within an infected individual.¹⁸ On a global scale, there is significant diversity between different regions. In the Russian Federation and Central Asia, the majority of HIV-1 infections belong to HIV-1 group M subtypes A and B, which is unique when compared to other regions.¹⁹

HIV can be transmitted in a variety of ways including contact with: blood, semen, pre-seminal fluids, rectal fluids, vaginal fluids, and breast milk. In order for the virus to be transmitted, there must be direct contact between any of the aforementioned fluids and damaged skin or abrasions of the mucosal tissue created by sexual intercourse.²⁰ Damage to the skin can be inflicted by the use of needles or sharp tools, and mucosal membranes subject to abrasions of sexual origin can be found in the rectum, vagina, urethra, and the mouth. Transmission from mother to child during pregnancy is also possible and typically takes place during the final trimester, particularly during the time shortly before or during birth.²¹ Throughout much of the world, the primary means through which HIV is transmitted is through contact between these mucosal abrasions and infected reproductive fluids or blood²², but in the Russian Federation the primary means is

¹⁷ David D. Ho et al., "Rapid Turnover of Plasma Virions and CD4 Lymphocytes in HIV-1 Infection," *Nature* 373, no. 6510 (January 1995): 123–26, <https://doi.org/10.1038/373123a0>.

¹⁸ Bette Korber et al., "Evolutionary and Immunological Implications of Contemporary HIV-1 Variation," *British Medical Bulletin* 58, no. 1 (September 1, 2001): 19–42, <https://doi.org/10.1093/bmb/58.1.19>.

¹⁹ Joris Hemelaar, "The Origin and Diversity of the HIV-1 Pandemic."

²⁰ Emanuele Fanale-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview," n.d., 10.

²¹ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood', "Human Immunodeficiency Virus (HIV)."

²² NIH, "The Basics of HIV Prevention _ Understanding HIV_AIDS _ AIDSinfo.Pdf" (U.S. Department of Health and Human Services, April 29, 2019), <https://aidsinfo.nih.gov/understanding-hiv-aids/fact-sheets/20/48/the-basics-of-hiv-prevention#>.

through the use of contaminated needles by intravenous drug users (IDUs).²³ A higher viral dose is required for infection through mucosal membranes than is required for infection directly into the bloodstream²⁴, which may partially explain why HIV has been able to spread so rapidly through the community of Russian IDUs. Transmission of HIV also depends on the biological properties of the virus, its concentration in infectious body fluid, as well as susceptibility of the host.²⁵

Only cells which have the CD4 glycoprotein on their cell surface are susceptible to infection by HIV.²⁶ These cells include up to 60% of the circulating T-lymphocytes, T-cell precursors, monocytes, macrophages, eosinophils, dendritic cells, and microglial cells found within the central nervous system.²⁷ The entry mechanism of HIV is dependent upon two glycoproteins, gp120 and gp41, which are both encoded by the *env* gene in the viral genome.²⁸ Of the two glycoproteins, gp120 is particularly important, as it is the glycoprotein primarily responsible for interactions with the CD4 glycoprotein.²⁹ Upon binding CD4, gp120 undergoes a conformation change which allows it to interact with chemokine receptors on the surface of CD4, most commonly CCR5 or CXCR4.³⁰ The interaction between gp120, CD4, and CCR5/CXCR4 prolongs the interaction

²³ Elena Dukhovlinova et al., "Two Independent HIV Epidemics in Saint Petersburg, Russia Revealed by Molecular Epidemiology," *AIDS Research and Human Retroviruses* 31, no. 6 (June 2015): 608–14, <https://doi.org/10.1089/aid.2014.0150>.

²⁴ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood', "Human Immunodeficiency Virus (HIV)."

²⁵ Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

²⁶ Giuseppe Pantaleo, Cecilia Graziosi, and Anthony S. Fauci, "The Immunopathogenesis of Human Immunodeficiency Virus Infection.Pdf" (The New England Journal of Medicine, 1993).

²⁷ Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

²⁸ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood', "Human Immunodeficiency Virus (HIV)."

²⁹ Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

³⁰ C Mark Hill et al., "Envelope Glycoproteins from Human Immunodeficiency Virus Types 1 and 2 and Simian Immunodeficiency Virus Can Use Human CCR5 as a Coreceptor for Viral Entry and Make Direct CD4-Dependent Interactions with This Chemokine Receptor," *J. VIROL.* 71 (1997): 9.

between the virus and the cell, allowing gp41 to undergo a conformational shift.³¹ This change in conformation exposes the fusion domain of gp41, which can then insert into the host cell membrane. The extracellular portion of gp41 subsequently collapses to form a hairpin structure that ultimately results in the fusion of the viral and host membranes and entry of the viral capsid.³²

Soon after entry of the viral capsid into the cytoplasm of the cell, the capsid is taken up by an endosome. The subsequent change in pH within the phagosome results in the release of the capsid's contents into the cytoplasm.³³ Of particular importance is the viral RNA genome, which is also released into the cytoplasm during the uncoating process. The RNA genome is now available to be transcribed by the reverse transcriptase enzyme, which is encoded by the viral *pol* gene, in the cytoplasm of the cell. Reverse transcriptase possesses an active site termed the ribonuclease H active site, which allows for the recognition of viral RNA and initiation of reverse transcription. This process proceeds as a minus-strand polymerization and results in an RNA/DNA hybrid double helix.³⁴ The RNA portion of this hybrid double helix is then degraded by the enzyme RNase H to leave a single strand of complementary DNA (cDNA), which is then converted into a double-stranded molecule of cDNA, called proviral DNA, by the DNA-dependent DNA polymerase activity of the reverse transcriptase enzyme.³⁵

³¹ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood', "Human Immunodeficiency Virus (HIV)."

³² Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

³³ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood', "Human Immunodeficiency Virus (HIV)."

³⁴ Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

³⁵ Rui Sousa, Yong Je Chung, and John P Rose, "Polymerase at 3.3 Å Resolution" 364 (1993): 7.

Following formation of the proviral genome, it is transported from the cytoplasm to the nucleus through nuclear pores as a complex consisting of the enzyme integrase and either linear or circularized proviral DNA. Once in the nucleus, integrase will cleave nucleotides at the 3' ends of the proviral DNA, creating single-strand overhangs that the enzyme can then utilize to insert the proviral DNA into the host cell genome at random. The proviral genome can only become integrated into the genome of cells which are in an activated state, but once proviral integration is complete the HIV infection has been finalized and the establishment of persistent HIV infection begins.³⁶

Latent CD4+ cells serve as long-term reservoirs of HIV, but upon activation of these cells the proviral DNA is transcribed into messenger RNA (mRNA). Transcription begins with the early-stage HIV regulatory proteins *tat* and *rev*. Following synthesis, Tat protein will bind to the transactivation response element (TAR) located within the proviral DNA genome in the nucleus and stimulate the transcription of longer strands of messenger RNA (mRNA). Concurrently, the Rev protein will facilitate the transcription process as well as inhibit the expression of additional regulatory genes so that structural and enzymatic genes can be expressed instead.³⁷

Viral mRNA is translocated from the nucleus to the cytoplasm where it can be translated and the resulting proteins can be used to assemble new virions. The proteins encoded by *gag* and *pol* will form the nucleus of the new virions, whereas the products of *env* will eventually form the glycoprotein spikes on the viral envelope that facilitate membrane fusion at the initial stages of infection. Many of the viral proteins are initially

³⁶ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood', "Human Immunodeficiency Virus (HIV)."

³⁷ Fanale-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

produced as large precursor molecules which are then cut into functional proteins by a viral protease, without which the virus is noninfectious.³⁸

In order to produce an infectious virus, two copies of the positive sense RNA genome, transfer RNA (tRNA), primers for cDNA synthesis, envelope proteins, Gag polyprotein, and the viral enzymes protease, reverse transcriptase, and integrase must be present. Assembly of the aforementioned components takes place at the plasma membrane of the host cell and is largely directed by the Gag polyprotein. Incorporation of the nuclear components, envelope assembly, and binding to the host plasma membrane occur simultaneously. While Gag is responsible for binding of the immature virion to the plasma membrane and formation of spherical viral particles, the actual process of budding from the cell is controlled by the host cell endosomal sorting complexes required for transport (ESCRT) machinery. As the virions pass through the membrane, they acquire their lipid envelope and envelope protein spikes.³⁹

When transferred through heterosexual intercourse, the cells lining the cervix mucosa are the first to be infected.⁴⁰ HIV then targets dendritic cells and macrophages/monocytes which possess CCR5 on their cell surface. Exposure of the virus to cells of the blood, however, makes possible the direct infection of T helper cells.⁴¹ Infected dendritic cells and CD4⁺ lymphocytes permit virus spreading into regional lymph nodes, where viral replication is extensive during the early stages of infection, and

³⁸ Fanales-Belasio et al.

³⁹ W. I. Sundquist and H.-G. Krausslich, "HIV-1 Assembly, Budding, and Maturation," *Cold Spring Harbor Perspectives in Medicine* 2, no. 7 (July 1, 2012): a006924–a006924, <https://doi.org/10.1101/cshperspect.a006924>.

⁴⁰ Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

⁴¹ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood'; "Human Immunodeficiency Virus (HIV)."

then into the bloodstream. In the lymph nodes, viral products can be found within follicular dendritic cells, macrophages, and activated CD4⁺ T cells, which subsequently become the main target of infection. Macrophages and CD4⁺ T cells are permanent reservoirs for HIV once infected, however, some cells may undergo lysis instead of allowing latent infection to persist.⁴²

Progression of HIV infection is rapid during the acute phase, with HIV able to be detected in regional lymphatic tissue within one to two days after exposure to the virus, and within a week it will have spread to regional lymph nodes. HIV then spreads to the entirety of the body, including the nervous system within 10-14 days post-exposure. As with other viral infections, the body's immune system begins to respond rapidly, producing antibodies against antigens on the surface of the virus. The early immune response initiates the production of low-affinity IgM antibodies against the virus, which are typically specific to the surface glycoproteins gp120 and gp41. Within 1-3 weeks, the body begins to produce high-affinity IgG against viral particles and antigen-specific T-cell responses will be initiated against various viral epitopes. Neutralizing antibodies are commonly produced against a variable region of gp120. However, the variable region of gp120 does not remain consistent between different strains of the virus, making elimination and efficient control of the infection difficult. Antibody levels tend to peak at the end of the acute infection and the beginning of the asymptomatic phase, after which they drop continuously as the host progresses towards the development of AIDS.⁴³

⁴² Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

⁴³ German Advisory Committee Blood (Arbeitskreis Blut), Subgroup 'Assessment of Pathogens Transmissible by Blood', "Human Immunodeficiency Virus (HIV)."

During the acute phase of the infection, extremely high levels of blood viremia allow the virus to spread to lymph nodes throughout the body, which serve as the anatomical site of establishment of short- and long-term viral propagation. Presence in the lymph nodes initiates the HIV-specific response and antibody production as mentioned previously, however it also results in the accumulation and subsequent infection of CD4⁺ T cells which is the primary driver behind the initial sharp decline in the number of circulating CD4⁺ T cells. Additionally, several of the cytokines produced by the immune system in response to viral infection, including various interleukins, TNF- α , and TNF- β have been shown to stimulate replication of HIV within cells, therefore worsening viremia.⁴⁴ Once viral RNA is detectable in the blood, the infected individual is capable of passing the virus on to others.⁴⁵

Due to the rapid decline in the number of CD4⁺ T cells and high viremia, the acute phase of the infection is when the majority of symptoms are experienced. Symptoms may appear during time periods ranging from a few days to a few weeks post-exposure to the virus, and most individuals present with flu-like symptoms or mononucleosis-like symptoms including fever, maculopapular rash, oral ulcers, lymphadenopathy, and weight loss. Individuals with more severe symptoms lasting for longer periods of time are typically at a higher risk for more rapid progression to AIDS. It is important to remember, though, that only 50 to 70 percent of patients with primary HIV infection display symptoms.⁴⁶ However, the symptomatic phase of infection due to

⁴⁴ Giuseppe Pantaleo, Cecilia Graziosi, and Anthony S. Fauci, "The Immunopathogenesis of Human Immunodeficiency Virus Infection.Pdf."

⁴⁵ Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

⁴⁶ Giuseppe Pantaleo, Cecilia Graziosi, and Anthony S. Fauci, "The Immunopathogenesis of Human Immunodeficiency Virus Infection.Pdf."

high levels of viremia is typically short-lived as the infected individual begins to produce the neutralizing antibodies previously mentioned that help to bring viral loads down to a lower level called the viral setpoint, which is unique for every individual. As HIV viremia drops and CD4⁺ T cell levels recover, although never reaching pre-exposure levels, the infected individual progresses into the second phase of infection which is clinically asymptomatic.⁴⁷

During the asymptomatic phase of HIV infection, detectable levels of viremia decrease significantly or disappear entirely within weeks to months after the acute syndrome subsides. Although viremia levels fall, that does not mean that viral replication has stopped. In fact, it is unlikely that viral replication ever completely ceases. During the asymptomatic phase, the immune system continues to deteriorate as the number of CD4⁺ T cells continues to decline.⁴⁸

The onset of the clinically asymptomatic period indicates that the body has initiated both innate and adaptive immune responses to the virus, and infected CD4⁺ T cells will begin to be eliminated. Antibodies produced by the adaptive immune response will contribute to the neutralization of virus infectivity or allow for the killing of infected cells through antibody-dependent cellular cytotoxicity (ADCC). T-lymphocytes which are specific to HIV antigens will also recognize viral antigens on the surface of infected cells and will promote cytotoxic elimination of those cells.⁴⁹ Single-cell killing can also result as a consequence of accumulated unintegrated viral DNA, as well as from the malfunction of important cellular translation machinery after HIV infection has become

⁴⁷ Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

⁴⁸ Giuseppe Pantaleo, Cecilia Graziosi, and Anthony S. Fauci, "The Immunopathogenesis of Human Immunodeficiency Virus Infection.Pdf."

⁴⁹ Fanales-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

established.⁵⁰ As the virus replicates inside of CD4⁺ cells and attempts to exit the cell by budding, it is possible for the virus to fuse with surface CD4 molecules, which results in destruction of membrane integrity and death of the cell, thereby further contributing to the decline in host CD4⁺ T cells. Virus-producing CD4⁺ cells may also engage in a fusion event, mediated by envelope glycoproteins (LFA-1), with uninfected cells. A single infected cell has the capability to fuse with up to 500 uninfected CD4⁺ T cells, thereby creating a large multinucleated cell with a short half-life that can reduce CD4⁺ T cell counts rapidly.⁵¹ Once the level of CD4⁺ T cells has been sufficiently reduced, the infected individual progresses into the autoimmune phase of HIV infection, also known as AIDS.

An individual is said to have progressed to AIDS once their CD4⁺ T cell levels have dropped beneath 200 cells/ μ l, at which point the infected individual becomes susceptible to opportunistic infections and tumor development because of the drastic reduction in functioning of the immune system.⁵² The World Health Organization defines AIDS by the occurrence of more than 20 opportunistic infections or HIV-related cancers.⁵³ The most common opportunistic infection in individuals living with AIDS is *Pneumocystis carinii* pneumonia (PCP), but infection by *Herpes zoster*, enteropathogenic parasites (*Giardia* species), and tuberculosis are also common, as is the development of Kaposi's sarcoma.⁵⁴ The autoimmune phase of infection is commonly characterized by

⁵⁰ Giuseppe Pantaleo, Cecilia Graziosi, and Anthony S. Fauci, "The Immunopathogenesis of Human Immunodeficiency Virus Infection.Pdf."

⁵¹ A Haseltine, "Molecular Biology of the Human Immunodeficiency," n.d., 12.

⁵² Fanale-Belasio et al., "HIV Virology and Pathogenetic Mechanisms of Infection: A Brief Overview."

⁵³ "WHO | HIV/AIDS," WHO, accessed October 16, 2019, <http://www.who.int/features/qa/71/en/>.

⁵⁴ "AIDS AND OPPORTUNISTIC INFECTIONS News," AIDSinfo, accessed October 16, 2019, <https://aidsinfo.nih.gov/news/71/aids-and-opportunistic-infections>.

lymph node swelling across the body, drastic weight loss, as well as fever and gastrointestinal problems. The number of CD4+ T cells continues to drop during this phase of infection, and lymphopenia (reduced numbers of blood lymphocytes) and anemia often occur.

According to the World Health Organization, without treatment, the majority of people that become infected with HIV will begin to develop signs of HIV-related illnesses within 5 to 10 years post-infection, and will progress to AIDS within 10 to 15 years post-infection. While there is currently no cure for HIV, disease progression can be brought to near cessation through the use of antiretroviral therapies.⁵⁵ Once an individual develops AIDS, without treatment, they are predicted to survive for only 6 months to 3 years.

Although the United Nation has classified the Russian Federation as a high-income country since 2014, it is still classified as an economy in transition. This means that even though the Russian Federation has made progress towards higher levels of development in recent years they still share several qualities with less-developed nations.⁵⁶ The Russian Federation may not meet all of the requirements to be classified as a developing country, however, the country continues to struggle in its efforts to control HIV/AIDS. HIV/AIDS remains a threat to public health within the Russian Federation due to high rates of injectable drug use, a thriving sex industry, and a lack of government programs and funding dedicated to controlling the epidemic.

⁵⁵ "WHO | HIV/AIDS."

⁵⁶ Department of Economic and Social Affairs of the United Nations Secretariat, "Country Classification," accessed November 12, 2019, https://www.un.org/en/development/desa/policy/wesp/wesp_current/2014wesp_country_classification.pdf.

CHAPTER TWO

How did HIV Spread To and Throughout the Russian Federation?

The Russian Federation is one among only nine countries worldwide where the burden of HIV infection is increasing, and contributes to 69% of the total number of people living with HIV globally. Most new HIV infections in the region are concentrated within high-risk populations, such as people who inject drugs (PWID/IDUs), men who have sex with men (MSM), and sex workers. The aforementioned high-risk groups account for more than 85% of new infections in the Russian Federation.¹ Within the UNAIDS region of Eastern Europe and Central Asia, the Russian Federation accounted for 61% of AIDS-related deaths in 2013.²

It is currently unknown if HIV testing within the Russian Federation is reaching individuals who engage in high-risk behaviors, as well as whether testing leads to knowledge of positive infection status, access to care, and viral suppression. According to a 2016 survey of 184 HIV-positive individuals, 76.6% were previously unaware of their HIV infection. This proportion translates to a population estimate of 86.6% (95% CI: 80.4 – 92.5), meaning that a predicted 86.6% of people living with HIV in the region are unaware of their infection.³

¹ A L Wirtz et al., “The HIV Care Continuum among Men Who Have Sex with Men in Moscow, Russia: A Cross-Sectional Study of Infection Awareness and Engagement in Care,” *Sexually Transmitted Infections* 92, no. 2 (March 2016): 161–67, <https://doi.org/10.1136/sextrans-2015-052076>.

² UNAIDS, “UNAIDS Gap Report,” 2014, https://www.unaids.org/sites/default/files/media_asset/UNAIDS_Gap_report_en.pdf.

³ Wirtz et al., “The HIV Care Continuum among Men Who Have Sex with Men in Moscow, Russia.”

Infection with HIV can be effectively managed and the progression to AIDS can be slowed or halted entirely through the use of highly active antiretroviral therapy (HAART), also known as combination antiretroviral therapy (cART) or antiretroviral therapy (ART). There are several classes of drugs that are currently used in HAART, including transcription inhibitors, protease inhibitors, fusion inhibitors, and integrase inhibitors. HAART improves the health of HIV-positive individuals by reducing viral replication and viral load, as well as by increasing CD4+ T cell counts and associated immune functioning. Suppression of the viral load also reduces the risk of an infected individual passing on the virus to someone else.⁴

Despite the aforementioned benefits of HAART, a 2016 survey of HIV-positive people in the Russian Federation found that only 16.9% were linked to care and only 8.7% of individuals that were linked to care were put on HAART, and an even smaller percentage had achieved viral suppression. Among those individuals who were previously aware of their HIV infection, a higher percentage had been linked to care, were on HAART, and had achieved viral suppression, indicating that awareness of one's HIV status is a significant barrier to accessing care within the Russian Federation in the post-Soviet era.⁵

The dissolution of the Soviet Union in December of 1991 sparked the largest collapse in public health ever witnessed in the industrialized world in peacetime, and is only rivaled in the Euro-Slavic world by the Black Death of the fourteenth century. A short eight years after the collapse, the most extensive and grandest healthcare system on

⁴ "Understanding HAART for HIV," Healthline, accessed October 23, 2019, <https://www.healthline.com/health/hiv-aids/understanding-the-aids-cocktail>.

⁵ Wirtz et al., "The HIV Care Continuum among Men Who Have Sex with Men in Moscow, Russia."

the face of the earth was spiraling into chaos. Predictions indicated that the population of the Russian Federation could fall to as little as 80-90 million people by 2050 – the lowest population the Russian Federation had seen in more than two centuries. If true, the Russian Federation’s population would plummet more in sixty years than any country in the Northern Hemisphere had in all of recorded human history, including during wartime.⁶

Although the collapse of the Soviet Union provided the catalyst that made the rapid spread of HIV possible, HIV was already circulating within the borders of the future Russian Federation. HIV was officially diagnosed and documented for the first time in the USSR in March of 1987, but there were undocumented cases going as far back as 1984.⁷ Prior to the official documentation of HIV infection in 1987, Moscow denied the presence of HIV/AIDS within the USSR entirely. At the Second International Conference on AIDS in 1986, Dr. Viktor Zhdanov became the first scientist to publicly declare that Moscow’s claims of virtually no cases of HIV/AIDS within the borders of the USSR were untrue⁸. While it is correct to conclude that the collapse of the Soviet Union and its healthcare system greatly exacerbated the problem of HIV/AIDS, it is important to acknowledge the pre-dissolution outbreaks that foreshadowed the post-socialism epidemic.

One such outbreak is known as the Elista incident, which took place in the city of Elista (Элиста) – the capitol city of the Republic of Kalmykia. The Elista incident began around 1982 when a Russian sailor working in Africa unknowingly contracted HIV.

⁶ Laurie Garrett, *Betrayal of Trust* (Hachette Books, 2011).

⁷ Judyth Twigg, *HIV/AIDS in Russia and Eurasia*, vol. 1 (Gordonsville: Palgrave Macmillan, 2006).

⁸ Laurie Garrett, *Betrayal of Trust*.

Upon returning home, the sailor infected his wife, who then infected her fetus. In 1988, the child was admitted to Elista's pediatric hospital with several infections of unknown causes. The child died shortly after being admitted to the hospital, and the mother soon began displaying similar symptoms. The mother left Elista and sought treatment in Moscow, where she met another woman displaying similar symptoms who had also lost a child at Elista under similar circumstances. The doctors at the hospital in Moscow agreed to give both mothers HIV tests, and thus confirmed the country's first AIDS outbreak.⁹

During the Soviet era, both healthy babies and babies suffering from common illnesses frequently received up to three hundred injections annually.¹⁰ In a country with a more developed and standardized healthcare system these injections would have been administered with single-use sterile syringes. However, in Elista and other hospitals spread throughout the country, multidepartment hospitals might use a single syringe for all injections administered in a day. This was common practice in the Soviet healthcare system, with studies reporting that as much as 14% of syringes were never sterilized. Further contributing to high rates of syringe reuse was the fact that, in this period, almost no single-use syringes were produced by the Soviet Union, and the state was required to use hard currency to buy them from abroad.¹¹ In more extreme cases, very sick babies routinely received implants of recycled, poorly sterilized catheters that contributed to the spread of the virus within the pediatric facility.

⁹ Laurie Garrett.

¹⁰ Laurie Garrett.

¹¹ David Remnick, "UNWASHED NEEDLES INFECT 27 INFANTS WITH AIDS," *Washington Post*, January 29, 1989, <https://www.washingtonpost.com/archive/politics/1989/01/29/unwashed-needles-infect-27-infants-with-aids/8ffcd771-7810-48bc-a7f3-c3b6f2f3f34c/>.

Unfortunately, the outbreak was not confined to Elista. Some of the HIV-positive babies were transferred to other hospitals throughout the country before their diagnosis was known. At these new hospitals, the children received treatment from doctors using the same healthcare practices that had been used at Elista, thereby worsening the outbreak.¹² By the time the last mother and child connected to the Elista incident were infected in 1994, roughly 250 cases had occurred in hospitals throughout the country due to injections with unsterile syringes, implantation of recycled catheters, and bites from breast-feeding babies.¹³ The resolution of the Elista incident comes at an important point in the history of HIV/AIDS in the Russian Federation. In the years following 1995, the outbreak would grow astronomically and gain the potential to absolutely decimate the Russian population.

In response to the Elista incident, the USSR mounted a massive, although ineffective, response. They launched the largest HIV testing program the world had ever seen, even going as far as to allow Soviet physicians to screen their patients without consent. Between the years of 1987 and 1995, it is estimated that upwards of 165 million ethnic Russians were tested for HIV. Participation in HIV testing was mandatory, and nobody had the right to refuse an HIV test. In addition, every Soviet citizen that left the USSR was subjected to a mandatory HIV test upon returning to the USSR. Although the widespread HIV testing did help the Soviet authorities identify several hundreds of cases of HIV infection, the Soviets continued to downplay the severity of the epidemic. The Soviet HIV surveillance system was not only ineffective, but it was also extremely

¹² Laurie Garrett, *Betrayal of Trust*.

¹³ V. Pokrovsky and J. I. Eramova, "Nosocomial Transmission of Human Immunodeficiency Virus in Elista, USSR," 1998.

expensive. Between the years of 1987 and 1992, over \$15 million was spent on HIV testing, but few cases were identified. In contrast, they spent only \$3 million on HIV prevention and education, which had the potential to generate more significant public health benefits.¹⁴ Additionally, instead of investing in solutions that would guarantee adequate supplies of sterile syringes and protective equipment for physicians and hospital personnel, they created quarantine centers where HIV-positive individuals could be studied.¹⁵

The situation changed in 1995 – it worsened. The fact that the post-1995 explosion in the number of HIV/AIDS cases originated in Ukraine is well-documented, but the circumstances that led to the infiltration of the Russian Federation by the epidemic is not. Through the end of 1995, as much as 43% of cumulative AIDS diagnoses in Europe were directly or indirectly linked to drug use, particularly injecting drug use.¹⁶

The dramatic uptick in the number of injecting drug users (IDUs) initially started in Ukraine, specifically around Odessa. Studies have shown that about half of injecting drug users in the region shared needles at least once a week,¹⁷ and that it is common practice to pull some of their own blood back into the syringe following the initial injection in order to flush out any remaining narcotics.¹⁸ Additionally, the way that drugs

¹⁴ Judyth Twigg and Richard Skolnik, "Evaluation of the World Bank's Assistance in Responding to the AIDS Epidemic: Russia Case Study" (The World Bank, 2005).

¹⁵ Laurie Garrett, *Betrayal of Trust*.

¹⁶ Kirsi Liitsola et al., "HIV-1 Genetic Subtype A/B Recombinant Strain Causing an Explosive Epidemic in Injecting Drug Users in Kaliningrad," *AIDS* 12, no. 14 (October 1998): 1907–19, <https://doi.org/10.1097/00002030-199814000-00023>.

¹⁷ Yuri A Amirkhanian, Jeffrey A Kelly, and Timothy L McAuliffe, "Psychosocial Needs, Mental Health, and HIV Transmission Risk Behavior among People Living with HIV/AIDS in St Petersburg, Russia," *AIDS* 17, no. 16 (November 2003): 2367–74, <https://doi.org/10.1097/00002030-200311070-00012>.

¹⁸ Laurie Garrett, *Betrayal of Trust*.

destined for injection were manufactured in the region inadvertently spread the virus to other users.

Injectable drugs were typically mass-produced and checked for quality and potency by young drug addicts seeking free narcotics. These addicts would repeatedly dip their personal syringes into the large pots, and frequently pulled the plunger in and out several times for reasons previously mentioned. Those who spearheaded these drug operations often had children collect used syringes from the so-called “Odessa shooting field” and refill them with narcotics to be put back into circulation, thereby increasing the likelihood of spreading the virus to other IDUs. In January of 1997, an organization by the name of Trusting Spot collected thousands of used syringes from the Odessa shooting field and found that a third of them tested positive for HIV.¹⁹

One factor that made the rapid spread of HIV among IDUs in Odessa possible is the location of Eastern European countries. Officials at UNAIDS identified eight out of the ten known HIV subtypes circulating throughout Eastern Europe and extending as far as Vladivostok in eastern Russia. The high prevalence of different HIV subtypes in this well-traveled region of the world made it possible for individuals to be infected with multiple HIV subtypes simultaneously, thereby creating the opportunity for different viral subtypes to mix genomes and create new forms of HIV.²⁰

In Ukraine, the majority of IDUs who tested positive for HIV were found to be infected by subtype A (IDU-A), which is believed to have been introduced into the region from the DRC or the Republic of Guinea. However, another strain of HIV, named IDU-B, was also co-circulating among IDUs in Ukraine. In the 1990s, significant portions of

¹⁹ Laurie Garrett.

²⁰ Laurie Garrett.

the Ukrainian labor force migrated to industrial regions of the Russian Federation, bringing along the scourge of injection drug use and HIV with them.²¹ The rapid spread of HIV through the Russian Federation, particularly through the population of Russian IDUs, began in Kaliningrad and then spread to other Russian cities in the following years. From 1994 to 1996, the period of the Kaliningrad outbreak, the number of new HIV cases attributed to IDUs jumped from zero to 66%, thereby illustrating the huge epidemic potential within the Russian Federation at this time.²²

As mentioned previously, the HIV/AIDS outbreaks throughout Eastern Europe and the Russian Federation were unique in that they were not all caused by the same subtype of HIV. Each of the known strains of HIV-1 can be found in this region of the world, suggesting that HIV-1 has been introduced on several different occasions.²³ This particular set of circumstances proved to be extremely beneficial to the virus, allowing for the exchange of genetic material between IDU-A and IDU-B, thereby creating a new strain: CRF03_AB. This particular recombinant was responsible for the outbreak not only in Kaliningrad, but also in portions of northern and central Russia, where it accounts for 23% of infections.²⁴ The trend of HIV-1 subtype A prevalence can also be seen in the IDU community in St. Petersburg. Within the St. Petersburg IDU community, 45.2% are HIV positive, and all but one of the 110 blood samples analyzed from the IDU community contained subtype A. However, there is a second and independent epidemic

²¹ Elena Kazennova et al., "HIV-1 Genetic Variants in the Russian Far East," *AIDS Research and Human Retroviruses* 30, no. 8 (August 2014): 742–52, <https://doi.org/10.1089/aid.2013.0194>.

²² Judyth Twigg and Richard Skolnik, "Evaluation of the World Bank's Assistance in Responding to the AIDS Epidemic: Russia Case Study."

²³ Liitsola et al., "HIV-1 Genetic Subtype A/B Recombinant Strain Causing an Explosive Epidemic in Injecting Drug Users in Kaliningrad."

²⁴ Kazennova et al., "HIV-1 Genetic Variants in the Russian Far East."

of HIV-1 subtype B in another marginalized group of St. Petersburg's population: men who have sex with men (MSM).²⁵

A study conducted between the years of 2006 and 2008 found an HIV prevalence of 8% among MSM. Out of 17 blood samples collected from MSM in St. Petersburg, all 17 contained HIV-1 strains of subtype B. HIV transmission among MSM in St.

Petersburg has been observed since the beginning of the Russian HIV epidemic, and has primarily consisted of subtype B introduced from Western Europe or the United States.²⁶

A separate study that examined MSM in St. Petersburg found that MSM engage in very risky sexual behaviors, likely due to the fact that the Russian government has taken extensive steps to end "gay propaganda," including valuable information about the HIV epidemic among MSM and sexual health for gay men.²⁷

For example, Deti-404 is an online group that offers psychological support, advice, and a safe community for LGBT youth, and as of mid-November 2018 it had nearly 97,000 members. Deti-404 has been shut down four separate times from 2015-2016 by the Russian government for violating the law protecting the "the informational security of children." Luckily, however, each time the website is shut down the creators have been able to move it to a different space on the internet so that it remains available for those who need it.²⁸

²⁵ Elena Dukhovlinova et al., "Two Independent HIV Epidemics in Saint Petersburg, Russia Revealed by Molecular Epidemiology," *AIDS Research and Human Retroviruses* 31, no. 6 (June 2015): 608–14, <https://doi.org/10.1089/aid.2014.0150>.

²⁶ Dukhovlinova et al.

²⁷ Michael Bochenek and Kyle Knight, *No Support: Russia's "Gay Propaganda" Law Imperils LGBT Youth* (New York, N.Y.: Human Rights Watch, 2018).

²⁸ Bochenek and Knight.

A study of people living with HIV/AIDS in St. Petersburg found that, on average, Russian MSM had a mean of over 150 sexual male partners, although it was found that MSM who were also IDUs had less male partners and were more likely to identify as heterosexual, even though they reported having sex with men. Since learning of their HIV status, MSM had an average of 36 male partners which perhaps indicates a lack of awareness of HIV transmission. The partners of HIV positive MSM were both HIV-positive and HIV-negative, with an average of 22 and 17 partners in each category respectively. However, only half of males were found to use condoms consistently when having intercourse with partners of negative or unknown HIV status²⁹

Furthermore, the same study found that 57% of HIV-positive MSM had engaged in anal sex with a serodiscordant partner since learning of their own HIV status. Additionally, 48% of them had engaged in some unprotected anal sex with other males, and 25% of their anal sex was unprotected. The risk is even higher among men who have sex with men and are also IDUs, essentially doubling the risk of contracting HIV. Most of the HIV-positive participants in this study remained sexually active and continued to participate in risky sexual and injection-related behaviors.³⁰ However, risky sexual behavior is not confined to the Russian population of MSM. After the collapse of the Soviet Union, prostitution became a multibillion-dollar, multinational enterprise, leading to the globalization of sexually transmitted diseases and, as discussed previously, the introduction of different subtypes of HIV into this region of the world.

²⁹ Amirkhanian, Kelly, and McAuliffe, "Psychosocial Needs, Mental Health, and HIV Transmission Risk Behavior among People Living with HIV/AIDS in St Petersburg, Russia."

³⁰ Amirkhanian, Kelly, and McAuliffe.

With the dissolution of the Soviet Union came rapid socioeconomic change, as well as an increase in individual vulnerability to contracting HIV. According to the World Bank, there has been an increase in the number of ‘street children’ at risk of sexual exploitation, a drop in the age of onset of sexual activity, increasing incidences of rape, as well as an increase in the number of women resorting to prostitution for economic survival. Sex work in the Russian Federation is very different than sex work in Western Europe and the United States. The majority of sex workers in the Russian Federation engage in sex work on a part-time basis, typically as a source of supplemental income.³¹

Sex workers typically work for a мамочка (mamochka), or a pimp. In order to maximize profit, mamochkas will often encourage their workers to engage in unsafe sexual practices. For example, mamochkas typically force sex workers not to use condoms because it allows them to charge more for their services. Among sex workers not employed by a mamochka, most claim to use condoms but, in actuality, they just charge more for customers who refuse to use them. A majority of these sex workers cannot afford condoms, which cost about 25¢, so when you talk to them about engaging in safe sexual encounters they think that it means avoiding beatings – not HIV or other STDs. To make matters worse, some of these sex workers are school-aged children. Children as young seven and eight work during recess performing sexual favors for adult men behind food kiosks, earning them about two dollars.³²

Police brutality towards female drug users and sex workers has also been noted as an important player in HIV risk in the Russian Federation. Police brutality is so common

³¹ Judyth Twigg and Richard Skolnik, “Evaluation of the World Bank’s Assistance in Responding to the AIDS Epidemic: Russia Case Study.”

³² Laurie Garrett, *Betrayal of Trust*.

in the Russian Federation that society has coined the term police беспредел (besprediel) or police lawlessness. Russian police typically engage in extrajudicial policing practices such as physical violence or arrests in the absence of illegal activities in order to instill fear and terror among the Russian population. A 2016 study reported that nearly 25% of Russian women have been forced to have sex with a police officer, which is over three times the regional average of non-partner sexual violence against women. It is even estimated that sexual violence from police may be underreported, as sex in exchange for freedom from harassment or prosecution is common and may not be seen as rape or sexual violence. This practice has become so common that Russian society has also coined a term for these women who are forced to engage in sexual acts with police officers: субботник (subbotnik), which is an old Soviet term referring to workers who are forced to work for free.³³

The general lack of education on HIV and how it is transmitted, even among healthcare professionals, is among the reasons that HIV has been able to spread rapidly throughout the Russian Federation. A 2003 study examined the knowledge of HIV/AIDS among the attendees of an STD clinic in St. Petersburg and found that, on average, participants were able to correctly answer only 55% of questions on an HIV/AIDS knowledge test. Among the most common misconceptions were: HIV can be spread through kissing, HIV can be spread by mosquitoes, and oral contraceptives provide protection against HIV.³⁴ Unfortunately, many of these misconceptions are shared by

³³ Karsten Lunze et al., "Sexual Violence from Police and HIV Risk Behaviours among HIV-Positive Women Who Inject Drugs in St. Petersburg, Russia – a Mixed Methods Study," *Journal of the International AIDS Society* 19, no. 4 (Suppl 3) (July 18, 2016), <https://doi.org/10.7448/IAS.19.4.20877>.

³⁴ Steven D Pinkerton et al., "HIV/AIDS Knowledge and Attitudes of STD Clinic Attendees in St. Petersburg, Russia," *AIDS and Behavior*, 2003, 8.

physicians and nurses practicing throughout the Russian Federation, and that is reflected in the ways that they interact with and treat patients with HIV.

The HIV care system in the Russian Federation is centralized, and care is typically delivered in specialized care centers and occasionally at infectious disease hospitals.³⁵ Highly compartmentalized health systems make it astronomically more difficult for individuals to access care, which is made worse by the overall lack of sites needed to meet the treatment needs of the Russian HIV-positive population. Comprehensive care for HIV not only includes HAART, but it also commonly includes psychiatric care and addiction treatment. Most of the time, physicians practicing in these areas do not communicate with each other or get involved in aspects of their patients' health outside of their area of expertise – making it nearly impossible to deliver comprehensive, multidimensional care to HIV-positive Russians.³⁶

Among those who do get connected to care, most are generally dissatisfied with the quality of care they receive. In a 2016 survey, 75% of participants who were not currently in medical care reported feeling mistreated by providers because their doctors did not interact with them properly and showed little interest in their problems. One 30-year-old male said that "...doctors put a distance at once, like a wall," when treating a patient with HIV. Additionally, a full third of survey participants reported having past

³⁵ Anna V. Kuznetsova et al., "Barriers and Facilitators of HIV Care Engagement: Results of a Qualitative Study in St. Petersburg, Russia," *AIDS and Behavior* 20, no. 10 (October 2016): 2433–43, <https://doi.org/10.1007/s10461-015-1282-9>.

³⁶ Andrea Krüsi et al., "Social and Structural Determinants of HAART Access and Adherence among Injection Drug Users," *International Journal of Drug Policy* 21, no. 1 (January 2010): 4–9, <https://doi.org/10.1016/j.drugpo.2009.08.003>.

negative experiences when interacting with HIV medical staff. For these reasons, many participants eventually postponed or refused entirely to begin HIV medical care.³⁷

It has also been seen that physicians sometimes discriminate against patients who have HIV. One study found that nearly 50% of HIV-positive people interacting with a physician were forced by either their physician or the police to sign a written acknowledgement of their HIV-positive status. This acknowledgement could then be used as a basis for criminal charges against those who were suspected of putting others at risk of infection. An additional 44% were forced by their physician to provide information about their sexual or drug use patterns. 30% reported that they were refused general health care altogether, and 29% said that they were isolated from other patients in a hospital or clinic because of their HIV status.³⁸ A positive HIV status was also found to influence access to care that is not directly tied to HIV. In a separate study focusing on discrimination felt by people living with HIV in the Russian Federation, it was found that 5% of HIV-positive individuals were refused family planning services and that another 5% were refused services for sexual and reproductive health.³⁹ Not only do physicians contribute to the spread of HIV through discrimination and refusal of care, but they also directly spread the virus through unsafe medical practices.

While it is clear that many physicians and other health care workers are concerned by the idea of contracting HIV from a patient, many routinely perform procedures that put them directly in contact with patient blood without any protective equipment. One

³⁷ Kuznetsova et al., "Barriers and Facilitators of HIV Care Engagement."

³⁸ Amirkhanian, Kelly, and McAuliffe, "Psychosocial Needs, Mental Health, and HIV Transmission Risk Behavior among People Living with HIV/AIDS in St Petersburg, Russia."

³⁹ Alexandra Pisareva, "Russia People Living with HIV Stigma Index Research 2010 EN.Pdf" (Yuri Levada Analytical Center, 2010).

such example can be found in Laurie Garrett's book *Betrayal of Trust*. Garrett tells the story of Russian neurosurgeons performing brain surgery on an HIV-positive drug user from Kaliningrad. The surgeons refused to wear gloves on account of the fact that "the brain is a fine structure and gloves would impede their work," – six of the surgeons and nurses in the operating room for that procedure later tested positive for HIV.⁴⁰ Further contributing to the spread of HIV through unsanitary and unsafe medical practices is the performance of abortions outside of a hospital.

As discussed previously, many women of reproductive age in the Russian Federation do not use condoms either due to a lack of access or a lack of education. One study of Russian women in St. Petersburg found that only small proportions of women had ever received any kind of sexual education, and a majority of the sex education they did receive was received at home and was insufficient.⁴¹ When women become pregnant with an unwanted pregnancy, abortions are typically the primary method of birth control. According to a 1997 quote from Andrei Sinyavsky, there are roughly 240 abortions per 100 live births in Russia – one of the highest rates of abortion in the world. After the collapse, doctors were able to make extra cash by performing procedures outside of the hospitals. Physicians typically would not do any type of HIV or other STD screening on women before performing these procedures, and instruments were typically not adequately sterilized in between patients. This means that if a physician performs an abortion on a woman who is HIV-positive and then performs a similar procedure on

⁴⁰ Laurie Garrett, *Betrayal of Trust*.

⁴¹ Elena Regushevskaya et al., "Contraceptive Use and Abortion Among Women Of Reproductive Age in St. Petersburg, Russia," *Perspectives on Sexual and Reproductive Health* 41, no. 1 (2009): 51–58, <https://doi.org/10.1363/4105109>.

another woman without sterilizing the medical equipment, he is able to unknowingly infect one woman after another with HIV.⁴²

Due to the high seroprevalence of HIV in the IDU population, prostitution, and the unintentional spread of the virus through healthcare facilities and practices, HIV has also been able to move into the Russian heterosexual population. Studies suggest that HIV may be spreading rapidly due to a relatively small group of infected individuals who are engaging in multiple high-risk behaviors including IDU, unprotected sex, and sex without disclosure of HIV serostatus.⁴³

One study of HIV-positive heterosexual IDUs in St. Petersburg found that 79% of IDUs reported injecting unsafely at least once in the 30 days prior to the survey. The term unsafely was taken to mean that individuals had shared syringes, cookers, cotton, or water used for injecting narcotics. These unsafe drug practices dramatically increase the risk of contracting HIV, as well as the risk of spreading the virus to heterosexual partners. Researchers found that individuals are actually less likely to use condoms with partners that were assumed to be IDUs, thereby highlighting the perceptions of HIV in the Russian Federation: that anyone who injects drugs is likely to be infected. The perceived serostatus of the partner was the strongest predictor of condom use – condoms were only used 36% of the time when the partner was perceived to be positive, 70% of the time when the partner was thought to be negative, and 48% of the time when the partners serostatus was perceived as unknown.⁴⁴ Awareness of one's serostatus and willingness to

⁴² Laurie Garrett, *Betrayal of Trust*.

⁴³ Laretta E. Grau et al., "HIV Disclosure, Condom Use, and Awareness of HIV Infection Among HIV-Positive, Heterosexual Drug Injectors in St. Petersburg, Russian Federation," *AIDS and Behavior* 15, no. 1 (January 2011): 45–57, <https://doi.org/10.1007/s10461-010-9775-z>.

⁴⁴ Grau et al.

disclose serostatus to prospective partners have both shown to factor significantly into the spread of HIV through the Russian heterosexual population.

Fewer than 40% of the participants in one study were aware of their partner's HIV status at the time of sex, which presents a significant risk for both parties involved of contracting HIV. Additionally, it was found that among HIV-positive participants, HIV serostatus was disclosed only 73% of the time and was less likely to occur with younger partners or with those whose serostatus was understood to be negative or unknown. It would be logical to assume that disclosure to potentially negative partners or partners of unknown serostatus would be associated with increased condom use, but disclosure was in fact found to be associated with less condom use. Finally, in regards to awareness, the study found that the number of potentially uninfected partners being exposed by infected persons could be reduced by as much as 60% if only half of the undiagnosed HIV-infected IDUs were to learn of their HIV status.⁴⁵

Each of the distinct populations discussed in this chapter faces discrimination from Russian society at large. IDU and MSM are stigmatized for not upholding traditional Russian values and for falling ill to the shortcomings of Western culture. Sex workers are often ostracized for their participation in a line of work that is viewed negatively by members of the public, and they often fall victim to abuse at the hands of law enforcement. The one thing that each of these groups have in common, however, is their heightened risk of becoming infected with HIV - which serves to magnify discrimination and stigma to an even greater degree. Several of the factors discussed in this chapter and the stigma and societal discrimination generated by them can

⁴⁵ Grau et al.

significantly impact both the willingness and the ability of HIV-positive people to access treatment, and HIV-negative people to access prevention services.

CHAPTER THREE

Who is at the Greatest Risk and How as HIV Affected Them?

In the Russian Federation, as in other regions of the world, not all groups of society are equally as likely to contract HIV. Among those disproportionately affected are: injecting drug users (IDUs), sex workers, prisoners, and men who have sex with men (MSM). Societal stigma towards individuals belonging to one of the aforementioned groups is already high in the absence of HIV infection, and is magnified when an individual does contract the virus. High levels of stigma towards HIV-positive individuals identifying with one or more of these groups have the potential to increase vulnerability to discrimination, complicate the psychological adjustment of living with HIV, and lead to significant mental health problems and barriers to accessing antiretroviral therapy (ART).¹

The true proportion of Russian IDUs who are HIV-positive is a matter of active debate, however two independent studies among IDUs in St. Petersburg conducted a year apart found HIV seroprevalence to be somewhere between 42.5% and 60%.^{2,3} IDUs who are both HIV-positive and HIV-negative face high levels of societal stigma, defined as a

¹ Yuri A Amirkhanian, Jeffrey A Kelly, and Timothy L McAuliffe, "Psychosocial Needs, Mental Health, and HIV Transmission Risk Behavior among People Living with HIV/AIDS in St Petersburg, Russia," *AIDS* 17, no. 16 (November 2003): 2367–74, <https://doi.org/10.1097/00002030-200311070-00012>.

² Elena Dukhovlinova et al., "Two Independent HIV Epidemics in Saint Petersburg, Russia Revealed by Molecular Epidemiology," *AIDS Research and Human Retroviruses* 31, no. 6 (June 2015): 608–14, <https://doi.org/10.1089/aid.2014.0150>.

³ Sarah K. Calabrese et al., "Internalized HIV and Drug Stigmas: Interacting Forces Threatening Health Status and Health Service Utilization Among People with HIV Who Inject Drugs in St. Petersburg, Russia," *AIDS and Behavior* 20, no. 1 (January 2016): 85–97, <https://doi.org/10.1007/s10461-015-1100-4>.

personal trait or mark that serves as the basis for social devaluation and discrediting. This stigma often arises when differences are labeled as undesirable and lead to separation, status loss, and discrimination in social, economic, and political power contexts. Furthermore, individuals who possess stigmatized characteristics may anticipate negative treatment by others and inadvertently come to promote the stigma associated with their own status.⁴ In addition to societal stigma, these individuals also suffer from high levels of internalized stigma, which results when negative attitudes and feelings associated with a characteristic which has been devalued by society are internalized and self-applied by individuals who possess that characteristic. IDUs who are HIV-positive are typically seen to have high levels of both internalized drug stigma and internalized HIV stigma, both of which have been identified as mechanisms through which societal stigmas can impact health outcomes.⁵

Additionally, it has been noted that multiple internalized stigmas have the potential to interact with one another to exacerbate or modify the effects of each.⁶ A 2015 study in St. Petersburg aimed to uncover how the interaction of internalized drug and HIV stigma in HIV-positive IDUs affects health status and health service utilization. The study used a sample of 811 IDUs who were both HIV-positive and HIV-negative. A relatively low proportion of individuals in the sample had completed any higher education and a majority of participants reported some degree of financial difficulty, daily or near-daily drug use, and longstanding injection drug use. Less than a third of the

⁴ Bruce G. Link and Jo C. Phelan, "Conceptualizing Stigma," *Annual Review of Sociology* 27, no. 1 (August 2001): 363–85, <https://doi.org/10.1146/annurev.soc.27.1.363>.

⁵ Calabrese et al., "Internalized HIV and Drug Stigmas."

⁶ Valerie A Earnshaw et al., "Intersectionality of Internalized HIV Stigma and Internalized Substance Use Stigma: Implications for Depressive Symptoms," *Journal of Health Psychology* 20, no. 8 (August 2015): 1083–89, <https://doi.org/10.1177/1359105313507964>.

participants in the study reported receiving regular HIV care, and the mean subjective health rating (scale: 0 – 100) and mean symptom count (out of 10) were 58.93 and 2.60 respectively.⁷

The results of the study indicated that internalized HIV and drug stigma were negatively associated with health status and health service utilization among IDUs who were HIV-positive. An association with poorer self-rated health, higher symptom count, lower odds of receiving regular HIV care, and lower likelihood of receiving drug treatment were also seen with high levels of internalized drug and HIV stigma. Interestingly, internalized HIV stigma was more strongly related to each of the previously mentioned metrics when internalized drug stigma is high than when it is low. This may be due, in part, to the process of receiving drug treatment in the Russian Federation – which requires formal registration as a drug user and monitoring for five years following treatment. During the five years post-treatment, quality of life is often reduced significantly by restrictions on employment, drivers licenses, and military service. The act of registering as a drug user itself is often believed to mark those who use drugs as social outcasts and subject them to police harassment or brutality if confidentiality is breached.⁸

In fact, drug policing practices in the Russian Federation have been found to actually increase HIV risk behaviors among people who inject drugs rather than reduce them. Punitive policing practices include unjustified arrests, planting of false evidence and extrajudicial syringe confiscations. Drug use is illegal in the Russian Federation, and national legislation allows drug-dependent people to be arrested on the basis of their drug

⁷ Calabrese et al., “Internalized HIV and Drug Stigmas.”

⁸ Calabrese et al.

use alone. The possession of needles is not illegal in the Russian Federation, but police are known to arrest drug users for this reason alone.⁹ A study in St. Petersburg found that more than half of IDUs surveyed had been arrested by police for possession of needles and syringes, which is not illegal in the Russian Federation, or for drugs planted on them by the police.¹⁰

The fear of imprisonment for syringe possession leads to an increase in HIV risk behaviors by discouraging the carrying of clean needles, thereby increasing rushed and unsafe injections in riskier environments. IDUs have even been known to identify the fear of arrest at pharmacies and syringe exchange programs as primary factors limiting their access to clean needles.¹¹ This phenomenon has been documented in one study of female sex workers at the U.S.-Mexico border which found that HIV infection was more common among individuals who had experienced syringe confiscation by police than those who had not, and HIV infection was found to be independently associated with confiscation of syringes by the police.¹²

The police in the Russian Federation commonly use physical violence against drug users. A 2015 study from Boston University that examined police brutality against drug users in the Russian Federation found that IDUs are often not perceived to be human by the police, which plays the role of facilitating violence against them. One police

⁹ Karsten Lunze et al., "Stigma and Human Rights Abuses against People Who Inject Drugs in Russia—A Qualitative Investigation to Inform Policy and Public Health Strategies," ed. Benjamin Mason Meier, *PLOS ONE* 10, no. 8 (August 25, 2015): e0136030, <https://doi.org/10.1371/journal.pone.0136030>.

¹⁰ Karsten Lunze et al., "Punitive Policing and Associated Substance Use Risks among HIV-Positive People in Russia Who Inject Drugs," *Journal of the International AIDS Society* 17, no. 1 (January 2014): 19043, <https://doi.org/10.7448/IAS.17.1.19043>.

¹¹ Lunze et al., "Stigma and Human Rights Abuses against People Who Inject Drugs in Russia—A Qualitative Investigation to Inform Policy and Public Health Strategies."

¹² Steffanie A. Strathdee et al., "Social and Structural Factors Associated with HIV Infection among Female Sex Workers Who Inject Drugs in the Mexico-US Border Region," ed. Landon Myer, *PLoS ONE* 6, no. 4 (April 25, 2011): e19048, <https://doi.org/10.1371/journal.pone.0019048>.

officer interviewed had the following opinion on the treatment of IDUs: “You know what is interesting? Human rights – the key word is human. Human rights are for humans. But drug users are not human. Therefore, they don’t have human rights.” A mindset similar to this one allows police officers to justify their treatment of IDUs, and as a result they are frequently seen using violence to extort money from IDUs in order to avoid arrest. Additionally, police are known to sometimes give “moral punishment” to drug users – including physical violence and rape.¹³

Substance abuse, constant fear of the police, and both external and internalized drug and HIV stigma combine to put IDUs at risk of developing severe mental health conditions and create significant barriers to accessing HIV treatment or prevention services. A study of HIV-positive persons living in St. Petersburg found that 58% of participants (not all of which are IDUs) had STAI anxiety scores that were comparable to medical patients with psychiatric components to their mental health problems. An additional 42% of participants scored so highly that their STAI anxiety scores were similar to levels found in psychiatric inpatients. Additionally, 60.4% of participants scored at or above the CES-D indicator of possible clinical depression, and 36.5% scored at or above the CES-D indicator of probable clinical depression and major depressive symptomology. Indicators for both depression and anxiety were higher amongst IDUs than the general population, and were highest among IDUs that were also MSM.¹⁴ The fact that not all of the study participants were IDUs highlights the mental health

¹³ Lunze et al., “Stigma and Human Rights Abuses against People Who Inject Drugs in Russia—A Qualitative Investigation to Inform Policy and Public Health Strategies.”

¹⁴ Amirkhanian, Kelly, and McAuliffe, “Psychosocial Needs, Mental Health, and HIV Transmission Risk Behavior among People Living with HIV/AIDS in St Petersburg, Russia.”

challenges that being HIV-positive in the Russian Federation poses - even in the absence of drug use.

Depression is the most commonly diagnosed psychiatric illness in people living with HIV, with prevalence rates up to 10 times higher than the general population. Depression not only takes a toll mentally, but depressive symptoms have also been shown to influence HIV progression. Depressive symptomology has been found to be associated with poor virological response to treatment, increased immunologic failure, and increased likelihood of AIDS-defining illness. A 2013 study focusing on HIV-positive Russian drinkers found that depressive symptoms played a potential role in making the decision to initiate ART. Delaying the initiation of ART for HIV infection can lead to opportunistic infections, cardiovascular, kidney, and liver disease, and neurological complications. Interestingly, the same study also reports that individuals who had been treated for their depression were more likely to receive ART than non-treated patients, which may be attributable to this population's willingness to accept and initiate pharmacotherapy for medical conditions. Regardless, though, the Russian Federation remains among the countries with the lowest ART coverage for those living with advanced HIV infection.¹⁵

Previous studies have indicated that stigma about a given identity is particularly distressing if that identity is central to a person's self-definition, which may help to explain why IDUs face such high levels of clinical depression and anxiety.¹⁶ A 2010 study of 660 people living in 11 different Russian cities with HIV put out by the Russian government reported that 78% of participants experienced some kind of negative feelings

¹⁵ Tracie M. Goodness et al., "Depressive Symptoms and Antiretroviral Therapy (ART) Initiation Among HIV-Infected Russian Drinkers," *AIDS and Behavior* 18, no. 6 (June 2014): 1085–93, <https://doi.org/10.1007/s10461-013-0674-y>.

¹⁶ Calabrese et al., "Internalized HIV and Drug Stigmas."

towards themselves in connection with their HIV status in the last 12 months, and 13% reported having wished to end their life. Additionally, it was found that more than half of the participants had made some kind of auto-discriminatory decision in the last 12 months.¹⁷

As with every decision, the decision for an IDU to seek treatment for their HIV infection is not made in a vacuum – it is made in a space that not only takes into account the previously mentioned mental factors, but also systemic barriers that may prevent them from receiving ART. Access to ART in the Russian Federation has increased significantly, with 50% of those who need it able to access it in 2011. However, the current system largely ignores IDUs or makes it more difficult for them to access ART than the general population. For example, an estimated 80% of the HIV cases in the Russian Federation are among IDUs, but only about 20% of the already limited number of people receiving ART are IDUs. A 2012 qualitative study of HIV-positive IDUs in Ekaterinburg found that the main reasons for not seeking treatment were: labyrinthine bureaucracy, a system ‘Catch 22’ (referring to a situation in which there is no possible way to win) created by the expectation that ART treatment was conditional upon treating their drug addiction, and a verticalized healthcare system in which severe lack of integration makes accessing ART difficult.¹⁸

Ekaterinburg is located in the Sverdlosk region of the Russian Federation, and is considered to have one of the most advanced systems for connecting HIV-positive

¹⁷ Alexandra Pisareva, “Russia People Living with HIV Stigma Index Research 2010 EN.Pdf” (Yuri Levada Analytical Center, 2010).

¹⁸ A. Sarang, T. Rhodes, and N. Sheon, “Systemic Barriers Accessing HIV Treatment among People Who Inject Drugs in Russia: A Qualitative Study,” *Health Policy and Planning* 28, no. 7 (October 1, 2013): 681–91, <https://doi.org/10.1093/heapol/czs107>.

patients in need of ART with care providers. However, the process is full of bureaucratic red tape and requires multiple appointments with multiple different specialists. To start, an appointment must be made in advance, and this appointment can only be made over the phone on a line that is frequently too busy to get through. Many people that are seeking care for their HIV are unaware of this requirement, and will therefore be turned away when they show up at a clinic or hospital hoping to see a doctor.¹⁹

At the first appointment, individuals will receive referrals for tests to examine immunologic suppression and viral load, general bloodwork, urine checks, and fluorography. Each of these tests are generally carried out in different parts of the clinic, with each typically having its own line. Additionally, bloodwork is only done before 11 AM, so it is not uncommon for patients to have to return multiple days in a row in order to complete their bloodwork. To get their test results, individuals must then make an appointment with an infectious disease specialist – which typically requires that an appointment be made up to a month in advance. Individuals must also visit the dentist, dermatologist, gynecologist when applicable, fluorography, and consultation with a tuberculosis specialist. Some of these services are available at the regional AIDS center, but others are located in local polyclinics and all specialists require separate appointments.²⁰

Once they have seen the required specialists, all people seeking access to ART are assessed by a psychologist. At the first appointment, psychological screening includes a questionnaire meant to assess their HIV and ART awareness. Following this, at their second appointment, the psychologist considers how likely the patient is to adhere to their

¹⁹ Sarang, Rhodes, and Sheon.

²⁰ Sarang, Rhodes, and Sheon.

medication schedule. It is at this appointment that some patients are required to complete several sessions of ‘Patients’ School’ which has the goal of educating patients on ART and increasing their chances of medication adherence. One 25 year-old patient, Evgeniy, described the process as trying to convince the psychologist that you deserved to be one of the “chosen ones.”²¹

The psychologist can then ask that individuals make an additional appointment with an infectious disease doctor to develop a treatment plan and acquire a prescription. However, the doctor can still recommend against treatment if they determine a patient’s drug or alcohol use to have adverse effects on their likelihood to maintain their treatment regime. To actually receive treatment, patients then require an official passport and residential registration in the Sverdlosk region. This process can take months to complete and significantly impacts treatment initiation for those in urgent need of ART. It is not uncommon for patients to have to delay ART initiation for several months as they go from doctor to doctor and ensure that they have all legal documents needed for treatment.²²

In the Sverdlosk region, there are no official regulations that deny IDUs access to ART – however, doctors retain the right to determine whether a patients’ drug or alcohol use will negatively affect their adherence to treatment. In a survey of 20 regions in the Russian Federation, only 2 explicitly stated that IDUs cannot qualify to receive ART and will only receive treatment when their condition has worsened to include multiple opportunistic infections – a point by which it is usually too late. However, it is common for doctors and other healthcare personnel to have the mentality that drugs must be

²¹ Sarang, Rhodes, and Sheon.

²² Sarang, Rhodes, and Sheon.

treated before HIV is treated. Unfortunately, it is extremely common in this setting for doctors to turn HIV-positive patients away until they have curbed their drug addiction.

One account reads like this:

In the AIDS centre, he had been told that he had a bad [CD4] cell count and they gave him 2 months, and asked him to try and quit drugs in those 2 months. And that once he had quit he should come back. But he continued to shoot up for a month while waiting to be admitted to the drug clinic. When there was a free bed...the doctor said he couldn't be admitted because of his heart apparently would not withstand the withdrawal. That was it, a vicious cycle.

The decisions made by doctors to withhold treatment until patients' drug addictions have been treated are not based solely on clinical factors, but often include judgements upon the lifestyles and character of possible patients. Even among those who do seek treatment for their drug addiction, the treatment is consistently thought to be ineffective because of cost, efficacy, and quality, as well as confidentiality and human rights breaches.²³

In Ekaterinburg, a prominent nongovernmental organization (NGO) called 'City Without Drugs' seeks to help individuals who have become addicted to drugs. However, the way this NGO goes about this is extremely ineffective and often cruel. The initiative promotes the coerced treatment of drug users, and it is not uncommon for this to be done against their consent. Treatment includes forced labor, physical beatings, and has even been known to include starvation. These methods of treatment are common in the Russian Federation, which could be due to the fact that opioid substitution therapy is illegal.²⁴

The last factor identified by IDUs as a barrier to accessing HIV treatment is the severe verticalization of the Russian healthcare system, which is a leftover from the

²³ Sarang, Rhodes, and Sheon.

²⁴ Sarang, Rhodes, and Sheon.

Soviet system. System verticalization means that each specialist or center is entirely their own entity, and as such, often do not share information about a patient with other specialists – thereby making it more difficult for both patients and doctors to achieve continuity of care. For example, there is only minimal drug specialist advice available within the regional AIDS centers, where all HIV treatment is handled. There is also no integration or co-location of TB and HIV or drug treatment services, and ART is not delivered to the TB hospital. To make matters worse, doctors are known to mitigate the problem of untreated drug use by discharging patients from the hospital; often sending them home to wait to die.²⁵

As mentioned earlier, there are several groups in Russian society that are at a higher risk of contracting HIV than the general population. However, as is often the case with sex workers and prisoners, there can be significant overlap between these different populations. For example, approximately 50% of prisoners in St. Petersburg were imprisoned on drug-related charges and estimates suggest that more than 10% of the Russian prison population had received a diagnosis of drug dependency.²⁶

Prisons have been known to have some of the highest concentrations of many communicable diseases such as TB, HIV, and viral hepatitis, with HIV infection in prisoners reaching up to 75 times that of the general population. Excluding the United States, the Russian Federation has the highest incarceration rate in the world, with about 1% of the Russian population currently imprisoned. One study of prisoners in the Samara Prison found extremely high rates of HIV and TB co-infection, with 6% of prisoners

²⁵ Sarang, Rhodes, and Sheon.

²⁶ Anya Sarang et al., “Drug Injecting and Syringe Use in the HIV Risk Environment of Russian Penitentiary Institutions: Qualitative Study,” *Addiction* 101, no. 12 (December 2006): 1787–96, <https://doi.org/10.1111/j.1360-0443.2006.01617.x>.

having both diseases. A separate study of Russian prisoners found that prisoners accounted for 30% of reported HIV infections in St. Petersburg since 1998, and in 2004 approximately 17% of prisoners were HIV-positive.²⁷ Additionally, HIV infection was higher among prisoners who were IDUs than among those who were not. This high-risk prison environment is thought to be attributable to the widespread and early introduction to injecting drugs in Russian society, with 4% of school children using drugs starting at ages as low as 13 years old.²⁸

In Russian penitentiary institutions, prisoners perceive drugs to be generally available but sterile injection equipment is extremely difficult to acquire. Although the frequency of injecting drugs may decrease once a person enters the prison, the likelihood of sharing syringes and other injection equipment has been seen to increase due to limited availability of syringes. One study of more than 1000 inmates in 11 prisons across the Russian Federation found that 26% of prisoners had injected drugs during the 3 weeks prior to the study, and 65% of prisoners had previously either used or lent used injection equipment.²⁹

The general attitude amongst Russian prisoners is that drugs are available given the right connections. Drugs have been known to enter the prisons through relatives, friends, lawyers, and even through the police. One prisoner reported that in order to get drugs, prisoners commonly admit to one or two other charges on top of the one they were

²⁷ Sarang et al.

²⁸ F. A. Drobniewski, "Tuberculosis, HIV Seroprevalence and Intravenous Drug Abuse in Prisoners," *European Respiratory Journal* 26, no. 2 (August 1, 2005): 298–304, <https://doi.org/10.1183/09031936.05.00136004>.

²⁹ Lizz Frost and Vladimir Tchertkov, "Prisoner Risk Taking in the Russian Federation," *AIDS Education and Prevention* 14, no. 5 (2002).

originally imprisoned for – and each additional charge provides a certain amount of drugs.³⁰

What makes prison populations such high-risk environments is not the abundance of drugs, but rather the shortage of sterile syringes. In Russian prisons, syringes are commonly stolen from the medical department and rotated throughout the prison for several months until confiscated, or they are homemade from a pen. Syringes are so scarce in this environment that they are stored and re-used for as long as possible and re-sharpened on a box of matches when blunt. It is not a rare occurrence to have an entire section of the prison, which can house as many as 200 people, injecting with only a single syringe. In order to mitigate this, some prisoners attempted to reduce syringe sharing outside of certain groups which they called their ‘families.’ Families generally consisted of about 8 prisoners who all shared a single cell and typically tried to keep their syringe within the family, but in this environment prisoners usually had no choice but to share their syringes with others.³¹

Another factor contributing to the spread of HIV in Russian prisons is the perceived safety of sharing syringes within the general prison population. This perception stems from the fact that inmates are routinely tested for HIV, hepatitis, and other sexually-transmitted infections upon entry to the prison; and HIV-positive inmates are usually segregated into separate cells. One male prisoner in Volgograd had this to say about sharing injection equipment: “There’s nothing to worry about there really. If you share a cell with a person, it means he’s got the same illnesses as you, either none at all,

³⁰ Sarang et al., “Drug Injecting and Syringe Use in the HIV Risk Environment of Russian Penitentiary Institutions.”

³¹ Sarang et al.

or he'll have the same as you." There are two main problems with this mentality; the first being the failure of prison authorities and prisoners to acknowledge the window period of primary HIV infection. HIV cannot be detected during this period but it can still be transmitted, providing the potential to rapidly spread HIV from one person to another in this setting. Additionally, sharing needles with other HIV-positive individuals provides the opportunity for co-infection with different subtypes, thereby increasing the odds of an HIV superinfection that can be extremely difficult to treat.³²

HIV risk behavior in prison settings seems to be more of a product of circumstance than of individual choices. Many prisoners who reported never having shared syringes before being incarcerated reported doing so once in the prison, thereby providing additional support to the theory that risk behavior in this setting is due largely to the circumstances in which individuals find themselves. One way to perhaps mitigate the risks associated with being an IDU in a Russian prison is to provide effective drug treatment options such as substitution treatment with methadone or buprenorphine – both of which are currently illegal in the Russian Federation. Researchers have also suggested that the practice of segregating HIV-positive prisoners should be limited due to the false sense of security that it can provide for others in the same setting.³³ It is of critical importance to remember that each of the discussed factors putting prisoners at an increased risk of acquiring HIV are not unique to the Samara prison, but are found in prisons across the Russian Federation.

One item of particular concern is the rapid turnover of prisoners in the Russian Federation. Research suggests that the Russian prison system has an annual turnover of

³² Sarang et al.

³³ Sarang et al.

350,000 to 5 million people, with IDUs being imprisoned for an average of 6 months.³⁴

While the HIV epidemic in this region of the world has been largely confined to IDUs, prisoners act as a potential bridge population between IDUs and the general population.

Of particular concern, because many IDUs do not start sharing needles until they are imprisoned and are given a false sense of protection from HIV, is the fact that many inmates who acquired HIV while imprisoned may not be aware of their serostatus and could inadvertently spread the virus to others. Another group that possesses a similar potential to act as a bridge population are sex workers, particularly those who are also IDUs.

Research has revealed a particularly close relationship between the use of injection drugs and sex work among women, with an estimated 22% - 82% of female sex workers also being IDUs. Additionally, studies suggest that among female IDUs, between 15% and 66% are also involved in some sort of sex work.³⁵ As discussed previously, women are typically at a greater risk of contracting a sexually-transmitted infection due to greater amounts of mucosal membranes in the reproductive tract, societal status, and other factors influencing a woman's capacity to negotiate safer sexual, and in this case injection, practices. Female IDUs have a tendency to be significantly younger than male IDUs, engage in riskier sexual practices, are more likely to share needles and syringes, and are more likely to share needles specifically with their sexual partner. The sexual

³⁴ Drobniewski, "Tuberculosis, HIV Seroprevalence and Intravenous Drug Abuse in Prisoners."

³⁵ Lucy Platt et al., "Impact of Gender and Sex Work on Sexual and Injecting Risk Behaviors and Their Association With HIV Positivity Among Injecting Drug Users in an HIV Epidemic in Togliatti City, Russian Federation:," *Sexually Transmitted Diseases* 32, no. 10 (October 2005): 605–12, <https://doi.org/10.1097/01.olq.0000175391.13947.f7>.

partners of female IDUs, compared to female non-IDUs, are also more likely to be male IDUs – which further increases their risk of contracting HIV.³⁶

Sex workers who are also IDUs have a greater risk of contracting HIV through injections than those who are not IDUs, due to the reasons mentioned in the previous paragraph, as well as their tendency to inject in higher risk environments. When compared to male IDUs and female IDUs who are not sex workers, sex workers tended to report first injection at a significantly younger age. The age at which these women first became involved in sex work tended to follow the age of first injection, indicating that sex work may have provided a means to support an existing drug habit. Specifically when injecting, IDUs who are also sex workers were significantly more likely than both men and non-sex workers to have used a needle or syringe that had been used previously by someone known to them to have been HIV-positive.³⁷

In Togliatti City, the majority of sex workers reported sex work as their primary source of income, with an average length of involvement of 2.8 years. These sex workers are usually younger women, and they typically become heavily involved in IDU communities, thereby increasing the likelihood of a sexual partner that is an IDU and exposure to HIV. Sex workers tended to report their sexual partner as the primary source of shared needles, indicating that women in this setting may be more likely to share injection equipment with individuals with which they have some sort of established relationship. The average sex worker in Togliatti City has 35.8 new clients per week, which greatly increases the risk of being exposed to the virus either through engagement in sexual practices or through sharing needles with these partners; it also elevates the

³⁶ Platt et al.

³⁷ Platt et al.

possibility of transmitting HIV to their non-IDU clients. The sharing of needles within IDU communities serves as a demonstration of trust and intimacy, and is therefore unlikely to change.³⁸

A separate study in St. Petersburg examining the influence of stigma and discrimination on sex workers' access to HIV services found that 48% of the street-based sex workers in St. Petersburg are HIV-positive. There are several barriers to accessing HIV services that sex workers must overcome in order to get the treatment they need. In St. Petersburg, 31% of the sampled sex workers reported that doctors have refused to treat them because of their involvement in sex work, 51% reported that doctors would not treat them because they were IDUs, and less than half of those sampled reported having ever disclosed their involvement in sex work to their care providers. Even more disheartening is the fact that 58% of sex workers feel that if they were to seek care, doctors would treat them badly, thereby discouraging them from seeking necessary medical care.³⁹

Female sex workers also must overcome self-imposed barriers, such as negative thoughts towards the self and others who are at similar risk of contracting HIV. Six percent of sex workers said that people with HIV should be punished, and an additional 9% said that HIV-positive persons should be isolated from society. Roughly half of the sex workers surveyed reported that they would be afraid to tell other people of an HIV-positive status, and 37% of sex workers who actually do have HIV reported feelings of social isolation once they learned of their positive status. Interestingly, sex work-related

³⁸ Platt et al.

³⁹ Elizabeth J. King et al., "The Influence of Stigma and Discrimination on Female Sex Workers' Access to HIV Services in St. Petersburg, Russia," *AIDS and Behavior* 17, no. 8 (October 2013): 2597–2603, <https://doi.org/10.1007/s10461-013-0447-7>.

stigma was found to be positively correlated with having been tested for HIV recently, maybe because it is more difficult to hide a positive HIV status from health care providers than it is to conceal engagement in sex work.⁴⁰

MSM constitute another marginalized group of Russian that is not only at a heightened risk of contracting HIV, but are also likely to face challenges accessing care. A 2016 study of MSM living in Moscow determined that approximately 15.6% of the MSM population there was currently living with HIV, with 76.6% of individuals testing HIV-positive being previously unaware of their infection status. Additionally, among those who were HIV-positive, only 16.9% were linked to care, 8.7% were on ART, and only 4.4% had achieved viral suppression. The likelihood of being linked to care, being put on ART, and having achieved viral suppression increased with the length of time that individuals were aware of their HIV infection, perhaps due to the amount of time that it takes to go through the necessary steps to access ART in the Russian Federation.⁴¹

Of particular interest is the fact that bisexual men were less likely than homosexual men to be aware of their HIV infection. This may be due to less knowledge of HIV risk related to unprotected anal intercourse, less access to HIV prevention information which is usually targeted to homosexual men, or because they may experience a greater level of self-stigma and isolation that would prevent them from utilizing HIV prevention services. About 20% of MSM report using private facilities for HIV testing despite low income, which suggests a high level of distrust in the free, public HIV testing facilities. Several of the study participants also reported purchasing negative

⁴⁰ King et al.

⁴¹ A L Wirtz et al., "The HIV Care Continuum among Men Who Have Sex with Men in Moscow, Russia: A Cross-Sectional Study of Infection Awareness and Engagement in Care," *Sexually Transmitted Infections* 92, no. 2 (March 2016): 161–67, <https://doi.org/10.1136/sextrans-2015-052076>.

HIV results, without ever actually having been tested for HIV, when they were required for employment or other legal issues; again highlighting the fear of confidentiality breaches from public institutions.⁴²

In March 2012, St. Petersburg passed a law that would fine individuals up to 500,000 rubles, which is approximately \$17,000 USD, for spreading “homosexual propaganda.” The anti-gay propaganda law was then passed at the national level in June 2013 and created a nationwide ban on propaganda for non-traditional sexual relations that made the sharing of information related to same sex practices a criminal offense. A 2017 study of MSM in Moscow found that among individuals who experienced stigma due to their sexual preferences, the likelihood of probable depression increased by a factor of 1.67 after the passage of the anti-gay laws.⁴³

Among the 1367 MSM who were surveyed in this study, 36.7% qualified as probably clinically depressed. Additionally, more than half of the MSM in Moscow report high levels of harmful or hazardous alcohol abuse that could be related to depressive symptoms. Within the broader group of MSM, men who regularly practice the receptive role during anal intercourse were found to experience higher levels of stigma, which nearly doubled the risk of probable depression in this group. Roughly 75% of the Russian population believes that homosexuality should not be accepted, which contributes to the high levels of stigma experienced by MSM and others in the LGBT community. MSM in the probable depression group were more likely to identify as

⁴² Wirtz et al.

⁴³ Emily Hylton et al., “Sexual Identity, Stigma, and Depression: The Role of the ‘Anti-Gay Propaganda Law’ in Mental Health among Men Who Have Sex with Men in Moscow, Russia,” *Journal of Urban Health* 94, no. 3 (June 2017): 319–29, <https://doi.org/10.1007/s11524-017-0133-6>.

homosexual, as well as less likely to be comfortable with their sexual identity – which increases the odds of depression by a factor of six.⁴⁴

Bisexual men were found to have odds of probable depression that were 29% lower than that of homosexual men, which has not been found in similar studies. The researchers suggest that this protective effect could be due to the fact that endorsement of a certain level of same-sex attraction permits a degree of psychological refuge from feelings of exclusion, self-stigma, and experiences of discrimination and violence. Additionally, having had five or more sexual partners within the last 6 months also had a protective effect against depression, with a 35% decrease in depressive symptoms among this group when compared to individuals who have had less than 5 sexual partners in the same timeframe. Finally, as predicted, high levels of social support and cohesion within this community also has a protective effect against depressive symptomology.

In conclusion, each of the discussed groups commonly experience discrimination, stigma, and social isolation within the Russian Federation due to societal opinions of characteristics that define them – which can include a positive HIV status. Members of these groups can have debilitating mental health conditions and have a greatly reduced chance of accessing ART or HIV prevention services when needed, often putting them at an increased risk of not only contracting HIV but also from dying of AIDS or AIDS-related illness. The political environment of the Russian Federation can be very harsh towards each of the groups mentioned, and towards HIV-positive individuals in general – thereby inadvertently making it more difficult to control the spread of HIV and to treat those who are afflicted by it. In order to build a comprehensive understanding of this

⁴⁴ Hylton et al.

problem, one must understand the stance of the Russian government and other public institutions on HIV and HIV risk factors, as well as what actions these groups take to promote or hinder access to risk-prevention services and treatment.

CHAPTER FOUR

How has the Russian Government Responded to the Epidemic?

In spite of the Soviet Union's commitment to public health and its efforts to prevent many communicable diseases, the response of the Russian Federation's leaders and institutions to the growing HIV/AIDS epidemic has been lackluster or altogether absent. In order to build an understanding the gravity of the situation, one must create a picture of the political context and implications of the epidemic, which will ultimately dictate how the Kremlin responds.

In the Russian Federation, the state is regarded as the ultimate center of authority by both government officials and the general populace – which contributes to the overwhelming isolationism that is inherent in the Russian culture and people. The same ideal is held by the country's leaders, with Putin and other members of the Russian political elite making it clear to the world that no changes in Russia's domestic affairs should arrive from outside of its borders.¹ Since 1993, the Russian government has insisted that the country deserves to and would be one of the greatest powers in the post-Cold War international system. The weakness of the Russian Federation in the post-Cold War era relative to European and Western powers has created political obsessions from the Kremlin about regaining international status and influence. After the dissolution of the Soviet Union, Yeltsin said the following: "Russia always was and remains a great world power. Such is its geopolitical position and its potential" and after his rise to power

¹ Vlad Kravstov, *Norm Diffusion and HIV/AIDS Governance in Putin's Russia and Mbeki's South Africa* (The University of Georgia Press, 2015).

Vladimir Putin declared that “either Russia will be a great power or it will not exist at all.” The Russian Federation itself is unlikely to disappear, but its status as an international power will continue to dwindle as a result of HIV/AIDS due to a weakening economy, an increasingly ineffective military, and an unstable social foundation.²

However, a worsening demographic decline, particularly among ethnic Russians, is threatening to compromise the Kremlin’s ability to maintain its status within the international system.³ In the best possible case, the HIV/AIDS epidemic will accelerate the country’s preexisting socioeconomic problems, and at worst it could lead to complete demographic collapse. In countries where HIV/AIDS has had a foothold for several decades, there has been significant reductions in societal stability, economic strength, and military effectiveness – all of which the National Intelligence Council reports “have a strong correlation with the likelihood of state failure in partial democracies.”⁴

The true rate of population decline in the Russian Federation is a matter of active debate, however it is obvious that the decline is becoming more rapid and that HIV/AIDS has the potential to be a great accelerator of that decline. In the absence of HIV, 15% of Russian couples are infertile, 75% of women experience serious complications during pregnancy, and the official fertility rate is less than half than that which would be needed for the Russian population to replace itself.⁵ The epidemic is currently causing the greatest levels of morbidity and mortality in regions of the country that are predominated by ethnic Russian populations, which are also the populations with the highest death rates

² Thomas Ambrosio, “The Geopolitics of Demographic Decay: HIV/AIDS and Russia’s Great-Power Status,” *Post-Soviet Affairs* 22, no. 1 (January 2006): 1–23, <https://doi.org/10.2747/1060-586X.22.1.1>.

³ Ambrosio.

⁴ Ambrosio.

⁵ Ambrosio.

and infant mortality in the absence of HIV/AIDS, as well as the younger generations. This combination of factors has significant implications for the future of the country. The World Bank predicts that Russia's population could fall below 100 million people by 2055; and as the population declines and becomes increasingly unhealthy, less money will be going into the government budget while the government will be forced to increase expenditures for social services – leading to failure or unwillingness of the government to provide for its pensioners. Additionally, fears of sinocization in the eastern part of the country because of the population crisis in these regions are at an all-time high as non-Russian ethnic groups grow rapidly as the numbers of ethnic Russians declines.⁶

HIV/AIDS is likely to reduce the country's labor supply, individual worker productivity, reduced savings and capital formation, as well as an increase in treatment costs. The majority of the burden created by the epidemic falls on the shoulders of those aged 15 to 30, and the threat of HIV/AIDS will cause this potential workforce to become either entirely unavailable or extremely underproductive. As the epidemic grows in severity, more money will have to be spent both individually and nationally to address it, leading to a decline in private savings and capital availability – which could lead to an inability of the Russian government to fund the programs that would be needed for long-term economic stability.⁷

With the increase in government spending that will be required if the epidemic is not addressed properly also comes great risk to the country's military effectiveness. Budgetary stress will reduce the ability of the military to purchase new equipment or upgrade existing equipment in order to compete militarily with other nations.

⁶ Ambrosio.

⁷ Ambrosio.

Additionally, drug use has become extremely common among members of the Russian military, with the number of drug users drafted into the military tripling or quadrupling with each cohort. Of current or former soldiers that have been confirmed to be HIV positive, over 30% acquired the virus while they were enlisted. These trends will eventually lead to a personnel shortage for the Russian military as it becomes unable to replace officers, succumbs to increased absenteeism, and sees a reduction overall morale as a result of sickness for ill soldiers and heavier workloads for healthy soldiers. Further illustrating the severity of the existing situation, before it gets any worse, the number of draftees rejected from military service due to a positive HIV status increased by a factor of 27 between the years of 2000 and 2005.⁸

In light of the political context and implications of the HIV/AIDS crisis, we can begin to piece together the response of the Kremlin and its leaders to the epidemic. HIV/AIDS was framed by the Russian government as an important political issue for the Russian people, however they had a very narrow understanding of the epidemic as being almost entirely a health problem only, focusing primarily on hospital-based transmissions through transfusions with contaminated blood or mother-to-child transmissions.⁹ The prevention programs that were put in place by the government up until 2002 were not able to address the realities of the epidemic. In 2002, the Russian government committed to playing a bigger role in mitigating the spread of the virus, but they only allocated an equivalent of \$20 million for the entirety of their HIV/AIDS program – which comes out to roughly 13 cents per citizen. Additionally, the priorities and methods of resource

⁸ Ambrosio.

⁹ Christopher Davis and Ben Dickinson, "Priorities, Government Institutions and Foreign Assistance in the Fight against HIV/AIDS in Russia," *Public Administration and Development* 24, no. 1 (February 2004): 31–40, <https://doi.org/10.1002/pad.295>.

allocation used by the government to handle the epidemic were not designed in ways that would control the most common causes of HIV infection in the Russian Federation. For example, as mentioned earlier, they dedicated the most money and gave the highest priority to reducing infection in the medical system and through mother-to-child transmission – not to programs such as needle exchanges or opioid substitution therapy. Government expenditures on the limited programs they did put in place was extremely low – less than 3 rubles or about 8 US cents per person.¹⁰

In 2003 Putin established the National Advisory Council on HIV/AIDS, which was comprised of federal ministries, federal and regional AIDS centers, and 12 Russian NGOs.¹¹ However, this organization and its affiliated organizations were essentially powerless because of the absence of any member of the presidential administration. Without discussion of the epidemic in the highest circles of the Russian government, no significant changes would be able to arise.¹² Nevertheless, it is useful to examine the composition of the National Advisory Council to understand the Russian government's response to the epidemic.

Four primary ministries are involved in addressing HIV/AIDS: Justice, Internal Affairs, Defense, and Health. Each of the Ministries was responsible for developing their own programs that addressed the impacts of HIV/AIDS in their separate spheres of influence – however there has been almost no collaboration or coordination between the different Ministries. For example, the Ministry of Justice sought to control the problem through the prison system by limiting drug use and prison tattooing, as well as trying to

¹⁰ Davis and Dickinson.

¹¹ Ambrosio, "The Geopolitics of Demographic Decay."

¹² Roxanna Sjöstedt, "Exploring the Construction of Threats: The Securitization of HIV/AIDS in Russia," *Security Dialogue* 39, no. 1 (March 2008): 7–29, <https://doi.org/10.1177/0967010607086821>.

reduce the amount of homosexual intercourse taking place within the prisons. The Ministry of Internal Affairs has jurisdiction over the control of illegal drugs and organized commercial sex work, and did not support any harm-reduction programs for the population at large and even periodically warned NGOs that any sort of needle or syringe exchange program for IDUs were illegal. The Ministry of Health was the primary Ministry responsible for bringing the epidemic under control, but there have continued to be limited efforts to target HIV testing to those members of Russian society at the greatest risk.¹³ It is clear that the federal government, for a long period of time after the Advisory Council was established, had no unified approach to tackling the epidemic – each Ministry had its own separate views and approaches to reducing HIV infection within the Russian Federation.

In regards to federal-regional responses to HIV, only HIV-afflicted regions that satisfied specific criteria were able to receive funding from the federal government. The four criteria were: positive political association and support of the federal government, availability of regional resources, ability to deliver services, and the capabilities of public administration programs.

In order to fulfill the requirement of political support, the region's leadership must have been aware of the HIV/AIDS problem, have developed a strategy to address it, and finally they must have assigned high priority to preventing new infections. To meet the resource requirement, the region must be able to divert the necessary resources to implement a multisectoral approach to the epidemic that included assistance from national organizations as well as NGOs. In order to prove that regions had the capacity to

¹³ Davis and Dickinson, "Priorities, Government Institutions and Foreign Assistance in the Fight against HIV/AIDS in Russia."

deliver treatment and prevention services, strong candidate regions must have had institutionalized, multisectoral plans for preventing new infections and have demonstrated their ability to actually carry out those plans. Strong candidate regions would also have a strong record of managing prevention services and have the potential for program expansion – both of which help to satisfy the fourth requirement of the ability to administer these programs to the public. In total, only six regions were candidates to receive assistance from the federal government in 2003: Krasnoyarsk Kray, Nizhny Novgorod, Penza, Pskov, Republic of Tatarstan, and Tomsk.¹⁴ Although these regions satisfied the criteria to receive federal funding, it is unclear how much, if any, of the promised funding was delivered – thereby leaving many regions of the country to rely on assistance from the international health community. However, in order to rely on the international health community, the Russian government must exhibit receptivity to international assistance.

Broadly, the international health community consists of both bilateral and multilateral agencies that provide financial and technical assistance for AIDS, HIV prevention, and the global market for pharmaceutical products. It is important to note that reliance on the international health community for HIV/AIDS has shifted from dominating AIDS governance in select countries, such as the Russian Federation, to enhancing and sustaining aspects of domestic programs. Receptivity to this international assistance, though, is key to improving HIV/AIDS governance and policy in the Russian Federation. In order for receptivity to be present within a government, two conditions must be satisfied: governing elites must be concerned about the nation's reputation as a

¹⁴ Davis and Dickinson.

country that can effectively respond to HIV/AIDS, and political elites must be aware of the nation's history of international cooperation and collaboration.¹⁵

Conversely, the Russian government could also choose to be resistant to international assistance – which would occur when external recommendations for AIDS prevention and treatment interact with high prices of ART medication in order to challenge the country's preexisting normative structure and how it believes it should respond. Additionally, countries tend to resist high market prices for medications whenever commitments to universal healthcare, which the Soviet Union had, combine with pharmaceutical capacity to produce generic versions of these medications. When we look at both the conditions required for receptivity of international assistance or resistance to international assistance, we can conclude that nations will be willing to collaborate with the international health community on the condition that it does not threaten preexisting societal norms and structures.¹⁶

In general, receptivity to international assistance is closely associated with national desire to enhance its reputation. Nations are generally receptive to this assistance because it provides them a means through which they can both maintain their current reputation and then improve it further. In addition, countries with a strong history of international collaboration will be more likely to continue that pattern when a new epidemic emerges. On the other hand, countries will often resist assistance when international standards and recommendations present a conflict with the society's normative structures – including beliefs about the causes and consequences of

¹⁵ Eduardo J Gómez, "The Politics of Receptivity and Resistance: How Brazil, India, China, and Russia Strategically Use the International Health Community in Response to HIV/AIDS: A Theory," n.d., 29.

¹⁶ Gómez.

HIV/AIDS, and how the public believes the government should respond. In order to understand the Russian Federation's receptivity/rejection of international assistance, one must take into consideration laws upholding ingrained societal beliefs, such as those that restrict sexual education and harm reduction programs.¹⁷

The Russian Federation specifically has a history of fruitful collaboration with the international community – and the country's (or perhaps the legacy of the Soviet Union's) epidemiological expertise has lent itself to extensive sharing and partnership with other nations. However, the country's leadership has never been concerned with building an international reputation because, as mentioned earlier, Russian political leaders have already convinced themselves that the Russian Federation occupies an important and influential role in the international sphere. In support of this viewpoint are the facts that Gorbachev initially ignored the epidemic and Yeltsin had absolutely no interest in improving the perception of the Russian government or their response to the epidemic by the international community. Putin, uniquely, has been much more committed to improving the country's response to HIV/AIDS. Putin's support, in part, comes from increasing global pressure to address the epidemic – but at no point has Putin shown any concern for his own personal reputation nor for the reputation of the Russian government in regards to its handling of the HIV/AIDS crisis.¹⁸

Unlike other emerging economies, such as Brazil and India, the Russian Federation has not made committed efforts to strengthening its relationships with international donors. Instead of complying with the requests of the international community and conforming to international norms and expectations, Putin and the rest of

¹⁷ Gómez.

¹⁸ Gómez.

the Russian government chose to respond to what they perceived to be the genuine domestic health needs. In 1999, the World Bank offered the Russian Federation the equivalent of \$150 million to address AIDS and tuberculosis, with \$50 million being dedicated to HIV/AIDS. However, this aid package was not accepted by the Russian government until 2003, largely due to the Ministry of Health's resistance to the World Health Organization's standards – thereby reaffirming the Russian Federation's resistance to change its morally conservative normative structure and beliefs about the epidemic.

In 2004 the Global Fund gave various Russian and international NGOs \$34.2 million to strengthen AIDS prevention and treatment services in the country, and in 2005 the European Union gave the Russian Federation 4 million Euros to assist with drug procurement and treatment capacity building. The Russian Federation also received an additional grant of \$120 million in 2005 to help the Ministry of Health improve administrative and technical capacities. Although the Russian Federation accepted grants for the purpose of improving HIV/AIDS programs, it is important to note that these partnerships were very difficult for the government to maintain. The Russian government had very little experience working with donor organizations such as the World Bank, and the Ministries have faced challenges committing to working with NGOs which are weak and poorly organized. Additionally, the Ministry of Health did not provide guaranteed participation for NGOs working with HIV/AIDS until 2004, and the subsequently-formed commission had little-to-no power due to the absence of high-level political party members on the commission.¹⁹

¹⁹ Gómez.

Although the Russian government has exhibited some receptivity to assistance from international organizations and donors, the government resisted international pressures to implement harm reduction and prevention programs for years. As mentioned in previous chapters, harm reduction programs such as needle exchanges and methadone substitution are currently illegal in the Russian Federation, marking an unwillingness on behalf of the government to accept human rights as an organizing principle of HIV/AIDS governance.²⁰ Resistance to changing these laws is largely attributed to the government's conservative morals, which has negatively impacted governmental interest in harm reduction programs. Sex education programs have been hampered in the same way – being condemned by both the Russian government and the Russian Orthodox Church.²¹

The price of ARV medications also influences resistance. In this regard, the government essentially has two options: either to accept the medications at market value or to enter into price negotiations through the World Health Organization. As of 2009, the government was actively participating in negotiations with the WHO in attempts to increase medication availability. The government also has the option of producing generic versions of ARV medications but, even though the Russian government has signed an agreement stating that generic production should be pursued, it has not proven to be a top priority for the government – indicating a true lack of interest in ensuring access to ARV medication for citizens who need it. All the more fascinating, the Russian Federation has both the expertise and the medical infrastructure that would be required for them to begin producing generic HIV drugs.²²

²⁰ Vlad Kravstov, *Norm Diffusion and HIV/AIDS Governance in Putin's Russia and Mbeki's South Africa*.

²¹ Gómez, "The Politics of Receptivity and Resistance: How Brazil, India, China, and Russia Strategically Use the International Health Community in Response to HIV/AIDS: A Theory."

²² Gómez.

The Russian Federation has shown some willingness to address the HIV/AIDS epidemic domestically without assistance from the international health community and NGOs. The securitization of the epidemic represents a triumph in the Russian domestic response. In April of 2006, President Putin declared publicly that HIV/AIDS was a threat to Russia's national security – which drew national attention to the issue and allowed for changes in the government's response to begin. In this declaration Putin allocated a twenty-fold increase in spending at the federal level dedicated to stopping the epidemic. This marks the first time that HIV/AIDS, and really any health issue, had been labelled as a national threat by a high-ranking government official despite the fact that HIV/AIDS has been a major problem in the Russian Federation since the years around 1995.²³ Labelling HIV/AIDS as a security threat allowed the government to frame the issue publicly, and therefore encouraged government officials to develop a strategy for action.

As mentioned earlier in the chapter; the Russian military is already facing severe shortages of healthy individuals that are eligible to serve, the mortality rate of HIV/AIDS is highest among the economy's most productive age group, and the Russian population is in rapid decline. Each of these factors is partly responsible for Putin's decision to frame the epidemic as threatening to national security and to implement programs, although weak programs, to address it's spread.

The response to HIV/AIDS from purely the federal level has been very minimal with regards to educating the public on HIV/AIDS, as well as implementing policies to prevent the spread of the virus and help those afflicted access treatment. Programs started by the government have been severely underfunded – to an extent that they are able to

²³ Sjöstedt, "Exploring the Construction of Threats."

have very little impact. For example, a program implemented by the government in 2002 to address AIDS spent only \$6 million. Six million dollars may sound like a large sum of money to an outside observer, but to put how little funding this really is into perspective, consider the fact that the Russian government spent \$150 million to raise the Kursk submarine that same year.²⁴ We must ask ourselves, then, if multiple international organizations have declared HIV/AIDS to be both a public health problem and a threat to international security – why was the Russian government so apathetic in its response?

Prior to Putin's declaration of HIV/AIDS as a threat to Russian national security, some domestic actors were already trying to raise public and political awareness about the issue, such as Gennadiy Onischenko. Onischenko argued that the virus had developed into something bigger than just a medical problem, but he struggled to affect the larger picture of Russian perception of the issue. This obstacle largely results from relatively low status of the Ministry of Health within the Russian governmental community, therefore the issue was not taken seriously as a matter of high priority by the Russian government until Putin's 2006 declaration. Even after the declaration, though, domestic identity formation factored largely into the government's response.

As previous chapters have illustrated, from the Russian perspective, people with HIV/AIDS are assumed to either be foreigners, homosexuals, or drug users. Each of these groups are associated with negative attributes by Russian society and therefore alienated from society at large – making it difficult for the government to take action against the epidemic. This separation was further illustrated when discussion of an AIDS vaccine was introduced. High-ranking researchers reportedly said that human tests of the vaccine

²⁴ Sjöstedt.

would only be performed on prostitutes, homosexuals, and drug addicts because ‘no ordinary person will agree to be vaccinated against AIDS.’²⁵

The view of the Russian Orthodox Church has also left a long-standing impact on the way that Russians view the epidemic. During the Soviet era, the Communist Party and the Church portrayed HIV/AIDS as a disease that could not spread to the Soviet Union because the kinds of immoral behaviors, like drug use, homosexuality, and sexual promiscuity, that help to spread the virus are nonexistent in the Russian Federation. Taking things a step further, the Russian government then attempted to make the claim that HIV/AIDS was a product of the CIA and the United States military intended for use as a biological weapon to subvert the Russian people.²⁶ With these factors in mind, the government’s inaction towards the epidemic may be more easily understood. From their viewpoint, it was physically impossible for the epidemic to spread to the Russian Federation because they were ideologically and behaviorally distinct from the Western countries where the epidemic was already gaining a foothold.

The views of the Russian government on HIV/AIDS programs have been historically aligned with those of the Russian Orthodox Church – that many harm reduction and prevention programs were ‘pandering to sin’ and were therefore unacceptable options moving forward. The Russian Orthodox Church has been consistent in its views towards HIV/AIDS: that it is a moral problem of both the individual and of society. One priest with an active role in the Church’s HIV/AIDS response said the following: “God allowed this new illness to appear to teach sinners and to stop the spread

²⁵ Sjöstedt.

²⁶ Jarrett Zigon, *“HIV Is God’s Blessing” Rehabilitating Morality in Neoliberal Russia* (University of California Press, 2011).

of several extremely destructive kinds of sin.” Some members of the Church even go as far as to say that HIV is a blessing because it forces individuals to become consciously aware of their mortality and may inspire them to changing their worldly behaviors.²⁷

Perhaps not altogether surprising, the Russian Orthodox Church wants individuals to reduce risky behaviors, but are vehemently against internationally-recognized means of doing so, such as needle exchange, condom distribution programs, and substitution therapy. Furthermore, the Church is almost entirely unwilling to communicate or foster working relationships with secular NGOs focusing on the epidemic. Even more shocking, the majority of the Church’s funding for such programs comes from non-Russian sources, yet church officials continue to refuse to adopt and promote international standards for prevention and treatment programs.²⁸

In conclusion, the Russian government and the Orthodox Church have ineffectively addressed the rapidly-growing HIV/AIDS epidemic and have endangered millions of Russian citizens. Furthermore, disease knows no borders - by refusing to adopt internationally-recommended HIV/AIDS prevention and treatment programs they continue to put the entire world at risk.

Concluding thoughts

The Russian Federation has the fastest-growing HIV/AIDS epidemic in the world, and it shows no sign of slowing down. Without dramatic and rapid change in Russian normative structure, institutions, health care, laws, and government, the virus will continue to spread and has the potential to reduce the Russian population to unprecedented levels and destroy the Russian economy. It is absolutely crucial for the

²⁷ Jarrett Zigon.

²⁸ Jarrett Zigon.

international health community to acknowledge the worsening situation within the Russian Federation and to encourage the Russian government to allow international organizations to effect change domestically, both in policy and societal beliefs about the disease. By failing to act, the international health community, the Russian government, and the Russian people will be ultimately culpable in the ruin of the Russian Federation.

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