

# Biobehavioral research in key populations in Voronezh region

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The problem of HIV infection is one of the most important issues in health care of Russia. The HIV prevalence amounted to 728.2 per 100 thousand people in Russia on 31.12.2019.

HIV has spread beyond vulnerable populations and is spreading widely in the general population. 62.7% of people got infected in heterosexual contacts in 2019. The proportion of HIV-infected people who injected drugs (PWID) is 33.6%. 2.5% of patients got infected through homosexual intercours.

**Objective:** To assess the prevalence of HIV among three key populations of the Voronezh region (PWID, sex workers (SW), men who have sex with men (MSM)). To assess the behavioral risks that contribute to infection.

**Methods:** Simultaneous HIV serological studies with interviews on a standard questionnaire with respondent-driven sampling. In 2019 each key group included 100 people. And in previous years the sample for the SW groups was 50-100 people, PWID - 200-300 people.

## Results and conclusions:

Prevention programs among PWID in the region were implemented in the Voronezh region with different intensities for 20 years. Several biobehavioral studies have been organized with the participation of international funds [2, 3]. Sentinel studies on a simplified questionnaire are conducted annually. According to UNAIDS, studies in the SW are conducted once every 5 years. Among MSM biobehavioral studies were not conducted in the region until 2019.

Biobehavioral studies have confirmed routine HIV surveillance data. A concentrated HIV epidemic has been registered in the PWID group since 2015.

The HIV detection rate among PWID in screening studies (per 1000 examined) amounted to 40.2 % in 2015 and increased 12.6 times compared to 2014. PWID testing increased in 2016-2018. At the same time, there was a decrease in the relative rates of HIV infection detection among PWID (2016-28.7 %, 2017-17.4 %, 2018- 16.9 %).

Seroepidemiological studies of 2008 and 2011 did not reveal a statistically significant increase in prevalence. Seroepidemiological studies have confirmed the development of the initial stage of the HIV epidemic in the Voronezh region. PWID more often used artificially processed poppy (42%), heroin (37%) [1].

Biobehavioral studies among PWID have confirmed low HIV prevalence in 2012-2014. PWID consumed heroin in 93.3%. PWID using heroin + synthetic drugs became 53.3%. 49.5% of PWID used drugs more than 3 times a day. 29.3% of PWID had drug overdoses. HIV-positive people use synthetic drugs in 100% of cases since 2015.

The socio-demographic characteristics of the PWID worsened in the 2019 study. 65% of respondents used injectable salt drugs in the past 12 months. 29% of respondents in the last 30 days. Respondents also consumed heroin (44%) and methadone (19%) over the past month. 89% of respondents have access to disposable syringes. 4% of PWID had a drug overdose in the last year.

HIV awareness is 83.7% in 2019. 39% of PWID have never been tested for HIV infection before. 12 PWID were identified with a positive rapid test result.

The SW showed a very high level of closure in a 2019 study. SW concealed the presence of pregnancy, sexually transmitted infections, drug use, the real number of sexual partners and other information. Express-testing was carried out in a personal car (mobile office) of outreach workers to exclude the

possibility of disclosing the results and pay attention to the personal risks of each sex worker.

The average age of SW has changed. The level of education of SW has increased. 68% of SW had a different fixed income. SW has a high frequency of alcohol consumption (more than 1 time per week in 84%). 16% of drug users used both injectable and non-injectable drugs. Highly risky models of sexual behavior have been identified. 39% of SW have had over 10 sexual partners in the last 30 days. 33% SW from 3 to 10 partners on the last day. 12% of SW reliably knew about HIV + sexual partner status. 46% of SW did not use a condom at their last contact. Reasons for non-use: 22% objected to the partner and 24% - do not consider it necessary.

HIV testing was previously done with 75% of SW. 46% of SW tested for HIV in the last year. HIV awareness is 62%. Two SW were identified with a positive result.

Routine surveillance data indicate that epidemiological processes in the MSM group have begun to intensify. The annual increase in HIV detection among MSM is 2.3%. Absolute numbers increased from 1-3 people in the period until 2012 to 17 people in 2019. We should take into account the peculiarities of disclosing your sexual preferences at the first visit to the doctor about HIV-positive status.

Biobehavioral research among MSM was first implemented in the Voronezh region. It was reflected in its mixed perception by respondents.

Respondents were aged 20-29 years - 59%. 72% of MSM had higher or incomplete higher education. 73% of MSM reported their first homosexual experience over the age of 18. Risky practices were found in a significant proportion of MSM. 23% of MSM had more than 4 (maximum - 20) sexual partners during the last year. 26% of MSM found it difficult to answer this question. 76% of respondents never use condoms for oral sex and 8% for anal sex. In 11% of cases there were sexual partners-PUD. The level of awareness of respondents about HIV is low in this group - 77%. 92% have been tested for HIV and know their result. MSM are examined annually in 67% of cases. HIV infection was detected in 5 MSM.

The conducted studies allow us to estimate the number of key groups and plan preventive measures in them.

Regional social oriented non-profit organization have established group outreach worker task force which allows us to care out epidemiological studies quickly and efficiently.

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