

HIV/AIDS Programme in Kyrgyzstan

Evaluation report
December 2014



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HIV Programme Review in Kyrgyzstan

**Evaluation report
December 2014**

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List of abbreviations

AIDS	acquired immunodeficiency syndrome
ART	antiretroviral therapy
ARV	antiretroviral
BCC	behaviour change communication
CBO	community based organization
CCM	Country Coordinating Mechanism
CD4	cluster of differentiation 4
CDC	Centres for Disease Control and Prevention
DDI	drug-drug interaction
CTX	cotrimoxazole
DST	drug susceptibility testing
ECDC	European Centre for Disease Prevention and Control
EFV	efavirenz
ELISA	Enzyme-linked immunosorbent assay
FMC	Family Medical Centre
FGP	Family group practice
GDP	gross domestic product
GNI	gross national income
HBV	hepatitis B virus
HCV	hepatitis C virus
HIV	human immunodeficiency virus
HR	harm reduction
HTC	HIV testing and counselling
ICAP	International Center for AIDS Care and Treatment Programs
IFA	indirect fluorescent antibody
IPT	Isoniazid preventive therapy
LGBT	lesbian, gay, bisexual, and transgender
LTFU	Lost to follow up
MDR-TB	multidrug-resistant tuberculosis
MoH	Ministry of Health
MSM	men who have sex with men
MTCT	mother-to-child transmission
NGO	Nongovernmental Organization
NSP	needle and syringe programme
OST	opioid substitution therapy
PCR	polymerase chain reaction
PHC	primary health care
PLHIV	people living with HIV
PMTCT	prevention of mother-to-child transmission
PWID	people who inject drugs
RAC	republican AIDS centre
SGS	Second generation surveillance
SOP	standard operating procedure
STI	sexually transmitted infection
SW	sex workers
TB	tuberculosis
TGF	The Global Fund
UNAIDS	The Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund

UNICEF Children's Rights and Emergency Relief Organization
UNODC The United Nations Office on Drugs and Crime
USAID United States Agency for International Development
VL Viral load
WHO World Health Organization
XDR TB extensively drug resistant tuberculosis

1. Executive Summary

The purpose of this desk review and the World Health Organization (WHO) country mission performed in Kyrgyzstan in November 2014 was to analyse the current HIV situation and provide strategic recommendations aligned with WHO guidelines in terms of priority setting and investments needed to curb the HIV epidemic in Kyrgyzstan. Strategic recommendations are intended to inform the ongoing Global Fund Concept Note development with expected disbursement from the Global Fund (TGF) for the period January 2016 – December 2017.

HIV/AIDS program is part of the national “Den Sooluk” health program and is considered as a priority area to be addressed. Kyrgyzstan developed a system of HIV prevention and care within a short timeframe, implemented it countrywide and has since endeavoured to improve service delivery. The fundamental health system infrastructure, legislation, community systems, valuable experiences of delivering HIV prevention, antiretroviral therapy (ART) and opioid substitution therapy (OST) are already in place. Needle and syringe programme (NSP) achievements to date are respectable. In many instances purely scaling up and reorganizing service delivery would be required in order to have a major effect on the HIV epidemic in Kyrgyzstan.

The epidemiological analysis found that the HIV epidemic in Kyrgyzstan is still concentrated among people who inject drugs (PWID), but there are signs of it increasingly affecting the general population. It is estimated that 30% of all people living with HIV (PLHIV) in Kyrgyzstan have not yet been diagnosed, and at least 1/3 are presenting late in their stage of disease. In addition, less than half of all diagnosed with HIV have been registered for follow-up care. Insufficient HIV testing and enrolment into care following a positive HIV diagnosis are thus some of the most significant barriers to controlling the HIV epidemic in Kyrgyzstan. Despite that ART has been appreciably scaled up during the last 3 years, (total of 1 501 PLHIV are on ART as of November 2014), data still show that 3 001 PLHIV are alive and off ART (53% of all alive notified cases).

Key affected populations in Kyrgyzstan include PWID, prisoners, sex workers (SW) and men who have sex with men (MSM); however injecting drug use among men has largely driven the HIV epidemic in Kyrgyzstan. Although the proportion of new HIV cases found among PWID has fallen significantly over time (down to 37% of all new HIV infections reported in 2013), PWID still bear a disproportionate number of HIV infections, accounting for 58% of the cumulative number of HIV cases reported in Kyrgyzstan. The HIV prevalence in PWID was 12.4% in 2013 (the highest of all key populations) with large diversities in prevalence between different regions. There are indications that effects of harm reduction (HR) programmes in Kyrgyzstan are gradually starting to set in, which would be expected after several years with high NSP coverage. However, additional good quality data are needed to support this apparent tendency.

Significant impact on the HIV epidemic will only set in by providing comprehensive services with NSP, OST and ART all applied in sufficient quantities; however a very low proportion of HIV positive PWID receive both ART and OST (2% of the estimated number of HIV positive PWID in Kyrgyzstan). Low OST coverage of PWID prevents observable effects of OST on the HIV epidemic, and urgent efforts are needed to scale up ART and OST in Kyrgyzstan.

Kyrgyzstan additionally has a high proportion of HIV infected children due mostly to nosocomial infection. Strict infection control and comprehensive epidemiological investigations of every suspected case of nosocomial transmission are needed to avoid future outbreaks.

The annual number of deaths in PLHIV and among acquired immunodeficiency syndrome (AIDS) cases continues to increase every year and has more than tripled since 2008. This is a worrying tendency and most probably reflects late presentation, late enrolment into ART, low retention in ART as well as an increase in TB/HIV coinfection and suboptimal management of TB/HIV coinfection. In 2013 alone, Tuberculosis (TB) accounted for 53% of all deaths in PLHIV. The mortality rate of TB/HIV coinfection is very high in Kyrgyzstan, and the multidrug-resistant tuberculosis (MDR-TB) epidemic, is one of the most severe in the World. The need to refer HIV patients to other facilities for TB diagnostics is delaying anti-TB treatment and ART initiation for those newly diagnosed. Obstacles in collaboration between AIDS centres and TB care causes delays in diagnostics, in starting ART and referral of patients from one specialized care institution to another. These delays may become very serious to PLHIV.

Several attempts have been made to increase the integration of services, including for TB/HIV coinfecting patients. As one of the few countries in the region, Kyrgyzstan has decentralized treatment of PLHIV to primary health care (PHC) level, however about half of all PLHIV still receive ART at secondary level (AIDS centres). A very low HIV patient caseload at PHC level is presumably problematic both for the quality of care and for cost-efficiency. Massive training and retraining programmes would be needed to secure quality treatment of a still low number of PLHIV in the primary care system in Kyrgyzstan, and the sustainability of this approach is concerning. It is recommended to immediately assess the preliminary outcome of ART decentralization in Kyrgyzstan. The concept of introducing multidisciplinary teams is respectable, but the actual practical use of these teams does not seem sensible. Multidisciplinary teams are more or less taking on the workload of the PHC physician and the training component of this aspect is not clear. Half of their time is used for paperwork, and none of their time is invested in locating lost to follow up (LTFU) PLHIV, which probably represent the biggest problem in relation to curbing the HIV epidemic in Kyrgyzstan. Specific suggestions on how to restructure and optimize service delivery within the current health system are provided throughout the report.

The HIV field has had a significant level of attention during these years in Kyrgyzstan, and it is essential to utilize this level of attention at a ministerial level to make appropriate changes and expand services in order to avoid a generalized HIV epidemic in Kyrgyzstan, and still secure sustainability of the national HIV programme.

Six priority areas for Kyrgyzstan have been identified and recommendations are provided for each area:

- Priority area 1: Increase diagnosis and enrolment into care of key populations
- Priority area 2: Ensure timely initiation of quality ART and retention in care
- Priority area 3: Optimize service delivery models and use of human resources
- Priority area 4: Scale up harm reduction for PWID, including OST
- Priority area 5: Prevent sexual, vertical and nosocomial transmission of HIV
- Priority area 6: Improve management, coordination and surveillance

Main recommendations Priority area 1: Increase diagnosis and enrolment into care of key populations

- Focus HIV testing strategically on the populations that are at highest risk for HIV, including hard-to-reach populations such as PWID
- Scale up community based rapid testing significantly for key populations including female drug users and migrants
- Introduce HIV rapid testing (capillary or saliva) for key populations in all narcology centres, at all NSP sites, all TB clinics/hospitals, all community based organizations (CBOs)/ nongovernmental organizations (NGOs) who have contact with key populations, at gay clubs, at all sexually transmitted infection (STI) clinics, in all prisons and detention centres, and at antenatal care centres and FMCs
- Urgent efforts to ensure linkage to care are needed (including social accompanying)
- Implement systematic follow up on those identified as HIV positive, but who are not enrolled into care
- Shorten the time between taking the blood sample and delivering test results: e.g. through simplification of the diagnostic algorithm and develop the algorithm to optimise information flow of test results. The algorithm should comprise: either one Enzyme-linked immunosorbent assay (ELISA) + Immunoblot or 2 different 4th gen. ELISA.
- Immunoblot should consistently be run every week at republican AIDS centre (RAC)

Suggested target setting for priority area 1

- HIV testing coverage of key population: at least 50% first year, at least 60% second year of carefully and reliably estimated key populations, and prioritise using rapid tests for key populations
- Enrolment in care: at least 80% of those diagnosed are enrolled into care

Main recommendations Priority area 2: Ensure timely initiation of ART and retention in care:

- Viral load (VL) capacity and availability must meet the requirements set by monitoring ART
- Implement strong internal and external quality control systems at major laboratories and reference the laboratory, including VL and CD4
- Reduce to a minimum the number of visits before ART can be initiated (e.g. by simplifying the HIV testing algorithm and by conducting epidemiological investigation later)
- ART should start without any delay when a person with clinical symptoms has been identified (codes 113 and 117)
- Ensure 100% access to ART for all eligible PWID
- OST needs to be scaled up substantially to allow for increased adherence of PWID to ART
- Close follow up of patients who miss a visit (peers, nurse, social workers or multidisciplinary team members) to locate LTFU patients

Suggested targets for priority area 2:

- Increase the number of PLHIV on ART by about 700 in 2015, by 800 in 2016, and by 800 in 2017
- The proportion of PLHIV on ART with VL below limit of detection (<500 with current equipment) will be 85% by 2016

Main recommendations Priority area 3: Optimize service delivery models and use of human resources

- Ensure that the responsibility of treatment of HIV infection lies with infectious disease specialists, and only in exceptional circumstances (when no infectious disease specialist is present), delegate responsibility of ART to the family doctor or other physician after passing an extensive training programme on ART; and employ TB specialists/narcologists at AIDS centres part time (potentially as part of multidisciplinary teams) and vice versa.
- Conduct a study of the effect of decentralization of HIV services in Kyrgyzstan by comparing treatment outcomes of ART provided at different health care levels and assess the cost effectiveness of decentralization¹
- Maintain multidisciplinary teams, but substantially re-organize their workload, expand their composition to include also TB specialist and narcologists and dedicate much more time for social workers/ peer consultant/ nurse to locate LTFU patients and to social accompanying
- TB diagnostics or sputum collection should be available at AIDS centres (revision of clinical protocols and algorithms)
- High quality training on ART should be targeted to those physicians and nurses who will be responsible for the treatment of PLHIV

Main recommendations Priority area 4: Scale up harm reduction for PWID, including OST

- Ensure quality of OST delivery:
 - Sufficient dosages of OST should be ensured through training and updated guidelines
 - Restrictive inclusion/exclusion criteria for OST happening in practice should be stopped
- Allow take-home dosages for 2-4 days of methadone for stable methadone users
- Work towards removing drug user registration requirements in order to obtain narcology services
- Ministry of Health (MoH) to revise current financing model of narcology centres and include OST in results based financing model
- MoH to show governmental commitment by co-financing OST programmes

Suggested Harm reduction targets:

1. Increase the number of OST clients to at least 2 500, including in prisons (10% of estimated size of PWID population)
2. Scale up NSP to reach at least 60% coverage of estimated people who inject drugs, including prisoners

Main recommendations Priority area 5: Prevent sexual, vertical and nosocomial transmission of HIV

Sexual transmission:

- Increase outreach to partners of key populations (behaviour change communication (BCC), condoms, HIV testing)
- The apparent low efficiency of preventive programmes among sex workers (SW) should be thoroughly analysed and future programmes should be planned following results from such evaluations

Prevention of mother-to-child transmission (PMTCT):

- Target HIV testing towards high risk pregnant women (key populations or the wife/partner of persons from key population) and early infant diagnosis must be implemented widely
- Use social accompanying when needed

Infection control:

- Thorough epidemiological investigation of all new HIV infections diagnosed in children without HIV+ parents should be conducted as soon as possible and continuously every time such a case appears. Appropriate follow up after results of epidemiological investigation should be started immediately
- Ensure implementation of international standards on the clinical use of blood and blood products

Main recommendations Priority area 6: Improve management, coordination and surveillance

Management and coordination:

- Set up a management team to oversee the implementation of the national HIV programme, to strengthen overall management capacity including strengthening leadership of RAC and overall coordination with donor agencies.
- Use capacity of newly established intersectoral Coordination Committee on Public Health issues under the Government for better coordination of national response and contribution of international partners in addressing HIV epidemic.

Surveillance:

- Ensure future second generation surveillance (SGS) is represented which can then in turn inform policy making
- Use epidemiologists to analyse data collected and produce outputs for action and strategic planning
- Create a unique identifier for protecting patients confidentiality (e.g. first three letters of first name, year and month of birth, first letter of gender) and enable matching with other databases using this unique identifier (e.g. Narcology dispensary, TB dispensary, STI clinic, prisons system)
- Collect HIV case report data on migrants and adjust surveillance
- Analyse and monitor carefully the development of AIDS cases and mortality among AIDS cases and PLHIV in Kyrgyzstan. Outcomes of analysis should be used to adjust treatment and testing strategies

Main recommendations for cross cutting issues (legislation, human rights and sustainability):

- Bill on limiting the rights of sexual minorities should not be enforced;
- Review of Laws and regulations to:
 - abolish criminalisation of transmission of HIV (incl. nosocomial transmission)
 - abolish registration of drug users to obtain services;
 - abolish regulation on testing on medical personnel;
 - abolish entry restrictions in relation to HIV
- The MoH should co-finance essential components (such as ART and OST) in the future to avoid complete collapse if TGF withdraws in a few years

2. Introduction

Kyrgyzstan has a population of approximately 5.7 million people, the vast majority being Muslim. According to the 1999 census, the ethnic composition of the population was as follows: Kyrgyz: 64.9%, Uzbeks: 13.8%, Russians: 12.5%, others: 8.8%. Kyrgyzstan is one of the poorest countries in Central Asia (1). In 2013, the total gross domestic product (GDP) was 7.2 billion USD and gross national income GNI per capita (Atlas) was 1 200 USD in 2013, one of the lowest in the WHO European Region (1).

The HIV epidemic in Kyrgyzstan is associated with a somewhat stable number of new HIV infections reported every year during the last five years, high prevalence of HIV in various key populations of which PWID has the highest prevalence, uneven spread of HIV in the different regions of the country, a changing pattern of predominant transmission mode from PWID to heterosexual, and a high proportion of infected children due mostly to nosocomial infection (Table 1) (2).

As of November 2014, 5 642 PLHIV had been officially registered in Kyrgyzstan, of which 68% were male. In total, 1 140 of all registered PLHIV died, and 681 cases had progressed to AIDS, of which 328 had died (2).

Overall, HIV prevalence remains low in the general adult population (estimated at 0.2% in 2013), however, Kyrgyzstan is one of seven countries in the world with the fastest growing epidemics over the last 10 years, peaking in 2012 with 724 new cases of HIV reported, and in 2013 alone, 504 new cases of HIV were registered (292 males, 211 females). Reported new HIV diagnoses have increased significantly over the last decade (3). A step increase evident in 2012 represents a large scale screening of children for HIV (about 150 000 tested) in late 2011/beginning 2012 because of a nosocomial outbreak in the Osh region, by which 157 children were detected HIV positive (2).

Table 1. HIV epidemiological overview Kyrgyzstan

Epidemiological criteria	Value
Estimated number of HIV population*, 2013 (HIV prevalence 15-49 years)	8021 (0.24)
Cumulative number of new HIV diagnoses (1 Nov 2014)**	5642
New HIV diagnoses (rate per 100 000) reported in 2013***	504 (9.1)
AIDS diagnoses (rate per 100 000) reported in 2013***	67 (1.2)
Death due to AIDS, rate per 100 000 reported in 2013**	3.0
Transmission mode** % (number of cases/total 2013 - 5113)	
Heterosexual	32%(1631)
PWID	58%(2966)
MSM (men who have sex with men)	0.4%(19)
MTCT (mother-to-child transmission)	3%(135)
Nosocomial	6%(330)
Unknown	0.6%(32)
Age distribution of HIV diagnoses** among all HIV diagnoses, 2013	
<15 years	5%
15-19	1%
20-29	24%
30-39	41%
40-49	21%
50+	8%
HIV prevalence among key populations:****	
PWID	12.4%
MSM	6.3%
SW	2.2%
Prisoners	7.6%
STI patients	0.9%

*Spectrum calculation, The Joint United Nations Programme on HIV/AIDS (UNAIDS)

** Republican AIDS Centre

***European Centre for Disease prevention and Control/WHO regional Office for Europe. HIV surveillance in Europe 2013. Stockholm: European Centre for Disease Prevention and Control (ECDC); 2014

****Results of Second Generation Surveillance (SGS) of HIV infection in Republic of Kyrgyzstan, 2013

Despite widely available and free of charge ARV, there has been a clear increase in new deaths among AIDS cases. In addition, the annual number of all deaths among PLHIV continues to increase every year and has more than tripled since 2008. The TB/HIV coinfection epidemic is also increasing and TB is the major cause of death among PLHIV in Kyrgyzstan (TB the cause of 53% of all deaths among PLHIV in 2013); Mortality rate of TB/HIV coinfection is high, with 43% (502/1 155) of the cumulative number of TB/HIV coinfecting persons registered in Kyrgyzstan having died (2).

A comprehensive epidemiological analysis is available in Annex 1.

3. Purpose and objectives

Background

Kyrgyzstan is in the process of preparing a second submission of a Global Fund HIV Concept Note proposing a grant with expected disbursement for the period of January 2016 – December 2017, and has requested the WHO Regional Office provide external technical support by reviewing the current situation and providing key recommendations on priorities and targets which are aligned with WHO guidelines and recommendations.

Scope and objectives of review:

The programme review encompasses 4 key components:

- A. Epidemiological analysis
- B. Review of HIV treatment and care along cascade of services
- C. HIV services for key populations
- D. Analysis of service delivery models for populations affected by the HIV epidemic from the perspective of the health system

4. Methods

The evaluation builds upon a desk review of readily available information regarding the country epidemic and HIV/AIDS treatment and care, including journal articles, national publications, WHO reports, and a country mission which took place from the 24-28 November 2014 in Bishkek, Kyrgyzstan. During the mission, experts met with key policy makers and representatives of the Ministry of Health, Ministry of Finance, Country Coordinating Mechanism (CCM), National AIDS Centre, TB centre, Republican Clinical Narcological Center, Narcology centre, TB Prison, National Reference Laboratory, family medicine centres (FMC), health care providers and patients at the above named institutions, civil society organizations and their clients, and other national and international partners. Annex 3 provides a full list of the country mission's informants.

5. Findings

Findings are divided into the following sections: 'Strengths and achievements', and 'Weaknesses and challenges' for six identified priority areas. Annex 1 provides a comprehensive epidemiological analysis.

5.1 Major strength and achievements

Kyrgyzstan developed a system of HIV prevention and care within a short timeframe, implemented it countrywide and has since endeavoured to improve service delivery. Below are some of the major strengths and achievements of the national HIV programme in Kyrgyzstan.

HIV testing

HIV testing is provided without any user fees for all persons in Kyrgyzstan. HIV testing and counselling (HTC) is offered by about 20 Nongovernmental Organizations (NGOs) (rapid saliva testing) and 63 different health facilities across the country: 9 AIDS centres, 54 public health centres, including 21 TB centres, 10 primary health care centres and 11 medical institutions of the penitentiary system. Community based HIV rapid testing has been introduced recently, but still has a character of 'pilot projects' (2).

ART and clinical guidelines

Expansion of ART is evident in Kyrgyzstan. The total number of people started on ART each year has almost doubled from 2011 to 2014 in almost all provinces. The largest increase was seen from 2011 to 2012 (229 new patients started on ART in 2011 and 445 in 2012), and data suggest that a significant scale up is to be expected also from 2013 to 2014. During the first 9 months of 2014, 413 PLHIV were started on ART compared to 253 over the same period in 2013 (2).

The vast majority of PLHIV on ART are on first line treatment and on a WHO recommended ART regimen (2). Antiretrovirals (ARVs) and anti-TB drugs, HIV diagnostics (rapid test, ELISA test, western Blot, cluster of differentiation 4 (CD4) count and VL tests) and TB diagnostics, are available free of charge for patients though almost exclusively funded by TGF.

Numerous clinical guidelines have been developed all in line with international standards. ART is however presently recommended only below CD4 350 in contrast to the latest WHO guidelines (4). According to the review team this is considered reasonable considering the current major problems of getting people with CD4 under 350 in care, and the current insufficient VL monitoring which may cause drug resistance on a larger scale if all with CD4 under 500 are started on ART.

Health service delivery

Physical access to ART has increased since the decentralization of ART; however there has been no evaluation of how this may have impacted uptake and the outcomes of ART. Pilot projects including multi-disciplinary teams and other initiatives such as 'one-stop-shop' integrated care at Bishkek AIDS centres and mobile units, have been implemented over the last 3 years (2). Evaluations and subsequent follow-up actions or expansions are still pending.

TB/HIV collaboration

AIDS centres and PHC facilities have implemented ambulatory patient cards including symptomatic screening of TB in PLHIV. The shift from hospital to ambulatory care of TB patients is also expected to have a positive influence on the treatment outcomes of TB/HIV coinfecting patients. Furthermore coverage of isoniazid based preventive therapy is increasing (2).

Harm reduction

Kyrgyzstan has significantly increased the number of NSP sites and has attained a high coverage of NSP. An extensive infrastructure to deliver NSP has been established over a relatively short timeframe. According to the annual United Nations Development Programme (UNDP) Report 2013 (5), in 2013 Kyrgyzstan had 46 points where PWIDs could get a minimum package of services (sterile injection kits, condoms and information and education materials) compared to 29 in 2012. The NSPs are implemented by the public health sector: FMC and narcology service (n=16); NGOs (n=7); pharmacies (n=8) and penitentiary institutions (n=15) (5).

The number of methadone sites has also increased, however OST coverage is still only 6% of the estimated number of PWID in Kyrgyzstan. Methadone is on the list of essential medicines and Kyrgyzstan is one of the few countries in the region to provide harm reduction services, including OST to prisoners and those within detention centres (6). NSPs were introduced in the first Kyrgyzstan prison in 2002, and are now available in all 15 penitentiary facilities, including detention centres and women's colony. OST has been implemented in 7 penitentiary institutions: 5 penal colonies (including female colony) and 2 detention centres (Bishkek and Osh). By 1 January 2012, the OST programme in prisons involved 105 patients (7) and by November 2014 this number had increased to 341 (8).

PMTCT

HIV testing of pregnant women is high at almost 88% of all pregnant women, and being higher than the average for the European region (9), this is a great achievement. Rapid tests are available at maternal houses, and home visits by a medical nurse after delivery generally ensure good follow up (interviews). The PMTCT programme in Kyrgyzstan has had respectable achievements with few vertical transmissions reported in the last two years (2). The introduction of early infant diagnostics is also an important step to improved PMTCT.

Infection control

In effort to reduce hospital-acquired infections in Kyrgyzstan, the Republican Scientific and Practical Centre for Infection Control has been established. Infection control committees were organized in all health care organizations, and more than 20 regulations for the prevention of nosocomial transmission and safety of medical procedures have been developed (10).

Community of PLHIV and NGOs working with HIV

The number of PLHIV organizations has increased rapidly from 1 organization in 2006 to 18 in 2011. Most organizations are based in Bishkek, Chui and Osh city/oblast (10). The NGO sector is an active part of the implementation of the HR programme in Kyrgyzstan. Two associations coordinate the NGO driven harm-reduction programmes in Kyrgyzstan, financed by international donors (10).

Surveillance

Both HIV and AIDS cases are notifiable in Kyrgyzstan. The quality of HIV surveillance core variables is very good: Transmission mode is reported as unknown for <1%, gender for 1.5%, and age is reported for 100% of cases. HIV case based reporting and patient monitoring is established and allows the tracing of epidemiological trends and relevant features of clinical manifestation. Detailed information on ARV is available. Information is collected and shared via numerous forms (Annex 4).

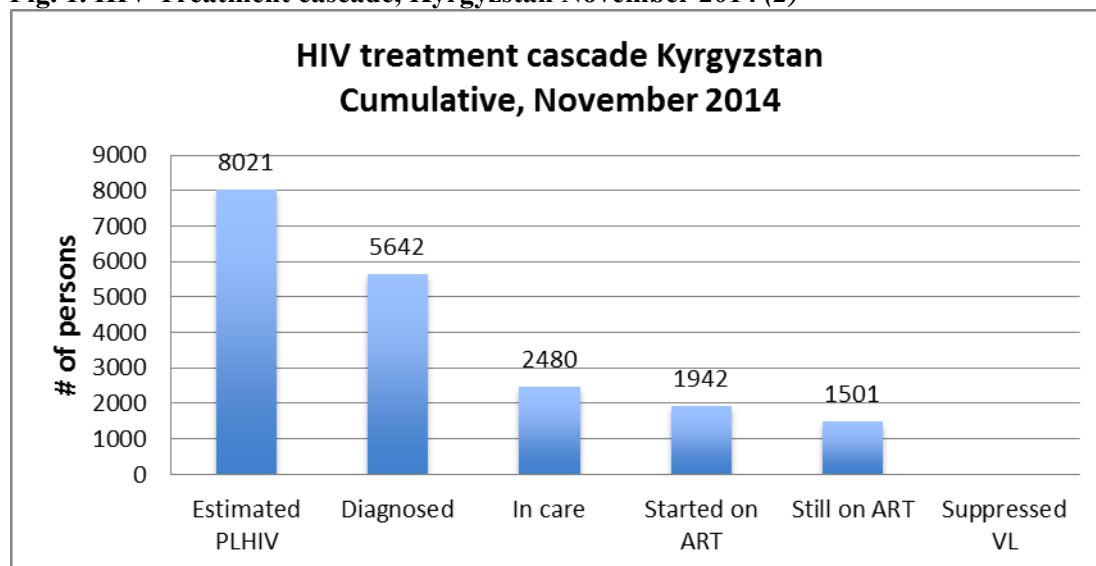
The republican AIDS centre maintains and develops name based HIV registry. All oblast AIDS centres have the same software, which is synchronized with the central database at least once a month. The database is updated retrospectively and it is expected that the system will be introduced in all the clinics, dealing with the treatment of HIV patients, including within family medical centres.

5.2 Weaknesses and challenges

Priority area 1: Increase diagnosis and enrolment into care of key populations

The estimated number of people living with HIV in Kyrgyzstan was 8 021 by 2013. With a total of 5 642 registered cases of HIV, about 30% of the estimated population of PLHIV in Kyrgyzstan had not yet been diagnosed. A total of 2 480 people had been registered for HIV care by November 2014, however this represents only 44% of all diagnosed with HIV (2) (Fig. 1). Insufficient HIV testing and enrolment into care following a positive HIV diagnosis are thus some of the most significant barriers to curbing the HIV epidemic in Kyrgyzstan.

Fig. 1. HIV Treatment cascade, Kyrgyzstan November 2014 (2)



Number of persons with suppressed viral load (VL) is unknown

The mission identified the following obstacles to efficient HIV testing in Kyrgyzstan:

- HIV testing mainly of low risk groups
- High positivity rates, but low testing coverage of key populations
- Late presentation, particularly of PWID
- Inadequate number and diversity of facilities offering HIV testing
- Inadequate availability of community-based rapid testing
- Inferior quality of laboratories
- The national HIV screening programme does not attract pregnant women most at risk of HIV

HIV testing mainly of low risk groups

The number of people tested for HIV in Kyrgyzstan has increased significantly over the last decade. In 2013, 410 833 people² were tested for HIV in Kyrgyzstan compared to 141 925 in 2004, however most of the increase has been due to an increase in the number of pregnant woman tested for HIV (2,10).

Pregnant women accounted for half of all persons tested for HIV in 2013. Other groups who are frequently tested but who have a very low risk of HIV and where the argument for HIV testing seems weak include: health care workers (14% (n=53 195) of all HIV tests in 2013 excluding donors, of which only 7 people tested HIV positive), persons arriving in the country (4%); persons leaving the country (2%), and military (1%). The number of tests and the proportion of key populations tested however remain very low. Of all tests conducted in 2013 (excluding donors), *only 4%* were among key populations (2) (Table 2), and a similar low proportion of key populations were found every year during 2008-2011 (11). The increased number of HIV tests therefore does not reflect increased access to testing for key populations.

In 2012, the MoH revised and approved the national clinical protocol ‘Testing and Counselling for HIV for Levels 1-3 of Health Care Organizations’ (12) supported by WHO. According to the new national HIV testing policy, ‘Informed written consent’ from the person or his/her legal guardian is explicitly required by law before an HIV test (12). But compulsory HIV testing for foreign nationals and stateless persons is still required, due to the requirement in the HIV/AIDS Law, which has not been revised since 2005 (13). Furthermore, testing as a condition of employment for people working in certain jobs such as people working in the food sector and health care workers must submit a certificate that verifies their HIV-negative status in order to be employed and also periodically after appointment (usually twice per year) (13). WHO strongly discourages any form of mandatory or compulsory HIV testing³. Furthermore significant cost savings could be sought by abolishing any requirements of mandatory/compulsory HIV testing, which instead could finance further outreach of rapid HIV testing to key populations.

² 370 160 reported to ECDC because about 40 000 were donors (3)

³ Statement on HIV testing and counseling: WHO, UNAIDS re-affirm opposition to mandatory HIV testing. Geneva, World Health Organization, 2012 (http://www.who.int/hiv/events/2012/world_aids_day/hiv_testing_counselling/en/index.html) According to WHO, all forms of HIV testing and counselling should be voluntary and should adhere to the “five C’s”: consent, confidentiality, counselling, correct test results and connections to care, treatment and prevention services

Table 2. HIV Testing data 2013 Data from Republican AIDS centre data (2)

Population	Size of pop.	Number of persons HIV tested in 2013	Newly detected cases	HIV positivity rate	Testing coverage (%)
All	5 663 133	410 833	480	0.11%	7.2%
Pregnant women	215 268	189 217	60	0.03%	87.9%
Donors		38 134	0	0%	
Contacts*		1034	36	3.48%	
Military		3954	0	0%	
Health Workers		53 195 [#]	7	0.01%	
PWID	25 000	4250**	188	4.4%	17%
Prisoners		9581 [#]	71	0.74%	
Sex Workers	7100	1112	3	0.2%	15.7%
MSM	22 000	77	12	15.5%	0.35%
TB patients	7209***	10 474 [#]	75	0.7%	>100%
People tested based on clinical indication (excl. TB)		35 748	69	0.2%	
Persons arrived to the Kyrgyzstan		14 860	3	0.02%	
People leaving the country		8832	4	0.04%	
Anonymous		2539	27	1.1%	

* sexual partners/needle sharing contact or nosocomial suspect case

**= 2429 code 102 (PWID Kyrgyz) + n= 1674 code 112.1 (PWID in prison) + n=147 code 202 (PWID foreigner)

*** number of new TB cases notified in 2013

experts believe that there might be some level of double testing of this group within one year

blank = no data

High positivity rates, but low testing coverage of key populations

Men who have sex with men (MSM), contacts (sexual partners/needle sharing contact or nosocomial suspect case) and PWID had the highest positivity rate, but also for the category ‘anonymous testing’ the positivity rate was high in 2013 (1%) (Table 2). The positivity rate of persons tested because of TB infection is lower than expected considering the TB/HIV coinfection epidemic in the country. This is likely owing to ‘double testing’ of TB patients within a year because the number of new TB cases in 2013 were smaller (7 209) than the number of TB patients tested for HIV in 2013 (10 474), also giving an artificial coverage of >100%. The true HIV testing coverage of TB patients is probably high, but the actual extent is not known due to double testing.

In 2013, of 4 250 HIV tests among PWID⁴, 1 674 (39%) were conducted in the penitentiary system. Every year since 2008 between 1/3 and 2/3 of all HIV tests among PWIDs were taken in prison or detention centres (2). The number of PWID tested has decreased every year since 2010, and is 25% lower in 2013 than in 2010. The number of MSM tested for HIV has increased since 2010 but is still very low (n=77 in 2013), which may reflect limited reaching out to this group and hesitation

⁴ (code 102, 202, 112.2)

towards disclosing homosexuality/bisexuality among people tested for HIV. The number of sex workers tested for HIV has increased more than 4 times since 2010 and the number of prisoners tested for HIV has also increased significantly (2).

Yet, the coverage of HIV testing is still low among key populations; 17% of the estimated number of PWID in the country were tested in 2013, 15.7% of SWs, and 0.4% of MSM⁵(Table 2). The prison turnover in 2013 was not available to the review team, and coverage can thus not be analysed. The SGS among prisoners in 2013 (14) found that despite recommended HIV testing at entry to the prison system, only 42% of prisoners were tested within the last 12 months and knew the result of their HIV test, still representing an increase since 2010, where 30% were tested within the last 12 months and knew the result. It is strongly recommended to focus HIV testing strategically on the populations that are at highest risk for HIV, including hard-to-reach populations such as PWID.

Late presentation - particularly of PWID

CD4 measurements are not systematically available for all patients enrolled into care, and less than half of all patients enrolled into care in 2013 had a CD4 measurement. Of all those newly enrolled in care in 2013 with a CD4 cell count measurement at presentation (n=204), 51% were late presenters (CD4 count <350) and 24% had a CD4 count <200, signifying advanced HIV disease (2) (Table 3). For PWID, late presentation was particularly significant; 2/3 of PWID enrolled in 2013 were late presenters (CD4 count <350) and 1/3 had a CD4 count <200. The extent of late presentation was comparable across the period 2012-2013 (Table 3). Data on CD4 count at HIV diagnosis is not available, only CD4 count at presentation.

Table 3. CD4 count and results in 2012 and 2013 (2)

CD4 count	Newly registered cases with a CD4 count at presentation (% of total N)		Newly registered PWID cases with a CD4 count at presentation (% of total N)	
	2012	2013	2012	2013
N	148	206	45	70
>350	75 (51%)	100 (48.5%)	19 (42%)	24 (34%)
<350	73 (49%)	106 (51.5%)	26 (58%)	46 (66%)

Of all patients on ART by October 2014, 15% were at stage 4; 42% were at WHO clinical stage 3, 21% at stage 2, 22% at stage 1(2). Children were diagnosed at a more advanced clinical stage, according to data from the republican AIDS centre (2), 65% of all children on ART were at clinical stage 3 at the time of ART initiation.

PWIDs have the lowest median CD4 cell count result (median =312) of all transmission groups who had a CD4 cell count taken at any time during the period 2012-2013 (2). PWID were also the group who less frequently had a CD4 cell count taken, with only 15% having a CD4 count in 2012-2013 (2). Without having separate CD4 cell results at the time of enrolment into treatment or HIV diagnosis, we cannot know whether PWIDs are tested later, if they enter care later, or if fewer are

⁵ assuming that key population size estimation numbers are correct

started on ART, retained in ART, or are less effectively treated with ART. Either way, data suggests that this group has a worse immune status and are less often provided with CD4 cell count measurements than other transmission groups. It is recommended to closely monitor CD4 at presentation separately for transmission groups, in order to monitor and evaluate the success of initiatives towards increased HIV testing and enrolment into care of key populations. Furthermore, CD4 cell counts should be equally available to all.

Inadequate number and diversity of facilities offering HIV testing

During the mission it was repeatedly stated that patients who are referred for HIV testing do not often reach testing sites. Even if the patient just needed to cross the road to get tested for HIV this could represent a barrier, as formulated by an informant: “maybe I’ll not go for testing today but decide to go another day” (interview drug user). It is of great importance to offer services such as HIV testing and information where key populations come for a health check-up, for methadone, for condoms, clean needles, social support, or where they gather and where they live. The review team recommends the introduction of HIV rapid testing (capillary or saliva) for key populations in all narcology centres, at all NSP sites, all TB clinics/hospitals, in all CBOs/NGOs who attract key populations, at gay clubs, at all STI clinics, in all prisons and detention centres, at antenatal care centres and FMCs.

Inadequate availability of community-based rapid testing

Community-level HIV testing and counselling may help to improve access and reduce the stigma and discrimination that is often associated with clinic-based testing (15). Community based HIV testing was introduced only 2 years ago in Kyrgyzstan with 21 NGOs involved and outcomes are elaborated below under the section of rapid testing. However community-based testing is not stated as a priority in the current HIV state programme. On the contrary, it states that patients can be counselled in CBOs/NGOs but should be referred to health facilities for actual HIV testing (10). It is recommended to scale up community based rapid testing, while assuring quality and enrolment into care of HIV positive persons.

Inferior quality of laboratories

Presently, 46 diagnostic laboratories are performing HIV ELISA testing, of which 1 is the reference laboratory at RAC, 7 are based at regional level AIDS centres, 36 at city/district level hospitals, and finally at an additional 2 major laboratories (HIV lab of the Blood centre and HIV lab of the Ministry of Interior)(2). Not all facilities that offer HIV testing are conducting ELISA testing. The majority of institutions who collect blood but have to send samples for HIV testing to one of the 46 laboratories, is considered to have well-functioning laboratories, skilled personnel, and offer a wide range of other tests (11). Confirmatory Immunoblot is only carried out in two facilities in the country: the RAC and in Osh Regional HIV/AIDS centre. According to a WHO review from 2011 (10) the quality of lab diagnostics was not satisfactory. Only 62.5% of laboratories offered high quality services in 2010 (i.e. achieved 100% accuracy in an external quality assurance programme). A recent review of HIV laboratory services from 2014 (16), found that there were no data on specificity and sensitivity for HIV screening tests. The quality control for indirect fluorescent antibody (IFA)/ELISA was not sufficient. The testing algorithm for HIV diagnosis was recommended to consist of only two different 4th generation HIV tests (instead of 3rd generation ELISA and Immunoblot tests). The reviewer though, was fairly satisfied with the performance of Immunoblot (16).

It is strongly recommended to implement strong internal and external quality control systems (at major laboratories and reference laboratory). Further, technical assistance is required to conduct mapping of existing laboratories and develop a plan for the future organization of HIV laboratory services in Kyrgyzstan.

The national HIV screening programme does not attract pregnant women most at risk of HIV

HIV testing of pregnant women is high at almost 88% of all pregnant women, and being higher than the average for the European region (9), this is a great achievement. Nevertheless, the ones who are not tested appear to be the ones who are at most risk. The vast majority (84%, n= 128) of all reported MTCT of HIV to date in Kyrgyzstan have occurred in children where the mother had not been tested for HIV before the child became sick and was tested positive for HIV, after which the mother tested HIV positive (2). In order to reduce vertical transmission, targeted HIV testing towards high risk pregnant women (key populations or the wife/partner of persons from key population) and early infant diagnosis must be implemented widely.

The reasons for the many lost to follow up (LTFU) patients before enrolment into treatment and care have not been investigated in Kyrgyzstan, however this mission identified key issues that may lead to loss of patients:

- Weak care pathways after a positive HIV rapid test
- Time from the first HIV test to confirmation of a positive result is up to 1.5 months!
- Weak information flow between different health care providers
- No systematic efforts to locate LTFU patients
- Fear of breach of anonymity and stigmatization

Weak care pathways after a positive HIV rapid test

HIV rapid testing has been introduced in Kyrgyzstan both in the form of rapid saliva testing and using capillary blood. A rapid saliva HIV testing programme was implemented by UNDP in collaboration with the United States Agency for International Development (USAID) and national partners in November 2012, after WHO recommendations were provided during the 2011 WHO review. The programme was implemented by 21 NGOs across the country, working with the following key population groups: PWID, SW, and MSM. Until 1 November 2014, based on the reporting from 20 NGOs, there were 7 273 persons tested, among them 305 were found HIV positive, including 43 with already known HIV positive status (2) (Table 4).

Table 4: Rapid saliva tests and results by risk group, Nov 2014 (2)

Risk group	Number tested	Positive results	Linked to care	New HIV diagnoses	Previously diagnosed HIV +
PWID	3885	233	58	20	39
MSM	836	34	21	20	1
SW	2552	38	12	8	3
Total	7273	305	91	48	43

The overall positivity rate was thus 4.2%, but the prevalence of new HIV diagnoses was only 3.6% because some were already known to be HIV positive. HIV positivity rates in 2013 differed by region and risk group, the highest in Osh and lowest in Jalal-Abad and Kyzyl-Kiya; and the highest among PWIDs, lower among MSM, and the lowest among SW (2). The high positivity rate demonstrates the effectiveness of this testing strategy to reach key populations. However, only 91 clients out of 305 (30%) with a positive saliva test, came to the AIDS centres for confirmation of

diagnosis and enrolment into care, of which 48 HIV cases were new HIV diagnoses. During the mission it was conveyed that incentives (small gift bags) were provided to persons from key populations who accepted a saliva HIV rapid test, which apparently had the consequence that some people were tested up to 10 times at different NGOs within a year. Consequently, the number reached with saliva rapid testing presented in Table 4 is somewhat overestimated, but the extent of this overestimation is unknown. Urgent efforts to ensure linkage into care are needed (including social accompanying, mobile service delivery including enrolment into care etc.). It is further recommended to stop providing incentives for the uptake of HIV testing as this has shown to cause inefficient use of resources, and skew data on testing; or consider incentives for the first visit to an infectious disease specialist instead.

Rapid testing using capillary blood was introduced by the republican narcology centre together with the Centres for Disease Control and Prevention (CDC). Rapid testing was conducted in August 2014 in 8 sites in Bishkek and Osh city in NSP, narcologist department. Among 290 tested, 20 were revealed positive and 4 were newly confirmed as HIV diagnoses at RAC, the remaining 16 cases were already known HIV cases. Red Crescent Society of Kyrgyzstan with support of the Russian community organization "SPIDinfosviaz" implemented a project including rapid testing with mobile units in Chui oblast from September to November 2014. Three were found HIV positive among 170 persons tested, however they had all been diagnosed with HIV before (2).

Rapid HIV testing pilot projects in Kyrgyzstan have thus proved very efficient in reaching key populations with high positivity rates and within a very short time frame. Nevertheless, data show that there are shortcomings. Apparently rapid tests are to some extent used as a confirmation of previous diagnosis by clients, but more troublesome is the finding that only very few people actually enter into the care system after confirmation of an HIV positive rapid test. It is of utmost importance that enrolment into care is ensured after a positive diagnosis. Multiple testing approaches are needed to reach key populations, and rapid saliva testing is one of them; however implementation of rapid blood testing in community based organizations should also be investigated. Other rapid testing initiatives recently introduced should be evaluated, and those deemed effective should be scaled up.

Time from first HIV test to confirmation of positive result up to 1.5 months!

HIV infections are diagnosed, based on one screening test enzyme-linked immunosorbent assay (ELISA), retested by ELISA and confirmed by Immunoblot in two laboratories (laboratory of republican AIDS centre and Osh AIDS center) (2). Therefore, all positive samples on the first ELISA are sent to those two laboratories for confirmation. Because of the current multi-step testing algorithm (at least 2 ELISA and one Immunoblot), and the costs of running the Immunoblot (capacity: 18 samples for every kit), the time from the first HIV test to confirmation of a positive result was up to 1.5 months according to reviewed patient cards. It is strongly recommended that the testing algorithm be cut to a maximum of two tests in order to minimize waiting time and costs, with the approval of the new order 202, the procedure should be simplified and made more clear. Immunoblot should consistently be run every week at RAC, regardless of the number of samples available in that week. The algorithm should comprise: either one ELISA + Immunoblot or 2 different 4th gen. ELISA. Finance and logistics should inform which algorithm is preferred. Rapid tests should remain as a screening test. In special situations ELISA + confirmatory test should be allowed to be taken at the same instance.

Geographically limited availability of indirect fluorescent antibody and Immunoblot may cause further delays for the diagnostic test of a patient. This may be solved by either increasing the number of laboratories performing the tests or by improving sample logistics (courier service).

Weak information flow between different health care providers

The information flow of test results between different providers (TB/narcology/STI services and HIV services) is very weak and causes further delay for those individuals tested outside AIDS centres. Communication and feedback to providers referring for HIV tests is weak and not systematic. The concept of 'confidential HIV testing' is misunderstood, as it sometimes is interpreted that information should not be shared with those health care providers who should follow up on treatment of that patient. It is important to ensure that information of a positive result without delay goes to the health care provider who referred the patient for the test, as well as to the AIDS centre.

No systematic efforts to locate LTFU patients

According to the UNDP report from 2013, only about 78% (288 744 people out of 370 160) received the results from their HIV test (5). In addition, the mission found no systematic efforts to locate patients who had tested positive, but who had not come for follow up visits. No specific national guidance or patient tracking system has been established for this purpose. There are very limited efforts at AIDS centres and family medical centres to locate patients who never showed up after having a confirmed positive test. Even existing multidisciplinary teams including peer consultants and social workers were not involved in locating patients LTFU. Considering that enrolment into care is the weakest part of the HIV treatment cascade for Kyrgyzstan, peer consultants and social workers should have as their main task to locate patients LTFU. Where multidisciplinary teams are not in place, use of peer consultants should be formalised and remunerated, with enough hours per week and budget for transport to actually go to the field, locate LTFU patients, counsel them and accompany them to the clinic.

Fear of breach of confidentiality and stigmatization

According to almost all informants interviewed at the mission, stigmatization and self-stigmatization of key populations contributes to a low uptake of HIV testing of key populations, (e.g. SW risk losing their job if found HIV positive). Many key populations also fear a breach of anonymity and many drug users did not want to reveal their drug use to family doctors (interviews). Informants reported previously having experienced stigma among doctors within primary health care facilities and therefore wished to continue treatment at AIDS centres instead. There was generally a low confidence in the STI clinic's ability to provide confidential testing, including HIV testing with pre-test counselling. An NGO working with sex workers indicated limited capacity of pre and post-test counselling of NGO staff. It was stated, that referrals would be much more efficient if more people were trained to perform pre-test counselling. Numerous episodes of self-treatment of STI's among SW were noted. It is recommended to continue the training of medical staff on issues of stigma. Information campaigns and trainings/sensitization among health care staff at family medicine centres (FMC)/ family group practices (FGP) might be an option. Patient confidentiality should be included and emphasized in the general medical curricula. Furthermore, a coding system should be introduced in order to assure anonymity and enable sharing of information across health care providers.

Priority area 2: Ensure timely initiation of quality ART and retention in care

ART has been available since 2005 and by November 2014, 1 942 people had been prescribed ART and 1 501 were still on ART (60% of those registered for care) of which 1/3 were PWID (2) (Figure 1). Data on the number of people who achieved viral suppression is infrequent (only about half of all patients receiving ART had a viral load measurement taken) and thus are not presented in figure 1. Despite ART being significantly scaled up during the last 3 years, data still show that 3 001 PLHIV are alive and off ART (53% of all alive notified cases). The majority were never enrolled into care (2). Among the total estimated number of people living with HIV in the country, only 15% were receiving ART by November 2014, among those diagnosed with HIV, 25% were receiving ART by November 2014.

Reports to UNAIDS in 2012 reveal that the twelve-month retention on ART was 73% among 229 started on ART (17). According to the RAC, twelve-month retention on ART had increased to 83% in 2013 and 84% during the first 9 months of 2014 (2). Of all PLHIV started on ART in the last 3 years, approximately 5-15% had previous experience with ART (i.e. starting ART again after previous interruption of ART) (2).

The mission identified the following barriers to a scale up of ART, adherence and retention in care:

- Poor HIV testing set-up, with several visits required before ART can be initiated
- Low proportion of PWID on ART and OST
- Extensive internal and external migration
- Limited use of appointments, reminders and support groups
- Limited time available for counselling on adherence
- No systematic procedures to locate lost to follow up patients
- Reports of side effects after a change of ART regimen (from Combivir + Efavirenz (EFV) to Atripla) among patients receiving treatment for MDRTB

Poor HIV testing set-up, with several visits required before ART can be initiated

Once the HIV positive laboratory test is confirmed, post-test counselling is performed by the epidemiologist who is also following up a very time-intensive patient investigation. The patient only meets the doctor for further clinical investigation and care, after this thorough epidemiological investigation including sensitive questions has been carried out. It is advisable to change this sequence around and reduce number of visits required before entering into care to a minimum. The patients need to feel that they are taken care of immediately by a doctor and that an initial treatment plan is discussed at the same visit where the patient is notified of the positive result. Currently, the patient needs between 4-5 visits (including for testing) before they are started on ART if deemed eligible (interviews RAC). This is a significant barrier to securing enrolment into treatment and consequently timely initiation of ART. It is strongly recommended to reduce to a minimum the number of visits before ART can be initiated e.g. by reducing the number of HIV tests and by conducting epidemiological investigation only after the first or second clinical visit. It should further be stressed that ART should start without any delay when a person with clinical symptoms of HIV has been identified.

Low proportion of PWID on ART/OST

Of all PLHIV started on ART, only about 1/3 were PWID. By November 2014, only 410 HIV positive PWID were at the time on ART (13% of the estimated number of HIV positive PWID), of which only 18% were also on OST (2,18)(Table 5). We did not find any reluctance among interviewed providers in relation to starting active drug users on ART, nor did the mission find reluctance among PWID to initiate ART (interviews). However such hesitancy has been described by others and might be one explanatory factor. Another contributing factor could be that some PWID diagnosed with HIV may have died before they were enrolled into care due to individual- and system-issues described previously in this report. The positive effect of OST on adherence to ART (19) will not be recognisable at a societal level when countrywide, only 74 HIV positive PWID are on both ART and OST. OST needs to be scaled up substantially to allow for visible improvements of adherence to ART among PWID in Kyrgyzstan. Furthermore it is essential to ensure 100% access to ART for all eligible PWID regardless of active drug use.

Table 5. PWIDs, OST and ART, November 2014 (2,18)

Estimated PWID	PWID On OST	Estimated HIV+ PWID	HIV + PWID on ART	HIV + PWID on ART and OST
Estimated 25 500	1 424 alive at 30 sites, (about 3000 cumulative)	3 162 (if HIV prevalence of 12.4% of estimated total PWID)	410	74

Extensive internal and external migration

Both internal and external migration creates challenges for both referral and retention in care. A clinician taking care of 105 PLHIV in FMC, had 1/4 of the patients lost to follow-up because the patients were sentenced to prison and 1/3 for other reasons. The clinician suspected that a majority of them were lost because of internal and external migration (interview). The national database of HIV patients should be utilized to diminish the number of PLHIV lost to follow up. The database should also be used to provide medical history of PLHIV who migrated internally in Kyrgyzstan.

Limited use of appointments, reminders and support groups

Reports of long waiting times or even showing up a day when the doctor is not at the office (interviews) are contradictory to retention in care. Patients should receive certain dates (and if found appropriate exact hours) when they have to come for a clinical appointment at an AIDS centre or FMC. It is recommended to introduce an appointment system for patients, while still being flexible enough to allow drop-in patients. Appointment systems would further allow the patient to visit the same doctor as often as possible, which could also potentially increase retention in care. An SMS reminder system would be a useful tool as well as most people in Kyrgyzstan, including most PWIDs, use a mobile phone. Mobile phones' alarm system can be used for adherence support and pill boxes is another tool shown to increase adherence. ART and/or OST self-help groups should be introduced where feasible, potentially with the assistance of formalised 'peers'.

Insufficient adherence counselling

Time for counselling on adherence and tracing LTFU patients is reportedly very limited (interviews). The amount of secretarial work should be substantially reduced for doctors capable of providing ART, nurses and social workers employed at AIDS centres. Emphasis should be on getting PLHIV in care and providing quality ART for them including adherence support, and not on reporting and documenting, which presently takes up more than half of their day (see also section on inefficient use of human resources).

No systematic procedures to locate lost to follow up patients

Lack of time and resources dedicated to follow-up investigations and locating patients LTFU from the side of the providers and limited use of social accompanying further impedes enrolment and retention in care. It is strongly recommended to increase efforts related to locating LTFU patients by more efficiently using staff already employed and scaling up the use of ‘peers’ for this purpose.

Reports of side effects after a change of ART regimen among patients receiving treatment for MDR-TB.

During the mission, a visit to TB prison (colony 31) revealed a significant loss of retention in care of ART patients after switching from combivir + EFV to Atripla. The possible drug-drug interaction (ddi) between tenofovir and aminoglycosides should be investigated further. In the first place the case reports of HIV/TB coinfecting prisoners in colony 31 should be recorded, including all coinfecting prisoners started on tenofovir (Atripla or any other combination that has tenofovir)⁶

To promote adherence, fixed dose combinations are generally preferred; a one pill once daily regimen containing tenofovir + emtricitabine + efavirenz should be the preferred first line regimen in the country⁷.

The mission identified the following barriers to quality of ART:

- Very limited availability of viral load (VL) testing and limited CD4 count measurements
- Concerns of low laboratory quality especially in regards to VL and CD4
- Low HIV case-load among physicians in some AIDS centres and FMC

Very limited availability of viral load (VL) testing and limited CD4 count measurements

Regular monitoring of ART with VL is not possible in Kyrgyzstan because VL’s are not sustainably available. In 2013, 640 patients on ART had a viral load measurement taken, but 590 patients on ART had no viral in 2013 (2). The target is to have at least one VL at baseline before ART initiation, one measurement one month after the baseline and then VL every six months while on ART.

Only about 60% of all PLHIV enrolled into care in 2013, had a CD4 measurement at the time of enrolment (2). In the period January – September, 2014, a total of 1 452 CD4 tests were taken, but it is not known for how many patients. It is important to ensure that the first CD4 measurement is performed within 4 weeks of HIV diagnosis.

The laboratory at the Republican AIDS Centre has Rotor-Gene-Q equipment to measure VL. There is one additional Rotor-Gene-Q, but this is not in use. The equipment uses Amplisense kits. The annual capacity of the polymerase chain reaction (PCR) equipment at the RAC will be saturated in 2015. Quality issues in the VL PCR determinations were pointed out in the report by Associate Professor Unemo 17–21 February, 2014, who described problems with calibration of VL (PCR)

⁶ This is indicated for following reasons:

- o Manufacturer (Gilead) warns about a possible ddi between tenofovir and aminoglycosides
- o The Liverpool University ddi website for ART (www.hiv-druginteractions.edu) warns about a possible ddi.
- o There is a paper that describes two patients with such ddi in the medical literature (Kenyon et al. 2011⁶).

⁷ Probably with the exception of MDR TB therapy including aminoglycosides

equipment and that quality assurance is insufficient and (16). A strong commitment is needed to enable VL measurements required to monitor ART. VL capacity and availability must meet the requirements set by monitoring ART and it is strongly recommended that the laboratory at the RAC take part in external international quality assurance for both VL and CD4 count. It is further recommended that a supportive laboratory supervision team be set up. The team should include international experts on HIV VL laboratory work and should review the progress and problems in VL laboratory with a few months interval.

Low HIV case-load among physicians in some AIDS centres and FMC

ART is provided and clinical care followed up in 9 AIDS centres and within an unknown number of FMCs (2). Some AIDS centres have a very low patient caseload (15, 16 and 17 PLHIV on ART at three different AIDS centres) and some FMC maybe an even lower caseload, but this is not clear (Table 6). This place serious doubt to the quality of care received at such clinics because HIV patients are seen too infrequently to maintain clinical proficiency to treat HIV patients. The organization of HIV services and related recommendations are further elaborated in the next section under priority area 3.

Priority area 3: Optimize service delivery models and use of human resources

Fragmented HIV treatment and care system

Several models of HIV service delivery are currently being implemented in Kyrgyzstan ranging from decentralization of HIV services into family medicine centres, to persisting vertical AIDS centre structures, and throughout some pilot project such as ‘one-stop-shop’ and the introduction of multidisciplinary teams at selected AIDS centres/FMCs. Below experiences and observations on the different models is provided.

Decentralization of HIV services including ART to primary health care level

As one of the only countries in the region, the HIV programme has started decentralizing HIV services such as HIV testing and ART to primary health care level family group practices (FGP) and family medicine centres (FMC) starting from 2011, where testing and administration of ART was introduced in FMC/FGP (interviews).

FGPs are responsible for providing comprehensive primary care, the concept of family medicine, and in each FGPs at least one physician is employed in addition to a midwife and nurse (20). In cities, FGPs operate as part of FMCs. FMCs are the largest outpatient health facilities in the country. They provide general medical care and specialized care and diagnostics. There are usually 10–20 specialists in each FMC (20), normally including a specialist in infectious medicine or a dermatovenerologist. When no infection medicine specialist or dermatovenerologist is present at FMCs, the family physician from the FGPs is responsible for the treatment of PLHIV, including being responsible for ART of PLHIV (interviews). A total of 66 FMC currently exist in Kyrgyzstan. Secondary care for HIV is still operational, and it is the patient’s choice whether they receive HIV treatment and care at one of the 9 AIDS centres across the country at oblast level, or at FMC/FGPs (interviews). However, according to information received at interviews, it is the plan to move towards increased ART follow-up in FMCs. At present, 687 patients were on ART follow-up in an unknown number of FMCs, 767 were on ART follow-up at AIDS centres, and 170 were in the prison health system. (Table 6)

The mission identified the following barriers to decentralization in FMC/FGP:

- Limited access to CD4 and VL, delay in results from test
- High staff turnover (typical for the country case load training health care system)
- High patient load (mostly other than PLHIV)
- Low HIV patient load
- Low knowledge levels
- Indications of substandard treatment of PLHIV
- Fear among PLHIV of breach of confidentiality

The vast majority of FMCs do not have access to CD4 count and VL, and thus have to refer, or send samples, to the oblast level AIDS centres. However, apparently transportation of blood samples is a major issue, as the budget for this is insufficient (state budget). This causes major delays of results for samples taken at FMC (interviews). Other barriers to decentralization which were mentioned during the mission interviews were the high turnover of staff, and that infectionists at FMC had too many other patients to treat besides those with HIV. The low HIV patient caseload among some physicians at FMC questions the quality of care and if this is an efficient use of resources. Extensive training and re-training on ART for health care staff has been conducted in Kyrgyzstan throughout recent years, but only a small fraction of those trained at FMC actually see HIV patients (interview data – see later under ‘training’ section). Yet a review found that knowledge levels on ART were poor (11). The WHO review from 2011 found examples of serious issues of low quality HIV care in FMC (11). Additionally it was repeatedly mentioned that patients preferred AIDS centres because they feared break of confidentiality at the FMC/FGP (interviews).

Positive effects of decentralization to FMC include:

- It has brought ART services closer to PLHIV
- Potentially closer collaboration with TB specialist, narcologists, etc.
- Potential of delivering patient centred care

Clearly decentralization has increased the number of options for patients as to where they prefer receiving treatment, and physical access to HIV treatment and care. During visits to FMC, it also seemed as if communication between the TB specialist and infectious disease specialist was better than in AIDS centres, but no evaluation of treatment outcomes of TB/HIV coinfecting has been conducted to support this. The collaboration between narcologists and physician at FMC was more complicated. The narcology centre was located in another adjacent building and communication was further compromised because of issues of sharing name-based health information e.g. drug use. Decentralization to primary health care is also expected to increase the delivery of patient-centred care. The extent to which patients were more satisfied with this model has not been studied and no proper cost-effectiveness evaluation of the different models of service delivery (FMC/AIDS centre) has been conducted or even planned for.

Table 6. Organization of ART health services in Kyrgyzstan, Nov 2014 (2)

	No. of HIV cases	Dispensary unit, AIDS centres		Epid. dep. AIDS centres	Family medicine centres	
		Doctors (occupied/positions)	Patients started on ART		Infectologists, dermatovenerologists	Patients started on ART
National AIDS centre		7	42	7	-	-
Osh	917	4/4	352	2/4	9	388
Jalal-Abad	596	2,5/4	123	1,5/3	2	35
Batken	114	1,0/2,0	-	0,5/1	2	42
City Bishkek	797	4/5	202	2/2	-	-
Chui	1598	0,25/2	-	3/3	6+3	222
Talas	67	2/2	15	1/1	-	-
Issyk Kul	122	1/2	16	2/2	-	-
Naryn	72	1	17	-	-	-
Prisons						170

To ensure quality of care and to be able to deliver targeted training and re-training, it is also recommended that the responsibility of the treatment of HIV infection remains with infectious disease specialists, and only in exceptional circumstances (when no infectious disease specialist is present) the responsibility of ART is delegated to the family doctor or other physician after passing an extensive training programme on ART.

Multidisciplinary teams

In 2011, Kyrgyzstan started implementing multidisciplinary teams and currently 11 multidisciplinary teams are effective in the country based within AIDS centres (at RAC, City of Bishkek AIDS centre, Osh, and Jalal-abad - funded by TGF) and within FMC facilities (funded by Russian federation and International Center for AIDS Care and Treatment Programs (ICAP) (2). According to interviews, some of the success on the scaling up of ART can be contributed to the function of multidisciplinary teams.

Teams usually consist of 1-2 physicians, one medical nurse, one social worker, and a peer consultant (PLHIV). Last year the team at the RAC also included one TB specialist but this was not successful mainly because of poor recruitment and engagement of this particular person. Teams that are based at AIDS centres do outreach to FMCs (they should in principle visit the same centre once every month), home visits, visits at hospitals, prisons and other places, when and if needed. In theory, the teams should particularly be concerned with outreach health care delivery to PLHIV under severe circumstances. Multidisciplinary team members are usually employed part time and part time at AIDS centres/FMC, but as other staff at AIDS centres do, they spend more than 50% of their time on reporting, and have to deliver an extensive report every month from 'monitoring visits' (interviews). The usage of these reports is not clear. 149 hard copy reports were placed in a binder of the director's office at the RAC, but according to our information, no analysis of the data, summary or follow-up action had been initiated. According to informants, time available for outreach to FMC was not enough, resulting in a visit to each centre, every 2nd month instead of on a monthly basis.

The multidisciplinary team at RAC has 7 FMC that they visit on average every second month for so-called 'monitoring visits'. However the character of the visits were more 'consultancy' based, than monitoring. Patients in FMC are asked to show up on a specific date where the team will come. The number of patients scheduled per visit ranges from 10-30. According to the informants, the team not only monitors, but actually handles the treatment of patients while the infectionists employed at FMC sit next to them or attend to other patients. Though the idea of the team was to support FMC with the most severe/difficult patients, in practice the multidisciplinary team is handling patients at FMC regardless of the severity/difficulty, and only those who are "accessible" (interview data). The infectious disease specialist is the gate keeper who schedules patients to come, sometimes it happened that the team did not have time to attend to all patients and the patients were then required to come back another day (interview data). The peer consultant usually consulted and motivated HIV positive patients, if they expressed a will, also in case of refusal of treatment. The peer provided some practical information on treatment effect, adherence issues, and appeared to act in lieu of a self-help group.

Another major purpose of the 'monitoring visits' to FMC of multi-disciplinary teams was apparently to collect samples (HIV tests, CD4 and viral load) (interview data). Transportation costs of samples necessitates that multidisciplinary teams bring back samples to AIDS centres when they visit. It is unclear what happens with samples taken outside the visits of the multidisciplinary teams.

Multidisciplinary teams are thus predominantly still facility based, at primary health care level instead of at a secondary health care level. There is very limited or no outreach of peers/social workers to locate LTFU patients, and accompany people to care. The concept of the multidisciplinary team is good, but the actual practical use of them does not seem sensible. They are more or less taking on the workload of the PHC physician, yet the training component of this aspect is not clear. Half of their time is used for paperwork, and none of their time is invested in locating LTFU PLHIV, which probably represents the biggest problem in relation to curbing the HIV epidemic in Kyrgyzstan.

It is recommended to maintain multidisciplinary teams but to substantially re-organize their workload in order to dedicate significantly more time for social workers/peer consultants/nurses to locate LTFU patients and provide social accompanying. Physicians are recommended to have a more selective role regarding the patients they attend to (only complex cases), and a greater ‘training and monitoring role’ rather than simply attending to patients. It is further recommended to include TB/narcologists in the teams, to reduce reporting requirements considerably, and to employ a courier service system to ensure fast and reliable transport of samples, not relying on the multidisciplinary team’s FMC visit once every 2nd month .

AIDS centres

As reported, many patients preferred to receive HIV treatment and care at AIDS centres because they did not feel comfortable disclosing HIV status or drug use at FMC due to concerns of breach of confidentiality (interview data). This is one of the articulated reasons why not all clinical HIV treatment and care has been decentralized to FMC yet. The role of AIDS centres, apart from attending to patients is to support FMC in decentralization, conduct monitoring visits, assist with complicated patients, and secure quality at FMC. In addition, AIDS centres collect and analyse samples (CD4, and for RAC also VL), conduct epidemiological surveillance, maintain patient databases, and conduct contact tracing and reporting (interview data).

Table 6 shows a very low number of patients on ART in some oblast level AIDS centres, yet despite the apparent brain drain, a relative number of physicians are employed at AIDS centres. The low HIV caseload among some physicians at AIDS centres (e.g. in Talas, Naryn, Issik-kul) questions the quality of care and if this is an efficient use of resources. A careful analysis of the outcome of ART in the different systems (e.g. FMC/AIDS centres) and related costs should be conducted. Despite a significant amount of data which has been obtained during 149 monitoring visits to FMCs carried out by multidisciplinary teams and AIDS centre staff over the last 2 years, no efforts have been made to analyse data from these visits. It is recommended to immediately start planning for conducting such a cost-effective study⁸. In addition it is recommended to optimize the number and location of AIDS centres in Kyrgyzstan, and consider the effectiveness of current staffing norms, including the number of epidemiologists and doctors required at AIDS centres. A critical review of the necessity of positions and considering increasing benefits to the remaining positions in order to motivate staff and decrease staff turnover, is also recommended. Quality of care should be promoted by having a set ‘minimal HIV patient load’ both in AIDS centres and outside AIDS centres.

Although it seems that knowledge levels on clinical management were sufficient at the RAC⁹, the vertical structure of the AIDS centre clearly limits optimal HIV patient care. The communication flow between AIDS centres and TB specialists/narcologists was insufficient, and co-location of ART/TB/OST services inadequate across the whole country. In case of an active drug addiction, the AIDS centres are to refer to the OST centre. However, there is no regular exchange of information between AIDS centres and narcology centres, and they do not know how many are referred and how many are actually reached (interview data). The same is the case for TB, which will be analysed in more detail in the next section. This is compromising outcomes of referrals, quality of care and retention in care. Kyrgyzstan should identify opportunities of co-location of TB/HIV/OST services at least at oblast/city level, which would contribute to patient centred service delivery, and

⁸ indicators for such a study may include patient evaluation, enrolment rate, time from diagnosis to ART initiation, retention in ART, viral load suppression, deaths among AIDS cases, and TB related mortality.

⁹ no other AIDS centres was assessed at this mission

furthermore offer significant cost-savings. Many AIDS centres have few patients and could potentially be merged with an existing nearby TB dispensary or Narcology centre by training narcologists/ TB specialists to prescribe ARVs or vv., or offer part time employment of infectionists at AIDS centres, and FMC. Thus, expenses to medical personal, supports staff, laboratories, rent, and electricity could be significantly reduced.

Only one option of a fully integrated service is available to some in Kyrgyzstan. In September 2013, the ‘one-stop-shop’ pilot project in Bishkek AIDS centre was initiated providing a fully integrated TB/HIV/OST service funded by UNDP/TGF (21). However, the programme has very few patients (n=12) mainly because it is situated adjacent to a police station and drug users are fearful of arrest if they show up for OST (interview data). The concept is nevertheless a model in line with the recommendations presented above, but poor planning has diminished its success.

The mission further identified a time-consuming and potentially weak transfer of information following release from prison. At present, data on prisoners released and regarding those on ART, are sent to a third organization which then compiles a list every month, and sends this to AIDS centres. There is no direct communication from the prisons to the AIDS centre to which the patient belongs (interview data). Very few NGOs work specifically with ex-prisoners. It is recommended to change the communication flow so that information about released prisoners reaches the appropriate AIDS centre as soon as possible following release. This enables AIDS centres to follow up on LTFU ex-prisoners.

Inadequate TB/HIV collaboration

Kyrgyzstan is experiencing a severe and increasing TB/HIV coinfection epidemic with high mortality rates (see the epidemiological analysis in Annex 1). Despite an agreement on increased collaboration between HIV/TB and commencing decentralization, there is still resistance to collaborate between TB and HIV services. Below are the major identified barriers to TB diagnostics and treatment of TB/HIV coinfecting patients in Kyrgyzstan:

- Limited communication and integration between HIV and TB services
- No systematic HIV rapid testing among TB patients
- No TB diagnostics available at AIDS centres
- Requirement of chest x-ray before ART can be initiated
- Anti-TB treatment is not available at the majority of AIDS centres
- Cotrimoxazole is not available at TB centres

Organisation of service delivery for TB/HIV coinfecting patients

TB treatment is generally carried out at hospitals during the intensive phase (initial 2 months) of anti-TB treatment. Recently the number of TB beds was reduced to 3 500 thereby halving the capacity for admitted TB patients, as a step towards increased infection control in TB hospitals and promoting ambulatory service delivery for TB patients instead of hospitalization. Ambulatory services are delivered through 7 TB dispensaries. Even at FMCs, there are problems of delivering integrated services for TB/HIV coinfecting patients including: high level of stigma of HIV and TB patients, limited number of staff and high turnover, and weak referral activities (21). Beyond the one-stop-shop initiative, there are very limited opportunities for TB/HIV coinfecting patients to receive integrated care in Kyrgyzstan. ARVs are not available at TB centres and TB medication is not available in HIV services. Referral between the two disease treatment silos is not systematic and the outcome of referral cannot be monitored. (21) It is recommended to employ TB

specialists/narcologists at AIDS centres part time (potentially as part of multidisciplinary teams) and vice versa.

HIV testing among TB patients

In 2013, 10 474 TB cases were tested for HIV (2). According to reports, 100% of TB patients admitted in hospitals are tested for HIV (21). This gives rise to concerns about the voluntary nature of HIV testing among this group. Samples are transported from TB centres only once per week, yet getting a confirmatory Western Blot is a very timely process, thus a confirmatory result can be delayed by up to 3 weeks (interview data). Systematic use of HIV rapid testing in TB patients should be implemented and those who test HIV positive should be fast tracked to receive a confirmatory HIV test result within one week.

TB diagnostics of HIV patients

In 2013, HIV clinics in Kyrgyzstan implemented the WHO recommended questionnaire tool (screening for TB) and in 2013, 90% of all people enrolled into HIV care were screened for TB (5). However, a very weak referral system to TB diagnostic sites has been described as a major barrier for early detection of TB among PLHIV Kyrgyzstan (21). There is usually no feedback to the HIV clinics regarding the results of the diagnostic TB tests (21). In Kyrgyzstan, the TB diagnostic steps, in TB presumptive cases (regardless of HIV status), include fluorography, culture and microscopy, and if available the Xpert/MTB RIF test. The GeneXpertMTB/RIF technology was introduced in Kyrgyzstan in 2012 and is being rolled out at a rapid pace. In 2013, 8 sites had GeneXpertMTB/RIF technology available at TB centres/hospitals. During 2012, 7 159 Xpert tests were performed in the country, and 759 (10.6%) showed resistance to rifampicin. Criteria for accessing such tests are based upon clinical judgment, with an HIV positive status a criteria for Xpert testing according to the national TB guideline approved in 2013. Results of drug susceptibility testing (DST) were reported available for 100% of all new TB cases in 2013, and for 74% of TB re-treatment cases (22). DST is available at 2 laboratories in the country, which the review team considered sufficient for Kyrgyzstan at present.

TB diagnostics are not available at AIDS centres and the need to refer HIV patients to other facilities for TB diagnostics is delaying anti-TB treatment and ART initiation for newly diagnosed patients (interview data). It is strongly recommended that TB diagnostics or sputum collection should be available at AIDS centres (this also requires revision of clinical protocols and algorithms).

ART for TB/HIV coinfecting patients

Before ART can be initiated a chest x-ray is necessary. ART candidates are thus referred to TB services, however TB clinics do not always see the need to perform this and if performed, it is challenging to having it interpreted (21). This causes major delay in ART initiation. It is strongly recommended to remove requirement of a chest x-ray before ART can be initiated.

Isoniazid preventive therapy (IPT) for PLHIV

According to WHO, TST should not be a requirement for initiating IPT and that PLHIV should be started on IPT following a negative symptom-based screening (23). The MoH recently developed a clinical protocol for the management of TB/HIV management in which IPT for PLHIV is emphasized.

Cotrimoxazole (CTX) prophylaxis for TB/HIV coinfecting patients

HIV services have a policy to provide CTX to all PLHIV with a CD4 count <200 (21). Cumulatively, about half of all TB/HIV coinfecting cases have received CTX (642/1 155) (Data from republican AIDS centre), that has been delivered by HIV services, and not by TB services. It is recommended that CTX be available at TB centres.

Human resources

The share of expenditures for salaries in the healthcare system and infrastructure is high and accounted for more than 80% of the entire national health budget (24). In 2011, there were 12 488 specialists with higher and secondary medical education who worked in the healthcare system of Kyrgyzstan, of which 774 worked in the AIDS service¹⁰ (10). About ¾ of positions in AIDS services were filled in 2010. A high turnover of staff is evident in the HIV field. From 2008 and 2011 about half of the AIDS' service staff with higher education was replaced, and PHC professionals are also lacking (10).

Inefficient use of human resources

Despite the 'brain drain' which is often referred to in Kyrgyzstan, the number of qualified staff working at AIDS centres in the country, including infectious diseases specialists, is high considering the current low number of HIV cases in the country. For every infectious disease specialist employed at AIDS centres and FMC across the country, the current HIV caseload is an average of 54 (45.75 full time occupied physician positions for 2 480 PLHIV ever registered for care), and ART case load even smaller at 33 however with a variation ranging from 15 patients to over 100 patients (Table 6). Doctors with a low HIV caseload are at high risk of not maintaining clinical proficiency. In conclusion, we are seeing in Kyrgyzstan a lower than average caseload than in most other countries and on average it means that each infectious disease specialist could manage to see all their patients within a few weeks twice a year.

Despite the lower-than-average caseload, staff at AIDS centres complain about being overloaded with work, but reasons for this should be sought elsewhere than the clinical case-loads. Clinicians employed at AIDS centres are spending the majority of their time (reportedly 4-5 hours per day) on reporting, documenting, entering in databases and doing other secretarial work (interview data). The current reporting obligations of HIV doctors is not a cost-effective use of their time and reduces patient-doctor contact time, time available for counselling, and outreach work. Furthermore epidemiologists spend a lot of time with data management and little time on analysis of the epidemiological data (interview data).

The same burden of administrative workload is observed among other trained staff at AIDS centres including social workers and medical nurses. Employing secretaries/administrative staff to carry out this work would allow these trained personnel to focus on what they are employed for and educated to do, namely, handling patients, counselling and social support, tracking down patients LTFU, and outreach work.

The number of staff overall at AIDS centres across Kyrgyzstan is overwhelming considering the low level epidemic and only 1 500 patients on ART. As an example, there are a total of 66.5 positions in the Republic AIDS centre alone, 48.5 in Osh AIDS centre, and very unexpectedly also 27 full time positions in Naryn AIDS centre (for only 17 patients ever started on ART in that AIDS centre, and not more than 72 ever diagnosed in that region) (2). A large component of staff at the

¹⁰ estimated all medical personnel involved in treatment and care of PLHIV in 2011, RAC did not have updated data.

AIDS centre are support staff (electricians, plumbers, cleaning staff, security staff etc.). Furthermore, the staff composition at the AIDS centre is at times quite unusual (full time lawyer, full time translator etc.). AIDS centres also employ a total of 20 epidemiologists. The number of epidemiologists employed is likewise tremendous, considering the relatively low level HIV epidemic in Kyrgyzstan. It is highly recommended to carefully review the need of all positions and identify ways to increase efficiency. It is the opinion of the review team that resources could be spent much more cost-effectively (e.g. financing other urgently needed staffing priorities such as scaling up the employment of peers, multidisciplinary teams including TB specialists etc.), while still generating cost savings that would enable the state to co-finance ART and OST.

It is recommended to:

- Free clinical time for clinical work by minimizing the administrative burden and reporting requirements (MoH and donors), and by delegating to non-clinical staff/secretaries paperwork, archiving, entering in databases
- Recruit secretaries/nurses/data managers to assist with filing, archiving, keeping track of appointments, entering databases, reporting etc.
- For epidemiologists: review the type of work performed: shift towards epidemiological data analysis, reduce and/or outsource data entry; and Optimise work with data: data entry, data cleaning to secretary/data manager;
- Review the standard operating procedures (SOPs) for each position at the AIDS centres

Abundant number of trainings, limited coordination and evaluation

Serious gaps in knowledge levels have been identified among health care staff in charge of providing HIV services, as well as substandard clinical practice (10,11). Several options of in-service training in HIV exist in Kyrgyzstan including online HIV courses, specialized 12, 24 and 72 hour courses in HIV infection, HIV specialization courses for medical professionals (KSMIRAT) every 5th year, seminars, on the job training, plus a variety of training courses by international organizations).

Barriers to improve capacity include:

- Brain drain and high turnover of staff
- Uncoordinated courses/training, not all integrated into undergraduate/postgraduate formal training
- Low quality of training (instructors are not always capable)
- High level of stigma towards PLHIV among health care workers

As part of the current state HIV programme (10), it was planned to train 10 national trainers on the treatment of HIV and HIV-related infections in accordance with the revised national clinical protocols, who shall then conduct training seminars for health care workers from 48 family medicine centres. Blood safety and the safety of medical procedures will also be included in the curricula of medical schools and postgraduate education (KSMIRAT). It was expected that 80% of specialists within health care organizations at all levels (including laboratories) that provide services related to HIV and infection control, will be trained and receive standard certificates by 2016 (10).

As of November 2014, a total of 1 425 medical persons were trained on HTC (942 doctors and 483 nurses). In addition, 1 046 persons were trained on ART (including 761 doctors and 285 medical assistants) (2). It should be mentioned that the scope and standard of this training is not known and

it is also not clear if some of these people were trained several times, but it is striking that for every 2 patients on ART in the country, approximately one doctor has been trained to deliver ART. The review team consider this a waste of resources. Training and high quality training on ART should be targeted to those physicians and nurses who will be responsible for the treatment of PLHIV. It is further recommended to redirect ART training to where it is most needed until results from the cost effectiveness study of decentralization are available. Training needs and planning of future training and staffing, should be based on the results of the cost effectiveness study of decentralization.

There was no overall coordination of all this training provided and supported by different donors. RAC does not have an overview of the situation. It is recommended to develop an overall master plan for training in relation to HIV, evaluate the needs for training and assign a coordination role to a relevant organization.

Priority area 4: Scale up harm reduction for PWID, including OST

A significant impact on the HIV epidemic among PWID, will only set in by providing comprehensive services such as NSP, OST and ART applied in combination (25,26).

NSPs

In 2012, Kyrgyzstan reached the international recommended level of more than 200 syringes per PWID per year (17,27). The number of syringes distributed per PWID per year by needle and syringe programmes (NSPs) increased from 151 in 2011, to 253 in 2012 (17) to 292 in 2013 (28). However, data are conflicting, and according to UNDP report 2013 the average client of NSP in Kyrgyzstan in 2013 received 544 syringes and 122 condoms. The number of PWIDs reached by NSPs in 2013 was 10 777 (43% of the total estimated amount of PWID assuming that the estimated size of PWIDs is correct) of which 1 500 were in the prison system. The number of female PWID reached was reportedly more than 1 000 (5). This is an increase compared to 9 192 PWID reached in 2011 (7).

Low coverage of Opioid Substitution Therapy (OST)

OST (methadone) was introduced in Kyrgyzstan in 2002. Since then the OST programme has expanded and by November 2014, OST was being provided at 30 facilities across the country. By December 2013, the number of OST clients was 1 424¹¹ out of an estimated 25 500 PWID in the country, similar to 2011 where 1 428 PWID received methadone (7,18). OST coverage is thus about 6% of the estimated population of PWID in Kyrgyzstan. Cumulatively about 3 000 PWID have been prescribed OST. Retention rates are thus inferior, and it must be expected that a certain proportion have died or migrated. According to an assessment in 2012 (ICAP) the OST retention level was very low: 29-40% during 12 months (29).

The mission identified the following barriers to NSP and OST access:

- Low and inflexible methadone dosages were observed in practice
- Registration as drug user is needed to access OST
- Home doses of methadone are not allowed
- Narcology services are result based, financed on per capita drug treatment provision (but not OST)
- The MoH not financing OST programmes

¹¹ of which 25% received methadone in the penitentiary systems

- Restrictive inclusion and exclusion criteria to OST in practice
- Police violations of the rights of PWID
- Negative attitude towards OST among some health staff, and some drug users
- Attitude towards drug users can be discriminating even among health care staff
- Limited opening hours of OST and NSP sites
- OST and NSP are sometimes located far from each other
- Lack of social and psychological support, and links to employment opportunities
- Insufficient offering of HIV testing and TB screening at OST and NSP sites

One of the biggest shortcomings of the OST programme in Kyrgyzstan is the low dosage of methadone, applied (Table 7). The average dose among 813 OST clients in 2014 was 63.3. Median doses are probably even lower and would also be relevant to obtain when monitoring OST programmes (18).

Table 7. Average doses of methadone Kyrgyzstan, July 2014 (18)

OST site	РЦН	ЦСМ № 1	ЦСМ № 6	ЦСМ № 8	ЧОЦСМ	ЫЦСМ	ТОКМОК	СОКУЛУК	БЕЛОВОДСК ОЕ	КАРА-БАЛТА
N of Pts	102	89	71	68	65	52	53	50	39	40
Average dose	54,0	46,0	65,0	55,0	67,0	65,0	71,0	68,0	76,0	81,0

OST site	КАИНДЫ	ОМОЦН-1	ОМОЦН-2	ОЦС	УЗГЕН	КАРА-СУУ	ПАМИРСКОЕ	КЫЗЫЛ-КИЯ	ДЖАЛАЛ-АБАД
N of Pts	8	36	30	45	9	16	13	11	16
Average dose	78,0	66,0	51,0	56,0	73,0	65,0	83,0	70,0	94,0

Opioid dosage is in principle individualized, but many doctors recommend using a minimal dose of methadone and further recommend patients to leave the program after some period of time (interview data). It is a widespread opinion among health care staff as well as NGO staff and PWID, that the best accomplishment of OST is abstinence and rehabilitation (interview data).

There is ample evidence that treatment goals become achievable if the average dose of methadone is between 80-120 mg/day. Dosages of less than 60 mg however have been described as completely ineffective (30) and low methadone doses may result in loss of retention in care, potential relapse of heroin use, overdose and death (31). It is obvious that the majority of patients in Kyrgyzstan are under sub-optimal management and receive a much lower dose of methadone than what they need to reduce risk behaviour. It is recommended to train health care staff in narcology settings on optimal dosages of methadone, including the interaction with ART and anti-TB drugs. Furthermore,

the official guide for provision of OST (32) should be amended to include the following recommendations: 1) treatment with methadone has to be as long as needed and with as high a dosage as needed, and 2) the most important indicator that allows evaluating the effectiveness is retention in OST.

The requirement to register PWID as drug users by harm reduction programs prevents PWID from accessing these services, because such registration lists may be shared with police (Interviews PWID, NGO staff). The legal framework of Kyrgyzstan, protects the privacy of medical information, but there are frequent violations and according to regulations, information may be shared with the police. The negative consequences of being on a drug use registry are numerous: risk of harassment by the police, risk of losing custody of children, loss of confidentiality etc. (33). It is recommended to work towards removing registration requirements for accessing NSP and OST.

A take-home policy is not implemented and the absolute majority of patients must visit treatment centres to receive methadone 365 days in a year. According to focus groups, this severely affects the uptake of OST in Kyrgyzstan and take-home doses for 2-4 days should be available to stabilise OST patients.

It is worrying that the national OST programme is completely reliant upon international funding by TGF, and that currently no financial incentives exist for narcology centres to enrol patients in OST. Financing of narcology centres is currently based on the number of drug users in drug dependence treatment, not including OST (interview data). The MoH should urgently revise the financing model of narcology centres to also provide incentives for OST. The MoH should further show support to OST by co-funding OST programmes.

According to national guidelines, eligibility criteria for OST only includes a diagnosis of opioid dependence and being above 18 years. However, the current mission found that in reality, there were still additional inclusion criteria in order to access OST at some sites in Kyrgyzstan (e.g. people must have a history of unsuccessful attempts at treatment through state abstinence-based programmes) (interview data). Furthermore, staff and users reported that people may be excluded from the OST programme if they were a concurrent drug user (interview data). Violence and diversion in the treatment centre should be the only criteria for forced discharge from OST programmes, in which case, the centre staff should make efforts to transfer the patient to another treatment centre for the continuation of OST.

PWID mentioned reluctance to access syringe exchange programs and drug treatment because police frequently overruled these sites (interview data). Exchange of used needles is problematic because of fear of arrest if carrying needles (interview data). A study in Bishkek among drug users reported that about 36% get their drug supplies directly from the police (34). Police education on the rights of drug users, MSM and sex workers may be considered.

Negative attitudes towards OST were reported during interviews among different stakeholders: health care staff, policy makers, and even PWID who were not on OST. Acknowledging the evidence of the effectiveness of OST programmes, it is surprising to see this attitude. Such negative attitudes towards drug users in general and OST probably represent some of the most significant barriers to accessing this service. There is an urgent need to consider how to tackle this situation; and leadership from both clinical society as well as political leadership is needed to change the

situation.

Some users reported that opening hours of OST sites and NSP sites were insufficient, and that a voucher system to access syringes in pharmacies were attractive particularly because of 24 hour opening times. In addition, it was mentioned that NSP and OST sites were sometimes located too far away¹². It is recommended to expand the opening hours of OST and NSP sites.

Psychosocial support is important to the success of OST, and it is recommended that psychosocial supportive therapy be delivered to every OST patient, possibly in cooperation with CBOs, and link these to employment opportunities. Patient support groups should be available in OST facilities wherever feasible and multidisciplinary teams established at narcology centres, with psychologists, social workers, peer consultants, and narcologists. The expansion of the use of peer counsellors in collaboration with NGOs to increase enrolment and retention in OST is recommended. Consider also introducing incentives for patients who choose OST (meals etc.).

As previously explained, limited integrated care exists for the HIV positive PWID in Kyrgyzstan. On site HIV testing (rapid tests) should be available at all NSP and OST sites, and TB screening and sputum collection should be conducted at OST sites. Finally it is recommended to conduct a mapping of PWID to assess geographical NSP and OST site coverage and needs (and match with the Narcologic registry) and potentially increase use of mobile NSPs for better coverage across the country.

Vulnerable female PWID

Data on female PWID in Kyrgyzstan is scarce. However, a review of studies in Kyrgyzstan on women who inject drugs and female sex workers from 2010 revealed that *some* respondents had experienced violence from police (35). Pregnant drug users may be pressured to have abortions or to give up their newborns (33). It is important to ensure that harm reduction activities are tailored to the needs of female PWIDs.

Overdose prevention

Among male drug users the death rates were four times higher in the 20–24 age group compared with the same age group in the general population in 2011, however the system of registration of drug-related deaths has significant drawbacks that compromise any conclusions on causes and extent of drug related deaths (7). According to a recent global review, drug overdose and AIDS-related mortality were by far the most common causes of death among PWID, and overall mortality was much higher among those HIV positive than among HIV negative PWIDs, also for other causes than AIDS, in particular overdose mortality (36). A recent study conducted among PWID in Tajikistan, Kyrgyzstan and Kazakhstan found that one-quarter (25%) reported witnessing a death of a PWID in the past year. Lay administration of naloxone to reverse overdose is safe, highly effective, and cost-effective (37,38). Peer-administered naloxone overdose prevention projects have been piloted in Kyrgyzstan with promising effects (39,40) and it is recommended to scale up peer-administered naloxone projects throughout Kyrgyzstan, and to improve surveillance on overdose related deaths.

HR in prisons

¹² it should be expected that a certain proportion on OST still inject drugs for various reasons, but less frequent

As of November 2014, about 4.5% (n=341) of all prisoners were receiving OST (8) (Table 8), thus accounting for 24% of all receiving OST in the country. Cumulatively, prisoners with HIV accounted for about ¼ of all registered cases of HIV. By November 2014, there were 301 PLHIV registered in the prison system of Kyrgyzstan, of which about half (n=169) were receiving ART in the prison system (11% of all PLHIV on ART), and 36 were receiving both OST and ART. About ¼ of PLHIV in prisons by November 2014 were receiving OST (Table 8). It should be noted that the number of PLHIV in prisons every year has tripled since 2006¹³.

Table 8. Prisoners, OST/HIV/ART, Kyrgyzstan November 2014 (8)

Prisoners total	On OST	HIV+	on ART	HIV+ on OST	On OST and ART
7500	341	301	169	74	36

According to the SGS from 2013 (14) among 750 prisoners from 9 out of 11 prisons in Kyrgyzstan¹⁴, HIV prevalence among prisoners differed widely between prison colonies (range: 0% - 23.8%) and was further related to the length of stay in prison; the longer the stay, the greater risk of HIV (14). This may indicate that transmission of HIV is occurring in prisons or alternatively that those imprisoned for longer times have a higher HIV prevalence. Reports of unsafe injecting practices and unsafe sex in penal institutions have been described as abundant (10). The SGS further found that general knowledge about HIV was low, only 27% correctly identifying ways of preventing the sexual transmission of HIV and at the same time rejecting major misconceptions about HIV transmission (14).

According to interviews with medical staff at prisons, it is standard procedure that all prisoners are offered an HIV test when they enter the prison system and subsequently about once every year. However, it was not possible to get data on the number of new HIV infections detected after a negative 'entry' test, which would be valuable data in order to assess prevention programmes in prisons. A proper evaluation of the effectiveness of HR programmes and ART in Kyrgyz prisons should be initiated which would be valuable not only for Kyrgyzstan but also neighbouring countries that have not come as far with the implementation of HR in prisons.

The Kyrgyz penitentiary system also provides voluntary HIV testing and testing for infections, including for sexually transmitted infections, TB and in theory also for hepatitis C, but no treatment is available so very scarce use of hepatitis C testing has been reported (41). In the TB prison (colony 31) of 280 prisoners, about 100 were injecting drug users, and of these almost ¾ were on OST (n=76). Out of 48 HIV positive inmates, 41 were on ART (of which 35 were coinfecting with TB) and 23 were on both OST and ART. This colony appeared to have successfully implemented OST, NSP and ART, and also expressed a positive attitude towards OST and drug users in general. Methadone dosages were generally sufficient, with a maximum of 390 mg/day for persons concurrently on ART and anti-TB drugs (interview data). There were no reported inclusion and exclusion criteria from OST such as those found in the public system. All Kyrgyz prisoners who are officially registered as opioid dependent are eligible to initiate methadone; however, the goal of this program is to eventually taper patients off methadone (41). Many drug users were first started on OST in prisons, and had not heard about the methadone programme available in the public health

¹³ 301 in 2014, 238 in 2010; 218 in 2009; 148 in 2008; 137 in 2007; 102 in 2006

¹⁴ but no data from detention centres.

system before they were imprisoned (interview data). As such, it appeared to the review team that this prison had a better functioning OST and NSP programme compared to those offered in the public system (higher average doses, no restrictive inclusion and exclusion criteria, more positive attitude towards OST and drug users, and no risk of arrest while accessing OST/NSP site). Prisons may actually represent an entry-point into methadone programmes in Kyrgyzstan, and colony 31 can provide a good example of how to scale up OST in prisons¹⁵, which other prisons in Kyrgyzstan, and prisons outside national borders, may learn from. However it is important to ensure linkage and referral to continued OST following release. Staff reported linking prisoners to AIDS centres, narcology centres, TB clinics and NGOs after release, but there was no information on the extent of successful transition.

NSPs in prison colony 31 distributed condoms along with sterile needles and syringes, and distributed about 600 per capita per month, but it was not possible to access condoms if you were not enrolled in the NSP programme (interview data). Furthermore, to access the NSP programme you had to register as a drug user. About 80% of the PWID inmates at colony 31 were users of the NSP, but only 20% were permanent users (interview data). The registration requirement may be a barrier to increasing the uptake of NSP in prisons, due to fears of the police when registering. It is recommended to remove the registration requirement for accessing NSP and OST, and provide condoms to all inmates, not only drug users included in the NSP. Investing in educational HIV prevention programmes in prisons is also recommended.

Five HIV infected prisoners had died within 2014 in colony 31, all of them were infected with TB and results of the HIV test were only received after their death. One had started on ART. Results of a confirmatory HIV test (immunoblot) was reportedly only received 1 to 1.5 months after the first HIV test had been taken. Only recently had rapid testing (saliva testing) and CD4 measurements become available in this prison. Capillary blood HIV rapid test would soon be available. Viral load has not been available for more than one year (interview data). HIV rapid testing should be available in all prisons and detention centres and ART should be started in a timely manner. Waiting times for a confirmatory result is quite problematic and should be decreased significantly and urgently.

Priority area 5: Prevent sexual, vertical and nosocomial transmission of HIV

Sexual Transmission

Men who have sex with men (MSM)

Very scarce data are available on MSM in Kyrgyzstan, and usually results from studies and SGS are compromised by the applied methodology and small sample sizes. Nevertheless, a survey from 2012 among 270 MSM in Kyrgyzstan may provide some insight (42). The study found an average age of study participants of 27 years. The majority (79%) of MSM were single/never married. This finding should however be considered in light of the inclusion criteria which comprised being in a social network of MSM, and having had sex with another man in the last 3 months. The study may thus have attracted the more “established” MSM who had a social network of MSM. The mean number of regular partners during the last 12 months was 1.5 for men and 0.45 for women, and the mean number of casual partners during 12 months was 3.85 for men and 0.44 for women. Of all respondents, 62% had been tested for HIV and knew the results. Condom use at last anal sex was

¹⁵ this prison alone accounts for 22% of all on OST in prisons in Kyrgyzstan

reported by 71% of MSM in Kyrgyzstan, however condom use from start to finish was less (59%) and consistent condom use with a regular partner (male or female) was low at 42% (42).

The strongest positive association to reporting consistent condom use was: '(having) been tested for HIV during the last 12 months' with other positive associations comprising 'condoms are easily available', 'being comfortable in obtaining condoms', and 'receiving social support for condom use'. Key factors that influence HIV testing utilization were: 'knowing where HTC services are available', 'receiving social support for HTC', and the 'intention to get HIV tested'. Limitations of this survey included a small sample size and a snowball sampling technique (42). As the SGS in Kyrgyzstan from 2013, this survey is also not representative of the entire county yet the study provides some indicators of the demographics and behaviour, but more importantly it provides valuable insight into how HIV prevention programmes for MSM in Kyrgyzstan may be improved.

While homosexuality was decriminalized in Kyrgyzstan in 1998, significant stigmatization of homosexuality and other MSM remains (42,43), and makes MSM a very hard-to-reach group. In 2012, four regions out of seven implemented preventive programs targeting MSM in Kyrgyzstan (42). Bishkek has only one gay club and only very few safe meeting places for the lesbian, gay, bisexual, and transgender (LGBT) community (interview data)(44).

Results from the study suggest an increase in social support (social accompanying to medical facilities, sessions between MSM etc.), an increase in simple accessibility to condoms and testing, and offering information regarding where condoms and HIV testing are available.

Sex workers

The SGS among SW from 2013 (45) found reduced use of condoms with steady and non-steady partners. The majority of SW who never used condoms were respondents older than 40 years. SWs most often acquired condoms from outreach workers (57%) however another study from Chui oblast in 2012 (n=102) found that most SW purchased condoms at pharmacies (46). Low coverage of HIV testing and prevention programs and low awareness levels were also noted. 56% had tested for HIV and received the HIV test result within the last 12 months. Only 21% were aware of HIV routes of transmission and prevention efforts, and rejected incorrect HIV routes of transmission, but with large regional variation (3% in Jalal-Abad to 66% in Batken). Of those SW who expressed symptoms of STIs, almost 9% treated themselves and 12% did not seek help anywhere. Coverage levels of preventive programmes (informational, education and condoms) also showed a large regional variation (12% in Talas to 93% in Batken). Overall national coverage was low at 25%; however data did not reveal a significant correlation between coverage by preventive programmes and HIV, HCV, Syphilis prevalence or reported condom use (46). The apparently low effectiveness of preventive programmes among SW should be thoroughly analysed to inform future programmes.

HIV is highly stigmatising in the community of sex workers, which was evident during the mission visits. According to the study among SW in Chui oblast in 2012 (46), only a few SWs felt able to disclose the results of their last HIV test to a family member or relative (32%), a doctor or nurse (9%), or their husband or regular sexual partner (8%). SW risk losing their job if they are found HIV positive, and if their female pimp (Mamochka) learns about their positive status. In addition to risking losing their job, SWs also risk losing their social network of other SWs (interview data). According to informants this may be one of the reasons why many sex workers were forced to go for HIV testing by their Mamochka, but never showed up at the AIDS centre for a second ELISA HIV test or even to get the results from the test. It is recommended that community based

organizations work with Mamockas and pharmacies where relevant, to increase access to condoms, educational materials and information.

PMTCT

By November 2014, a cumulative 709 pregnant women had been registered with HIV, and 597 deliveries had been registered¹⁶ (2). It is not known how many of the HIV positive pregnant women were from key populations or sexual partners/spouses of migrant workers and PWIDs. Of HIV positive mothers with registered delivery, 483 (81%) received ARVs and 481 (81%) of registered new-borns received ARVs. However, national data reporting PMTCT coverage varies between different regions (2).

All pregnant women have access to free of charge antenatal care services and 95% of deliveries are administered at medical institutions (24). 72% of women were newly diagnosed with HIV during pregnancy, and 28% were diagnosed with HIV after delivery (47). The availability of free of charge antenatal testing is an important achievement and a cornerstone for the further development of PMTCT in Kyrgyzstan. However, still about 5 % of children born to pregnant PLHIV become HIV-infected (2).

The vast majority of all reported MTCT of HIV to date (84%, n= 128) have occurred in children where the mother had not been tested for HIV before the child became sick, and was tested positive for HIV (2). It is recommended to increase outreach to facilitate HIV testing for key pregnant populations and use social accompanying where needed. An analysis should be conducted whether regional differences in the coverage of HIV test for pregnant women exist. Furthermore, it should be analysed which of the vulnerable group(s) (PWID's, partners of PWID's, migrants or sex workers) fail(s) most often to be included in PMTCT, and services should be developed to improve coverage. Future data collection on PMTCT should also be improved.¹⁷

Barriers for accessing health care services for women with HIV have been described as low awareness, low level of education, high levels of migration, and weak integration of services for these women (47). Of pregnant women with HIV on ART about 20% were found to be non-adherent in the same survey from 2012. A recent report by Dr Cowan (48) from September 2013 provides a descriptive analysis of obstacles for PMTCT and also for perinatal prevention of other STIs. The report gives good suggestions to the practical arrangement of PMTCT in Kyrgyzstan. It is suggested to address the recommendations in this report and to develop the means to secure PTMCT also for women in migration.

Early infant diagnosis has been very problematic in Kyrgyzstan: 98% of all children had not been PCR tested in 2012 because of laboratory problems, and 34% of children over 18 months of age had

¹⁶ 709 - 83 (abortions) and -40 (still pregnant) = 597

¹⁷ and include: number of PLHIV in the need of PMTCT; number of PLHIV who were prior to pregnancy or started during the first trimester ART; number of PLHIV who started during second trimester ART; number of PLHIV who started during third trimester ART (including just prior to the labor); number of PLHIV in need of PMTCT who did not receive ART and reason for failure to receive ART (including the risk group for HIV and also details, e.g. migration, sex worker, remote area / region / oblast etc.); number of PLHIV who had their VL measured prior to ART and during pregnancy; number of infants who received ART; number of infants who had their VL for an early diagnosis; number of infants who had ELISA/IFA tests at the age of 18 months to exclude MTCT; number of infants who were not tested (either VL or ELISA) for MTCT including the risk groups of mothers whose infants were not tested and the oblast / region where the test was missed.

not been tested with ELISA (47). Kyrgyzstan was the country in region performing the worst in regards to the testing of infants born to HIV–infected mothers (17). PCR for early infant diagnosis was initiated 2-3 years ago, at 2 months and at 6 months, but changed with the new revised guidelines to at birth, 1 month and 3 months. Dry spots have been used since 2013, because of problems with transportation of blood samples. Children are given 28 days of ART if the viral load is lower than 100 000. If over 100 000, the regimen is tripled. However, obtaining viral load is difficult outside Chui; here infants will receive triple regimens if no viral load is available. Children are tested at 18 months for HIV antibodies. Early infant diagnosis should be sustained and consistently applied.

Infection control

About ¼ of all blood donated is from voluntary blood donation (10). In addition, it is very normal that relatives donate blood. In 2010, 12% of all donated blood was discarded because of infection markers¹⁸. According to the National Blood Centre, 100% of donor blood was tested for infections in 2010. However, an external quality assessment from 2011, found that only 55% of the laboratories had conducted screening of blood donated that corresponded to appropriate quality standards (10).

Barriers to infection control in Kyrgyzstan have been reported as (10):

- Insufficient laboratory quality standards
- No exchange of information between AIDS centres/narcology centres/blood centres about persons who cannot act as donors
- Increasing number of transfusions
- No regular monitoring and analysis of transfusion services

It is recommended that a thorough epidemiological investigation of all new HIV infections diagnosed in children without HIV positive parents should be conducted as soon as possible and continuously every time such a case appears. Appropriate follow up after results of the epidemiological investigation have been determined, should be started immediately.

Furthermore, it is recommended to:

- Improve laboratory standards
- Ensure implementation of international standards on the clinical use of blood and blood products
- Develop capacity in order to ensure safe injecting practices and infection control in hospitals, particularly within children’s hospitals in nosocomial outbreak areas, while adjusting the indication to use injections to international standards
- Review critically the internationally approved indications of blood transfusions to identify unnecessary use of blood. The goal should be to reduce the number of blood transfusions
- Discourage blood donations from relatives especially for non-emergency indications. All blood units from relatives must be tested for blood borne infections
- Facilitate exchange of information between AIDS centres/narcology centres/blood centres about persons who cannot act as donors
- Advocate for voluntary unpaid blood donation and resume projects that previously in Kyrgyzstan had increased significantly volunteer unpaid blood donation

¹⁸ 2.6% of the total amount of donated blood was discarded because of HCV; HBV: 4.6%, HIV: 0.5%, Syphilis: 1.3%.

- Encourage the reporting of systemic problems inside institutions to take action to improve services

Priority area 6: Improve management, coordination and surveillance

Management and coordination

Implementation of the national HIV programme appears uncoordinated and the overall management capacity appears weak. Many international agencies and donors support HIV related activities in Kyrgyzstan¹⁹, however TGF is by far the largest international donor (11, UNDP report 2013). In addition to the many different donors, multiple actors are active in the field of HIV in Kyrgyzstan. According to the State HIV programme more than 100 different AIDS organizations are involved in the national HIV programme. This requires substantial coordination in order to prevent duplication of work and avoid inefficiencies.

UNDP is the principal recipient of the TGF grant, and they have 40 sub-recipients including the Republican AIDS centre, Republican Narcology centre, Preventive medicines association, State agency for punishment execution, WHO, UNICEF, and NGOs (5). In 2011, the structure of the CCM was amended to improve representation of all stakeholders. According to the current State HIV programme 2012-2016 (10), the CCM should act as ‘a unified national coordination system for the implementation of the state programme on HIV’. CCM meet every quarter to review progress on implementation (10). Yet, major shortcomings in the coordination are present and include very limited analytical work on the progress of implementation, no overall coordination of training, and inadequate efforts for implementing previous recommendations by international experts.

It is recommended to:

- Set up a management team to oversee the implementation of the national HIV programme, to strengthen the overall management capacity, including strengthening the leadership of RAC and the overall coordination with donor agencies
- Conduct donor mapping of HIV projects and coverage to avoid overlap
- Develop a division of work plan, highlighting responsibilities between donors
- Ensure efficient representation of the Ministry of Internal affairs at coordination meetings
- Consider technical assistance in the introduction and implementation of WHO recommendations presented here

Surveillance

Databases

The core variables (age, gender, transmission mode) are outlined for nearly all the cases. However additional data for some variables are required, and it is recommended to complete crucial variables such as CD4 cell count, partner risk information, information regarding the origin of cases, probable country of infection, and information regarding ‘migrant’ status. Due to the existence of several databases for HIV and AIDS cases, manual work is used every year to update all existing databases. It is recommended to reduce the number of databases through combining laboratory, clinical and epidemiological databases (HIV&AIDS databases).

¹⁹ The Global Fund (TGF), UNAIDS, WHO, UNICEF, UNODC; United Nations Population Fund (UNFPA); UNDP, World Bank, German development bank (KfW), German Federal Enterprise for International Cooperation (GIZ), United States Agency for International Development (USAID), Centers for Disease Control and Prevention (CDC), Department for international development (DFID)

The national patient database is too large and requires extensive input, yet outputs of key indicators are not sufficient (e.g. ART coverage). Reviewing the collection of unnecessary epidemiological and testing information is suggested. It is recommended to create quality indicators for the database, make internal checks²⁰ and create automatic outputs for different demands including ART coverage e.g. monitoring of patients; epidemiological monthly bulletins, monitoring of HIV and health programs.

National reporting

AIDS centres use a name based database, which limits the sharing of information between Narcology and AIDS centres. It is recommended to use a unique identifier code for protecting patients confidentiality (e.g. first three letters of first name, year and month of birth, first letter of gender or any other method harmonised among other institutions), which should also enable a match with other databases using unique identifiers (e.g. Narcology dispensary, TB dispensary, STI dispensary). High level protection of all databases, which are connected to the internet should be ensured. Coverage of CD4 cell count reporting is increasing, however still covers less than one fifth of new HIV diagnoses.

International reporting

Despite the update outlining cases who developed AIDS and died during the time covered in the national database, only the most recent year data is submitted to ECDC/WHO European HIV surveillance system. This approach of data submission excludes progress of disease for older cases. Therefore information at European level is not updated for historical data for Kyrgyzstan. In the year 2015, a new combined dataset (HIV+AIDS) will be introduced at European level. It will contain combined variables from two historical HIV and AIDS datasets, thus reducing the reporting burden. There will be several new variables introduced, such as viral load, and last attendance date to clinic. These changes will provide an opportunity for further development of the dispensary unit database in order to adopt it to European reporting and make an automated output upon request.

Second generation surveillance (SGS)

SGS provides some insight into target populations; however there are significant limitations with regards to sampling and small sample sizes. Analysis of the results of SGS, comparing two years of varying coverage and differences in methodology, may lead to the wrong conclusion, for example a decrease of HIV or hepatitis C virus (HCV) prevalence and comparison should be made with caution, as rather different and incomparable populations may be described. Prevention coverage in Bishkek, in one of the cities with the highest number of services was very low at 28%. No difference in HIV prevalence was noted in relation to those PWID who have access to clean needles, compared to those who do not. It is very important to analyse the group of PWID, who participated in the previous study separately. These contradictions and inconsistencies should be addressed when interpreting data. Regular SGS were introduced in 2008 and reports should be freely available and easily accessible. Repository of surveys and studies should be created.

HIV surveillance data presentation

Visual presentation of data still focuses on cumulative numbers with particular attention to transmission modes. It is suggested to use linear presentation of trends by transmission mode by year (Fig. 3 – annex 1). Data presentation by age groups is important, due to historically high

²⁰ (e.g. as in the European database; for example MSM = gender Female. or Sexual transmission age =3 years)

numbers of reported HIV cases among children due to nosocomial transmission as presented in this report in figure 2 – annex 1.

Data analysis and dissemination of data

Despite extensive internal and external reporting forms, limited analytical work of data collected and limited follow-up action is carried out. Some key data and worrying trends need urgent attention and analysis:

- Investigation of 12 cases of suspected nosocomial infection in 2013, and 10 in 2014,
- HIV treatment cascade and reasons for major gaps
- The increase in mortality among AIDS cases, and the marked increase in number of deaths among PLHIV
- Treatment outcomes in FMC vs. AIDS centres

Epidemiological data dissemination from RAC is rather limited²¹. There are many donors involved in the HIV work, however, no explanations, only links. There is a monthly web bulletin on epidemiological data available on the website, however very limited information for people about HIV, no organogram and information is not available in English.

HIV/AIDS reporting

There are too many forms to be filled in and circulating in very high frequency. The rationale for some of them is not always clear. Review of these forms is recommended in order to omit some of them, simplify others and replace by computer data exchange or by placing data extract on the website. It is recommended to make a reporting plan and templates to all donors one year in advance: for mid-term planning; make a complete and clear list of all data request and outputs for the year (see example in Table Annex 4). Improve, agree on and change reporting templates to all recipients in advance e.g. MoH.

5.3 Cross cutting issues

Sustainability and financing

Total funding of the National HIV programme has increased greatly over the last few years, and TGF is by far the largest international donor contributing with more than 50% of all international funding for the national HIV programme in Kyrgyzstan (5,11). Domestic state funding for HIV more than doubled from 2011 to 2012 (1 441 565 in 2011 to 3 886 526 USD in 2012), but still accounts for less than 15% of total national HIV programme and finances, covering only staffing, infrastructures and maintenance of AIDS centres and some elements of blood services. Funding from TGF has also increased significantly since 2010. The total annual GF budget for HIV was 5 836 715 USD in 2010 and 11 829 864 USD in 2013 (5, 17).

The dependency on TGF and other international donors is very concerning. ARV and TB drugs, HIV diagnostics, CD4 count and VL tests, TB diagnostics, NSP and OST programmes, are almost entirely funded by TGF. Prisons are severely dependant on international funding, even landlines and internet are covered by international organizations. It is recommended that the MoH co-finance essential components (such as ART and OST) of the next grant to avoid complete collapse if TGF withdraws in a few years. The MoH should develop a clear plan on how to increase financial support over years for priority areas in order to express their commitment.

²¹ www.aidscenter.kg

Concerns that a very large amount of the state HIV budget was dedicated to harm reduction alone, and the cost-effectiveness of the harm reduction programme, was mentioned during the mission. The effectiveness of the NSP and OST programmes has been documented²², and several studies have shown that harm reduction programmes are cost-effective programmes, and even more so, if provided together (NSP + OST)^{23,24}. The epidemiological analysis provided in Annex 1 of this report outlines that indications of the harm reduction programme effects are becoming detectable in Kyrgyzstan. This mission has nevertheless identified that human resources are occasionally inefficiently used and that coordination of activities is weak. It is important to take a critical look at the staffing norms, optimize their work to correspond to an appropriate level (e.g. physicians should be conducting clinical work, secretaries should be doing administrative work, etc.), ensure coordination of all actors in the field to avoid redundancies, and maybe identify other cost savings by integrating care models (49). A flexible financing model of NGO's should also be considered, e.g. social order.

AIDS centres complain that there are not enough funds to cover transportation of samples, which causes severe delays in getting results from HIV tests, CD4, etc. Optimising the number of AIDS centres and looking at utilising existing structures (TB dispensaries/Narcology) would clearly cover all sample transport expenses and funds would still remain which could be used to co-sponsor other priorities such as ART and OST to increase sustainability of these important components.

Human rights issues and legislation

MSM

The LGBT community in Kyrgyzstan faces severe discrimination and violations of human rights. Recent reports from Human Rights Watch describe how gay and bisexual men in Kyrgyzstan have experienced physical, sexual and psychological abuse by the Kyrgyz police (50). In October 2014,

²² See: Gowing et al (2008) Substitution treatment of injecting opioid users for prevention of HIV infection. *Cochrane.Database.Syst.Rev.*, CD004145. Gowing et al. (2011). Oral substitution treatment of injecting opioid users for prevention of HIV infection. *Cochrane.Database.Syst.Rev.*, CD004145; World Health Organization (2005). Effectiveness of drug dependence treatment in preventing HIV among injecting drug users World Health Organization, Geneva, Switzerland; Mattick RP, Breen C, Kimber J, Davoli M. Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence. *Cochrane Database of Systematic Reviews* 2009, Issue 3. Art. No.: CD002209. DOI: 10.1002/14651858.CD002209.pub2.; Jarlais DD. Systematic review research on needle/syringe programs and opiate substitution programs in low- and middle-income countries. *J Food Drug Anal.* 2013 Dec;21(4):S59-S61. Dutta A1, Wirtz AL, Baral S, Beyrer C, Cleghorn FR. Key harm reduction interventions and their impact on the reduction of risky behavior and HIV incidence among people who inject drugs in low-income and middle-income countries. *Curr Opin HIV AIDS.* 2012 Jul;7(4):362-8. doi: 10.1097/COH.0b013e328354a0b5; Aspinall et al. Are needle and syringe programmes associated with a reduction in HIV transmission among people who inject drugs: a systematic review and meta-analysis. *Int J Epidemiol.* 2014 Feb;43(1):235-48. doi: 10.1093/ije/dyt243.

²³ See: Guinness L et al. The cost-effectiveness of consistent and early intervention of harm reduction for injecting drug users in Bangladesh. *Addiction.* 2010 Feb;105(2):319-28; Kwon J et al. Estimating the cost-effectiveness of needle-syringe programs in Australia. *AIDS.* 2012 Nov 13;26(17):2201-10.; Ni MJ1, Fu LP, Chen XL, Hu XY, Wheeler K. Net financial benefits of averting HIV infections among people who inject drugs in Urumqi, Xinjiang, Peoples Republic of China (2005-2010) *BMC Public Health.* 2012 Jul 29;12:572.; Connock M et al. Methadone and buprenorphine for the management of opioid dependence: a systematic review and economic evaluation. *Health Technol Assess.* 2007 Mar;11(9):1-171, iii-iv. Jones, L., et al., A review of the effectiveness and cost-effectiveness of needle and syringe programmes for injecting drug users, 2008, Centre for Public Health, Liverpool John Moores University: Liverpool.

²⁴ Calculation on unit costs of OST and NSP for different regions may be found here: UNAIDS 2007 resource estimations, Schwartlaender et al 2011; UNSW estimates, based on 10 studies identified in the 6 regions

the Kyrgyz parliament accepted a bill banning the dissemination of information ‘aimed at forming positive attitudes towards non-traditional sexual relations’. The bill faces two more votes before it will be signed into law by the president. A similar law was introduced last year in Russia and the proposed law in Kyrgyzstan would imply that those "forming a positive attitude to untraditional sexual relations" among minors or in mass media, risk imprisonment of up to 1 year (51). However the current character of the law is so vague that it leaves room for interpretation, which then may have consequences far beyond just minors and mass media. The United Nations strongly condemned this proposed law, saying that the “adoption of this law would go against the commitments made by Kyrgyzstan during its universal periodic review in the UN Human Rights Council in 2010” (52).

Sex Workers

In Kyrgyzstan, 35% of sex workers reported being tested for HIV or other STIs against their will after being picked up by police (33). Qualitative data from Central and Eastern Europe and Central Asian republics suggested that physical violence from the police was ubiquitous among male and transgender sex workers, and in some countries of central Asia including Kyrgyzstan, police were cited as the main threat to personal safety (34).

Illicit Drugs

Possession of illicit drugs is an offence, depending on the quantity seized when the suspect is arrested (e.g. possession of heroin weighing less than 1 gram is an administrative offence, possession of more than 1 gram is subject to criminal prosecution²⁵). Despite that syringe possession is not criminalized, PWID are still being subject to police arrest due to the possession of syringes (53).

Criminalization of HIV

Both the HIV law and Criminal Code in Kyrgyzstan contain provisions criminalizing exposure and transmission of HIV²⁶. Although there have been no prosecutions for sexual transmission, there have been numerous prosecutions for HIV transmission due to medical negligence in hospitals over the last 8 years, of which several have caused conviction of health care workers and administrators including PLHIV²⁷.

Entry restrictions

Entry restrictions exist for visitors to, and foreign residents, of Kyrgyzstan. The law mandates HIV testing for foreign citizens and stateless persons on arrival in the country and on an annual basis. Non-citizens are subject to deportation if they attempt to evade this test (54).

²⁵ according to the Criminal Code of the Kyrgyz Republic (adopted in 1997); and the Administrative Code of the Kyrgyz Republic (adopted in 1998)

²⁶ GNP+, Global Criminalisation Scan, available at <http://www.gnpplus.net/criminalisation>

²⁷ <http://www.telegraph.co.uk/news/worldnews/asia/kyrgyzstan/9063987/Kyrgyz-officials-say-another-70-children-are-infected-with-HIVAIDS-virus.html>

The review has the following recommendations related to Human rights issues and legislation:

- The Bill on limiting the rights of sexual minorities should not be enforced;
- Police education to reduce harassment of drug users and sex workers
- Review of Laws and regulations to:
 - abolish criminalisation of transmission of HIV (incl. nosocomial transmission)
 - abolish registration of drug users to obtain services;
 - abolish regulation on testing on medical personnel;
 - abolish entry restrictions in relation to HIV

6. Recommendations

6.1 Main recommendations

Main recommendations Priority area 1: Increase diagnosis and enrolment into care of key populations

- Focus HIV testing strategically on the populations that are at highest risk for HIV, including hard-to-reach populations such as PWID.
- Scale up community based rapid testing significantly for key populations including female drug users and migrants.
- Introduce HIV rapid testing (capillary or saliva) for key populations in all narcology centres, at all NSP sites, all TB clinics/hospitals, all CBOs/NGOs who have contact with key populations, at gay clubs, at all STI clinics, in all prisons and detention centres, at antenatal care centres and FMCs.
- Urgent efforts to ensure linkage to care are needed (including social accompanying, mobile service delivery incl. enrolment into care etc.).
- Implement systematic follow up on those identified as HIV positive, but not enrolled into care.
- Shorten the time between taking the blood sample and delivering test results: e.g. through simplification of the diagnostic algorithm and develop an algorithm to optimize information flow of test results. The algorithm should comprise: either one ELISA + Immunoblot or 2 different 4th gen. ELISA.
- Immunoblot should consistently be run every week at RAC, regardless of the number of samples available in that week.

Suggested target setting for priority area 1

- HIV testing coverage of key population: at least 50% first year, at least 60% second year of carefully and reliably estimated key populations and prioritize using rapid tests for key populations.
- Enrolment in care: at least 80% of those diagnosed are enrolled into care

Main recommendations Priority area 2: Ensure timely initiation of ART and retention in care:

- VL capacity and availability must meet the requirements set by monitoring ART
- Implement strong internal and external quality control systems at major labs and reference laboratory, including of VL and CD4.
- Reduce to a minimum the number of visits before ART can be initiated (e.g. by simplifying the HIV testing algorithm and by conducting epidemiological investigation later
- ART should start without any delay when a person with clinical symptoms has been identified (codes 113 and 117).
- Ensure 100% access to ART for all eligible PWID.
- OST needs to be scaled up substantially to allow for overall improvements of PWID adherence to ART.
- Close follow up of patients who miss a visit (peers, nurse, social workers or multidisciplinary team members) to locate LTFU patients.

Suggested targets for priority area 2:

- Increase the number of PLHIV on ART by about 700 in 2015, by 800 in 2016, and by 800 in 2017.
- The proportion of PLHIV on ART with VL below limit of detection (<500 with current equipment) will be 85% by 2016.

Main recommendations Priority area 3: Optimize service delivery models and use of human resources

- Ensure that responsibility of treatment of HIV infection is with infectious disease specialists, and only in exceptional circumstances (when no infectious disease specialist is present) delegate responsibility of ART to the family doctor or other physician after passing an extensive training programme on ART, and employ TB specialists/narcologists at AIDS centres part time (potentially as part of multidisciplinary teams) and v.v. while ensuring continued supervision of the treatment.
- Conduct a study on the effect of decentralization of HIV services in Kyrgyzstan by comparing treatment outcomes of ART provided at different health care levels and assess the cost effectiveness of decentralization²⁸
- Maintain multidisciplinary teams, but substantially re-organize their workload, expand their composition to include also TB specialists and narcologists, and dedicate much more time for social workers/peer consultants/nurses to locate LTFU patients and to social accompanying.
- TB diagnostics or sputum collection should be available at AIDS centres (revision of clinical protocols and algorithms).
- High quality training on ART should be targeted to those physicians and nurses who will be responsible for treatment of PLHIV.

Main recommendations Priority area 4: Scale up harm reduction for PWID, including OST

- Ensure quality of OST delivery:
 - Sufficient dosages of OST should be ensured through training and the update of guidelines
 - Restrictive inclusion/exclusion criteria for OST happening in practice should be stopped
- Allow take-home dosages for 2-4 days of methadone for stable methadone users
- Work towards removing drug user registration requirements in order to obtain narcology services
- MoH to revise current financing model of narcology centres and include OST in results based financing model
- MoH to show governmental commitment by co-financing OST programmes

Suggested Harm reduction targets:

- Increase number of OST clients to at least 2 500, including in prisons (10% of estimated size of PWID population)
- Scale up NSP to reach at least 60% coverage of estimated people who inject drugs, including prisoners

Main recommendations Priority area 5: Prevent sexual, vertical and nosocomial transmission of HIV

Sexual transmission:

- Increase outreach to partners of key populations (BCC, condoms, HIV testing)
- The apparent low efficiency of preventive programmes among SW should be thoroughly analysed and future programmes should be planned following results from such evaluations

PMTCT:

- Targeted HIV testing towards high risk pregnant women (key populations or the wife/partner of persons from key population) and early infant diagnosis must be implemented widely
- Use social accompanying when needed

Infection control:

- Thorough epidemiological investigation of all new HIV infections diagnosed in children without HIV+ parents should be conducted as soon as possible and continuously every time such a case appears. Appropriate follow up after results of epidemiological investigation should be started immediately
- Ensure implementation of international standards on the clinical use of blood and blood products

Main recommendations Priority area 6: Improve management, coordination and surveillance

Management and coordination:

- Set up a management team to oversee implementation of the national HIV programme, to strengthen overall management capacity including strengthening leadership of RAC and overall coordination with donor agencies.
- Use capacity of newly established intersectoral Coordination Committee on Public Health issues under the Government for better coordination of national response and contribution of international partners in addressing HIV epidemic.

Surveillance:

- Ensure future SGS are represented which can then in turn inform policy making
- Use epidemiologists to analyse data collected and produce outputs for action and strategic planning
- Make the unique identifier for protecting patients confidentiality (e.g. first three letters of first name, year and month of birth, first letter of gender) and enable match with other databases using unique identifier (e.g. Narcology dispensary, TB dispensary, STI clinic, prisons system)
- Collect HIV case report data on migrants and adjust surveillance
- Analyse and monitor carefully the development of AIDS cases and mortality among AIDS cases and PLHIV in Kyrgyzstan. Outcomes of analysis should be used to adjust treatment and testing strategies

Main recommendations for cross cutting issues (legislation, human rights and sustainability):

- The Bill on limiting the rights of sexual minorities should not be enforced;
- Review of Laws and regulations to:
 - abolish criminalisation of transmission of HIV (incl. nosocomial transmission);
 - abolish registration of drug users to obtain services;
 - abolish regulation on testing on medical personnel;
 - abolish entry restrictions in relation to HIV.
- The MoH should co-finance essential components (such as ART and OST) in the future to avoid complete collapse if TGF pulls out in a few years

6.2 Specific Recommendations

Specific recommendations for priority area 1:

- Abolish any requirements of mandatory/compulsory HIV testing, which instead could finance increased outreach of rapid HIV testing to key populations.
- Ensure information flow between health care providers (STI clinic, narcology services, TB clinic; prison service etc.) either by social accompanying, by paper vouchers, phone calls or faxes.
- Peer consultants and social workers should have as their main task to locate patients LTFU. Where multidisciplinary teams are not in place, the use of peer consultants should be formalised and remunerated, and they should have enough hours per week and a budget for

transport to actually go to the field, locate LTFU patients, counsel them and accompany them to the clinic.

- Improve/modify practices of saliva rapid testing and ensure follow up and enrolment into care after a positive HIV diagnosis.
- Stop providing incentives for the uptake of HIV testing or consider incentives for a first visit to an infectious disease specialist instead.
- Rapid testing initiatives recently introduced should be evaluated and those effective should be scaled up if found effective.
- HIV rapid testing should be available in all prisons and detention centres and ART should be started timely. Waiting times for a confirmatory result is really problematic and should be decreased significantly.
- IFA and Immunoblot
 - Remove the obstacles for a swift HIV diagnosis by increasing number of labs performing the tests or by improving sample logistics
- Continue pre- and post-test counselling, but:
 - focus and shorten;
 - give relevant information, where to go for confirmatory test;
 - provide appropriate information on treatment available.
- Patient confidentiality and medical secret issues should be included and emphasized in the general medical curricula
- Continue the training of medical staff on issues of stigma. Information campaigns and training/sensitization among health care staff at FMC/FGP might be an option
- A coding system should be introduced in order to assure anonymity and enable sharing of information across health care providers
- Decrease the number of groups for compulsory testing including health care workers
- Ensure voluntary HIV testing for prisoners twice a year
- Closely monitor CD4 at presentation separately for transmission groups, in order to monitor and evaluate the success of initiatives towards increased HIV testing and enrolment into care of key populations
- CD4 cell counts and VL should be equally available to all

Specific recommendations for priority area 2:

- Provide counselling on practical issues on adherence (peers, nurse, social workers, doctors etc.) e.g. use of mobile phones (alerts, SMS) and pill boxes
- Introduce appointment systems
- Same doctor, same patient whenever possible
- Support self-help groups on ART and OST
- Ensure monitoring of ART and TB regimens and effectiveness of treatment also after change of ART for TB/HIV coinfecting patients
- Fixed dose combinations are generally preferred; A one pill once daily regimen containing tenofovir + emtricitabine + efavirenz should be the preferred first line regimen in the country (Probably with the exception of MDR-TB therapy including aminoglycosides)
- National database of HIV patients should be utilized to diminish the number of PLHIV lost to follow up. The database should also be used to provide medical history of PLHIV who migrated internally in Kyrgyzstan
- First CD4 cell count must be performed within 4 weeks of HIV diagnosis

- Monitoring of ART outcome by VL will be measured at least before the start of ART, at 1 and 6 month after the start, and thereafter every 6 months
- Technical assistance is required to conduct mapping of existing laboratories and develop a plan for future organization of HIV laboratory services in Kyrgyzstan
- Supportive supervision team for VL should be set up. The team is advised to include international experts on HIV VL laboratory work. The team should review the progress and problems in VL laboratory with a few months interval during the first 12 months

Specific recommendations for priority area 3:

- Physicians in multidisciplinary teams to have a more selective role in terms of patients they attend to (only complex cases) and a greater training and monitoring role
- Include TB/narcologists in the multidisciplinary teams
- Optimize number and location of AIDS centres, and consider effectiveness of current staffing norms, including number of epidemiologists and doctors required at AIDS centres.
- Quality of care should be promoted by having a set ‘minimal HIV patient load’ both in AIDS centres and outside AIDS centres.
- Investigate opportunities of co-location of TB/HIV services at oblast/city level
- Consider merging those AIDS centres with a few patients, with an existing nearby TB dispensary or Narcology centre
- Develop an overall master plan for training in relation to HIV, evaluate the needs for training and assign a coordination role to a relevant organization (Training needs and planning of future training and staffing should be based on outcomes and results of cost effectiveness study of decentralization)
- Redirect ART training to where it is most needed until results from cost effectiveness study of decentralization are available
- Employ a courier service for systematic collection of samples from FMC/AIDS centres to central laboratories
- Technical expertise is required to conduct mapping of existing laboratories and develop a plan for future organization of HIV laboratory services in Kyrgyzstan
- Systematic use of HIV rapid testing in TB patients should be implemented and those who test HIV positive should be placed fast tracked to receive a confirmatory HIV test result within one week
- Remove the requirement of a chest x-ray before ART can be initiated in TB/HIV coinfecting patients
- PLHIV should be started on IPT following negative symptom-based TB screening
- CTX should be available at TB centres
- Change the communication flow so that information about a released prisoner reaches the appropriate AIDS centre as soon as possible Provide Hepatitis B vaccination to PLHIV
- Make available time for clinical work by minimizing the administrative burden and reporting requirements (MoH and donors) and by delegating to non-clinical staff/secretaries paperwork, archiving, entering in database
- Recruit secretaries/nurses to assist with filing, archiving, keeping track of appointments, data managers entering databases, reporting etc.
- Review the epidemiologists type of work: shift towards epidemiological data analysis, reduce and/or outsource data entry; Optimise work with data: data entry, data cleaning to secretary/data manager
- Review SOPs for each position at AIDS centres

Specific recommendations for Priority area 4

- Scale up the use of peer counsellors in collaboration with NGOs to increase enrolment and retention in OST
- On site HIV testing (rapid tests) should be available at all NSP and OST sites
- TB screening and sputum collection should be conducted at OST sites
- Increase the opening hours of OST and NSP sites
- Increase social and psychological support by establishing multidisciplinary teams at narcology centres: psychologists/social workers/peer consultant/narcologists
- Link to employment opportunities at OST sites
- Support ‘self-help groups’ to increase adherence to OST
- Consider introducing incentives for patients who choose OST (meals etc.)
- Conduct mapping of PWID to assess geographical NSP and OST site coverage and needs (match with Narcologic registry) (Potentially increase use of mobile NSPs to better cover the entire country)
- Ensure proximity of OST and NSP sites
- Ensure that harm reduction activities are tailored to the needs of female PWIDs
- Scale up peer-administered naloxone projects throughout Kyrgyzstan and improve surveillance on overdose related deaths
- A proper evaluation of the effectiveness of HR programmes and ART in Kyrgyz prisons should be initiated which would be valuable not only for Kyrgyzstan but also neighbouring countries who have not come as far with the implementation of HR in prisons
- Colony 31 can provide a good example of how to scale up OST in prisons²⁹ which other prisons in Kyrgyzstan and prisons outside national borders may learn from.
- Ensure linkage and referral to continued OST after release from prison
- Remove the registration requirements for accessing NSP and OST in prisons

Specific recommendations for Priority area 5

Sexual transmission:

- Make condoms available to all prisoners
- Invest in an educational HIV prevention programme in prisons
- If a sero-discordant couple are present, start ART immediately among PLHIV
- Decrease STIs among SW by referring them to STI clinics (high rates >20% of self-treatment)
- Continue and expand counselling and HIV testing by peers
- Increase social support (social accompanying to medical facilities, sessions between MSM etc.)
- Community based organizations should work with Mamockas and pharmacies where relevant to increase access to condoms, educational materials and information
- Include migrants as a vulnerable group in strategies for successful HIV prevention, treatment and care in Kyrgyzstan

PMTCT:

- Develop the means to secure PMTCT also for women in migration
- Improve data collection on PMTCT³⁰

²⁹ this prison alone accounts for 22% of all on OST in prisons in Kyrgyzstan

- An analysis should be conducted whether regional differences in the coverage of HIV testing for pregnant women exist. Furthermore, it should analyse which of the vulnerable group(s) (PWID's, partners of PWID's, migrants or sex workers) fail(s) most often to be included in PMTCT
- A recent mission report by Dr Cowan from September 2013 provides suggestions for the practical arrangement of PMTCT in Kyrgyzstan

Infection Control:

- Develop capacity in order to ensure safe injecting practices and infection control in hospitals, particularly within children's hospitals in a nosocomial outbreak area, while adjusting the indication to use injections to international standards
- Critically review the internationally approved indications of blood transfusions to identify unnecessary use of blood. The goal should be to reduce the number of blood transfusions.
- Discourage blood donations from relatives especially for non-emergency indications. All blood units from relatives must be tested for blood borne infections
- Advocate for voluntary unpaid blood donation and resume projects that previously in Kyrgyzstan, had increased significantly the voluntary unpaid blood donation
- Encourage the reporting of systemic problems inside institutions to take action to improve services
- Carefully analyse all data and patient history every time a new case of nosocomial infection is suspected, and if nosocomial transmission of children at a certain clinical setting has been identified, investigations of potential nosocomial transmission among adults should also be carried out and reported.

Specific recommendations for Priority area 6:

Management and coordination:

- Conduct donor mapping of HIV projects and coverage to avoid overlap
- Develop a division of work plan and responsibilities between donors
- Ensure efficient representation of Ministry of Internal affairs at PHCC
- Consider technical assistance in the introduction and implementation of WHO recommendations presented here

³⁰ and include: number of PLHIV in the need of PMTCT; number of PLHIV who were prior to pregnancy or started during the first trimester ART; number of PLHIV who started during second trimester ART; number of PLHIV who started during third trimester ART (including just prior to the labour); number of PLHIV in need of PMTCT who did not receive ART and reason for failure to receive ART (including the risk group for HIV and also details, e.g. migration, sex worker, remote area / region / oblast etc.); number of PLHIV who had their VL measured prior to ART and during pregnancy; number of infants who received ART; number of infants who had their VL for an early diagnosis; number of infants who had ELISA/IFA tests at the age of 18 months to exclude MTCT; number of infants who were not tested (either VL or ELISA) for MTCT including the risk groups of mothers whose infants were not tested and the oblast / region where the test was missed.

Surveillance:

- Improve the capacity of epidemiological analysis
- Reduce the number of databases: combine existing patient tracking database (lab + epi+ clinical) with all available epidemiological databases (HIV/AIDS databases)
- Remove the hierarchy of data entry in order to speed up data flow and access to clinical care
- Create automatic outputs for different demands: e.g. monitoring of patients; epidemiological monthly bulletins, monitoring of HIV and health programs etc. in order to save time
- Create quality indicators for the database; make internal checks (e.g. as in the European database; for example MSM = gender female, or sexual transmission age =3 years)
- Enable high level protection to all databases, which contain sensitive data and are connected to the internet
- Electronic data base should interlink with e-health system

Specific recommendations for cross cutting issues (legislation, human rights and sustainability):

- The MoH should consider financial mechanisms to support NGOs, e.g. social order
- The MoH should have a clear plan on how to increase financial support over years for priority areas in order to express their commitment
- Efficient monitoring of interventions or even cost efficiency and intervention analysis studies should be done in order to show effectiveness and secure government funding
- Police education to reduce harassment of drug users and sex workers
- Interdisciplinary collaboration should be assured (with the Ministry of Internal Affairs: prison authorities, police) in order to increase efficiency of certain harm reduction interventions.

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Annex 1. Country overview and Epidemiological analysis

Country overview

Kyrgyzstan is divided into 7 regions (oblasts) administered by governors. The capital city Bishkek (874 400) and the second largest city Osh (255 800) are administratively independent cities with a status equal to an oblast. Each oblasts comprises a number of districts (raions). About 2/3 of its 5.7 million population lived in rural areas in 2011.

The country is largely mountainous (90%) and is geographically placed on one of the major drug routes from Afghanistan to Russia and Europe (the northern route). Drug trafficking is widespread and The United Nations Office on Drugs and Crime (UNODC) has estimated that 25% of all Afghan heroin (95 metric tons) was transported along this route, travelling through Tajikistan, to Osh in Kyrgyzstan, and then on to Kazakhstan, before arriving in Russia (55).

As of 2012, 38% of the population lives in poverty and the largest part of the poor population lives in rural areas. Unemployment has been at a relatively stable level over the last 5 years, higher than in neighbouring Kazakhstan, but lower than unemployment rates in other central Asian countries (Uzbekistan, Tajikistan, Turkmenistan) (1).

Kyrgyzstan has a very young population. In 2013, 30% were below 15 years of age, the fertility rate was 2,68 and population growth rate 1.04%. Net migration was -6.74/1000. The high levels of outmigration is concerning for the stability of the labour force and skilled workers in Kyrgyzstan (56). The country's average monthly wage is \$228 (3-4 times less than in Russia and Kazakhstan) and brain drain has been significant in Kyrgyzstan over the last 15 years. It is estimated that over 300 000 Kyrgyz labourers reside in Russia and over 150 000 in Kazakhstan. Revenue from remittances alone accounted for 32% of the country's GDP in 2013 worldwide only exceeded by Tajikistan (42%) (57). The majority of migrants are engaged in individual entrepreneurship and in regular or occasional travel for the purpose of selling goods. Seasonal migration is also widespread, mainly for agricultural, construction jobs and public service sector (24). Kyrgyzstan also has a high medical staff outflow, and particularly the public sector and rural areas are suffering from this outmigration (24).

Life expectancy at birth was 70 in 2012 (1) and cardiovascular diseases constitute the major causes of deaths (58). Kyrgyzstan's health system has evolved from the 'hospital-centred' Soviet model of health care: highly specialized, with an emphasis on curative and inpatient care, while primary care has been neglected until 1996 where reforms focusing on strengthening primary health care have been introduced (20). HIV is one of 4 priorities in the current health reform programme 'Den Sooluk' 2012-2016 (58). Tuberculosis, cardiovascular diseases, maternal and child health constitute the remaining priority areas and every year a joint annual review on all four priority areas is being presented and discussed among all stakeholders.

The World Bank estimated that Kyrgyzstan spent \$83 per person in 2012 on healthcare which is higher than neighbouring Tajikistan with \$54 per person in 2012, but significantly lower than all other countries in the region³¹ (1). Health expenditure per capita has though tripled since 2005 and total health expenditures account for a larger share of GDP (6.2% in 2013) than in most other former soviet union countries (1). The share of expenditures for salaries and infrastructure is high and accounted for more than 80% of the entire national health budget (24).

Three principal sources are financing the health system: the public sector (general taxation and mandatory health insurance), private households (mainly in the form of out-of-pocket payments) and external funds from international development agencies (11). Private expenditures make up about half of all financing sources, and out-of-pocket about 90% of private expenditures. Healthcare services and medications are provided on basis of the state guaranteed health care package, but patient co-payment is required in some instances (such as for drug dependence treatment, treatment of hepatitis C infection etc.). The government of Kyrgyzstan annually adopts a “Programme of State Guarantees” that determines specific population categories entitled to certain primary healthcare services with reduced or no co-payment requirements. However, informal payment to medical staff continues to grow (24).

The state HIV programme 2012-2016 (10) and related budget has a strong focus on the following 3 components:

- HIV prevention, treatment and care for PWID (41% of the entire national HIV budget allocate to this component);
- Health system strengthening (including decentralization of HIV services to PHC, human resources for health and infection control – 32% of the State HIV programme budget);
- Universal access to PLHIV services (including ART, PMTCT, OIs and social support - 13.5% of the State HIV programme budget)

Epidemiological analysis

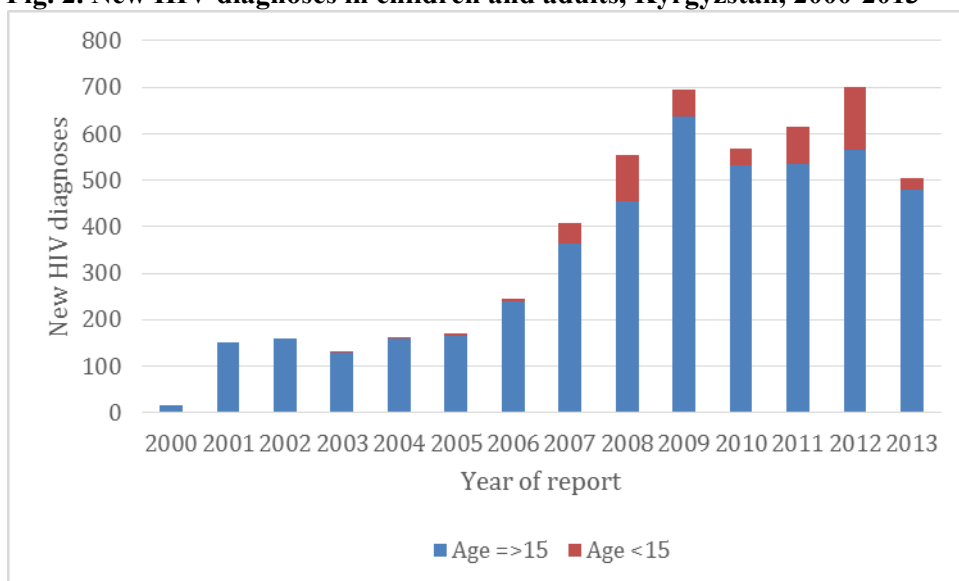
The HIV epidemic in Kyrgyzstan is associated with a somewhat stable number of new HIV infections reported during the last five years, high prevalence of HIV in various key populations, uneven spread of HIV in different regions of the country, changing pattern of predominant transmission mode, and a high proportion of infected children.

As of November 2014, 5642 PLHIV had been officially registered in Kyrgyzstan of which were 68% were male and 96% citizens of the Kyrgyz Republic. In total, 1140 of all registered PLHIV have died, and 681 cases had progressed to AIDS of which 328 had died (2).

Overall HIV prevalence remains low in the general adult population (estimated at 0.2% in 2013), however, Kyrgyzstan is one of seven countries in the world with the fastest growing epidemics over the last 10 years and it peaked in 2012 with 724 new cases of HIV reported. In 2013 alone, 504 new cases of HIV were registered (292 males, 211 females) (3). Reported new HIV diagnoses have increased significantly over the last decade (3) (Fig. 2). The step increase evident in 2012 may represent a large scale screening of children for HIV (about 150.000 tested) in late 2011/beginning 2012 because of a nosocomial outbreak in Osh region by which 157 children were detected HIV positive.

³¹ Kazakhstan: \$521; Uzbekistan: \$105; Turkmenistan \$129

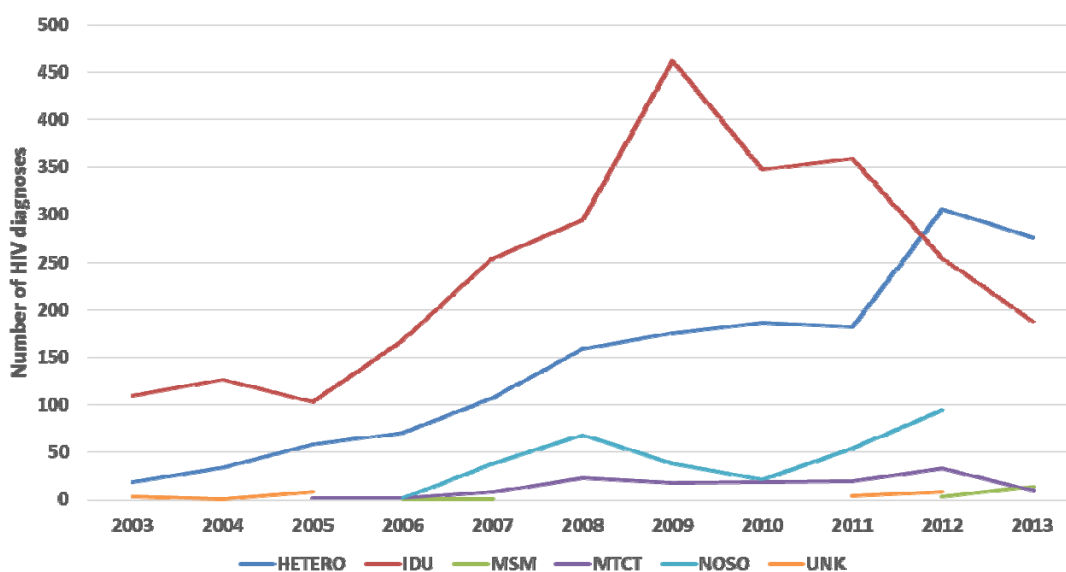
Fig. 2. New HIV diagnoses in children and adults, Kyrgyzstan, 2000-2013



According to UNAIDS spectrum estimations (59), about 8000 [6,500 - 10,000] people were living with HIV in Kyrgyzstan by the end of December 2013, of which about 2/3 have been diagnosed. The epidemic is still considered ‘concentrated’, as the prevalence in the general population is below 1%, but exceeds 5% in several key populations (60).

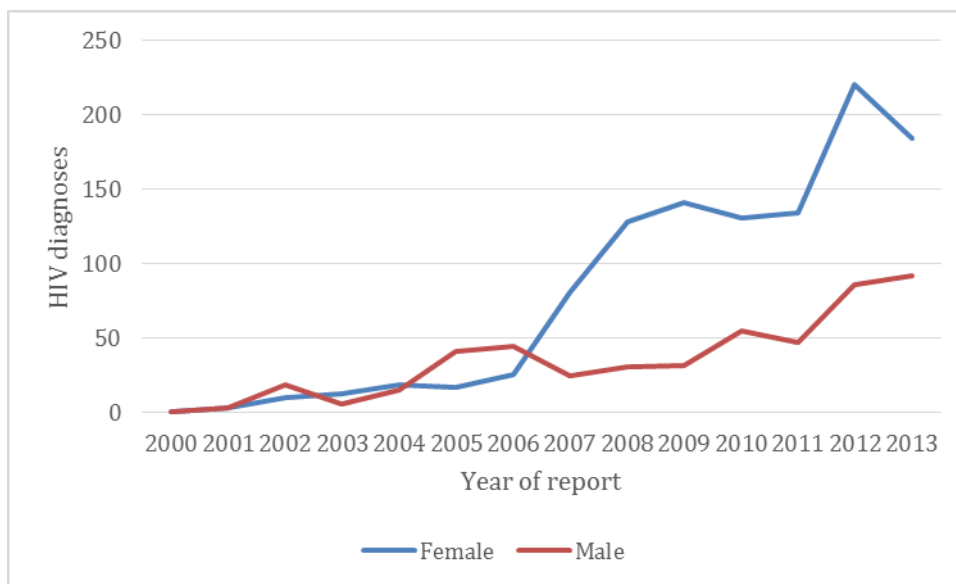
By the end of 2013, the cumulative distribution of transmission modes reported to WHO/ECDC is as follows: 58% through injecting drug use (2965/5113); 32% (1631/5113) heterosexual transmission; 3% (135/5113) MTCT; 0.4% (19/5113) MSM (3). In addition to the reported numbers to WHO/ECDC, about 6% of all HIV infections are suspected nosocomial transmission, and all recorded among children below 15 years (2).

Fig. 3. New HIV diagnoses by transmission mode 2003-2013



Lately a transition towards more sexual transmission has been reported (Fig. 3) and sexual transmission has increased for both women and men (Fig. 4). As of 2012, sexual transmission was the dominant reported transmission mode (3). The increase in heterosexual transmission among males might be explained by an increased hidden epidemic among MSM where transmissions were falsely reported as heterosexual transmission due to severe stigma of MSM in Kyrgyzstan.

Fig. 4: New HIV diagnoses reported due to heterosexual transmission, by gender, Kyrgyzstan, 2000-2013



Of all newly reported HIV cases in 2013 (n=504), 55% (n=276) were reported infected through heterosexual contact, 37% (n=188) through injecting drug use, 2% (n=10) through mother-to-child transmission and 6% unknown (3). The following groups are considered key populations in Kyrgyzstan: people who inject drugs, sex workers, prisoners and men who have sex with men. There are no official epidemiological data on migrants because national experts do not currently consider this group a key population at higher risk in Kyrgyzstan due to lack of reliable data.

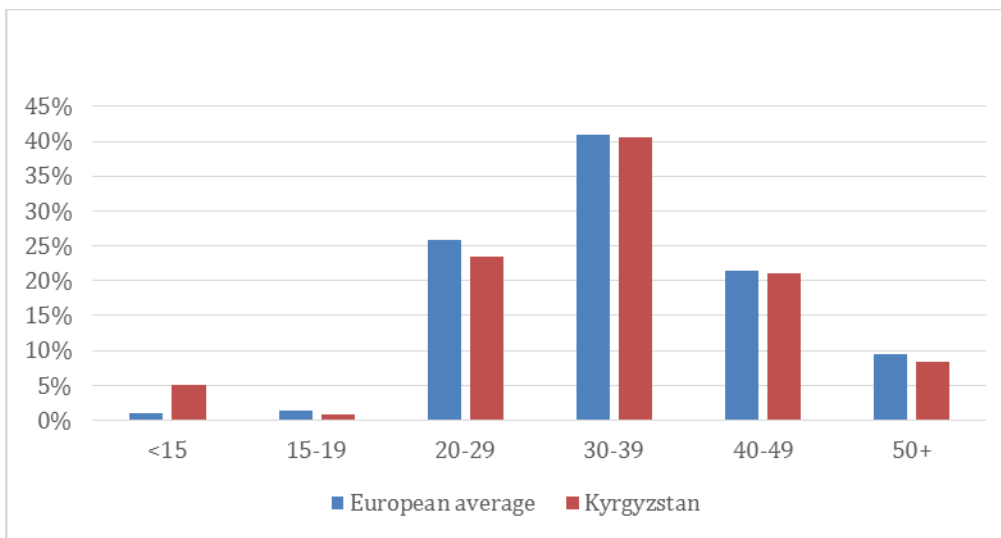
Prior to 2006, Osh city was the region in Kyrgyzstan that had reported most cases of HIV, but since 2007 an intensive increase in the number of HIV infections were noted in Osh oblast, Chui region and Bishkek (10). Cumulatively, Chui oblast accounts for the largest proportion of all reported HIV cases (30%), followed by Osh Oblast (20%), Osh city (17%) and Bishkek city (15%) (Data RAC). Issyk-kul, Naryn, and Talas oblasts have reported few HIV cases (n=122, 72, 67 respectively) and only since year 2006 (10).

Women are increasingly being diagnosed with HIV – a warning sign that the epidemic might be in the early transition to a generalized epidemic. In 2011, women accounted for 31% of all new HIV cases, by 2013, this share had increased to 42% (3). In the southern part of Kyrgyzstan women account for the majority of all new HIV cases (Osh oblast 69%, Jalal-Abad oblast 66%, Batken oblast 62%) (47). The overrepresentation of females in these regions might be related to nosocomial transmission also among adults, as data on nosocomial transmission among children suggest that more boys than girls were infected (60% vs. 40%), but this should be further investigated because data available to the review team cannot explain this overrepresentation of women. UNAIDS

estimate that 35% of women living with HIV in Eastern Europe and Central Asia probably acquired the virus through injecting drug use, while an additional 50% were most likely infected by partners who inject drugs (61). Surveillance data from Kyrgyzstan available to the review team do not support this. This may be explained if a certain proportion of PWID cases were coded as heterosexual duo to higher stigmatisation of women drug users than men.

About 2/3 of HIV infections are found in the age group 20-39 years (3621/5340), since 2007 most cases were detected in the age group 30-39 and the age distribution of new HIV diagnoses reported in Kyrgyzstan is comparable to European average, except the age group <15 years which is markedly higher in Kyrgyzstan than the European average (Fig. 5).

Fig. 5. HIV diagnoses and age groups Kyrgyzstan and European average (2,3)



Children

Of all HIV cases registered to date in Kyrgyzstan about 9% (n=516) have been identified among children below 15 years of age, with a considerable increase over the last 5 years (Table 9) (5). Cumulatively, nosocomial transmission account for about 66% of all cases of HIV diagnosed in children below 15 years of age, MTCT about 30%, and unknown 3.5% (Table 9). Osh oblast account for 68% (n=349) of all HIV diagnosis of children and 64% (n=30) of all registered deaths among children living with HIV in Kyrgyzstan. Overall, boys were more likely than girls to be diagnosed with HIV (60% vs. 40%) for both cases of nosocomial and MTCT (2). Causes of this skewed sex distribution are not clear and had not been investigated.

Table 9. New HIV infections in children (0-14 years) (2)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Total new HIV infections, children (no. of deaths in children)	6 (2)	3 (1)	46 (4)	98 (7)	50 (7)	44 (2)	57 (4)	157 (8)	24 (7)	28 (5)	516
Reported cases of MTCT ³²	2	1	10	26	15	20	18	37	10	13	153
Reported as 'unknown'	0	0	0	0	0	0	0	11	2	5	18
Reported as 'nosocomial'	4	2	36	72	35	22	39	109	12	10	342
male/female	1/5	1/2	33/13	60/38	33/17	22/22	32/25	94/63	20/4	15/13	311/202

Nosocomial cases of HIV infections have been recorded in Kyrgyzstan since 2004, and as of November 2014, nosocomial transmission was suspected among 342 people (6% of all HIV infections ever registered in the country) – and all reportedly children below 15 years without an HIV positive mother (2). Reported nosocomial transmission in hospitals contained at least 72 children in 2 hospitals in Osh (Nookat and Osh hospitals) during the period 2006-2008 (62), and in 2011/2012, 147 children were diagnosed with HIV in Osh oblast and Jalal-abad oblast after intensive HIV screening of almost 150.000 children ultimo 2011 and early 2012 (interview data) of which 113 were suspected nosocomial, 27 cases vertical and 7 unknown (2). However, nosocomial transmissions are continuously being reported, (about 1 every month in 2013 and 2014) and epidemiologists refer those cases to be from the nosocomial outbreak in 2006-2008 because they are found among older children 7-14 years of age, but no CD4 counts were available and this parameter has not been used in the epidemiological investigation of new nosocomial cases to assess the recency of infection (interview data). The review team concludes that available data suggests either that these children who are diagnosed 6-8 years after the outbreak constitute the so-called long-term non-progressors alternatively on-going nosocomial transmission must be suspected. Only a small percentage (about 1-5%) of children infected with HIV will remain free from AIDS-defining illnesses for longer than 9-10 years in the absence of therapy (63,64). This would mean that the number of nosocomial transmissions from the outbreak in 2006-2008 should be larger than the currently reported. It is paramount to carefully analyse all data and patient history every time a new case of nosocomial infection is suspected, and if nosocomial transmission of children at a certain clinical setting has been identified, investigations of potential nosocomial transmission among adults should also be carried out and reported.

Kyrgyzstan has reported a cumulative total of 153 mother-to-child transmission cases and in 2014 alone 13 MTCT cases had been reported by November 2014 (2). Reported cases of vertical transmission has shown an increase over the last 10 years and the highest number of MTCTs were reported in 2012 (n=37) during the intensified screening after nosocomial outbreak, after which reported cases have dropped (Table 9). The total number of recorded HIV infections among pregnant women in Kyrgyzstan has increased more than five times since 2007 and since 2009 about 100 HIV positive women became pregnant every year, highest number registered in 2012: 128. Almost half of all pregnant HIV positive women were registered in Osh oblast and Bishkek city (2). The prevalence of HIV among children born to HIV-positive mothers was 5.5% in 2012 (47)

³² WHO/ECDC reporting 2013

compared to 7% in 2009 (10). The vast majority of all reported MTCT of HIV to date (84%, n= 128) have occurred in children where the mother had not been tested for HIV before the child became sick and was tested positive for HIV (2). 38 children born to HIV infected mothers have died countrywide by 2013, also in these cases the mothers were not tested and as a consequence preventive measures were not conducted in time (47).

Estimation of size of key populations at higher risk

Estimation of population size is very important in planning of preventive activities, resources, creating indicators and evaluating the interventions. A combination of methods was used to estimate the size of key populations (Table 10). For SW (65) and PWID (66), methods and population size estimates seems to be reasonable, however, the number of PWID may be underestimated because the SGS only include PWIDs above 18 years. In this regard it is noteworthy that in a study from 2009 among more than 1500 school children in 25 schools in Kyrgyzstan (mean age 13.4), 11.2 % had ever used any illicit drug (17), there is no data on how many of these children were injecting drugs, but it should be assumed that among young people below 18 years who uses illicit drugs some of them will inject the drugs, although no data is available to support this. Until reliable data on are available on injecting drug use among children below 18 years, this will however remain speculations including any possible effect on the PWID size estimation.

The estimated population size of MSM (22 000 – close to that of PWID) (67) looks high. Extrapolation of the proportion of MSM in two major cities to all male population in Kyrgyzstan does not seem sensible. Russians and Uzbek were overrepresented compared to locals according to national ethnical composition which may cause an overestimation when extrapolating. One third of those included in the MSM size estimation reported having a heterosexual partner one third reported having a steady homosexual partner, nevertheless median number of partners was 11 and 79% used condom during last sexual intercourse (67). For planning preventive measures it is important to estimate the size of MSM who are *at high risk* for acquiring HIV by practicing unsafe sex with male partner(s). Activities and services for MSM are mainly concentrated and delivered in two cities – Bishkek and Osh, therefore calculation of program coverage using extrapolated number from general population would always result in a too low coverage.

Table 10. Estimation of population size in different key populations (65,66,67)

Risk group	Description	Methodology	Methods of Size calculation	Study size	Estimated population Size (min-max)	Recommended estimate for calculation of service coverage	Year
SW	>18y; 10 cities	Outreach visits to CSW working places; Semi-structured (50) and focus groups (9) interviews;	1. Previous publications 2. Expert opinions 3. Capture-recapture 4. Multiplication method	1021	7100 (6980-7316)	7100	2013
MSM	>18y; two cities (Bishkek, Osh)	NGOs outreach, previous publication, experts interviews, semi structured interviews;	1. Capture-recapture 2. Direct/indirect multiplication 3. Nomination method 4. Extrapolation method	435	22 000 ³³	3800 ³⁴	2013 January
PWID	>18y; 12 months of IDU	as above	1. Capture-recapture 2. Multiplication 3. RDS	1265	25 500 (20 300 – 29 200)	25 500	Oct 2013-Jan 2014

Estimation of the size of the undiagnosed HIV population

The estimated size of the undiagnosed HIV population has been fluctuating greatly within the past 5 years (59). Informants conveyed that the estimations have become lower and more accurate over the last few years. It should be noted that the estimated number of key populations will affect the UNAIDS (Workbook and Spectrum)-based³⁵ estimated number of undiagnosed population in Kyrgyzstan. Consequently, in case the estimated number of e.g. PWID is too low, the size of the undiagnosed population of PLHIV and will be too low. Hence, it is crucial to have estimates on the number of key populations, as accurate as possible.

³³ estimated from n=3800 found in study population in Osh and Bishkek and extrapolated to 1,5% of the general 16-44y population in Kyrgyzstan

³⁴ For calculation of program coverage for the two cities OSH and Bishkek

³⁵ Workbook and Spectrum is a method to estimate adult HIV prevalence in the whole population. It is based on data from prevalence surveys and therefore requires information on the size of risk groups and the prevalence of HIV amongst these risk groups. These estimates are then fed into Spectrum, alongside other demographic and epidemiological information to estimate the size of the infected population and those needing ART.

Second Generation surveillance (SGS)

Second generation surveillance surveys (14,45,68,69) have been conducted every 2-3 year since 2008. Repeated cross-sectional study design were conducted in SW, MSM, PWID, prisoners, and STI patients and included data on socio demographics and behavioral questionnaire and anonymous testing for antibodies for HIV, HCV and syphilis. Key results from the latest SGS in 2013 are provided in Table 11. Trends for key populations obtained through SGS are not presented here because sampling methods and data collection localities have changed considerably over time – actual trends can thus not be inferred from these SGS.

Table 11. Result from SGS 2013 (14,45,68,69)

Target group	Size of study population	HIV prevalence	HCV prevalence	Syphilis prevalence	% tested for HIV in the last 12 months and received their results	% who correctly indicate preventive measures for sexual transm. and indicate wrong ways of HIV transm.	Condom use during last intercourse
PWID	904	12.4%	45.2%	8.4%	43%	46%	39%
MSM	190	6.3%	1.6%	7.9%	40%	56.8%	81.6%
SW	854	2.2%	3.3%	23.9%	55.9%	20.9%	90.5%
Prisoner	750	7.6%	34.5%		41%	26.8%	
STI patients	819	0.9%	2.2%	10.9%	26.3%	28.8%	79.9%*

*with commercial partner

PWID

Injecting drug use among men has largely driven the HIV epidemic in Kyrgyzstan; the cumulative number of IDU HIV transmissions was 2966 by the end of 2013. Although the proportion of new HIV cases found among PWID have fallen significantly over time (down to 37% of all new HIV infections reported in 2013), PWID still bear a disproportionate number of HIV infections accounting for 58% of the cumulative number of HIV cases reported Kyrgyzstan (2,3). The number of officially registered PWIDs in Kyrgyzstan is 9007 (18), however, the true number of injecting drug users is expected to be significantly higher than the number of officially registered PWIDs because far from all PWIDs are willing to be officially registered as drug users because of concerns of the break of confidentiality of these data, fear of stigma and arrest (interview data). The estimated number of PWID in Kyrgyzstan was 30 083 in 2009; 18 934 in 2010; and 25 500 in 2013 (66).

Bishkek and Osh city are important transport hubs, including for transport of heroin, and together with Chui oblast they represent the largest populations of registered injecting drug users in the country. The largest number of HIV positive cases is also found in these three locations with the addition of Osh (2,11) (Table 12).

Table 12. HIV and PWID in Kyrgyzstan, cumulative, Nov 2014 (2)

Oblast/City	Number of HIV+ cases 2014 (% of all PWID HIV+ cases)	Officially registered PWIDs in 2014 (total: 9007)
Osh oblast	1056 (20%)	(282 in 2011)
Osh city	917 (17%)	2017 (Osh city + Osh oblast)
Chui oblast	1598 (30%)	2904
Bishkek city	797 (15%)	2963
Jalalabad oblast	596 (11%)	591
Batken oblast	114 (2%)	129
Issyk-Kul oblast	122 (2%)	261
Naryn	72 (1%)	29
Talas	67 (1%)	113

Table 12 shows the positive relationship between number of HIV cases and number of officially registered PWID, except from the Osh Oblast accounting alone for 20% of the cumulative number of HIV infections Kyrgyzstan, but only for 4% of all registered PWID in the country in 2011 (in 2014 only cumulated data from Osh city and Osh oblast were available). Osh oblast has the largest reported number of nosocomial transmissions and the majority of children below 15 living with HIV, which probably explains the lack of association between officially registered PWID and HIV cases. Bishkek city accounts for 33% of all registered PWIDs, and only 15% of all HIV cases, this could indicate either a better coverage of HR programmes, that less PWID are tested for HIV in Bishkek or that there are more barriers to being registered as a person who uses drugs in Bishkek compared to other cities/oblasts. One could have hoped that the regular SGS (69) could spread some light on these issues, however problems with lack of representativeness and a changing study population over time severely limits the applicability of the results of the SGS for policy making purposes.

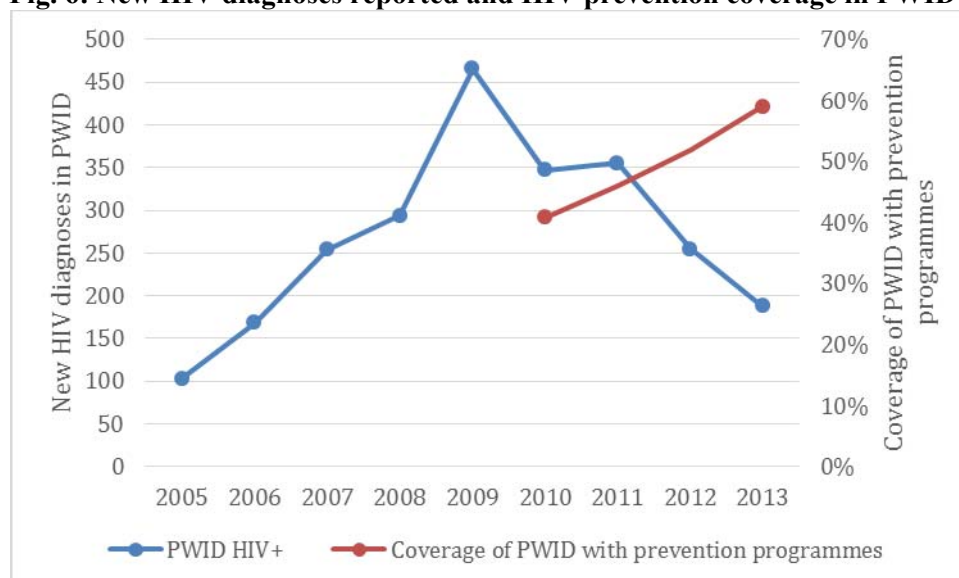
Second generation surveillance (SGS) among PWID have been performed in 2013, 2010 and 2008. As previously mentioned, trends cannot be inferred by comparing results from SGS over time (e.g. in 2013 inclusion of very low PWID HIV prevalence oblasts (Naryn, Issyk-kul), and in 2010 inclusion of Osh which has a high HIV prevalence among PWID). The SGS is also not representative of the entire country as stated in the latest survey report (69). Convenience sampling was applied and the number of individuals surveyed at each site/oblast was ranged from n=33-250. (69). Small samples and the sampling methods limit considerably the use and representativeness of the results of the survey report to inform about the entire population of PWID in Kyrgyzstan.

The SGS may give some indications, but caution should be taken in its application on the entire PWID population in Kyrgyzstan. The HIV prevalence was 12.4% in 2013 (the highest of all key populations) but large diversities were reported in prevalence of HIV among PWID between different regions (Osh 16.8%, Bishkek 10.4%; Batken: 6.1%; Issik-Kul: 0% in 2013) (69). Among 904 PWIDs, the majority of PWID were men (90%). Heroin was the drug of choice of the almost all PWID in Kyrgyzstan (86% of cases) and about half injected every day. Almost 60% reported using sterile needles at last injection in 2013. Most of PWID had sexual partners and practiced unsafe sex. 68% were above 35 years compared to 48% in 2008 (69). However, this does most probably not reflect that the age structure of PWID have changed, but rather mirrors that the sample in 2013 on average were older than the sample from 2008 and contributes to the finding that the samples have not been representative. It is of pronounced importance to ensure representativeness of future SGS which can then in turn inform policy making.

The SGS from 2013 further showed that coverage by HIV-prevention services, in particular the minimal package of services for PWIDs (distribution of information-educational materials, syringes and condoms) was not associated with safe injecting behaviour (69). This is an interesting, yet disturbing finding. Despite the lack of representativeness of the SGS, such finding is still valid within the group surveyed, the SGS describes that maybe frequency or coverage issues of minimal packages was insufficient to have any effect.

Correlating coverage of prevention programs, including NSP in terms of number of needles distributed per PWID during the latest 2 years (151 in 2011 and 253 in 2012) and the downward trend of the reported number of new HIV diagnoses among PWID and decreasing positivity rates (Table 13, Fig. 6), this may indicate that effects of HR programmes in Kyrgyzstan are starting to set in, which would be expected after several years with high NSP coverage (70). However additional good quality data are needed. Nevertheless, testing rates of PWID are still insufficient and the decrease in number of new HIV infections detected among PWID cases since 2009 could be a result of low testing coverage of PWID, or multiple annual testing of negative PWIDs because of testing incentives introduced in 2012.

Fig. 6: New HIV diagnoses reported and HIV prevention coverage in PWID



The new number of AIDS cases among HIV positive PWID also shows a decreasing tendency since 2010 (Table 13). PWID accounted for about 56% of all new AIDS cases reported in 2013 with a decreasing proportion since 2010 (2).

Table 13. HIV/AIDS PWID in Kyrgyzstan Nov 2014 (2)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
New HIV cases transmission through IDU	110	170	276	304	464	340	362	257	188
New AIDS cases transmission through IDU	17	19	20	27	53	102	58	55	38
PWIDs ³⁶ tested for HIV	2139	5180	2747	3258	4795	5704	5284	4992	4250
Positivity rate PWIDs	5.1%	3.3%	10%	9.3%	9.7%	5.9%	6.8%	5.1%	4.4%

Female PWID

About 10% of all PWIDs in Kyrgyzstan are female (69). The share of women PWID out of all the women living with HIV was greatest in Chui province (28%) and Bishkek (20%), whereas Osh (7%) and Issyk-Kul (4%) provinces had the lowest rates (47). HIV prevalence for women who inject drugs are similar to that of men (59), however SGS suggest that HCV is up to 3 times higher in women PWID than male PWID. This could be related to the discriminative culture of the woman being the last persons to inject in a group sharing needles (mission focus group drug users).

Prisoners

At present about 7500 people are imprisoned in Kyrgyzstan at 11 colonies and 5 detention centres – (8). Prison population rate was 181 per 100.000 population in 2012, corresponding to the average of all Central Asian countries (71). Prisoners represent a vulnerable population, about 1/3 are drug users (interview prison) and HIV prevalence was 7.6% in 2013 (69).

In order to preliminary assess the effect of HR programmes in prisons one may analyse SGS prevalence trends and correlate with the implementation of HR programmes. SGS for prisoners are considered fairly reliable over time (from 2010 to 2013), because of appropriate and similar sampling technique. According to the SGS the prevalence of HIV among prisoners has decreased from 13.7% in 2010 to 7.6% in 2013. Despite a small sample size at some colonies (sample sizes range between 31-300), it is interesting to note a significant decrease of HIV prevalence since 2010 in almost all penal colonies. The decrease was substantial in colonies offering both OST and NSP programmes with an average decrease in HIV prevalence between 2010 and 2013 of 56% in these colonies. In colonies where only NSP programmes are implemented the average decrease is smaller, but still significant (42% decrease) (14). This indicates that OST and NSP programmes in Kyrgyz prisons are likely to be successful in the prevention of HIV in prisons, and further indicate that OST combined with NSP may cause an even larger effect than NSP alone, which is in line with literature (72,73).

Syphilis prevalence was 14% in 2013 but higher syphilis markers were reported among female prisoners (26%). Hepatitis C prevalence was found at 34,5% showing a slight decrease from earlier the survey in 2010 where Hepatitis C prevalence was 37.5% (14). In 2010, UNODC estimated the prevalence of Hepatitis B and Hepatitis C infection among prisoners in Kyrgyzstan to be 10% (55). Data are thus conflicting on this issue. TB is a major problem in the penitentiary system of Kyrgyzstan, where the TB notification rate was 3800/ 100 000 and the TB mortality rate: 248/100 000 in 2011 (21), both about 25 times higher than in the general population (22).

³⁶ labelled with the following codes: 102; 112.1; 202

MSM

The latest estimation report on the number of MSM in Kyrgyzstan concluded that around 22 000 (1.5% of adult males) of the Kyrgyz population are MSM (67). However as previously mentioned this number might be overestimated considering that results from study population (from Bishkek and Osh only) were extrapolated to the entire country. Latest SGS among 190 MSM report an HIV prevalence among MSM of 6.3% (68). This is an increase since last SGS in 2010 which found HIV prevalence of 1% among MSM. The SGS further found that the majority of MSM in the latest SGS were in the age group 20-29 years (54%), a higher prevalence of syphilis and HCV in Bishkek compared to Osh city (Syphilis 13% vs. 3%; HCV 2% vs. 1%) (68). However small sample sizes of both surveys, overrepresentation of certain ethnical groups and snowball sampling preclude any conclusions on trends in HIV prevalence and SGSs are far from being representative of the entire country. Results from several SGS among MSM may thus only offer some indications of prevalence levels and in their current state they cannot be used to direct policy making or evaluation. Nonetheless, it is noteworthy that the prevalence of HIV, syphilis and HCV was considerably higher among those who reported they had been reached by HIV prevention programmes (education materials and condom distribution) compared to those who reported not to be covered by HIV prevention programmes. This finding might be caused by selection bias, if the organizations who recruited study population provide screening and treatment services and therefore attract MSM with symptoms. Proper analysis of the effect of HIV prevention programmes among MSM carried out to date needs to be conducted.

In 2013, 14 new HIV diagnoses in men were reported infected through having sex with men, in 2012, 3 new cases among MSM were reported to WHO/ECDC (3). Cumulatively, only 19 cases of homosexual route of HIV transmission have ever been reported in Kyrgyzstan (3). The number of new HIV diagnoses among MSM was mainly due to increase of rapid tests among MSM (2).

Considering estimations of the number of MSM in Kyrgyzstan, the SGS prevalence data among MSM, it must be assumed that quite an abundant number of MSM transmissions are incorrectly reported as 'heterosexual' or 'unknown'. The recent reported increase in sexual transmission among men could point to a hidden MSM epidemic in Kyrgyzstan which is slowly being uncovered however, the true extent of HIV transmission among MSM in Kyrgyzstan is currently unknown.

Sex workers

In 2013, the estimated number of sex workers in Kyrgyzstan was: 7100 (6980-7316) (65) and the HIV prevalence was 2.2 in 2013 (45). Female sex workers had a larger proportion of young (<25 yrs.) HIV positive sex workers than other central Asian countries (74).

According to SGS from 2013 among 854 SWs the HIV prevalence was 2.2% in 2013 but with regional variation (Osh: 2%; Jalalabad:6%; Bishkek 1.6% in 2013). Syphilis prevalence among SW was high at almost 24% whereas HCV prevalence was low at 3.3%. In contrast to the methodology of SGS among MSM and PWID, the sampling methods of the SGS of sex workers appears solid (45). Yet, the SGS among SW included only cities/towns where AIDS service specialist and NGOs had access to SWs groups³⁷, meaning that the selected respondents probably have had higher exposure to prevention activities than the average sex worker in Kyrgyzstan. The SGS is therefore also not expected to be representative for the entire country, but the SGS for SW express a

³⁷ SW clusters included: 30 sites in Bishkek, 12 in Osh, 8 in Jalal-Abad, 15 in Kyzyl Kiya, 7 in Tokmok, Naryn and Tala

considerably better geographical coverage (it covers all oblasts with at least n=50 from each oblast - including remote oblasts), has a large sample size and has applied a more solid sampling method than the SGS for MSM and PWID from 2013. Still caution should be applied in interpreting trends from the SGS in 2010, because additional sites with zero HIV prevalence among SW were included in the 2013 SW survey (45).

According to the Global AIDS response progress report (9) male sex workers have a significantly higher HIV prevalence than female sex workers (17% vs. 2%) in Kyrgyzstan, although the sample sizes behind these data are not known. Very limited research on male sex workers is available from this region, although male sex workers have been observed along drug trafficking routes (74).

Estimates suggest that 62% of women who inject drugs in Kyrgyzstan also engage in sex work - one of the highest proportions in the region (59), yet HCV prevalence was low at 3.3% among the SGS sample in 2013 (45). Data reported in 2011 showed that 8,7% of SW injected drugs in Kyrgyzstan (74), other studies from Kyrgyzstan show a high proportion of injecting drug users among female sex workers in Bishkek, but lower levels in Osh (75). Though injecting drug use among female sex workers may be rare in some settings, recreational drugs and alcohol use limits other risk reduction behaviours, such as condom use (74). A study from 2007 in Bishkek demonstrated that 42% of 132 drug-dependent female SWs reported being forced to take drugs to facilitate sex work (75) More research on male SWs is needed as well as research on the overlap of sex work and (injecting) drug use among SWs in Kyrgyzstan.

Migrants

Kyrgyzstan has one of the highest rates of labour migration in the world³⁸ and despite studies showing that migrants may carry a higher risk of HIV due to limited knowledge on HIV, risky behaviour and limited accessibility to healthcare (76), no disaggregated surveillance or case report data are collected for this population group, which makes it complex to assess any potential higher risk of migrants in Kyrgyzstan. The word 'migrants' cannot even be found in the State HIV programme (10) and national experts do not consider migrants as a key population at higher risk nor as a vulnerable group in Kyrgyzstan. HIV testing data on 'people leaving the country' reveal low HIV positivity rates among this group (0.04% -similar to that of pregnant women). However, health care workers communicated repeatedly that migration present a problem for prevention efforts and retention in care (interview data).

In a baseline study conducted in Kyrgyzstan in 2010, 31% of labour migrant surveyed said that condoms do not provide protection against HIV infection and 38% thought that only injecting drug users could contract HIV. 73% reported that they had not used condoms during their last encounter with a SW and 53% never bought condoms (77).

The abundant number of (seasonal) labour migrants in Kyrgyzstan and their equivalent estimated number of wives/partners combined with reported low knowledge levels, high risk behaviour (76) and problems of retention in care, legitimates classifying labour migrants and their partners vulnerable populations, and it is recommended that migrants are included as a vulnerable group in strategies for successful HIV prevention, treatment and care in Kyrgyzstan. It is further recommended to collect HIV case report data on migrants and adjust surveillance.

³⁸ <https://www.iom.int/cms/en/sites/iom/home/where-we-work/europa/south-eastern-europe-eastern-eur/kyrgyzstan.html>

ART

Among the total estimated number of people living with HIV in the country, only 15% were receiving ART by November 2014, among those diagnosed with HIV 25% were receiving ART by November 2014.

Data provided by Republican AIDS centre by November 2014, show that of the cumulative number of alive PLHIV on ART (1501) 76% are adults. On national level the number of adult men and women on ART are comparable (577 vs. 533), whereas for children below 15, more boys are on ART than girls (236 vs. 126) which reflect the epidemiology of children in Kyrgyzstan. However at oblast levels differences also exist between adults. In Osh oblast more than twice as many women are on ART compared to men, in almost all other regions men dominate. This pattern also to some extent reflects differences in the epidemiology between regions, with more women infected in Osh oblast (66%) (2).

There are large differences between provinces in regards to the coverage level of ART (Table 14). Osh oblast has the highest coverage (51% of all cumulatively registered PLHIV are on ART), whereas Chui oblast has the lowest (12%). However, the high coverage of ART in Osh reflects mostly a high number of children on ART in Osh oblast where almost half of all PLHIV on ART are children (2). Chui oblast has a significant lower proportion of PLHIV on ART (12%) than other Oblasts. Reasons for the low percentage of PLHIV on ART in Chui oblast are not clear, but should be investigated.

Table 14. ART coverage in Kyrgyzstan by 01.10.2014 (2)

Oblast/City	Cumulative number of HIV positive cases registered	PLHIV Currently on ART (% children)	% on ART of all PLHIV registered in the province
Osh oblast	1056	536 (49%)	51%
Osh city	917	248 (18%)	27%
Chui oblast	1598	189 (5%)	12%
Bishkek city	797	219 (1%)	27%
Jalalabad oblast	596	170 (21%)	29%
Batken oblast	114	42 (12%)	37%
Issysk-Kul oblast	122	25 (4%)	20%
Naryn	72	25 (-)	35%
Talas	67	18 (11%)	27%

Coinfections

TB

In 2013 alone, 7209 cases of TB were notified in the general population in Kyrgyzstan of which 2/3 are male (22). TB incidence rate was reported as 141/100 000 population in 2013 (including HIV coinfection cases) and mortality rate (excluding HIV/TB) at 11/ 100 000 population. TB incidence and mortality rates over the last 3 years show a relatively stable trend (22).

21% of the cumulative number of registered PLHIV in 2013 were coinfecting with TB, and in 2013 alone, 28% of all new cases of HIV were TB/HIV coinfecting. The number of new registered TB/HIV coinfection cases more than doubled between 2009 and 2013 (88 in 2009; 203 in 2013) (2).

TB forms among all HIV/TB coinfecting patients in 2013 were distributed as follows and is in line with what would be expected in such a setting: most common was infiltrative TB (579; 56% of all TB cases), after which disseminated TB (153; 15%), and extrapulmonary TB (140, 12%) (2)

As of September 2014, the cumulative percentage of TB/HIV coinfecting patients who had received treatment for TB was 92% (1062/1155), and has been above 90% since 2010 (2). However it is not stated in these statistics how many completed TB treatment, how many defaulted, how many lost to follow up and how many were also on ART. According to the UNAIDS global report 2013 (17), the percentage of estimated HIV-positive incident TB cases that received treatment for both TB and HIV was 41% in 2012.

The mortality rate of TB/HIV coinfection is very high in Kyrgyzstan. Of the cumulative number of TB/HIV coinfecting cases in Kyrgyzstan as per September 2014, 43% (502/1155) have died, of which TB accounted for 74% of all deaths among TB/HIV coinfecting persons (371 deaths) (2). Number of deaths among TB/HIV coinfecting have increased over the last 5 years (47 in 2009; 96 in 2013) but so has number of new TB/HIV coinfecting cases, causing comparable, but very high, mortality rates over the last 5 years (2).

MDR TB

Kyrgyzstan is one of the high priority MDR-TB countries in the WHO European Region (22). According to the latest global TB report, MDR-TB prevalence was estimated at 26% among new TB cases, the highest figure in the world only exceeded by Belarus at 36%. Among previously treated TB infections, the proportion was estimated at 55% also one of the highest reported percentages in the world (22). According to the reporting to the World TB report 2014, the number of notified cases of rifampicin-resistant TB reached 1191 in 2013, of which 1064 (89%) were enrolled into MDR-TB treatment. MDR-TB notifications decreased between 2012 and 2013 in the country, however it is estimated that only around 2/3 of the estimated MDR case burden is detected in Kyrgyzstan (22).

Extensively drug resistant tuberculosis (XDR TB)

According to the National TB programme, among 511 cases of MDR-TB which underwent DST, 18 (3.5%) were XDR (21).

Hepatitis B and C

Hepatitis contributes with about 16% of the cumulative number of reported deaths among PLHIV (2). According to the Republican AIDS Centre, the number of people tested for hepatitis B virus (HBV) in the general population in 2011 was 80 828, of whom 4 051 had a positive result (5%)³⁹; for HCV the figure was 79 984, of whom 2 638 had positive results (3%).

In 2013, the prevalence of HCV in PWID was 45.2% (69). Surveys of the prevalence of HBV among key populations were not carried out. Hepatitis C testing and drugs to treat HCV are available but not free of charge for patients, and too expensive to a vast majority of HCV/HIV-coinfecting (interview data). Vaccination programmes for Hepatitis B should be considered for adults including PLHIV who have not been vaccinated for Hepatitis B during vaccination programme for children.

³⁹ presumably HBsAg +ve and thus chronic carriers of HBV (data not clear)

AIDS and mortality

As of November 2014, the total number of deaths among PLHIV was 1140 of which 45% had died because of TB or with TB (2). In 2013 alone, TB accounted for 53% of all deaths among PLHIV; hepatitis 16% and severe bacterial infections 15%. Mortality rate of PLHIV per 1000 people was 0.03 in 2013, similar to that of the previous two years (2). The proportion of cumulative deaths among PLHIV (including children) was highest in the following city/oblasts: Osh city (24% of all registered PLHIV had died), Chui (22%), Jalal-abad (20%) and lowest in Batken (7%), Naryn (8%) and Bishkek city (12%) (2).

By the end of 2013, the cumulative number of AIDS cases was 597 of which 477 were male and 417 were infected through IDU (3). In 2013 alone, 68 new AIDS cases and 45 new deaths among AIDS cases were reported (Table 15)(2).

The number of new AIDS cases has a decreasing tendency after a peak in 2010 (Table 15). The same trend is seen for PWID. This decrease can either reflect missed HIV diagnosis or an actual decrease in number of new AIDS cases, decrease of reporting or a combination. Considering the low CD4 count at presentation in 2013 is it likely that missed HIV (and thus AIDS) diagnosis may contribute to this decreasing tendency.

Despite widely available and free of charge ARV, there was a clear increase of new deaths among AIDS cases. In addition, the annual number of all deaths among PLHIV continues to increase every year and have more than tripled since 2008 (Table 15).

Table 15. Outcomes of HIV diagnosis 2008-2013 (2)

Criteria	2008	2009	2010	2011	2012	2013
New AIDS cases	36	75	130	95	95	68
Death among AIDS cases	15	21	26	39	53	45
% of death among AIDS*	42%	28%	20%	41%	56%	66%
Nb of all death	55	108	94	112	167	171

*Rate of reported number of death and reported AIDS diagnoses within a given year

Timely administered treatment usually decreases mortality rates and this information is thus important in interpreting treatment success. The increase in mortality among AIDS cases is worrying tendency and most probably reflects very late presentation, late enrolment into ART or PLHIV not retained on ART. Other explanatory factors could represent: the apparent increase in TB/HIV coinfection and potentially suboptimal management of TB/HIV coinfection. Also improved reporting, diagnosis and testing may have influenced the increased number of all cause mortality. To our knowledge, no analysis of the causes for this sharp increase has been conducted in Kyrgyzstan. It is recommended to analyse and monitor carefully the development of AIDS cases and mortality among AIDS cases and PLHIV in Kyrgyzstan. Outcomes of analysis should be used to adjust treatment and testing strategies.

Annex 2. Terms of References

WORLD HEALTH
ORGANIZATION
REGIONAL OFFICE FOR
EUROPE



ORGANISATION MONDIALE DE LA
SANTÉ
BUREAU RÉGIONAL DE L'EUROPE

WELTGESUNDHEITSORGANIS
ATION
REGIONALBÜRO FÜR
EUROPA

ВСЕМИРНАЯ ОРГАНИЗАЦИЯ
ЗДРАВООХРАНЕНИЯ
ЕВРОПЕЙСКОЕ РЕГИОНАЛЬНОЕ
БЮРО

Evaluation of the HIV program review in Kyrgyzstan

24-28 November, 2014

1. Background

By the end of 2012, Kyrgyzstan had reported a cumulative total of 4609 HIV cases, including 530 that had progressed to AIDS and 183 deaths among AIDS cases, to the WHO Regional Office for Europe and the European Centre for Disease Prevention and Control (ECDC). In 2012 alone, 724 HIV cases, 88 AIDS cases, and 19 deaths among AIDS cases were reported. The rate of newly diagnosed HIV infections in 2012 was 13.2 per 100 000 population and continuous to increase each year. Of the newly reported cases with information about transmission mode in 2012 (85%), 51% were infected through heterosexual contact, 43% through injecting drug use, 1% through male-to-male sexual contact and 6% through mother-to-child transmission. Kyrgyzstan has reported a cumulative total of 125 mother-to-child transmission cases, of which 33 (26%) were reported in 2012 alone.

Taking undiagnosed infections into account, the Joint United Nations Programme on HIV/AIDS (UNAIDS) and WHO estimate that 8 000 (6 500 – 10 000) people were living with HIV in Kyrgyzstan at the end of 2013, that less than 1000 people became newly infected and that fewer than 500 people died from AIDS-related causes during 2013. HIV prevalence in the adult population was estimated to be 0.2% (0.2–0.3%).

As reported to the WHO Regional Office for Europe and the European Centre for Disease Prevention and Control (ECDC), 470 355 HIV tests (85.9 per 1000 population) were performed in Kyrgyzstan in 2012, a 23% increase compared with the number of tests in 2011.

A total of 2138 people had been enrolled in medical HIV care at the end of 2013, including 1074 people who were receiving antiretroviral therapy (ART). Among the total estimated number of adults living with HIV in the country, estimated 10% (8–12%) were receiving ART at the end of the year.

WHO and the Global Fund have Cooperative Agreement regarding the provision of WHO technical assistance to applicants to the Global Fund prior to submission of their concept notes. The contract

is effective during period from 1 January 2014 until 31 December 2015. Technical assistance is organised through WHO Collaborating Center on HIV and Viral Hepatitis and external consultants and based on discussions with the countries and the Global Fund Portfolio Managers and formal Country Requests.

Kyrgyzstan is eligible for the Global Fund grant country to support national programme on HIV/AIDS. The country requested the WHO Regional Office to provide technical assistance to conduct HIV Program review and review of the National Strategic Plan for development of the Concept Note.

2. Program review

Program review will include 4 key components:

- E. Epidemiological analysis
- F. Review of HIV treatment and care along cascade of services
- G. HIV services for key populations
- H. Analysis of service delivery models for populations affected by the HIV epidemic from the perspective of the health system

A. Epidemiological analysis will focus on:

- Assessment the level of, and trends in, HIV disease burden (incidence, prevalence, mortality), including estimated data on HIV epidemic.
- Assessment of whether trends in HIV burden are plausibly related to programmatic efforts or other factors.
- Assessment of capacity of national HIV surveillance system to monitor epidemic development and to inform policy decisions on interventions needed.

B. Review of HIV treatment and care program along cascade of services

- HIV testing: for general population and key populations, including community-based testing and linkage to HIV treatment and care services, CD4 count at time of diagnosis
- Early HIV infant diagnosis, MTCT and paediatric ART
- Enrolment and retention in HIV care, including general HIV care, management of coinfections and co-morbidities, integration of HIV/Viral hepatitis, HIV/TB, HIV/OST services
- ART: estimated need and coverage, criteria for ART initiation, adherence
- ART regimens (1st line, 2nd line and 3rd line)
- Monitoring of ART response and diagnosis of treatment failure: VL, ARV toxicity, HIVDR
- Patient tracking system
- ART outcome: viral suppression

Analysis of HIV treatment and care program will also include review of treatment and care policy and national clinical protocols.

C. HIV services for key populations (PWID, SW, prisoners, MSM, labour migrants?)

- Needle and syringe program
- Drug dependency treatment (OST)
- ART access
- Prison settings

- Community outreach (HIV testing and linkage to HIV treatment and care services, ARV dispense, case management/social accompanying)

Analysis of HIV services for key populations will focus on coverage, quality and integration with other health services within health system and will build on findings of the Harm Reduction evaluation as of August 2014.

D. Analysis of service delivery models for populations affected by the HIV epidemic from the perspective of the health system

Analysis will be focused on:

- capacity of the national health system to provide effective human, financial and infrastructural resources to address health needs of affected by HIV epidemic populations, including key populations which require a proactive approach in service delivery with strong social support and case management
- health systems barriers and interventions needed to optimize and monitor HIV services along continuum of care and ensure high coverage with HIV testing, enrolment to HIV treatment and care, adherence to ART, integration and linkage of services.

3. Participants

Three experts:

- ✓ Maiken Mansfeld - team leader and public health expert from the WHO Collaborating center on HIV and Viral Hepatitis (Copenhagen)
- ✓ Matti Ristola - clinician, head of HIV services, Helsinki University Hospital (Finland) and WHO Collaborating center on HIV and Viral Hepatitis (Copenhagen)
- ✓ Giedrius Likatavicius – epidemiologist, free-lance consultant (Lithuania)

External consultants will be supported by the WHO staff member:

- ✓ Saliya Karymbaeva - HIV coordinator in the WHO country office in Kyrgyzstan

4. Methodology

Preparation phase will include desk review and analysis of available documents (WHO guidelines, national policy/strategy/plans, clinical guidelines, publications, reports, etc.)

During the country mission WHO experts will visit relevant institutions and facilities and discuss with key informants: policy makers, health care providers and beneficiaries, NGOs, other national partners where appropriate. Together with local clinical experts they will also have access to medical records of PLHIV for a review clinical management.

5. Time, duration and geographical sites of the mission

Mission is planned for November 24-28, 2014. Additional days will be added for desk review and analysis of national background documents and report writing.

5 days mission

7 days desk review and reporting

Logistic support will be provided by the WHO and national health authorities.

6. Deliverables

- Key recommendations based on public health approach will be developed and presented to the national stakeholders by the end of the mission. Compliance of approaches and recommendations with the main WHO recommendations, e.i. ‘Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection’ 2013⁴⁰ and ‘Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations’ 2014⁴¹ will be ensured.
- All team members will provide their written contribution using the template (will be delivered) to Maiken Mansfeld by **3 December 2014**. Draft mission report will be shared with team members for comments. Key recommendations will be agreed and finalised no later than **8 December, 2014**, and will be shared with the stakeholders in Kyrgyzstan and will inform final Concept Note version.
- Final report with findings and recommendations will be submitted to WHO regional office for Europe by **17 December, 2014**.

The reports will be posted on the WHO EURO web site.

⁴⁰ <http://www.who.int/hiv/pub/guidelines/arv2013/download/en/>

⁴¹ <http://www.who.int/hiv/pub/guidelines/keypopulations/en/>

Annex 3. Review team and List of informants

Review team consisted of three external consultants:

- Maiken Mansfeld - Team leader and public health expert, WHO Collaborating centre on HIV and Viral Hepatitis (Copenhagen)
- Matti Ristola – clinician, head of HIV services, Helsinki University Hospital (Finland) and WHO Collaborating center on HIV and Viral Hepatitis (Copenhagen)
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Annex 4. List of National reporting forms

No	Form	Fields	To whom	From	Frequency	Main purpose	Comments
1	Patient registry	124	To HIV patient tracking system/dispensary	treating doctor	after visit/4 times /year	Monitoring of disease/dispensary surveillance	
2	№1		GosEpidNadzor, Department of disease prophylactics;	RAC	once a month	report on infectious and parasitic infections	
3	№4		Republic medical information centre, following review of RAC	from District laboratory diagnostic services reported to oblast AIDS centre to RAC	once a month	epidemiological data on the number tested on HIV and positives	form will be reviewed form 2015
4	№4a		Republic medical information centre, following review of RAC	from District reported to oblast AIDS centre to RAC	once a year	changes in epid.part and dispensary part	from 2015 epidemiological and dispensary forms will be separated (4a and 4b). Form is too overwhelming
5	№4б		Republic medical information centre, following review of RAC	from District reported to oblast AIDS centers to RAC	once a year	information on MTCT	
6	№12-1	13	Republic medical information centre	Family medical centres to oblast medical information centres	every quarter	pre and post test counselling on HIV and 13 HIV indicators	Simplified 13 questions on HIV reported quarterly implemented in 2014.
7	№12 Здрав	13	Republic medical information centre	Family medical centres to oblast medical information centres	once a year	pre and post test counselling on HIV and 13 HIV indicators	Extensive form
8	№14-1	13	Republic medical information centre	From hospitals to oblast medical information centres	once a quarter	pre and post test counselling on HIV and 13 HIV indicators	Simplified 13 questions on HIV reported quarterly implemented in 2014.

9	№14 Здрав	13	Republic medical information centre	From hospitals to oblast medical information centres	once a year	pre and post test counselling on HIV and 13 HIV indicators	Extensive form
10	№17		Republic medical information centre	RAC	once a year	medical resources	



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