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# Ukraine HIV Program Efficiency Study:

Can Ukraine improve value for  
money in HIV service delivery?

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## TABLE OF CONTENTS

LIST OF FIGURES .....	iv
LIST OF TABLES .....	vi
LIST OF ABBREVIATIONS/ACRONYMS .....	vii
EXECUTIVE SUMMARY.....	ix
<b>1 INTRODUCTION AND BACKGROUND .....</b>	<b>1</b>
<b>1.1 HIV Epidemic Trends in Ukraine.....</b>	<b>1</b>
<b>1.2 Ukraine’s HIV Response.....</b>	<b>2</b>
<b>1.3 Rationale, Objectives and Programmatic Focus of the Study.....</b>	<b>5</b>
<b>2 STUDY METHODS .....</b>	<b>7</b>
<b>2.1 Analytic Framework .....</b>	<b>7</b>
<b>2.2 Selection of Study Areas, and Sampling Frame and Strategy for Study Sites.....</b>	<b>7</b>
<b>2.3 Data Collection Plan .....</b>	<b>10</b>
2.3.1 Phase 1 – Data Collection at Site and Service Provider Level .....	10
2.3.2 Phase 2 – Data Collection at City, Oblast and National level .....	12
<b>2.4 Data Analysis Plan .....</b>	<b>12</b>
<b>2.5 Study Limitations.....</b>	<b>14</b>
<b>3 RESULTS OF NATIONAL AND OBLAST LEVEL ANALYSIS.....</b>	<b>17</b>
<b>3.1 Context within which HIV Services are Delivered: Ukraine’s Healthcare System .....</b>	<b>17</b>
<b>3.2 Health Financing in Ukraine.....</b>	<b>17</b>
<b>3.3 Government Resource Allocations to Health Facilities .....</b>	<b>18</b>
<b>3.4 Volume of and Processes for HIV Program Allocations by Government.....</b>	<b>19</b>
<b>3.5 HIV Financing in the Study Areas .....</b>	<b>20</b>
<b>3.6 Challenges for Improving the Efficiency of Health Budget Allocations and Health Service Delivery at the National and Oblast Levels .....</b>	<b>21</b>
<b>4 RESULTS AT PROGRAMME LEVEL: NEEDLE AND SYRINGE PROGRAM.....</b>	<b>23</b>
<b>4.1 Scope, Scale, Coverage and Utilisation of NSP Services in the Three Study Areas .....</b>	<b>23</b>
4.1.1 Summary: NSP Program Coverage Indicators.....	23
4.1.2 NSP Service Delivery Models .....	25
4.1.3 Duration of Service Provision and Equipment for Services.....	26
4.1.4 Scope of Services Provided at NSP Sites .....	27
4.1.5 PWID Demand and Access to NSP services.....	32
4.1.6 Linkages and Referrals Between Services .....	33
<b>4.2 NSP Program Funding, Unit Costs and Technical Efficiency .....</b>	<b>34</b>
4.2.1 Sources of NSP Program Funding.....	34
4.2.2 Unit Costs of Providing NSP Services .....	35
4.2.3 Technical Efficiency of NSP Services Delivered .....	41
4.2.4 Unit Cost Comparison to Other Studies.....	44

- 4.3 Management of and Information about NSP sites ..... 45**
  - 4.3.1 Operational Characteristics of NSP Sites.....45
  - 4.3.2 Monitoring & Evaluation of NSP Programme .....48
  
- 4.4 Institutional Efficiency and Exogenous Factors ..... 48**
  - 4.4.1 Legislation and Enforcement .....48
  - 4.4.2 Medical Waste Storage and Disposal.....49
  
- 4.5 Summary of Findings Relating to Program Efficiency of NSP Sites in Ukraine ..... 49**
  - 4.5.1 NSP Programme’s Successes.....49
  - 4.5.2 NSP Programme Challenges and Proposed Solutions.....50
  - 4.5.3 Recommendations to Improve HIV Program Efficiency in NSP Sites in Ukraine.....52
  
- 5 RESULTS AT THE PROGRAMME LEVEL: OPIOID SUBSTITUTION THERAPY ..... 53**
  - 5.1 Scope, Scale, Coverage and Utilisation of OST Services in the Three Study Areas ..... 54**
    - 5.1.1 Summary: OST Program Capacity and Coverage Indicators .....54
    - 5.1.2 OST Service Delivery Models.....56
    - 5.1.3 Scope of Services Provided at OST Sites .....57
  
  - 5.2 OST Program Funding, Unit Costs and Technical Efficiency..... 59**
    - 5.2.1 Sources of OST Program Funding.....59
    - 5.2.2 Total Costs of Delivering OST Services .....60
    - 5.2.3 Unit Costs of Delivering OST Services .....62
    - 5.2.4 Regional Upstream Costs .....65
    - 5.2.5 Technical Efficiency Analysis for OST .....65
    - 5.2.6 Comparing Ukraine’s OST Unit Costs to those of Other Countries .....66
  
  - 5.3 Management and Information about OST Sites ..... 67**
    - 5.3.1 Operational Characteristics of OST sites .....67
    - 5.3.2 Monitoring & Evaluation.....69
  
  - 5.4 Institutional Efficiency and Exogenous Factors ..... 69**
    - 5.4.1 Barriers to OST Service Provision.....69
    - 5.4.2 Legislation and Regulations .....70
  
  - 5.5 Summary of Findings Relating to Program Efficiency of OST Service Delivery in Ukraine .71**
    - 5.5.1 Unit Costing Analysis.....72
    - 5.5.2 Recommendations to Improve the Program Efficiency of OST Service Provision ...73

<b>6</b>	<b>RESULTS AT THE PROGRAMME LEVEL: ANTIRETROVIRAL THERAPY .....</b>	<b>75</b>
<b>6.1</b>	<b>Scope, Scale, Coverage and Utilisation of ART Services in the Three Study Areas .....</b>	<b>75</b>
6.1.1	Summary: ART Program Coverage Indicators .....	75
6.1.2	ART Service Delivery Models and Regimens .....	76
6.1.3	Scope of Services Provided at ART Sites .....	76
6.1.4	Referrals.....	78
<b>6.2</b>	<b>ART Program Funding, Unit Costs and Technical Efficiency .....</b>	<b>80</b>
6.2.1	Sources of ART Funding .....	80
6.2.2	Overall Costs of ART Service Delivery, and Cost Components.....	80
6.2.3	Unit Costs of ARV Services .....	82
6.2.4	Regional Upstream Costs .....	85
6.2.5	Analysis of ART Service Provision Efficiency: Cost Savings with ARV Drugs.....	86
<b>6.3</b>	<b>Management of and Information about ART Sites .....</b>	<b>88</b>
6.3.1	Management and Decision-making .....	88
6.3.2	Staffing .....	88
6.3.3	Monitoring and Evaluation .....	89
6.3.4	Procurement of ARVs.....	90
<b>6.4</b>	<b>Institutional Efficiency and Exogenous Factors .....</b>	<b>92</b>
<b>6.5</b>	<b>Summary of Findings Relating to Program Efficiency of ART Service Delivery.....</b>	<b>92</b>
<b>7</b>	<b>KEY ACTIONABLE AREAS &amp; RECOMMENDATIONS.....</b>	<b>95</b>
<b>7.1</b>	<b>Needle and Syringe Program (NSP) .....</b>	<b>95</b>
<b>7.2</b>	<b>Opioid Substitution Therapy (OST) .....</b>	<b>97</b>
<b>7.3</b>	<b>HIV Antiretroviral Treatment (ART) .....</b>	<b>99</b>
<b>7.4</b>	<b>Cross Cutting Areas to Address .....</b>	<b>100</b>

## **LIST OF FIGURES**

Figure 1: Sources of HIV/AIDS funds, Ukraine 2010.....	2
Figure 2: HIV/AIDS expenditure on activities by sources of funding, Ukraine 2010 .....	3
Figure 3: Stakeholders and the coordination of HIV response activities in Ukraine .....	4
Figure 4: Map of the study areas .....	8
Figure 5: Service delivery models represented in the study sites in the study regions in Ukraine, 2012.....	9
Figure 6: Schematic representation of Phase 1 and Phase 2 processes.....	10
Figure 7: Proportion of regional budget spent in the three study sites in 2010 in Ukraine .....	21
Figure 8: Percentage of budget spent on NSP, OST and ART at the study sites in Ukraine in 2010...	21
Figure 9: Type of equipment in the NSP sites in three study regions in Ukraine, 2012 .....	27
Figure 10: % of PWID visits that was for a core NSP service in study sites, Ukraine, 2012 .....	29
Figure 11: NSP occasions of service (total contacts) in the study regions in Ukraine, July 2011 – June 2012.....	30
Figure 12: Average number of syringes distributed per PWID per year in Ukraine, 2012 .....	30
Figure 13: Number of needle-syringes distributed per client in the last 12 months at study sites in Ukraine, 2012 .....	31
Figure 14: Condom and IEC material distribution to clients accessing NSP sites in the study regions in Ukraine, July 2011 to June 2012.....	31
Figure 15: Condom per client and contact for NSP sites in study regions in Ukraine, 2012 .....	32
Figure 16: Frequency with which NSP clients are referred at NSP sites in study regions in Ukraine, 2012.....	33
Figure 17: % of NSP sites in study regions in Ukraine offering testing onsite and those referring for HIV testing, 2012 .....	34
Figure 18: Distribution of cost components for NSP sites in Ukraine, 2012 .....	36
Figure 19: Variation in cost components for NSP sites in Ukraine in 2012, by study region .....	36
Figure 20: Unit cost per needle and syringe across the study sites in study regions in Ukraine, 2012	37
Figure 21: Cost (USD) per visit to NSP sites in study regions in Ukraine, 2012 .....	38
Figure 22: Cost (USD) per client at NSP sites in study regions in Ukraine, 2012 .....	39
Figure 23: % of efficient NSP sites and % by which non-efficient NSP sites could increase outputs in study regions in Ukraine, 2012.....	41
Figure 24: Potential efficiency – based on four points for each NSP site in study regions in Ukraine, 2012.....	42
Figure 25: Estimated potential savings in the NSP program area using DEA analysis through the reduction of input while maintaining the same level of output, applied to non-efficient sites in the study sample .....	43
Figure 26: Cost per client for NSP sites in Ukraine in 2012, comparison with other studies (USD) .....	45
Figure 27: Profiles of staff at the NSP sites in study regions in Ukraine, 2012.....	46
Figure 28: % of time spent on administrative matters and with clients at NSP sites in study regions in Ukraine, 2012 .....	47
Figure 29: The number of patients accessing OST programmes in Dnipropetrovsk, Kyiv City and Mykolayiv as of September 2012 .....	56
Figure 30: Volume of visits for core services as percentage of total visits for all OST-related services in Ukraine, June 2011 – July 2012 .....	58



Figure 31: OST funding sources (non-integrated sites) in study regions in Ukraine, 2012 .....	60
Figure 32: Cost components for non-integrated OST sites in Ukraine, 2012 .....	61
Figure 33: Total cost of OST service delivery for integrated sites in Ukraine, 2012 .....	61
Figure 34: Program staff cost for OST sites in three study regions in Ukraine, 2012.....	62
Figure 35: Unit cost(s) (USD) per OST client per year at OST sites in study regions in Ukraine, 2012 .	63
Figure 36: Total costs (core programmes only) per reference site in study regions in Ukraine, 2012.	63
Figure 37: Unit cost per client by cost component, at OST sites in study regions in Ukraine, 2012 ....	64
Figure 38: Regional upstream cost (UAH) per PWID for OST at OST sites in study regions in Ukraine, 2012.....	65
Figure 39: Staff composition at OST sites in study regions in Ukraine, 2012 .....	67
Figure 40: Number of ART regimens for 1 <sup>st</sup> and 2 <sup>nd</sup> line treatment, per ART in study regions in Ukraine, 2012 .....	76
Figure 41: Volume of visits for core ART-related services as a percentage of total visits for all services at ART sites in study regions in Ukraine, 2012 .....	78
Figure 42: Number of sites offering or referring for TB diagnosis or treatment in three study regions in Ukraine, 2012 .....	79
Figure 43: Number of clients (and visits) per annum for TB diagnosis and treatment in study regions in Ukraine, 2012 .....	80
Figure 44: Funding sources for ART sites in study regions in Ukraine, 2012 .....	80
Figure 45: Cost components for ART sites in study regions in Ukraine, 2012 .....	81
Figure 46: First and second line prices per ART site (USD) in study regions in Ukraine, 2012 .....	81
Figure 47: Comparison of second line ARV drug prices (USD) in LMICs compared to that of Ukraine (2012 prices).....	82
Figure 48: Cost per client (USD & UAH) for 11 sampled ART sites in Ukraine, 2012.....	82
Figure 49: Cost of CD4, VL and OI services per visit in Ukraine, 2012 .....	84
Figure 50: Regional upstream costs per PWID for ART in study regions in Ukraine, 2012.....	86
Figure 51: Potential Cost Savings with less expensive ARV drug purchases in Ukraine, based on 2012 prices .....	87
Figure 52: Number of 1 <sup>st</sup> line and 2 <sup>nd</sup> line ART regimens in study regions in Ukraine, 2012.....	87
Figure 53: ART staffing profile mix (including full and part-time staff) in study regions in Ukraine, 2012.....	88

## LIST OF TABLES

Table 1: HIV estimates in Ukraine (2011 – 2015) .....	1
Table 2: Estimates of HIV prevalence among PWID among study sites .....	8
Table 3: Estimates of PWID population size and number of PLHIV receiving ART in study sites .....	8
Table 4: Summary of study sites.....	9
Table 5: Phase 1 data collection tools .....	11
Table 6: Overview of national health funding and HIV/AIDS funding in Ukraine, 2009 – 2011 .....	19
Table 7: Program spending for the study sites (2009 and 2010).....	20
Table 8: Performance indicators for NSP sites in Ukraine, 2012 .....	24
Table 9: Model of service provision for NSP in Ukraine, 2012 .....	25
Table 10: Scope of services provided at NSP sites in Ukraine, 2012 .....	27
Table 11: Total and average costs for providing NSP services at NSP sites in study regions in Ukraine, 2012 .....	35
Table 12: Summary of Variation in Unit Costs of Delivering NSP services in Ukraine, 2012.....	39
Table 13: For different input options, sites that could increase outputs, and % of sites operating at scale efficiency in Ukraine, 2012.....	41
Table 14: Key decision makers within NSP sites in study regions in Ukraine, 2012.....	47
Table 15: Performance indicators for OST sites in Ukraine, 2012.....	54
Table 16: Scope of services provided at OST sites in Ukraine, 2012 .....	58
Table 17: OST unit cost comparisons with international figures in Ukraine, 2012 .....	66
Table 18: Performance indicators for ART sites in Ukraine, 2012.....	75
Table 19: Summary of scope of services provided at ART sites in Ukraine, 2012 .....	77
Table 20: HIV viral load and CD4 laboratory monitoring and diagnostic services for opportunistic infections, tuberculosis and viral hepatitis – Unit cost per client and proportion of total client costs – in study regions in Ukraine, 2012.....	85
Table 21: Cost savings possible if all ARV drugs were procured at GF prices, in study regions in Ukraine, 2012.....	86

## LIST OF ABBREVIATIONS/ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ANOVA	Analysis of Variance
APMG	AIDS Projects Management Group
ART	Antiretroviral Therapy
ARV	Antiretroviral
C&T	Counseling and Testing
CC	Community Centers
CD4	Human T-helper cells expressing CD4 antigen (T-helper cell)
CDCV	Care Delivery Value Chain
CRS	Constant Returns to Scale
CSIS	Center for Strategic and International Studies
DEA	Data Envelopment Analysis
ELISA	Enzyme-Linked Immunosorbent Assay
FSW	Female Sex Workers
GCP	Good Clinical Practice
GF/ GFATM	The Global Fund to Fight AIDS, TB, and Malaria
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
IBBS	Integrated Biological and Behavioral Surveillance
IEC	Information, Education, and Communication
LMIC	Lower-Middle Income Country
MOH	Ministry of Health
MSM	Men Who Have Sex with Men
NAT	National AIDS Trust
NGO	Non-Governmental Organization
NSP	Needle and Syringe Programmes
OI	Opportunistic Infection
OST	Opioid Substitution Therapy
PLHIV	People Living with HIV
PMTCT	Prevention of Mother-to-Child Transmission of HIV
PWID	Injecting Drug Users
SOP	Standard Operating Procedure
STI	Sexually Transmitted Infection
SUNRISE	Scaling-up the National Response to HIV/AIDS Through Information and Services
TB	Tuberculosis
UAH	Ukrainian Hryvnia (National currency of Ukraine)
UCDC	Ukrainian Center for Socially Dangerous Disease Control
UIPHP	Ukrainian Institute of Public Health Policy
UNAIDS	Joint United Nations Program on AIDS
UNGASS	United Nations General Assembly Special Session
UNODC	United Nations Office on Drugs and Crime
USAID	United States Agency for International Development
USD	United States Dollar
VL	Viral Load
VRS	Variable Return to Scale
WHO	World Health Organization

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## EXECUTIVE SUMMARY

### Introduction

**Ukraine is experiencing the most severe HIV epidemic amongst the Eastern Europe and Commonwealth of Independent States countries.<sup>1</sup> By the beginning of 2012, an estimated 213,000 adults in Ukraine were living with HIV/AIDS, with a national adult prevalence of 0.7%.** The epidemic is concentrated mainly in urban areas, with the highest prevalence of 22.9% among injecting drug users (IDUs). IDUs constitute 35.6% of total newly detected HIV cases in 2011. It is estimated that there are 290,000 (range 278,000–387,000) IDUs in Ukraine. Other key populations at-risk are sexual partners of IDUs and female sex workers (FSW), and to a lesser extent, men who have sex with men (MSM).

In the past decade there has been increased commitment by the government and partners to identify, target and scale-up HIV responses in the country. The Government has developed and is implementing a comprehensive package of interventions for HIV prevention, treatment and care among people who inject drugs (PWIDs), which includes: needle and syringe programs (NSP), opioid substitution therapy (OST) and other drug-dependence treatments, antiretroviral therapy (ART), HIV testing and counselling, prevention and treatment of sexually transmitted infections (STIs), promotion and distribution of condoms, targeted information, education and communication (IEC), as well as the prevention, diagnosis and treatment of tuberculosis and hepatitis C.

**With the current changes in the international HIV financing landscape and the anticipated reduction in Global Fund financing, it is expected that the last two years of the Ukraine 2014-18 National AIDS Strategy will require increasing domestic resources, or more efficient implementation of the same services. This leaves Ukraine with approximately three years to develop and implement a transition strategy in order to meet its growing HIV response financing challenge.** At present, an average of 13% of the total government budget was allocated to the health sector between 2009 and 2011. During this period, Total Health Expenditure (THE) in Ukraine increased from US\$ 9.1 billion in 2009 to US\$ 12 billion in 2011 with approximately 0.7% spent on HIV and AIDS. While the government is the main funder of treatment services and the bulk of the ART procurement budget comes from the Ministry of Health, there has also been considerable dependence on external funding sources. Just under half of HIV response expenditure is financed by external donors (47% in 2010), of which 37% is from the Global Fund (the single largest contributor).

**An external evaluation of the National AIDS Program conducted in 2009 identified a number of severe inefficiencies in the implementation of the HIV response, including: i) low coverage of HIV services; ii) inadequate scope of the package of services; iii) large variation in the quality of services provided; and iv) high costs of service delivery.** With a rapidly growing epidemic and the threat of a steadily contracting resource envelope, **Ukraine must redirect considerable efforts in its HIV response to improving the efficiency with which the response is implemented.**

### Study Objectives

The objective of the Ukraine HIV program efficiency study is to improve the implementation of the HIV program through addressing the key question of ‘How can Ukraine deliver HIV services at the lowest cost, at the required coverage and quality, and ensuring a continuum of services’. Based on the findings of this study, actionable recommendations and policy options have been developed to inform the design and implementation of the new National AIDS Strategy. Through this, the study also contributes to the sustainability of HIV/AIDS response financing and implementation to scale.

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<sup>1</sup> Ukraine Harmonized AIDS Response Progress Report. Reporting period: January 2010-December 2011. Kyiv 2012.



### Scope of the Study

The study focuses on the implementation modalities and costs of delivering three key interventions that contribute to harm reduction programs for PWIDs, which is the segment of the population which is responsible for the majority of HIV transmission cases, and in which the HIV epidemic is mostly concentrated. The three services are: the Needles and Syringe Program (NSP), Opioid Substitution Therapy (OST) and Antiretroviral Therapy (ART).

### Methods

**Analytic framework:** This study defines efficiency through an analytic framework comprising four components: i) technical efficiency and service delivery; ii) management and information; iii) financial resources and flow of funds; and iv) institutional efficiency and exogenous determinants (see below). The following analyses were carried out for each of the three intervention programs: i) mapping of service provision processes; ii) identification of key issues relevant to the efficiency of service provision; iii) calculation of service provision unit costs; and iv) analysis of service provision efficiency.

Technical efficiency and service delivery	<ul style="list-style-type: none"><li>• Delivered in accordance with the appropriate operational standards of implementation.</li><li>• Unit costs per output: the maximum output has been produced with the least input (least unit cost).</li><li>• Referral and integration between services and the three interventions.</li></ul>
Management and information	<ul style="list-style-type: none"><li>• Optimal utilization of management, procurement system, human resources and information to support effective and efficient service delivery.</li></ul>
Financial resources and flow of funds	<ul style="list-style-type: none"><li>• Adequate resources and timely funds availability at the service delivery level. This will include resources utilized at oblast and national level to support service delivery at the community level as well as management of funds by service delivery agencies.</li></ul>
Institutional efficiency and exogenous determinants	<ul style="list-style-type: none"><li>• Institutions and policy environments are effective if the policy environment, laws and regulations support, enable service delivery to the beneficiaries.</li></ul>

**Geographic focus:** This study focuses on one city and two oblasts in Ukraine, namely Kyiv City, Dnipropetrovsk oblast and Mykolayiv oblast. The selection of oblasts was based on the HIV prevalence among PWIDs, the presence of the three intervention services in various service delivery models, the availability of data and the possibility of collaboration with implementing partners. The estimated number of PWIDs was highest in Kyiv City (38,000) with the HIV prevalence among PWIDs of 18.1%. Dnipropetrovsk and Mykolayiv reported 17,000 and 10,000 IDUs, respectively, but with higher HIV prevalence at 41.3% and 43.8%.

**Sampling and data collection:** Data were collected in two parallel phases: Phase 1 was based on a selection of 54 service providers within 52 sites (31 NSP sites, 9 OST and 10 ART, as well as 2 integrated sites). This phase included the overall mapping and observation of the service delivery models at the selected sites, qualitative semi-structured interviews with a sub-sample of staff and clients at the service provider sites and the collection of financial data including budgets, expenditure, and unit cost data. Phase 2 involved the conduct of a desk review of the identified key themes. At the end of the data collection period, a preliminary validation of data at the regional and national level was conducted through interviews with key informants including representatives of national health authorities, donors and NGOs.

## Key Findings/Results

The HIV response in Ukraine involves multiple national and international stakeholders, facing similar implementation challenges. The study found four main areas of constraints which affect the efficiency of HIV service delivery in Ukraine:

- **Low uptake of services and/or insufficient coverage** in NSP, OST and ART programs, which results in low capacity utilization of service delivery sites.
- **Poor referral system.** The comprehensive package of HIV prevention and treatment services recommended for people who inject drug requires the use of multiple services which are not adequately integrated or linked.
- **Heterogeneity in staff composition across service delivery sites,** with no guidance available on the optimal number and composition of both operational and program staff to help achieve the maximum output at the lowest staff costs.
- **Lack of service standardization.** There is large variation in service delivery models and number of services provided to clients.

These key findings for each of the three interventions programs are discussed in more detail below.

### A. Needle and Syringe Program

**Finding #1: Low utilization and coverage of NSP services, along with poor NSP integration with other essential services, was identified in all three study regions.** The study found that on average across the sample, only 28% of visits to NSP sites were associated with core services. The volume of visits for needle and syringe exchange ranged from as low as 10% to a maximum of 49% of the total services provided. The average number of syringes distributed per IDU per year was 98 in the three study regions, which is - considerably less than the minimum of 130 syringes per IDU per year recommended in the HIV Alliance service package (the national average of 75.3 was even lower).

**Finding #2: Overall, half of the sites in this study are not operating efficiently when comparing unit costs amongst study sites.** The average cost of NSP services was US\$54 per client per year, ranging from less than \$10 through pharmacy-based service providers to \$340 per client per year in a mobile NGO service based in an Anti-TB Dispensary Center. The NSP sites in Mykolayiv were less efficient than sites in both Dnipropetrovsk and Kyiv City, wherein Mykolayiv spent more proportionally on program staff (average 46% of total) versus the other regions (28.7% and 23.6% respectively). The analysis shows that the less efficient sites can increase their distribution of needle syringes by about 20% without changing staff or program costs.

**Finding #3: There are considerable differences in the quality and cost of services provided across the NSP program sites, even those with similar service delivery models.** The data from the 31 NSP sites indicate that despite the contractual agreements with the HIV Alliance stipulating a package of core services, the services delivered vary widely between the sites.

**Finding #4: At the operational level, there are large variations in implementation practices across the program sites.** The composition of the team and staff profile varies across the sites which contribute to the wide variation in the average cost of services per client. The operating hours and days also vary significantly between the sites from 9 hours to 84 hours per week across the same service delivery model sites. This results in a wide variation in the number of clients per hour across the sites from 0.3 client per hour to 8.6 clients per hour.

**Finding #5: Linkages and referral policies have not been formally developed and disseminated, which leads to interruption of services for IDUs.** The linkages between services and healthcare

providers are weak with only about half of the observed sites provide referral to counselling, testing and treatment. Referrals are particularly important for optimizing contact with IDU to refer to other services, in particular TB and Hepatitis C testing to ensure access to treatment.

### ***B. Opioid Substitution Therapy***

**Finding #1: Low coverage and limited access to OST services is a major constraint.** Despite the number of OST clients increasing nearly 13-fold over the past five years, OST service coverage remains very low. There were only 0.53 sites for every 1,000 IDUs in the country. This means that only 2.8% (or 7,102 clients) of the total estimated 250,000 opioid injecting population in Ukraine has access to and received OST services in 2011, which is substantially lower than the national target levels.

**Finding #2: Legislation and regulations are the key issues affecting the overall delivery of OST services in Ukraine.** The existing legislation and regulations are complex and prohibitive to OST program delivery. There are various interpretations of regulations which affect the provision of OST drugs and patient access to services. For instance, law enforcement officials continue to target doctors and patients associated with OST programs.

**Finding #3. There is considerable variation in the cost of OST services.** The average cost of OST services is \$364 per client per year, ranging from \$82 to \$596 (including program staff and drugs). The wide variation is also observed in the clinicians' workload across the OST sites: the number of clients seen per hour per clinician varies from 3.7 to 17.5. Generally, the better performing sites were those with the highest number of clients per staff member per hour open, which correlated with the sites where Global Fund is the primary funder, and purchasing decisions are made by the donor (other sites have MOH involved in purchasing decisions). Sites which are open every weekday (4 hours per day), weekend days (2 hours per day) were more cost-efficient when compared to sites that were open for 60% longer durations per week, but saw fewer clients per hour.

**Finding #4. The program staff costs constitute the highest proportion of the costs of OST services.** The GFATM covers about one third of all program staff cost providing additional payments for the service providers. The second highest component of OST cost is drugs, which are currently purchased by GFATM. The third highest cost component is cost of operational staff. Altogether these components represent about 80% of total OST service delivery cost.

**Finding #5. OST sites are less consistent in providing referrals to ART services.** Among the three study regions, Mykolayiv had a weaker referral system than the other two regions, and less service coverage. Seven out of eleven OST sites reported offering and referring for ART. All referrals to ART services are made either to hospitals or AIDS Centers. Clients reported coming to OST and ART services through both informal and formal referral processes. For the two OST-ART integrated sites that are included in this study, client referrals and service coverage are good.

### ***C. Antiretroviral Therapy***

**Finding #1. Low coverage and unmet demand for ART services for PWIDs are main challenges.** Current ART coverage is low at only 8.3%, and access to treatment for HIV-positive PWIDs severely constrained. In Ukraine, PWIDs are about 85% less likely to receive ART compared to other PLHIV.

**Finding #2. The large number of ART regimens (as high as 29 regimens) for the government funded sites results in higher costs of ART drugs compared to the GFATM funded site.** The GFATM funded sites have fewer regimens on both 1<sup>st</sup> and 2<sup>nd</sup> line treatments: for the 1<sup>st</sup> line government funded sites have up to 29 regimens of treatment, while GFATM funded – maximum of 8 regimens. The number of regimens affects the procurement procedures, and therefore, the price of drugs. On

average, Government pays 28% more per 1<sup>st</sup> line drugs and 41% more per 2<sup>nd</sup> line drugs. On average, Government drug prices could be reduced by 30%.

**Finding #3. Costs of ARV drugs accounts for the largest share of the total ART costs, followed by the program staff cost.** The unit cost per ART client was USD 856. Drugs cost accounts for 74% of total ART cost while the program staff costs represent 8.8%. ARV drugs prices are high compared to other countries, between 4 and 5.5 times higher than the average costs for low-middle income countries (LMIC) for first-line drugs. The workload of staff, similar to OST programs, varies widely: the number of patients per operating hour ranges from 0.1 clients to 7.4 clients per hour. The better performing sites tend to have lower program staff cost (due to higher clients/staff ratios) and lower drugs cost (due to more streamlined treatment protocols and better procurement).

**Finding #4. Lack of compliance with ART guidelines and standards leads to large variability in implementation of ART programs across regions.** Within the framework of existing national regulations, many regions have developed their own local approaches to the provision of ART, leading to stark discrepancies between regions in how the treatment process is organized and in the capacity of AIDS Centers. Despite all the sampled sites reporting using the MOH treatment protocol (and three also reporting the use of the WHO guidelines), there is still a high level of diversity in the implementation of the programs.

**Finding #5. Lack of an integrated approach to service provision.** HIV testing is not offered to patients at the sites where they were diagnosed with hepatitis B or hepatitis C viral infections and for TB patients. These are viewed as “missed opportunities of early HIV diagnosis and engagement in HIV treatment and care of co-infected patients”. Currently, testing, diagnosis, vaccination and treatment for STIs and HCV for most at-risk populations are only implemented on a project basis and funded internationally.

## Key Recommendations

*1. Make sure that all NSP sites are operating at optimal efficiency:* According to the DEA, about 51% of NSP sampled sites are not operating at optimal efficiency. Based on the same input and output data from the NSP sample sites, it was found that inputs (program staff costs and associated consumable item costs) can be reduced on average by 18% while maintaining the same level of outputs (number of clients, frequency of visits and the number of needle-syringes distributed).

*2. Benchmark different sites in terms of their efficiency, and make sure that there are cost savings associated with the non-efficient sites:* The unit cost of the best performing OST site is UAH 672 per client<sup>2</sup>. If all the sites can achieve the unit cost of the best performing site, the sites can on average save at least half (50%) of their unit cost per client for methadone stand-alone OST and 43% of the unit cost per client when including all costs (non-integrated sites).

*3. Reduce the cost of ART by adoption of WHO treatment regimen guidelines:* The study recommends reducing the number of regimens from 29 to a maximum of eight, following WHO treatment guidelines which would contribute to reducing the ART costs by procuring the most cost-effective combination of ARVs. The current Global Fund funded ARV drugs purchasing mostly follows this recommendation and is shown among the sampled sites to be on average 28% lower costs for first line drugs per client and 41% lower cost for second line drugs per client. This cost saving measure can in turn provide the government with some solution to the possibility of having to fund for 100% of the national HIV treatment needs, in addition to increasing coverage as well as setting the aim to implement the new WHO treatment guidelines on the earlier provision of ART to PLHIV with CD4 counts of 500 cells/mm<sup>3</sup> or less.

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<sup>2</sup> Unit cost per client considers costs for OST staff costs and the costs of methadone for 365 client visits a year.

*4. Reform the procurement and supply system for ARV drugs:* The removal of organizational and procedural barriers that are inflating drugs purchasing prices will improve expenditure on ARV drugs. The current system implemented by the government is lengthy and involves several steps, which leaves it prone to potential backlog whenever a delay occurs at any single step, thus potentially causing a disruption in supplies. Through the annual bidding process, service providers are required to accurately forecast ARV needs for the following year, and are only able to submit the applications or bids for drugs once a year. Additionally, incorporating lessons from the experiences and processes adopted by the Global Fund recipients in their ability to secure lower prices and manage the procurement and supply system would also be beneficial to the government in improving its own procurement and supply system. Transparency and accountability of the processes are also encouraged.

*5. Strengthen human resource management:* Changes to the staff composition at the service provision sites could be implemented to: a) align the staff profile with the needs of the IDUs served by each specific service delivery model; and b) increase demand for services and coverage to maximize staff time utilization. Increased efficiency can be achieved by identifying the optimal level of workload between clinical and non-clinical personnel, especially for ART programs. Considering the higher salaries of doctors compared to non-clinical personnel, the aim is thus to reduce the administrative workload of clinicians in order for them to dedicate more of their time to clinical work and hence possible increasing the client to clinician ratio at the sites. Having an optimal numbers and composition of both operational and program staff will help achieve the maximum output comparable to salary costs.

Three aspects of human resource management can improve the service delivery efficiency: the staff to client ratio, the composition of clinical and non-clinical staff, as well as the work distribution of staff in terms of clinical and service related tasks versus administrative tasks.

*6. Increase coverage for NSP, OST and ART programs at the same sites:* Overall increase in access can bring the response efforts closer to the international recommended minimum threshold of program coverage to achieve an actual impact in reducing transmission and morbidity. Increasing the number of clients generally will lead to spread the capital and operational costs across a wider client base. This provides efficiency gains on capital and operational costs per client and will reduce the overall unit cost per client.

*7. Improve the referrals and linkages system among NSP, OST and ART program:* Clients of HIV intervention services, particularly so those who are injecting drug users who generally suffer from multiple co-infections and opioid dependence, are often reliant on multiple services. There is a need for either an integrated approach, such as the model developed and implemented at the Kyiv City AIDS Center, and/or a well-documented system of referrals and linkages with clear guidelines. An effective referral system will improve client acceptability for NSP, OST and ART services, potentially increasing coverage of the program. Greater patient volumes will increase the number of clients seen per opening hour, and spread staffing, capital, and operational costs across a wider client base.



## 1 INTRODUCTION AND BACKGROUND

### 1.1 HIV Epidemic Trends in Ukraine

In 2009, Ukraine was among twenty countries that together generated more than 70% of new HIV infections globally.<sup>3</sup> It was estimated that at the beginning of 2012, 213,000 people aged 15 and above were living with HIV, with the estimated HIV prevalence in the 15 – 49 age group being 0.7%. HIV prevalence among tuberculosis (TB) patients within the general population and among incarcerated TB patients is 15.5% and 21.9%, respectively. Although there has been a decrease in the number of registered new HIV cases among people who inject drugs (PWID) over the past five years, in 2011, sentinel surveillance found that HIV prevalence was still highest among PWID at 22.9%.

A cumulative total of 223,530 cases<sup>4</sup> of HIV infection among Ukrainian citizens have been officially registered, including 56,373 cases of AIDS and 28,498 AIDS-related deaths.<sup>5</sup> The epidemic is primarily in urban areas. The southern and eastern regions of Ukraine continue to be the most affected, with seven south-eastern regions accounting for 70% of newly registered cases in 2007.

**Table 1: HIV estimates in Ukraine (2011 – 2015)**

	2011	2012	2013	2014	2015
The total number of people living with HIV (adults aged 15+ years)	230,000	213,000	201,000	191,000	182,000
HIV prevalence in adults aged 15+ years	0.58%	0.54%	0.51%	0.49%	0.47%
HIV prevalence in adults aged 15 – 49 years	0.76%	0.70%	0.66%	0.62%	0.59%
Estimated number of new HIV infections	3,500	4,800	6,100	6,000	5,800
Estimated number of AIDS-related deaths	22,000	21,000	17,000	15,000	13,000
Estimated number of PLHIV in need of treatment	122,000	120,000	117,000	115,500	114,000

Source: National HIV/AIDS Estimates in Ukraine (April 2012)

As of 1 January 2010, the Southeast regions and Kiev City in Ukraine, namely Dnipropetrovsk, Donetsk, Mykolayiv, Odesa reported the highest HIV prevalence, between 223.7 - 512.7 per 100,000 population compared to the national average of 220.9 per 100,000 population as of 1 January 2010.<sup>6</sup>

New HIV infections in Ukraine occur primarily amongst PWID, their sexual partners, female sex workers (FSW), their sexual partners, and, to a lesser extent, men who have sex with men (MSM). In 2011, it was estimated that 36% of newly detected HIV cases occurred amongst people who inject drugs<sup>7</sup> and that there are between 278,000 and 387,000 PWID in the country.<sup>8</sup>

Transmission to sexual partners of PWID and overlapping risk behaviors of unsafe sex and injecting are believed to be major factors in HIV transmission dynamics. This is confirmed by data from HIV-positive pregnant women: during the period 2000 to 2010, approximately 39% of HIV-positive pregnant women in Ukraine were themselves either PWID or sexual partners of PWID.<sup>9</sup>

<sup>3</sup> Sidibé, M., Letter to Partners, UNAIDS, 2011.

<sup>4</sup> Due to a change in the surveillance system, WHO indicated that the numbers for the period 2008-2009 were under-reported.

<sup>5</sup> International HIV/AIDS Alliance in Ukraine, 2013.

<sup>6</sup> Ukraine National Report on Monitoring Progress towards the UNGASS Declaration of Commitment on HIV/AIDS, 2010.

<sup>7</sup> Ministry of Health Ukraine, 2012. Ukraine Harmonized AIDS Response Progress Report (UNGASS) 2012.

<sup>8</sup> Based on the 2011 IBBS survey of 9,069 PWID in 27 regions.

<sup>9</sup> Nieburg, P. & Carty, L., 2012. Injecting Drug Use in Ukraine: The challenges of providing HIV prevention and care. CSIS, March 2012.

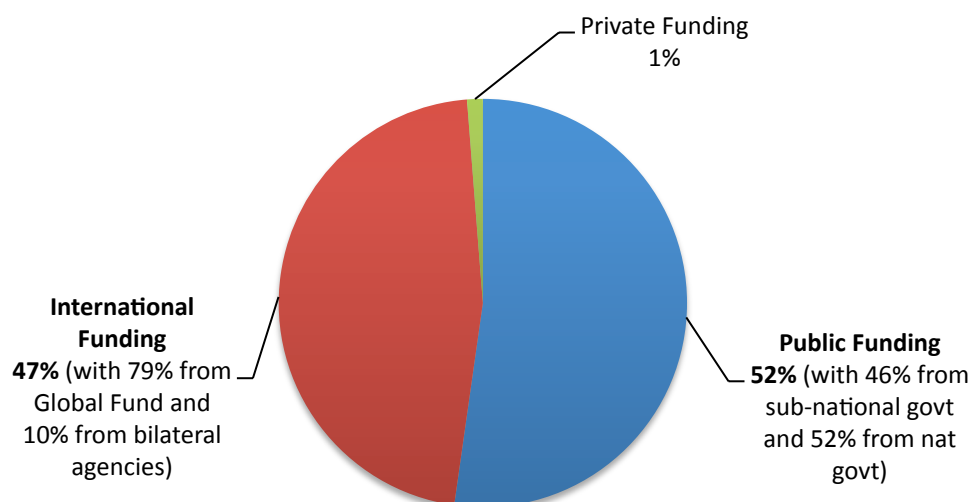
### 1.2 Ukraine's HIV Response

**Nature of HIV response:** Over the last decade, the government and its partners have focused efforts towards understanding HIV epidemic dynamics, identifying those at risk and prioritizing geographical areas for interventions. Efforts have been made to design and implement appropriate and rigorous HIV/AIDS programmes that address local dynamics and mobilize resources for scaling up prevention interventions for at-risk populations. Access to antiretroviral therapy (ART) also increased; by 2008, the ART program was gradually scaled up to all 27 regions across the country. A comprehensive package of interventions for the prevention, treatment and care of HIV among PWID have been endorsed by the WHO, UNODC and UNAIDS. Harm reduction policies and programmes for PWID have been implemented, including needle and syringe programmes (NSP), opioid substitution therapy (OST)<sup>10</sup> and ART programmes. Other components of the intervention package include:

- HIV testing and counseling.
- Prevention and treatment of sexually transmitted infections.
- Condom distribution for PWID and their sexual partners.
- Targeted information, education and communication for PWID and their sexual partners.
- Prevention, diagnosis and treatment of tuberculosis.
- Vaccination, diagnosis and treatment of viral hepatitis.

**Financing the HIV response:** HIV financing is provided by both the public sector and international funding, with households (individuals) contributing a small proportion through out of pocket expenses – See figure 1.

**Figure 1: Sources of HIV/AIDS funds, Ukraine 2010**



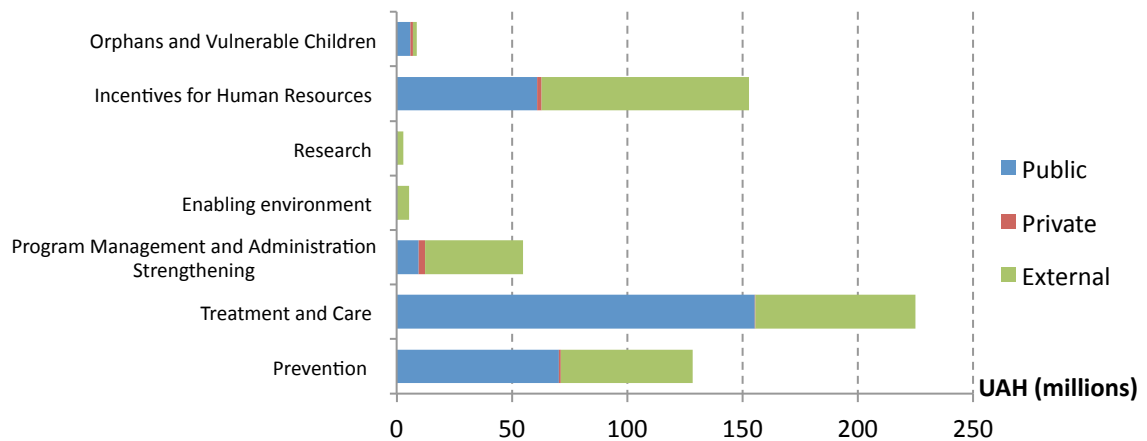
Source: National AIDS Spending Assessment report

As shown in Figure 2, almost 39% of all HIV response expenditures in 2010 were spent on treatment and care, followed by prevention efforts and incentives for human resources. These three activities make up nearly 80% of total HIV/AIDS spending in 2010. Expenditure on treatment and care was covered largely by public funds (82% in 2009) but this decreased to 69% in 2010 with the increase in external (international) funding.

<sup>10</sup> In local documents and references, the OST program is more commonly referred to as "Substance Maintenance Therapy (SMT)". To be consistent with the World Bank's standard terminology, this report will use the term OST.

The government is the main funder of treatment services and the bulk of the ART procurement budget comes from the Ministry of Health. Funds for HIV prevention programmes are channelled through the Alliance-Ukraine as the Principal Recipient down to the Sub-Recipient non-governmental organizations (NGOs) implementing the programmes.

**Figure 2: HIV/AIDS expenditure on activities by sources of funding, Ukraine 2010**



Source: National AIDS Spending Assessment report

A transition to increased domestic sources of funding for prevention programmes is expected to take place over the next two to five years. The Global Fund (GF) Round 10 funding being implemented in 2012 – 2013 is anticipated to have additional funding up to 2016. The new National AIDS Program will commence 2014 – 2018, however, there is uncertainty as to whether the response will be adequately funded up to the end of this period. Current GF commitments to Ukraine stand at US\$184.6 to be spent by the end of 2017. It is therefore expected that the last year of this plan (2017 – 2018) will be funded by domestic resources.

**Monitoring and evaluation of HIV response:** The guiding document in responding to HIV in Ukraine is the *National Program on prevention of HIV, treatment and care for HIV-positive people and people with AIDS (2009-2013)*. This document, which has yet to be adopted by the Ukrainian Parliament, stipulates that the creation of a system for monitoring and evaluating the actions taken at national and regional levels is one of the key elements in Ukraine’s response to HIV. There is also National M&E Plan of program execution, which defines the list of indicators, the target and basic indicators, methods of data collection and its frequency, and responsible organization.

In 2009, the Program Activities Monitoring and Evaluation Center (M&E Center) was created as a department of the Ukrainian Center for Socially Dangerous Disease Control under the order of Ministry of Health of Ukraine № 236 by 09.04.2009 “on creation of the Ukrainian Center monitoring and evaluation of program activities to fight HIV-infection/AIDS at the Ukrainian Center for AIDS Prevention and Control of Ministry of Health of Ukraine”, and as part of the GF Round 10 funding. The M&E Center has 27 regional departments<sup>11</sup>, which are responsible for data collection and analysis. At the service delivery sites, although the M&E system is established, facility staff, including doctors, reported having to spend a disproportionate amount of their time on paperwork related to statistical reporting.

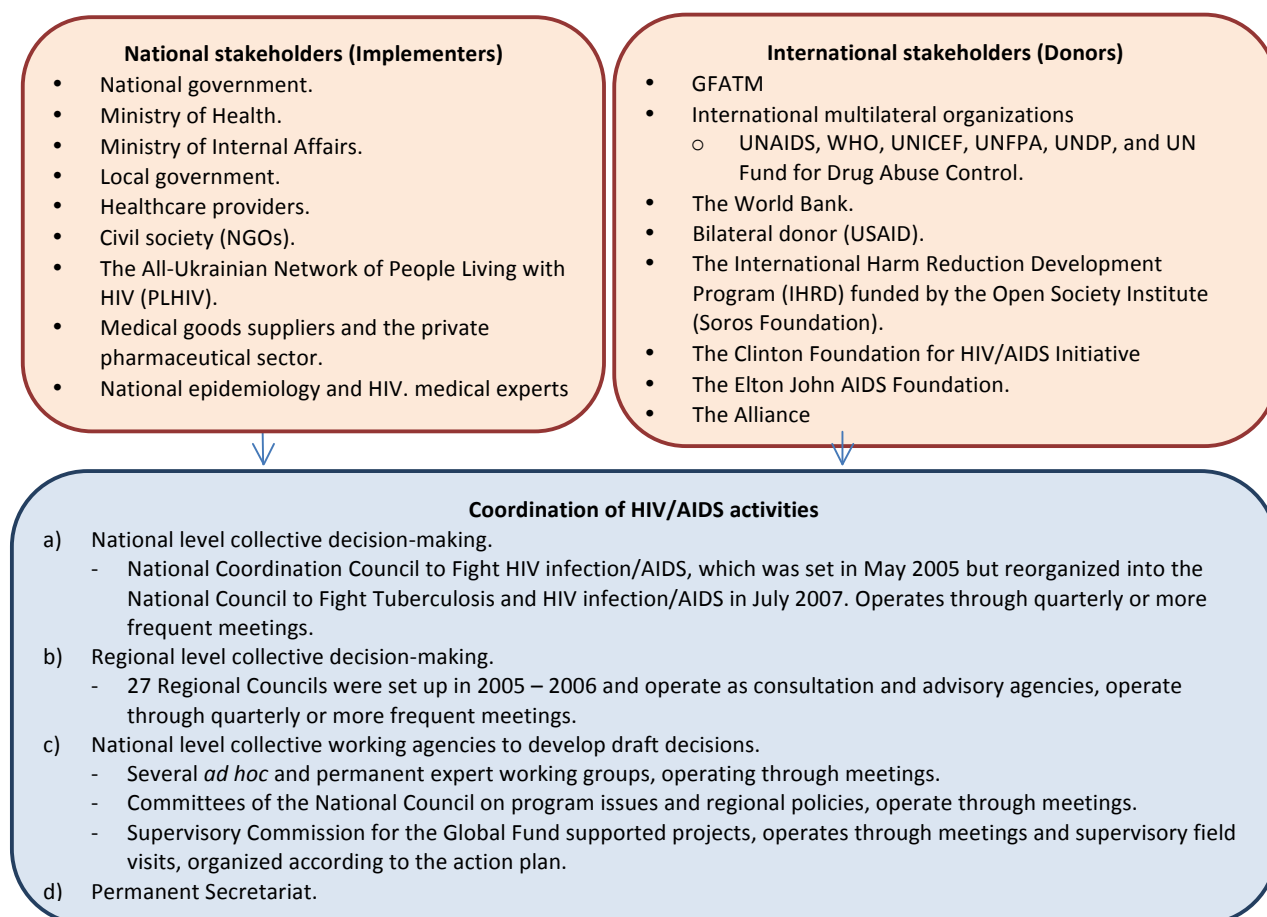
Monitoring and evaluation of HIV response also extends to NGOs that are sub-recipients of Global Fund grants. They are required to submit the programmatic and financial reports on a quarterly

<sup>11</sup> Including two sites formerly in Crimea

basis. The Alliance has also used financing from the Global Fund to introduce a specially developed database to monitor the provision of HIV services to most at-risk populations. It uses unique identifier codes to prevent the double-counting of individuals and enabling a better assessment of service coverage. The software allows for real-time reporting to the Global Fund, and is used by more than 150 NGOs in Ukraine.<sup>12</sup> However, there are several weaknesses. Based on the key informant interviews, it is clear that the Alliance does not specifically link the programmatic and financial performance achieved by NGOs. The financial reports are not checked by financial offices, but are reviewed only by a contracted audit company. Program officers are not required to review financial reports in order to understand the amount of funds spent to achieve the targets, financial officers do not assess the programmatic reports and do not evaluate the cost of program implementation. This represents a missed opportunity for improved decision-making based on known unit costs of running the programmes, and informed NGOs performance conclusions prior to grant disbursements.

**Coordination of HIV response:** Ukraine's response to HIV involves the cooperation among multiple stakeholders at the national and international levels (Figure 3). At the national level, there are several state institutions involved in HIV/AIDS response: Cabinet of Ministers, State Service on HIV/AIDS and other socially dangerous diseases, the Ministry of Health, the Ukrainian Center for Socially Dangerous Disease Control (UCDC), the National Council on TB and HIV/AIDS, the oblast authorities and AIDS Centers.<sup>13</sup>

**Figure 3: Stakeholders and the coordination of HIV response activities in Ukraine**



<sup>12</sup> Alliance. (2012). Final Report of the Program: "Support for HIV and AIDS Prevention, Treatment and Care for Most Vulnerable Populations in Ukraine", August 2007 – July 2012. Funded by GFATM under Round 6 grant.

<sup>13</sup> Establishment of a National Public Health Institute in Ukraine, Rapid Feasibility Assessment Report. Dr. Viorel Soltan, 2013

The International HIV/AIDS Alliance in Ukraine and the All Ukrainian Network of People Living with HIV (PLHIV) have maintained responsibility of managing a variety of NGOs, with most of the targeted preventive services for PWID being implemented by NGOs that are financed by donors. As of 2012, there were more than 120 NGOs contracted nationwide.<sup>14,15</sup>

**HIV response challenges:** A comprehensive evaluation of the national AIDS response in 2009 revealed several weaknesses: low coverage, inadequate scope, variations in quality, high costs, inefficient referral and linkages between social, community level prevention and health services, complex and bureaucratic registration process for people who are HIV-positive, weak linkages between testing and treatment, lack of effective care and support programmes, and costly vertical services of medical care and integrated management of patients.

A review of the National AIDS Program 2009 – 2013 indicated that it failed to sufficiently regulate interaction between the public and civil sectors in terms of cooperation on funding sources, involve NGOs as partners in the process of determining priorities, and ensure referral mechanisms between sectors. It also revealed that priority-setting weaknesses resulted in government funding concentrated on treatment (and not prevention), and that prevention activities for MARPs (harm reduction and prevention of mother to child transmission, PMTCT) were funded by the Global Fund without governmental control of quality and efficiency.

All of these HIV response challenges have hindered efforts to reduce HIV incidence.<sup>16</sup> As a result, the National AIDS Program 2014 – 2018 tasks the State Service with prime responsibility for development, implementation, control and coordination, collaborated with other ministries to determine technical priorities within the allocated budget to resolve urgent epidemic problems, and to create complete list of activities for NAP. Activities are also planned to improve cooperation of central and regional levels.

### 1.3 Rationale, Objectives and Programmatic Focus of the Study

In the context of the changing financial landscape and reduced international resources for HIV/AIDS programmes, maximizing resource utilization to generate the greatest return on investment is central to the discourse of ensuring sustainability of the HIV response in Ukraine. Clearly, one of the key emerging challenges in the country is efficient implementation of the HIV response.

Within this context, the **objective** of the HIV programme efficiency study is to address the key question: ‘How can we deliver uninterrupted HIV programme services to beneficiaries at the lowest cost, to the required coverage and quality?’ Specifically, the study aims to:

- Assess the efficiency of NSP, OST and ART programmes in Ukraine.
- Make recommendations on how to deliver NSP, OST and ART to the beneficiaries at the lowest cost, at agreed quality and ensuring continuum of services.

**Programmatic Focus:** Given that new HIV infections primarily occur amongst PWID and their sexual partners, this HIV programme efficiency study focused on improving the efficiency of HIV services for these populations in Ukraine: (i) Needle and Syringe Program; (ii) Opioid Substitution Therapy; and (iii) Antiretroviral Treatment<sup>17</sup>.

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<sup>14</sup> International HIV/AIDS Alliance in Ukraine (2013). Harm reduction wins the battle against HIV/AIDS in Ukraine, March 7, 2013

<sup>15</sup> Tarantino, L., Chankova, S., Preble, E., Rosenfeld, J. and Routh, S. August 2011. *Ukraine Health System Assessment 2011*. Bethesda, MD: Health Systems 20/20 Project, Abt Associates Inc.

<sup>16</sup> 2007 – 2008 Comprehensive Evaluation of the National AIDS Response in Ukraine, 2009, Ukraine.

<sup>17</sup> The analysis of the ART program will include all people living with HIV and it will not differentiate PWID.



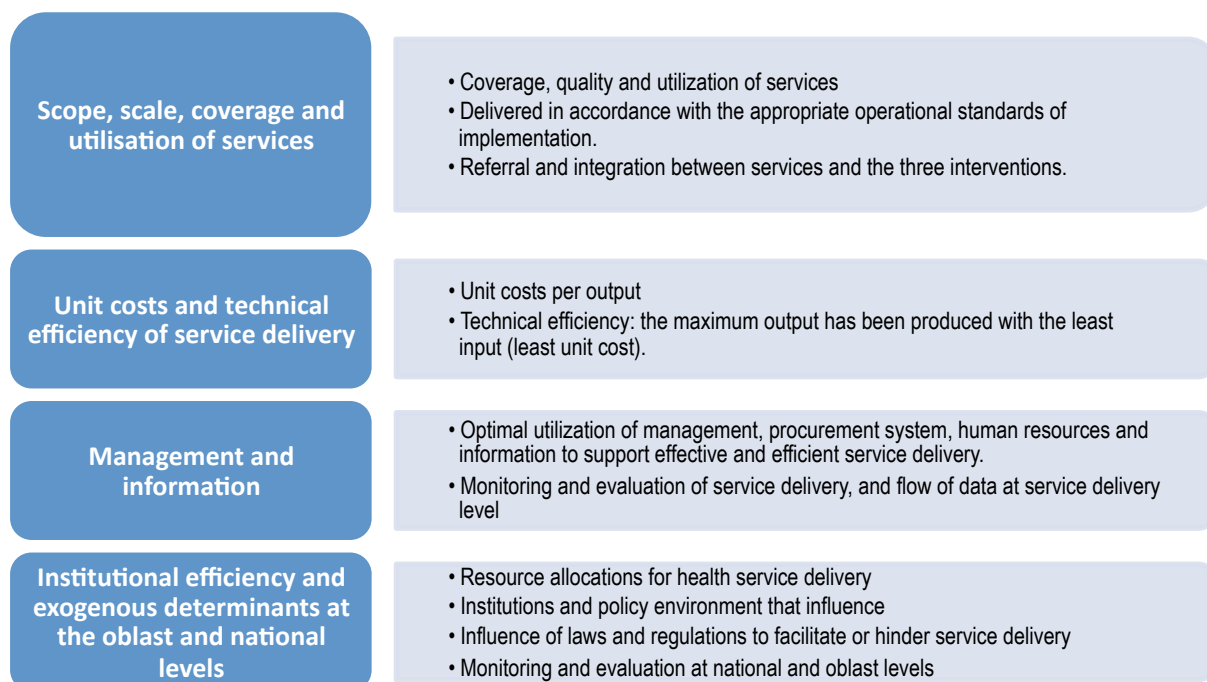
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## 2 STUDY METHODS

### 2.1 Analytic Framework

Efficiency is a measure of whether healthcare resources are being used to get the best value for money. Technical efficiency refers to the relationship between resources (capital and labour) and health outcome. A technically efficient position is achieved when the maximum possible output is obtained from a set of resource inputs.<sup>18</sup> Given the key weaknesses in Ukraine's HIV response, program efficiency will be attained when services are not only delivered in technically efficient ways, but also when management and information systems, resource flow and institutions work efficiently to ensure optimal service delivery conditions. Therefore, delivering a good quality output (service) to the beneficiary at the lowest cost is determined by the optimal implementation of all four components:

Because the HIV services delivered to the beneficiary is the end result of processes at the service delivery and site level, enabled by decisions and support processes at the oblast and national levels, the analytic framework for this study is based on reviewing specific aspects of program efficiency in relation to the three selected HIV services at both the service provider/site level and at the oblast/national levels.



### 2.2 Selection of Study Areas, and Sampling Frame and Strategy for Study Sites

**Selection of study areas:** Based on these criteria – (i) the HIV prevalence among PWID in the oblasts; (ii) the presence of the three services (ART, OST and NSP); (iii) the presence of different models of NSP service provision to allow analysis and comparison; and (iii) data availability and collaboration

<sup>18</sup> For further and brief discussion about efficiency, see Palmer S & D J Torgerson (1999). Definitions of Efficiency *BMJ*. April 24; 318(7191): 1136

with implementing partners – it was agreed that the study will focus on two oblasts: Dnipropetrovsk and Mykolayiv, and one city, Kyiv City (Figure 4). These are referred to as study areas in this report.

**Figure 4: Map of the study areas**



**HIV among PWID, and PWID size estimates, in the study areas:** Mykolayiv and Dnipropetrovsk regions reported high HIV rates among PWID whereas the HIV prevalence among PWID in Kyiv City was slightly lower than the national average (Table 2: Estimates of ). Of the three study areas, Kyiv City was estimated to have the highest number of PWID, followed by Dnipropetrovsk and Mykolayiv (Table 3).

**Table 2: Estimates of HIV prevalence among PWID in the study sites**

	<b>Dnipropetrovsk</b>	<b>Kyiv City</b>	<b>Mykolayiv</b>	<b>Ukraine</b>
<b>2007</b>	16.4%	12.7%	42.5%	
<b>2009</b>	22.7%	23.2%	55.2%	22.9%
<b>2011</b>	41.3%	18.1%	43.8%	21.5%

**Table 3: Estimates of PWID population size and number of PLHIV receiving ART in study sites**

<b>Region</b>	<b>PWID population size</b>		<b>PLHIV receiving ART</b>	
	<b>Number</b>	<b>% total PWID in Ukraine</b>	<b>Number</b>	<b>% total PLHIV on ART in Ukraine</b>
Kyiv city	38,000	13.1%	2,000	7.2%
Dnipropetrovsk	17,000	5.9%	3,669	13.2%
Mykolayiv	10,109	3.4%	2,192	7.9%

*Source: Size estimation report, 2009 & National HIV/AIDS Estimates in Ukraine, 2012*

**Selection of service providers and study sites:** The sampling frame was all sites delivering NSP, ART and OST services in the three study areas. Non-probabilistic purposive sampling was used to select study sites. Site selection was based on the following criteria: (a) the need for all three programmatic

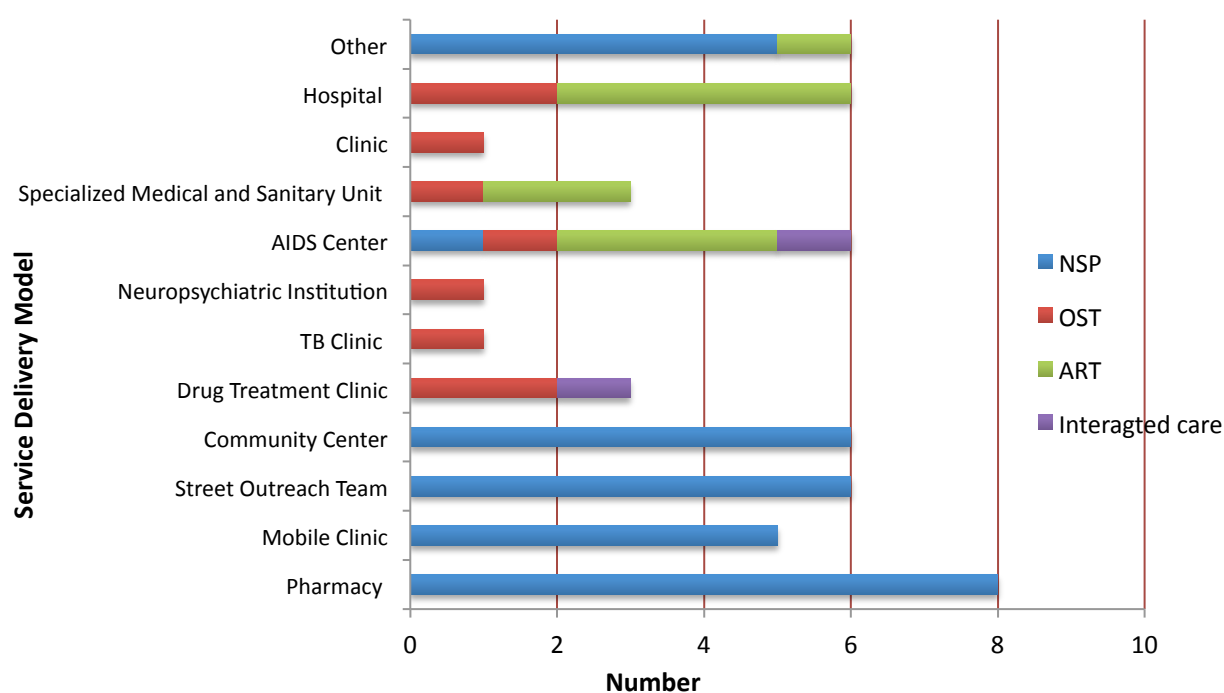
areas to be represented in the sample, (b) all the different models of service delivery to be included (c) integrated sites be included, where possible, (d) public, civil society and private sector service providers to be represented; and (e) at least one rural site to be included. A total of 52 sites<sup>19</sup> from Kyiv City, Dnipropetrovsk and Mykolayiv were identified.

The 52 service provider sites from the three regions included 31 NSP sites, 9 OST sites, 10 ART sites and 2 integrated sites (Table 4). Each integrated site offers both OST and ART services; hence the total number of service providers sampled was 54. All OST sites and integrated sites are managed by the government/public sector. In Figure 5, the breakdown of the service delivery models are presented for the three programmes.

**Table 4: Summary of study sites**

Study areas	NSP	OST	ART	Integrated sites	Total
Dnipropetrovsk	9	3	4	1	17
Kyiv City	13	1	2	1	17
Mykolayiv	9	5	4	0	18
<b>Total</b>	<b>31</b>	<b>9</b>	<b>10</b>	<b>2</b>	<b>52</b>

**Figure 5: Service delivery models represented in the study sites in the study regions in Ukraine, 2012**



Source: Study data, collected in 2012

**Sampling for site level data collection:** For the Phase 1 data collection efforts from sites / service providers, 30 sites were selected purposively from the 54 providers. Ten sites were selected from

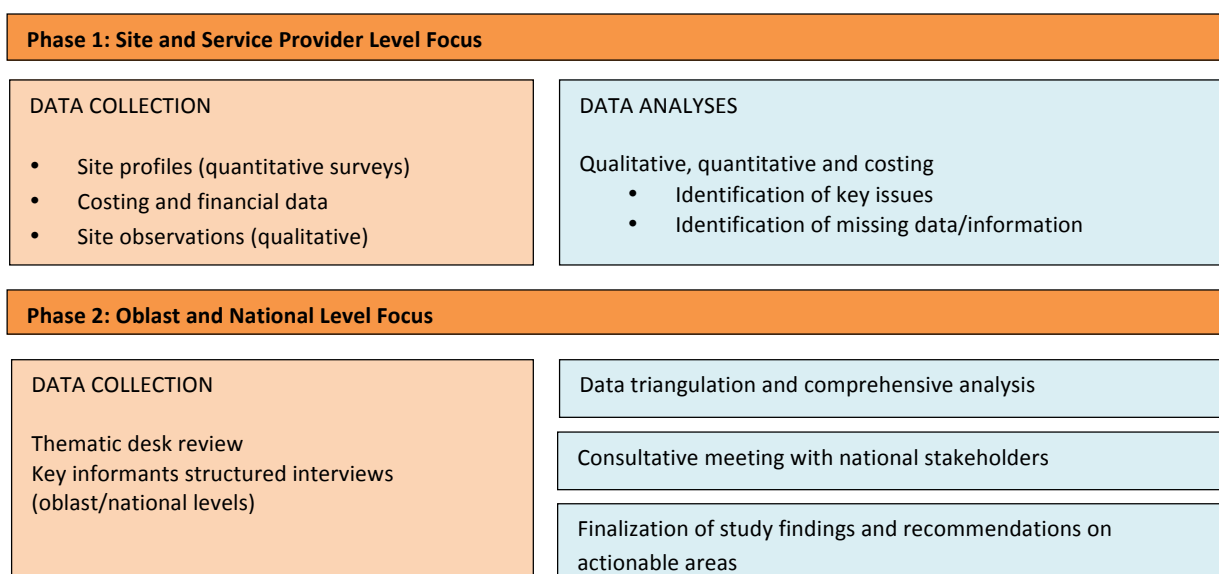
<sup>19</sup> The initial sampling frame identified a total 54 sampled service providers. With two pairs of integrated services sampled (two programmes within one site), the number of sites is reduced to 52.

each of the two oblasts and the remaining 10 sites from Kiev City. The ten sites in each study area were selected based on these criteria: (a) the need to balance sites with many and few clients and (b) stratification in terms of HIV program (NSP/OST/ART), service provider management (government or NGO), and location from the main cities as well as from more remote/out of main city locations.

### 2.3 Data Collection Plan

The study was implemented in two phases. Phase 1 (conducted between August – October 2012) focused on data collection at service provider level and Phase 2 (January – May 2013) focused on oblast and national levels – see Figure 6.

**Figure 6: Schematic representation of Phase 1 and Phase 2 processes**



#### 2.3.1 Phase 1 – Data Collection at Site and Service Provider Level

There were three components of data collection in Phase 1:

##### a) Mapping and Observations

- For each intervention (OST, NSP, ART) the range of services used by clients during the study period was identified and then mapped in two ways. The first was to map the services against those offered by the other sites; the second was to define a group of core services. These core services were defined using the *2012 WHO, UNODC, UNAIDS Technical Guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users*, as a platform and comparing the comprehensive package to the services offered through the sample study sites in Ukraine. Core services were then used to conduct analysis on service offerings, referrals and cost.
- The main objective of the on-site survey interviews is to gather as much information regarding the key operational, management and programmatic features of the service centers. This constitutes comprehensive mapping of the center and the services provided.
- Observation is used to directly examine the processes, content, and timing of interactions between service providers and clients, as well as any external factors that are evident during the process of service provision. Observation requires that an ‘observer’ or data collector

watch and observe a staff member or a volunteer carry out his or her work during the course of a client’s progression through the steps of a particular service access.

**b) Costing data collection and document review**

- The costing tool is a Microsoft Excel spreadsheet formulated specifically to calculate the cost of HIV services at the service provider level. The classifications are:
  - *Program cost*: All costs associated with consumable supplies to support all program services offered by the site. For NSP sites these may include: needle syringes, containers for collection of used needles and syringes, condoms, lubricants, rapid test kits (chlamydia, gonorrhoea), diagnostics for Hepatitis B, HBsAg and Hep C, bandages, cream, wipes, food and Information, Education, and Communication (IEC) materials.
  - *Program staff cost*: Physician, nurse/sister, pharmacist, social worker, physiologist, specialist doctor (infectious disease, gynaecologist, and psychiatrist), biologist and lab technician.
  - *Operational cost*: Rent, communal costs (electricity, water, sewerage and other), communication costs (telephone, fax), vehicle maintenance and fuel (where vehicles not used for service provision), maintenance of medical and non-medical equipment, small administration costs (stationery, printing, etc.), and other (e.g., training).
  - *Operational staff cost*: May include accountant/economist, deputy chief of personnel, driver, janitor, storekeeper, lawyer, consultant, project manager/coordinator and receptionist.
- Secondary data review based on records, reports and other sources of information available on-site. A service record review is a process to review relevant documentation involved in providing services to clients at service delivery point. It aims to assess what is being documented against existing guideline documents including Good Clinical Practice (GCP) guidelines, Standard Operating Procedures (SOPs), manuals and various reports such as monthly, quarterly and annual report.
- Financial data: Figures are in UAH unless specified otherwise, taking an economic costing approach. During data collection building costs (construction and repairs) were collected for the last 5 years (01.07.2007 – 30.06.2012), and both implicit and explicit costs were captured and included. Volunteer staff salaries were included based on comparable estimates from within the dataset (only applied to NSP data).

**c) Service provider interviews and client interviews**

- A face-to-face semi-structured qualitative interview using an interview guide intended for respondents who are service provider personnel.
- A guided in-depth face-to-face interview that specifically caters to the clients or beneficiaries of the service centers.

Table 5 below summarizes the five data collection tools used in Phase 1. A detailed description of the Phase 1 data collection protocol and tools is presented in the Phase 1 Implementation Manual.

**Table 5: Phase 1 data collection tools**

Data collection tool	Type of interview	Respondent/data source	Data components
<b>1. Quantitative mapping</b>	Structured survey	Site manager or main technical personnel	- General description - Services provided - Drugs and supplies - Management - Access - Monitoring and evaluation - Referral and linkages

Data collection tool	Type of interview	Respondent/data source	Data components
			- Exogenous factors
<b>2. Costing data</b>	Record review data compilation	Finance manager and references to financial records	Service provider level unit cost and service provision data
<b>3. Qualitative site observation*</b>	Observations based on a checklist/guide	Data collector/observer on-site	- Time log and processes of client flow from entry to exit - Conditions of site
<b>4. Service provider interview*</b>	Semi-structured interview (qualitative)	Selected service provider staff member	- Service provision roles - Management & operational issues - Referrals and linkages - Challenges - Staff time log
<b>5. Client exit interview*</b>	Semi-structured interview (qualitative)	Selected clients accessing the sites	- Access to services - Service utilization - Costs - Referrals - Strengths & weaknesses of services

\* Only conducted at the selected sub-sample of 30 sites.

Preliminary data review and analysis was conducted at the end of Phase 1. Based on this, data gaps and key areas for further in-depth review were highlighted and later addressed during Phase 2.

### **2.3.2 Phase 2 – Data Collection at City, Oblast and National level**

The Phase 2 data collection process began with the identification of data gaps from Phase 1 and an extensive desk review of key topics identified based on the preliminary assessment of Phase 1 data. These were categorized into five main research themes:

- Services provided through the NSP, OST and ART programmes.
- Overall issues with regards to financing of HIV and health services in Ukraine
- Referrals and linkages among NSP, OST and ART programmes.
- Access to NSP, OST and ART programmes.
- Confidentiality and client privacy at NSP, OST and ART programmes.
- Legal challenges and exogenous factor that affect NSP, OST and ART program operations.

The key topics influencing service delivery efficiency from the desk review were identified and incorporated into the analysis plan. The findings of the desk review were used to supplement the costing and quantitative data analyses in this study, along with the analysis of interview transcripts from both Phase 1 and Phase 2. Further data gaps were also identified, along with the identification of key informants at the national level. A series of face-to-face interviews with the key informants and resource persons, purposively identified at the oblast and national levels, were then conducted by two local consultants, using a semi-structured interview guide.

### **2.4 Data Analysis Plan**

Through the triangulation of data and information obtained from the various data collection components of both Phase 1 and Phase 2, the following analyses were carried out at the national and oblast level, as well as for each of the three selected programmes:

**a) Scope, scale, coverage and utilisation of services**

- Coverage, quality and utilization of services
- Delivered in accordance with the appropriate operational standards of implementation.
- Referral and integration between services and the three interventions.

**b) Unit costs and Technical efficiency of service delivery**

- Unit costs per output
- Technical efficiency: the maximum output has been produced with the least input (least unit cost)

**c) Management and information**

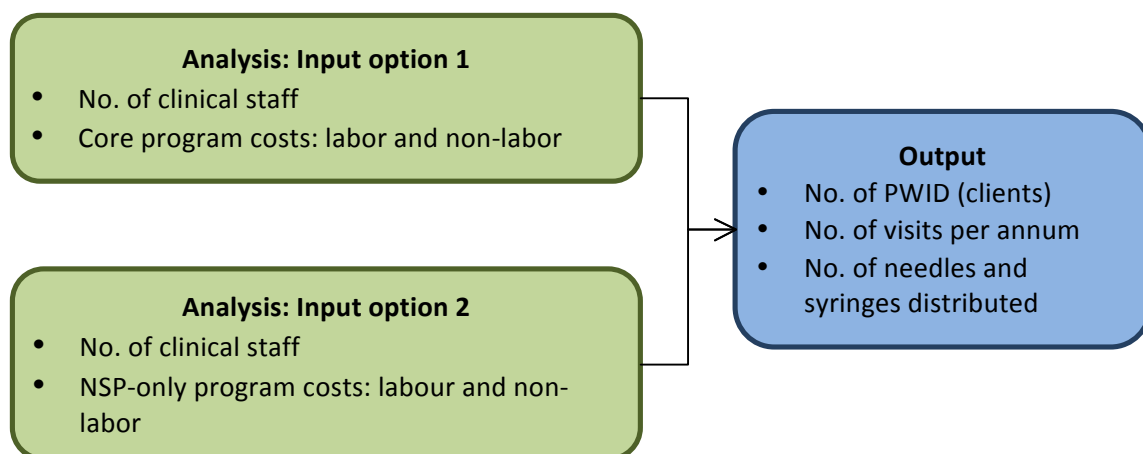
- Optimal utilization of management, procurement system, human resources and information to support effective and efficient service delivery.
- Monitoring and evaluation of service delivery, and flow of data at service delivery level

**d) Institutional efficiency and exogenous determinants at the oblast and national levels**

- Resource allocations for health service delivery
- Institutions and policy environment that facilitate or hinder service delivery
- Influence of laws and regulations to facilitate or hinder service delivery
- Monitoring and evaluation at national and oblast levels

**Choices about technical efficiency analysis:** Technical efficiency is a measure of *how much can output be increased while keeping the level of inputs constant*. Data envelopment analysis (DEA) was used for the NSP sites to determine the extent to which NSP outputs be increased while keeping the level of inputs constant. DEA analyses were not conducted for OST and ART services because the sample size for ART and OST sites were too small. The following parameters governed the DEA analysis for the NSP sites:

*Selection of inputs:* In executing a technical efficiency analysis, a decision needs to be made about which inputs are used. It was decided that the DEA would be done for 2 input options and the following outputs:



*Exclusion of outlier sites:* For each input option, two sets of results were produced: in the first instance, the outputs from all 29 NSP sites were included in the technical efficiency analysis and in the second instance, the outputs from sites with unit costs more than 2.5 standard deviations from the sample mean of the original data were excluded.



**Other analyses:** Further, the following analyses were performed:

- Analysis of variance (ANOVA) was used to assess the association between NSP, OST and ART costing and program attributes, where the explanatory variables were categorical.
- Linear regression was used to assess the association between NSP, OST and ART costing and program attributes, where the explanatory variables were continuous.
- The output variable (program unit cost) was natural log transformed to achieve normality. The number of hours a service was open per week was also natural log transformed to improve model fit.

**Selection of indicators for measuring outputs and definition of core services:** Where possible, site performance indicators for the three programmes are presented based on the WHO/UNODC/UNAIDS Comprehensive Package for HIV Prevention, Treatment and Care among People Who Inject Drugs. Performance is classified in terms of availability, coverage and quality.

**Annualized capital costs:** Annualized Capital costs were calculated using the individual cost and date of acquisition data provided by each site in the HIV Program Efficiency Study survey between July 2011 to June 2012 on specific capital items (including building costs [within the last 5 years], vehicles, medical and non-medical equipment). Using methods and data provided in the “Workbook for the collection of cost information on HIV facilities and services, UNAIDS 2011” on the useful lifespan of items and the annualized discount approach, the following data and calculations were applied to the individual items.

Frequently used lifetime values for capital goods<sup>20</sup>:

Buildings - 30 years  
Vehicles - 5 – 10 years

Beds, tables, other furniture - 10 years  
Computers - 3 – 5 years

**Discount rate:** A discount rate of 3% was applied. This rate was then used together with the number of years (lifetime value) to determine the appropriate factor.<sup>21</sup> Annualized capital costs were calculated as [Cost of item] divided by [3% discount factor applicable to lifetime value of items]. Annualised capital figures were then added to the other annual costs to determine total annual costs per site.

## 2.5 Study Limitations

- **Uncertainty about full time equivalent (FTE) of staff working at the facility:** Data from the sites did not always include specification as to the degree to which a staff member was part-time. Due to this limitation, analysis could not be done using FTE numbers. Figures presented in this report used the number of clinical staff per site, as provided by the sites.
- **Proportion of staff time spent on service delivery not observed:** Data on how staff spent their time between administrative and patient-oriented tasks were collected through observations of 21 staff at five sites. These two data limitations restricted analysis, and as a result, the study was unable to provide specific recommendations on staff composition levels. However, staff mix is included per site as is the staff composition at the best performing sites.
- **Definition of NSP sites and some sites not available:** For the purpose of this study, primary data were collected at the sites served by the mobile clinics. For instance, during the observation

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<sup>20</sup> In cases where the date of acquisition was earlier than the maximum ‘frequently used lifetime value’ this number was used instead.

<sup>21</sup> See Annex 1: Annualisation factors of ‘Workbook for the collection of cost information on HIV facilities and services, UNAIDS 2011’.)

period at one particular mobile clinic in this study, a two-person team (a psychologist and a social worker) conducted its operations by moving from one apartment unit to another. These functioned as temporary drop-in sites. One limitation of this approach was that mobile clinics operated according to pre-determined schedules. Two mobile clinic sites in Kyiv City, operated by one mobile clinic, did not offer NSP services to NSP clients during the observation period; instead the sites offered services to female sex workers. As a result, service provision data was not available for these two sites.

- **Operation of ART sites:** One of the sampled ART sites (coded M\_#1) was only in operation for eight months at the time of the data collection. Data, including the number of clients, was limited. Hence, this site was excluded from the analysis.
- **Challenges with the integrated sites:** For the two integrated ART+OST sites, there were two main issues: (a) it was difficult to determine the separation of staff time use between ART and OST services; and (b) shared costs were allocated between ART and OST components of the sites through proportional allocation based on the volume of client visits for ART and OST services.
- **Hawthorne effect:** In some components of the data collection, face-to-face interviews were conducted and some direct observations were made e.g. the time spent on tasks by service providers. That the study participants were aware that the information they provide will be assessed in some way to measure efficiency, and that they may have perceived this as an assessment of their own individual performance, may potentially influence their responses and performance while under observation.
- **Analysis:** Overall, the level of analysis feasible was limited due to the small sample size (number of sites). As such, only univariate analyses were performed. Further, DEA provides efficiency scores that only apply to those sites in the sample. Due to measurement errors and outliers, we re-ran the model to remove sites whose output-to-input ratios were more than two-and-a-half standard deviations from the sample mean. Both sets of results are presented.

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### 3 RESULTS OF NATIONAL AND OBLAST LEVEL ANALYSIS

#### 3.1 Context within which HIV Services are Delivered: Ukraine's Healthcare System

The framework of Ukraine's healthcare system retains all the core features of the Semashko integrated healthcare model.<sup>22</sup> Developed in the Soviet Union in early 1920s, this model is based on a highly centralized system of publicly owned medical institutions that are financed and regulated by central authorities through universal and strong vertical command<sup>23</sup>. A limited number of decisions are delegated to the regions and local levels. However, in the last 20 years, there has been some decentralization of healthcare.

The national Ministry of Health coordinates the health system through regional health authorities, which are structural subdivisions of local administrations but are functionally under its jurisdiction. Ministry of Health also manages the health care system according to an administrative, budgeting and accountability hierarchy and directly finances only vertically managed services, including HIV/AIDS services. At the regional level the Ministry of Health (MOH) of the oblasts and Kyiv City health administration are accountable to the national Ministry of Health for national health policies within their jurisdictions. At the local level, primary and secondary care facilities and hospitals are owned by the various tiers of local self-government.

Although the majority of treatment or other medical services are provided by government health care facilities, there are a growing number of private health care providers. For example, almost all pharmacies in the Ukraine are privately owned and managed. Each health department at the local level is responsible for the health facilities located in its area and is functionally subordinate to the MOH, but managerially and financially accountable to the respective local government. This situation sometimes causes difficulties in health policy implementation, in terms of decisions and policies being made at the national level relying on local decision makers for implementation.<sup>24</sup>

#### 3.2 Health Financing in Ukraine

The health expenditure in Ukraine has increased from US\$ 9.1 billion in 2009 to US\$ 12 billion in 2011, an approximately 30% increase. An average of about 13% of funding from the total national budget was allocated to the health sector between 2009 and 2011. Health expenditure per capita has increased from US\$ 200 in 2009 to US\$ 265 in 2011. Approximately 55% of this amount is financed by taxation (public expenditure), with the remaining 45% coming from households' out of pocket expenditures at the point of service.

Most health financing comes from general government revenues raised through taxation. About 20% of all health sector spending comes from the MOH via vertical health programs, while most of the public spending on healthcare in Ukraine is delegated to sub-national budgets. Local budgets receive a considerable share of funds through equalization transfers from the central government that are based on demographic variables<sup>23</sup>. Local funds are spread among rayon/municipal and regional budgets. At the time of the study, regional health budgets included the budgets of 27 oblasts: the Crimea AR, the 24 oblasts and two cities (Kyiv and Sevastopol) which have the same status as an oblast. While the MOH provides guidance on the planning of health services, the oblasts and local governments are responsible for the finance and management of health service delivery within their

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<sup>22</sup> See 'Table 1 The Roles and Responsibilities of the State Organs Involved (schematic)' to mapping of overlapping roles and responsibilities in relation to coordination of the National AIDS response.

<sup>23</sup> "How is it working? Measuring governance in the health system in Ukraine", WB report, 2013

<sup>24</sup> See 'Table 1 The Roles and Responsibilities of the State Organs Involved (schematic)' to mapping of overlapping roles and responsibilities in relation to coordination of the National AIDS response.

jurisdictions.<sup>25</sup> These are subject to regulation by the MOH for compliance with health standards as well as financial accountability.

Regional health administrations finance their health facilities from their own budgets. Local health authorities or local administrations (if they have no separate health authorities in their structure) finance health care facilities under their jurisdiction from the relevant municipal health budgets.

Current rules for budget planning and execution are complex and rigid, making in-year adjustments a long and difficult process. The legislation which drives budget execution is comprehensive and elaborate; with very detailed guidance for cases when in-year adjustments need to be made, allocating expenditure appropriations either between lines or between the months of the year.

As budget spending units, public health facilities operate on the basis of a “Monthly Instalment Plan”, which divides the facility’s annual budget into monthly spending ceilings. The Monthly Instalment Plan is developed by the facility as part of their budget planning. For every spending unit, the Monthly Instalment Plan becomes one of the key documents in the process of authorization and release of funds. Development and approval of the Monthly Instalment Plan is a very long and complex procedure, any amendments are equally time-consuming and must follow the same lines and rounds of consultations, verifications, agreement and approval.

The complexity of the system often works against the need for flexible cash management, making it very difficult to introduce changes. Even for small adjustments, flexibility for reallocation is minimal and within unprotected items only<sup>26</sup> (which is a very small share in the first place). The procedure involves detailed explanation and justification for the change, and, in the case of provisional agreement with healthcare authorities, a subsequent process of budget amendments (preparation of proposal, consultations with the local administration, voting at the local council, and coordination with the Treasury).

### 3.3 Government Resource Allocations to Health Facilities

Resource allocation for health facilities is based on an historical approach, with adjustments made for inflation or other budgetary issues<sup>27</sup> and the program’s approach). Payments to health facilities are made strictly according to line-item budgeting procedures and input norms under the Semashko system, and are related to the capacity (e.g., number of beds) and staffing levels of individual facilities rather than the volume or quality of services provided. The management of individual facilities is delegated to chief doctors who are given significant freedom to establish in-house rules (e.g. staff selection, performance assessment and service quality control, utilization of out-of-pocket financial expenses, and public procurement).

Ukraine’s health budgetary system and resource allocation model have implications for both the delivery and financing of the country’s response to HIV, including the three regions discussed in this report. There are notable challenges associated with budgetary and financial resource allocation decisions at the national, regional and local level. While funds are spent at the local level, the decisive authority is not with local governments, leading to a misalignment of administrative and financial responsibilities at the local and regional levels. Local administrations have very little discretion in allocating funds and administering programs. Decision-making (including facility-level budgeting) is subject to a rigid vertical structure of input norms imposed by ministerial orders.

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<sup>25</sup> Tarantino, L., Chankova, S., Preble, E., Rosenfeld, J. and Routh, S. August 2011. *Ukraine Health System Assessment 2011*. Bethesda, MD: Health Systems 20/20 Project, Abt Associates Inc.

<sup>26</sup> Protected items are salaries, medical supplies and cost of utilities. All other budget lines are considered as unprotected.

<sup>27</sup> For example, medical facilities’ maintenance budget also includes human resources salary expense.

Moreover, healthcare facilities find themselves at the ‘mismatch’ frontline between available resources and service delivery mandates, absorbing the resulting ‘unfunded’ costs and, where possible, shifting them on to the patients. Administrators need to not only present their budgets, respecting impossible norms, but also find a way to provide actual services within their budget envelopes.

There have been reports of delays in the disbursement of grants, particularly the GF grants.<sup>28</sup> In some instances, the delays have exceeded one month, affecting the timely implementation of agreed work plan programs. It was explained as due diligence, thus a month’s buffer was given to ensure program implementation was not affected by delays.

### **3.4 Volume of and Processes for HIV Program Allocations by Government**

The Ministry of Health oversees and manages national funds for AIDS and the AIDS control programs. The programs are approved either by executive order or by law. The 5-year budgets of the National AIDS Program are approved by the Parliament of Ukraine, and according to the Ukrainian legislation the budget for each particular year is approved by Law separately on the State budget for a respective year.

While the historic approach remains the primary strategy for determining health care budgets, a targeted program approach is used for HIV/AIDS programs<sup>29</sup>. These programs are structured vertically and funded jointly by the MOH and respective local government health budgets with some contribution from Global Fund.

With the exception of a couple of pilot regions, resource allocations to HIV programs are assigned according to strict line-item budgeting procedures under the Semashko approach, which is in turn based on norms set by the Ministry of Health or Ministry of Finance. These norms depend mostly on the input capacity of a health facility and are usually not connected with the real needs of patients or performance measures. An average of 0.7% of Ukraine’s health care budget was spent on HIV and AIDS between 2009 and 2010 (Table 6).

**Table 6: Overview of national health funding and HIV/AIDS funding in Ukraine, 2009 – 2011**

	<b>2009</b>	<b>2010</b>	<b>2011</b>
Total expenditure on health (UAH) <sup>a</sup>	71,236,000,000	84,522,000,000	95,543,000,000
Total expenditure on health (US\$) <sup>a</sup>	9,143,135,846	10,650,990,473	11,991,440,333
Percent of national government expenditure on health as a total of national government budget	12.8%	12.7%	12.8%
Percentage of health expenditure on HIV/AIDS <sup>b</sup>	0.72%	0.68%	n/a
<i>Harm Reduction program for PWID</i>	0.04%	0.04%	n/a
<i>ART</i>	0.14%	0.16%	n/a
Percentage of external (donor) resources for health	0.25%	0.26%	0.41%
Private expenditure on health as percentage of total expenditure on health	45.0%	43.4%	44.3%
General government expenditure on health as percentage of total expenditure of health	55.0%	56.6%	55.7%
Out of pocket expenditure on health as percentage of total private expenditure	42.0%	40.5%	41.5%
Health expenditure as % of GDP	4.3%	4.41%	4.0%
Total HIV expenditure (UAH)	509,446,463	578,340,208	n/a

<sup>28</sup> GFATM. (2012) Audit of Global Fund Grants to Ukraine. GF-OIG-10-016, 3<sup>rd</sup> August 2012.

<sup>29</sup> TB, reproductive health and cardiovascular diseases are among other disease area considered to be targeted programs in Ukraine.

## Ukraine HIV Program Efficiency Study: HEALTH SYSTEM AND HEALTH FINANCING CONTEXT

	2009	2010	2011
<i>Per capita (UAH)</i>	11.14	12.73	n/a
<i>% of GDP</i>	0.06%	0.05%	n/a
<i>Total HIV expenses (US\$)</i>	65,387,420	72,879,204	n/a
<i>Per capita (US\$)</i>	1.43	1.60	n/a
Health expenditure per capita (UAH)	1,558	1,860	2,114
Health expenditure per capita (US\$)	200	234	265

Note:

a. Includes out-of-pocket expenditures.

b. Excludes out-of-pocket expenditures.

Source: Health expenditure series, WHO, Geneva & Ukraine Harmonized AIDS Response Progress Report Jan 2010 – Dec 2011

### 3.5 HIV Financing in the Study Areas

Upstream costs fluctuate and vary between areas as shown in Table 7 (based on data from the National AIDS Spending Assessment). In 2010 upstream support costs comprised 34% of the Mykolayiv regional total. The largest component of upstream expenditure was for human resources.

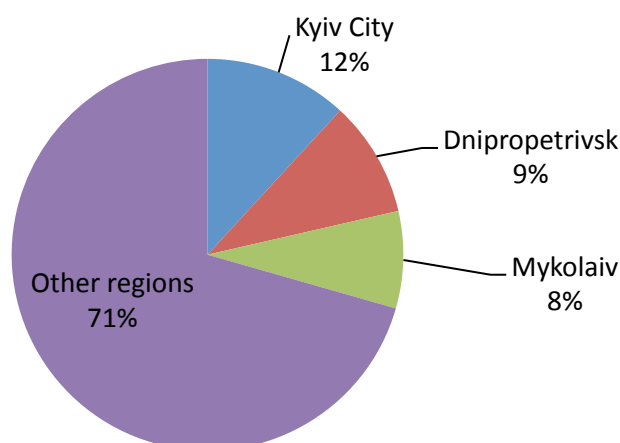
**Table 7: Program spending for the study sites (2009 and 2010)**

	Dnipropetrovsky				Kyiv City				Mykolayiv			
	2009		2010		2009		2010		2009		2010	
	UAH	%	UAH	%	UAH	%	UAH	%	UAH	%	UAH	%
<i>Total spending for OST and percentage on HIV/AIDS</i>	777,561	2%	1,507,447	4%	1,389,709	3%	1,676,610	3%	1,073,821	3%	1,051,784	3%
<i>Total spending for NSP and percentage on HIV/AIDS</i>	1,668,180	4%	2,256,431	5%	4,292,095	9%	2,824,423	6%	1,530,217	5%	1,584,422	5%
<i>Total spending for ART and percentage on HIV/AIDS</i>	15,397,654	39%	26,192,076	63%	17,785,861	39%	20,199,199	39%	17,737,908	54%	13,942,527	40%
<b>Total funding for OST, NSP and ART, and percentage of the oblast budget on HIV/AIDS</b>	17,843,395	46%	29,955,954	72%	23,467,665	51%	24,700,231	48%	20,341,946	61%	16,578,733	48%
<b>Other HIV/AIDS expenditure (prevention, care and support, treatment)</b>	11,836,057	30%	10,584,418	26%	13,712,976	30%	12,309,741	24%	5,758,303	17%	6,204,584	18%
<b>Other HIV/AIDS expenditure (upstream support)</b>	9,406,476	24%	928,244	2%	8,901,995	19%	14,265,670	28%	7,040,584	21%	11,932,243	34%
<b>Total spending for HIV/AIDS</b>	<b>39,085,927</b>	<b>100%</b>	<b>41,468,616</b>	<b>100%</b>	<b>46,082,637</b>	<b>100%</b>	<b>51,275,642</b>	<b>100%</b>	<b>33,140,833</b>	<b>100%</b>	<b>34,715,560</b>	<b>100%</b>

Note:\* Figures may total exactly due to rounding.

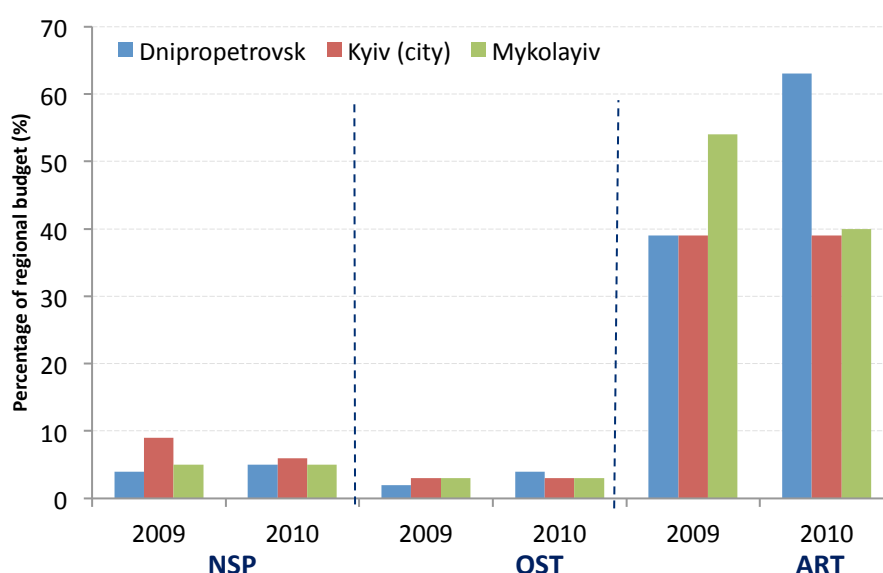
Source: NASA, study team analysis

Figure 7: Proportion of regional budget spent in the three study areas in 2010 in Ukraine



Source: Study data, collected in 2012

Figure 8: Percentage of budget spent on NSP, OST and ART at the study sites in Ukraine in 2010



Source: Study data, collected in 2012

In Kyiv City, the substantial majority (78%) was spent on human resources while in Mykolaiv the majority of expenditure was split between human resource and construction (55% and 31%, respectively). In Dnipropetrovsk, HIV spending was more evenly spread between human resources, advocacy, construction, and to a lesser extent, program support.

### 3.6 Challenges for Improving the Efficiency of Health Budget Allocations and Health Service Delivery at the National and Oblast Levels

- Ministry of Finance can veto programmes or funding amounts for which Ministry of Health has programmatic responsibility.
- Budget reallocation procedures are rigid, time-consuming and complex, involving a number of



regional bodies as well as State Treasury.

- Resource allocation for health facilities is based on an historical approach, with adjustments made for inflation or other budgetary issues (e.g., medical facility's maintenance budget, which includes expenses for salaries [human resources]) and targeted program approach (program performance's budget).
- Allocation and payment of resources to facilities are based on strict line-item budgeting procedures relating to input capacity (e.g., number of beds) and **not** volume of demand or community needs.
- Health facilities have to spend funds as allocated. Reallocations are possible, but are generally restricted by bureaucratic procedures.
- Inconsistent regulation regarding out-of-pocket payments.
- Any change in the facility's income and expense estimates must be approved by the local authority.
- Some inconsistencies and uncertainties exist with regards to the use of unspent funds at the end of the year. In some cases, if there are any unspent funds at the end of the fiscal year, authorities will reduce facilities' budgetary allocations for the next year by that amount. In other cases, the unspent funds are either returned to the budget or remain on the account to be considered as the share for the next fiscal year's budget to be spent according to its budget line.

These challenges mean that there are no incentives for facilities to save or use funds efficiently, and no provision for local authorities to adjust their services (and funding) to service changing community demands. It leads to service providers developing workarounds to fund the ensuing gaps, (requests for out-of-pocket payments from health care clients and/or service provision/quality shortfalls).

## 4 RESULTS AT PROGRAMME LEVEL: NEEDLE AND SYRINGE PROGRAM

The Needle and Syringe Program in Ukraine is the cornerstone of the harm reduction strategies to prevent HIV infection equipment among PWID through the sharing of contaminated syringes and injecting equipment. In 1998, Ukraine officially adopted harm reduction as state policy for HIV prevention among PWID, including governmental support under the National AIDS Law and National AIDS Plan for needle exchange.

The NSP service delivery in Ukraine is available in several models.<sup>30</sup> Since the onset, the NSPs have been established and implemented by the HIV International Alliance—Ukraine, funded through GF funding. Nominally, the needs of NSPs are determined by the ICF Alliance’s Programmatic Department. However, individual NGOs have a significant degree of influence in establishing the kind of programmes offered at NSP sites. NSP sites are implemented by NGOs contracted by the HIV Alliance Ukraine.

The work of Alliance-Ukraine requires a high level of coordination with the government. In some instances, government AIDS centers will invite local NGOs supported by Alliance-Ukraine to share their office space. Patients who receive counseling and testing services provided by government physicians in one room, are referred to local NGOs occupying another room in the same facility for other support services. Drop-in centers run by local NGOs invite government workers to provide counseling and testing on a mobile basis, bringing these essential services closer to clients in environments where they feel welcome and comfortable. Furthermore, some of the Alliance-Ukraine’s implementing partners have begun to offer rapid tests in their drop-in centers and mobile clinics. Volunteers or NGO staff often accompanies clients to the center.<sup>31</sup>

By December 2011, there were a total of 1,667 NSP sites nation-wide, giving a ratio of six NSP sites per 1,000 PWID in the country.<sup>32</sup> Although more than half of PWID (54.1%) were reached with HIV prevention programmes in Ukraine, only 5.8% of PWID have regularly accessed the NSP in 2011. Based on the WHO, UNODC, UNAIDS technical guide for setting targets for universal access, this NSP coverage remains inadequate<sup>33</sup> at the national level.

### 4.1 Scope, Scale, Coverage and Utilisation of NSP Services in the Three Study Areas

The NSP sites selected in this study have different service delivery models, including through pharmacies, mobile clinics, street outreach teams and community centers. Each model is adapted to local settings and needs, and response to different contexts. Each model, therefore, plays a role in the success of the intervention.

#### 4.1.1 Summary: NSP Program Coverage Indicators

In the Integrated Bio-Behavioral Survey (IBBS) 2011, the majority of respondents reported using sterile syringes or needles in their recent injecting episode and did not use syringe or needle previously used by another person. Only 7.9% indicated sharing injection.<sup>34</sup> The same IBBS suggested

<sup>30</sup> Other Harm reduction services provided to PWID include outreach, information and education, referrals for additional medical and social assistance, distribution of condoms and treatment of STIs, primary medical aid, and legal advice. The Alliance-funded program provides some additional services such as drug-use counseling, voluntary, counseling and testing for HIV-infection by rapid tests and diagnostics for STIs.

<sup>31</sup> UNAIDS. (2010). The International HIV/AIDS Alliance in Ukraine: Promising Approaches to Combination HIV Prevention Programming in Concentrated Epidemics. This publication was produced by the AIDS Support and Technical Assistance Resources (AIDSTAR One) Case Study Series. May 2010.

<sup>32</sup> Ministry of Health Ukraine, 2012. Ukraine Harmonized AIDS Response Progress Report (UNGASS) 2012.

<sup>33</sup> WHO, UNODC, UNAIDS Technical Guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users – 2012 revision: less than 20% - low; 20 – 60% - mid; more than 60% - high.

<sup>34</sup> Ministry of Health Ukraine, 2012. Ukraine Harmonized AIDS Response Progress Report (UNGASS) 2012.

that, at the national level, three PWID HIV programme coverage gaps are evident: (i) the proportion of PWID reached is still low—a previous report stated that in 2011, the proportion of PWID reached through HIV prevention programmes was 54% of total estimated PWID<sup>35</sup>; (ii) of those PWID reached, the frequency of contact is not regular—only 5.8% come in regularly i.e., at least once per month<sup>36</sup>; and (iii) those who are reached are not receiving enough sterile needles to change injecting behavior, based on the estimated number of sterile injecting equipment given out per PWID.

Table 8 provides a snapshot of the service coverage of the NSP programmes in the study sites compared to the national level. This data suggests that service coverage of PWID programmes in the three study areas is higher than in the rest of Ukraine.

**Table 8: Performance indicators for NSP sites**

NSP	Indicators	Year	Data
<b>Availability</b>	6 NSP sites (including pharmacy sites providing no-cost needles and syringes) per 1,000 PWID in Ukraine	2011	Secondary
	1667 NSP sites in Ukraine	As of 1 Jan 2012	Secondary
<b>Coverage</b>	5.8% PWID regularly reached by NSPs in Ukraine	2011	Secondary
	54.14% PWID reached with HIV prevention program in Ukraine <i>Numerator: Number of PWID who accessed an NSP in the past 1 month; Denominator: Number of PWID</i>	2011	Secondary
	Number of syringes distributed per PWID per year: <b>75.3</b> in Ukraine	Jan 2010 – Dec 2011	Secondary
	Number of syringes distributed per PWID per year: <b>56 in Dnipropetrovsk</b> (Note: Based on 9 sample sites for each region)	Jul 2011 – Jun 2012	Primary
	Number of syringes distributed per PWID per year: <b>136 in Kyiv City</b> (Note: Based on 13 sample sites for each region)	Jul 2011 – Jun 2012	Primary
	Number of syringes distributed per PWID per year: <b>101 in Mykolaiv</b> (Note: Based on 9 sample sites for each region)	Jul 2011 – Jun 2012	Primary
	Number of syringes distributed per PWID per year: <b>98 in average for 3 regions</b>	Jul 2011 – Jun 2012	Primary
	<b>NSP occasions of service (total contacts) in specified reporting period</b>		
	<b>162</b> per 100 PWID across 3 regions (High)	Jul 2011 – Jun 2012	Primary
	<b>49,000</b> 288 per 100 PWID in Dnipropetrovsk Note: Based on 9 sample sites for each region (High)	Jul 2011 – Jun 2012	Primary
	<b>35,000</b> 92 per 100 PWID in Kyiv City Note: Based on 13 sample sites for each region (High)	Jul 2011 – Jun 2012	Primary

<sup>35</sup> Ibid.

<sup>36</sup> Thematic report on PWID

NSP	Indicators	Year	Data		
	<b>22,000</b> <b>216</b> per 100 PWID in Mykolayiv Note: Based on 9 sample sites for each region (High)	Jul 2011 – Jun 2012	Primary		
Quality	NSP sites adhering to UNAIDS best practice recommendations for HIV prevention among PWID in Ukraine (3 regions): <i>Based on 31 sites (3 regions) only 1 site included reference to UNAIDS guidelines in conjunction with MOH and WHO guidelines</i>	Jul 2011 – Jun 2012	Primary		
		Dnipro.      Kyiv City      Mykolayiv			
	Clients access an NSP and receive IEC	14%	60%	31%	Primary
	Clients access an NSP and receive condoms	94%	84%	81%	Primary
	Number of condoms per contact	4	8	2	Primary

#### 4.1.2 NSP Service Delivery Models

In the three study areas (across the 31 NSP sites), NSP is delivered through four different models: pharmacies, mobile clinics, street outreach teams (including secondary syringe exchange), and community centers (see Table 9). Each model is adapted to local settings and needs, and responds to different contexts. Each model, therefore, plays a role in the cumulative effect of the harm reduction interventions by reaching different sub-populations of PWID.

**Table 9: Model of service provision for NSP**

Delivery Models	Description
<i>Pharmacy-based</i>	<p>Pharmacy-based HIV prevention service is an innovative model utilized in Ukraine to implement needle and syringe programmes for PWID. This approach has been reported as having increased the capacity to reach new clients.<sup>37</sup> According to HIV Alliance-Ukraine, at the end of 2010, 123 pharmacies (32% municipal and 68% private pharmacies) delivered HIV prevention services for PWID in cooperation with 25 NGOs in 13 regions in Ukraine.</p> <p>The pharmacy-based NSP includes free syringe distribution/exchange, distribution of alcohol swabs, condoms, IEC materials and other services. The HIV Alliance-Ukraine supplies the pharmacies through the NGOs operating in the area, and the pharmacists would contact the NGO for replenishment of supplies. PWID dispose used needles and syringes in designated containers in the pharmacies, and removal of the containers are secured by NGOs/social workers through collaborative agreements between the NGOs and the pharmacies. In one of the pharmacies sampled in this study, this container was a box placed near the front entrance of the pharmacy. The participating pharmacies also provide referrals to NGOs and healthcare facilities for HIV and Sexually Transmitted Infection (STI) testing.</p>
<i>Mobile clinics/outreach</i>	<p>The mobile clinic is an outreach service delivery model utilized to make HIV prevention and medical services available to PWID (along with other at-risk populations) who are reluctant to utilize the other forms of services. Mobile clinics are fully or partially operated by NGOs and provide NSP, IEC, condoms, STI testing as well as HIV testing and counseling services, and other medical services. The mobile clinics operate at community hotspots by a team of medical doctors (especially infectious disease doctors, narcologists, dermatovenereologists and gynaecologists), nurses and social workers, and hired part-time staff who provide services in the mobile clinics for a specific time-set. The mobile clinic operates at different hot spots on a specific agreed upon schedule. Outreach workers</p>

<sup>37</sup> APMG, 2010.

Delivery Models	Description
	<p>inform PWID and other at-risk populations about availability of the mobile clinics and services provided.</p> <p>A mobile clinic model uses a large bus with white, non-transparent windows. The bus bears a Mobile Clinic sign and the official NGO logo. The interior is separated into two main compartments or ‘rooms’, with comfortable conditions and protecting client privacy. At least one doctor from the AIDS Center is part of the service team, and they help facilitate links for clients who may need to be referred to the Centers. Mobile clinic networks are not available at national coverage level with survey data showing that some clinics operate for as little as 2 hours per week, and others for up to 25 hours per week.</p>
<p><i>Community Peer-Driven intervention</i></p>	<p>NSP service delivery through community-based interventions is usually combined with a one-stop shop approach. It relies on establishing contact, trust and delivering health and HIV-related messages, behavioral change communication and referral, through an individual or group approach. Community outreach is mostly achieved through Peer-Driven Interventions.<sup>38</sup> It relies upon people who currently inject drugs to implement tasks in exchange for incentives. Current injectors are recruited and trained by peer outreach workers.</p> <p>One particular model for community outreach is through the <i>secondary syringe exchanger</i>. This model relies on the person injecting drugs, or a volunteer/outreach worker, who accesses a NSP site to collect sterile injecting equipment not only for their own use, but also for distribution to other injectors. In one such model sampled in this study, an NGO staff member collects needles and syringes from the NGO center and was observed transporting these in large, heavy bags across town using public transportation. At a site, a makeshift service desk was set up, usually on a fixed day and time in clear view of surrounding residential buildings. It is here that PWID came to exchange their used needles and syringes for new, sterile ones. At the site observed, there are no private areas for confidentiality and the outreach worker was seen to transport the used needles and equipment back to the NGO center again using public transportation.</p> <p>In another street-based NSP set up in Kyiv City, conditions were improved, particularly in that there was a better sense of privacy as the location used was secluded and comfortable.</p> <p>Another street-based model was observed in a rural setting in Mykolayiv. The key issue in this set-up was the clients’ access to the site, considering the village does not have a public transportation system and some clients reported as having to walk thirty minutes to reach the site.</p>
<p><i>Fixed sites/community centers/drop-in centers</i></p>	<p>Most of the sites in this study are rented apartment units or basements, with a reception area for community members to use, as well as separate rooms where NGO staff and social workers use to provide counseling and other support services. Both stationary and mobile NSP services rely on social workers and outreach workers to attract the PWID to participate in the NSP through a range of activities such as distributing information and PWID registration cards, as well as gain community trust. The activities include spending time visiting the streets and talking to people, particularly PWID.</p> <p>Because drop-in sites usually operate throughout the day, there is seldom crowding and clients tend to feel comfortable, resting and staying longer—even for several hours at a time.</p>

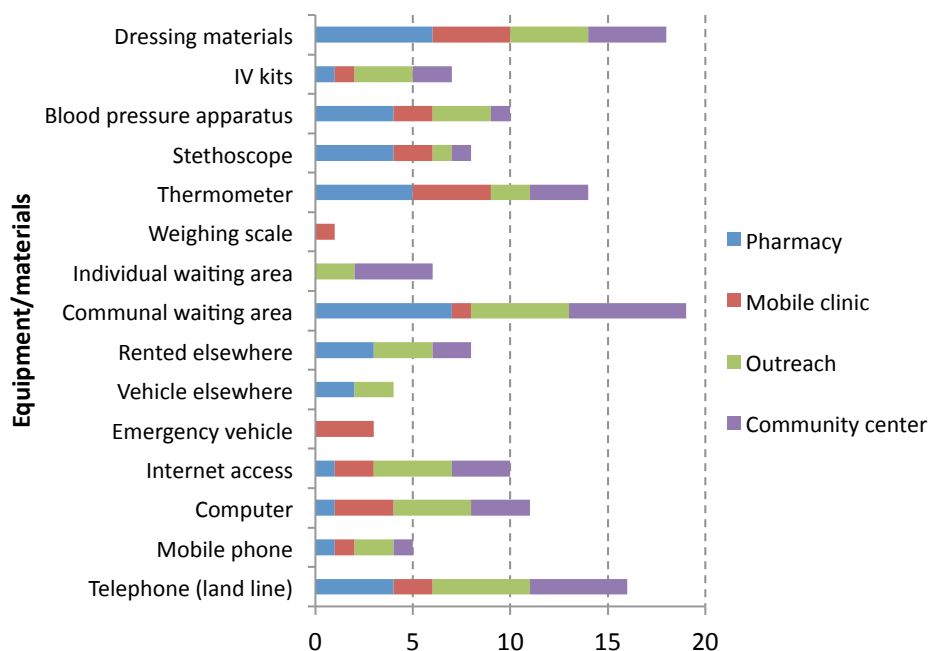
#### **4.1.3 Duration of Service Provision and Equipment for Services**

Most of the NSP sites in this study have been operating for four years or less (87%). Three sites have been operating for five years and one site ten years. The on-site equipment varied and was

<sup>38</sup> APMG. (2009). From Beyond Boutique to Epidemic Control : Evaluation Report of HIV prevention activities by International HIV/AIDS Alliance Ukraine funded by the Global Fund to Fight AIDS, TB and Malaria

dependent on the service delivery model (mobile ambulatories and pharmacies have, for example, different equipment than the outreach teams). However, our study revealed that all sites were functional and basic communication and diagnostic equipment were available in all sites, as depicted in Figure 9.

Figure 9: Type of equipment in the NSP sites in three study regions in Ukraine, 2012



NOTE: Although 31 sites were included in the study, the raw data showed that not every site was equipped with respective equipment / material. Thus, the total number of sites with different types of equipment never reached 31.

Source: Study data, collected in 2012

#### 4.1.4 Scope of Services Provided at NSP Sites

a) **Number of sites providing core NSP services:** Table 10 presents the list of services provided by the NSP sites sampled in this study. A sub-set of these services are identified as ‘core’ based on the UNAIDS technical guide on services that sites need to provide in order to effectively deliver NSP services. These core services are indicated as such in the table below.

Table 10: Scope of services provided at NSP sites

NSP service components (as per International HIV/AIDS Alliance package of services)		Number of sites offering service (n = 31)
<b>Distribution of injecting equipment and disposal services</b>		
Distribution of needles and syringes	Core	29 <sup>39</sup>
Distribution of alcohol swabs (as additional injecting equipment)	Core	27
Retrieval of used needles and syringes from clients and from the streets and other public settings	Core	17

<sup>39</sup> Although 31 sites were selected, one mobile clinic serving 2 sites, did not offer NSP during the observation period, despite being financed as NSP sites

NSP service components (as per International HIV/AIDS Alliance package of services)		Number of sites offering service (n = 31)
Disposal of used needles and syringes which are collected from clients and from the streets	Core	3
Distribution of disinfectants	Core	5
<b>Behavior change</b>		
Distribution of information, education and communication (IEC) materials	Core	28
Peer-based counseling		23
Self-help group sessions for PWID		8
Social support		11
Psychological support		13
Prevention services* for PWID/FSW		1
Counseling for partners and close relatives		11
<b>Services to increase coverage among PWID</b>		
Financial incentives/motivation for participation in the program (incl. food packages)		11
<b>Testing – core for comprehensive package</b>		
Voluntary counseling and testing through either standard laboratory tests (ELISA) <sup>40</sup> or rapid/point of care tests		13
<b>Sexual health services – core for comprehensive package</b>		
Distribution of condoms	Core	29
Distribution of lubricants		20
STI diagnostics		13
STI treatment		0
Overdose prevention	Core	6
Provision of primary health care		14
Referral to narcologist		14
Referral to infectious diseases doctor		20
<b>Others</b>		
Includes barber services, needlework courses, food packages and diagnosis of TB		0

Note: \* This was a generic service description, and actual services may have differed between sites.

- b) Despite the contractual agreements with the HIV Alliance stipulating a package of core services, the services delivered vary between the 31 sites. HIV testing—core service required in the HIV Alliance package of services—is provided only in 13 out of the 31 sites included in the study. This warrants further investigation on why rapid HIV tests are not systematically offered in all sites.

Overdose prevention is considered a core service in the UNAIDS/UNODC Guide but only 6 out of the 31 sites provided overdose prevention services—most had very low (less than 4% of overall services) actual number of service transactions.

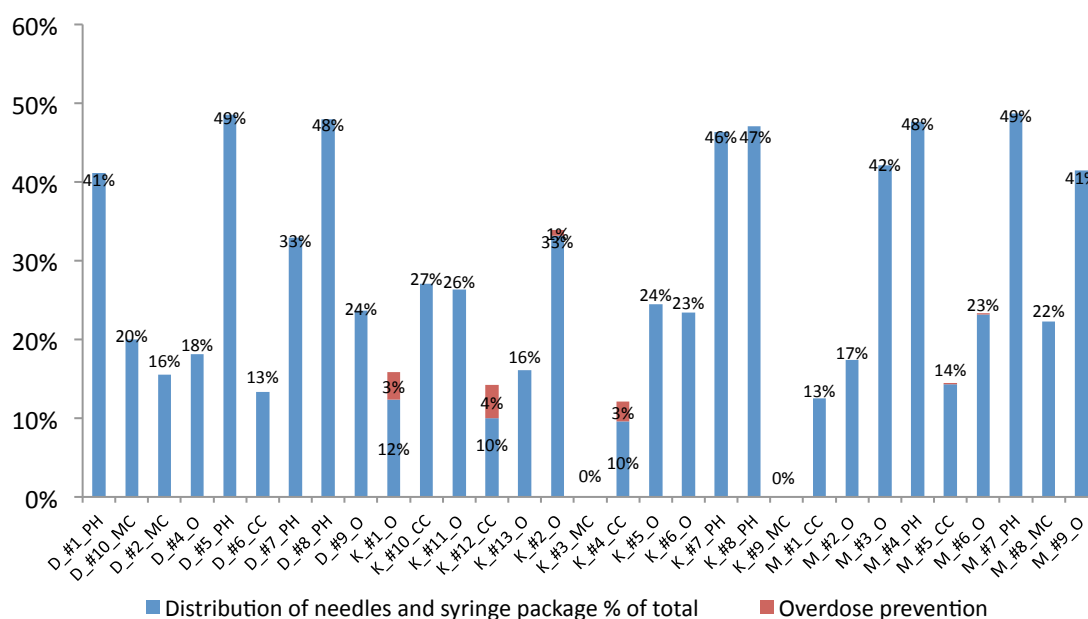
<sup>40</sup> Some NSP sites are able to conduct ELISA, whereas other sites refer to other services.

Gaps in regulating storage and utilization of medical waste as well as requirements for the disinfection of used syringes have delayed the implementation of the NSP program. The safe disposal of used needles and syringes is only implemented by three sites out of the total 31 NSP sites sampled, with none in Mykolayiv. Quite worryingly, in interviews with staff of service provider sites, one respondent reported that *“needles and syringes are collected into cardboard boxes and are accumulated there until the issue of disposal is solved”*. Another respondent claimed that the issue of not being able to dispose of needles *“is lobbied at the highest levels”*. Nonetheless, there is no clear protocol neither on disinfection and utilization of used syringes and needles collected outside of the state healthcare facilities, nor on collecting used syringes by NGOs.

The non-core services, funded as part of the agreement with the HIV Alliance, are meant to respond to specific needs of PWID in view towards improving their quality of life and increase adherence to services. However, our analysis reveals that the auxiliary services include a very diverse spectrum of services per site, and are not necessarily informed by the needs of the PWID. *Providing services that are not essential for the PWID is likely to be a waste of useful and scarce resources.*

- c) **Rate with which PWID are utilising core NSP services:** The utilization of core services at each of the sites was assessed Figure 10 shows that across the sampled sites on average, only 28% of visits to NSP sites were associated with core services. The volume of visits for needle and syringe exchange can vary from 10% of the total services provided to 49%.

Figure 10: % of PWID visits that was for a core NSP service in study sites, Ukraine, 2012

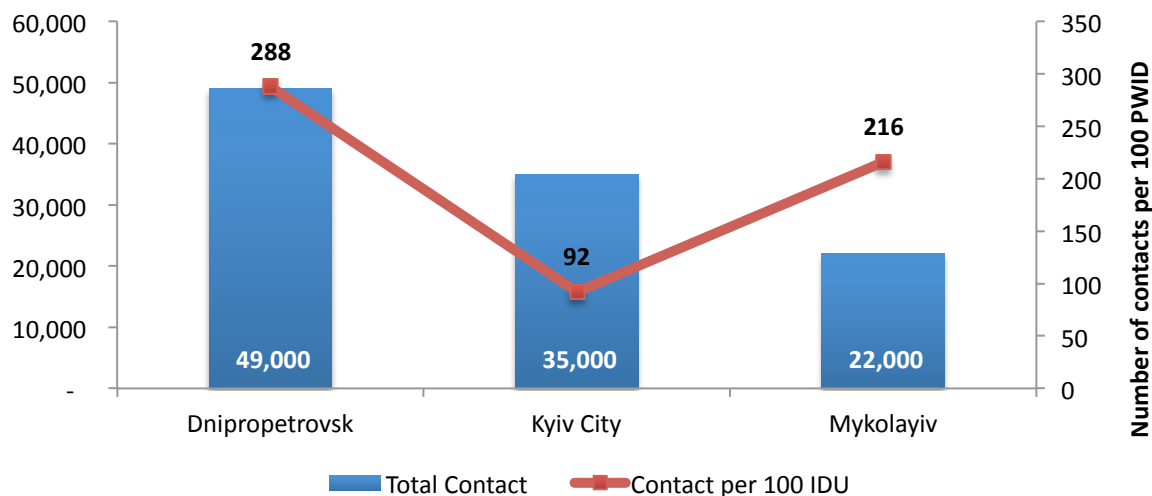


Source: Study data, collected in 2012

- d) **PWID contacts at NSP sites:** Among the sampled NSP sites, the amount of contact with clients already known to the programme is high by international standards. In particular, high client contact levels were found at Community Centres. Dnipropetrovsk has indicated the highest contact rate (288 contacts per 100 PWID) compared to Mykolayiv and Kyiv City (Figure 11).



Figure 11: NSP occasions of service (total contacts) in the study regions in Ukraine, July 2011 – June 2012

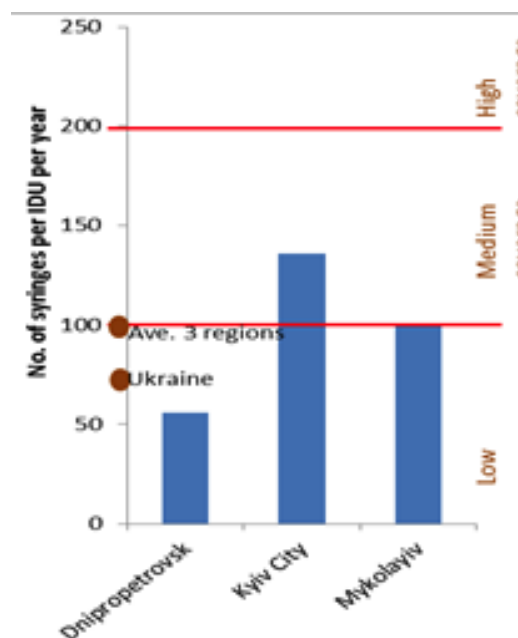


Source: Study data, collected in 2012

- e) **Distribution of injecting equipment at NSP sites:** The HIV Alliance’s package of NSP services requires that the implementing partners provide 130 syringes per PWID per year. In Ukraine, it was reported that between 2010 and 2011 an average of 75.3 syringes were distributed per PWID per year. The data from this study showed that there is an average of 98 syringes distributed per PWID per year within the three study regions. Among the three study regions, Kyiv City and Mykolayiv have higher average numbers of syringes distributed per PWID per year (136 and 101 syringes, respectively) compared to the national average of 75.3 (which translates to 1 needle for every 3.7 days per PWID reached). Dnipropetrovsk, on the other hand, has the lowest at 56 syringes per PWID per year (Figure 12). More importantly, the average number of syringes per region masks substantive variations in the number of syringes given to PWID per year by the sites, ranging from 8 syringes to 291 syringes per PWID (Figure 13).

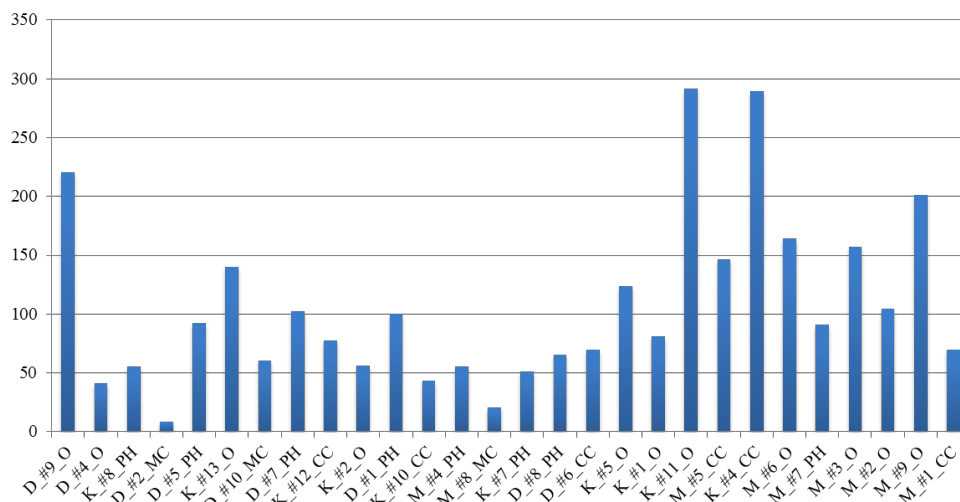
One site reported an exceptionally high numbers of syringes distributed, 1,440 per PWID; this was treated as an outlier and excluded from the data presentation. Accessibility of sterile needles and syringes is still low and the striking variations of syringe distribution per PWID warrants particular attention about the quality of service provision.

Figure 12: Average number of syringes distributed per PWID per year in Ukraine, 2012



Source: Study data, collected in 2012

**Figure 13: Number of needle-syringes distributed per client in the last 12 months at study sites in Ukraine, 2012**



Note: Site K#6\_O excluded from graph as outlier with exceptionally high number of syringes distributed (1,440).

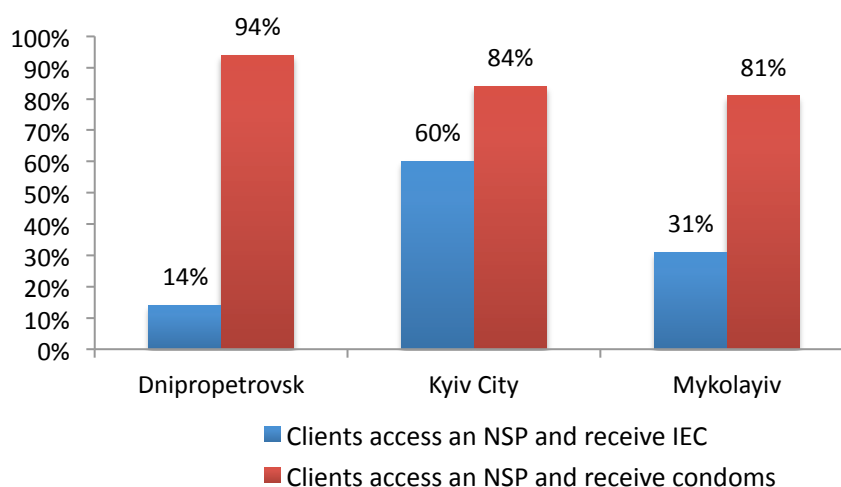
Source: Study data, collected in 2012

One possible contributor to the low numbers of syringes given out per PWID client, as suggested by a pharmacy coordinator during an interview, is the practice of reducing the overall syringe handouts as a way to avoid needles and syringes stock-outs and to ensure all clients got something upon coming to the service site. This is corroborated by the fact that in 2011 the number of used syringes collected nationwide dropped by 1,081,413 syringes compared to 2010.

- f) **Condoms and IEC materials distributed to PWIDs:** Most clients accessing NSP also received condoms (81 – 94%) but low levels of IEC, except in Kyiv City (Figure 14). In Dnipropetrovsk almost all NSP clients received condoms but only 14% received IEC materials. However, similar to the number of syringes distributed per PWID, the number of condoms given per contact varies: in average, the PWID receives 5 condoms in each contact varying from 2 condoms per contact per PWID in Mykolayiv, 4 in Dnipropetrovsk to 8 in Kyiv City.

The number of condoms delivered per PWID per contact varies from 1 to 31 condom per contact, indicating limited quality of condom distribution (Figure 15). Even though one of the sites has 605 condoms per client per annum, yet it is only 17 condoms per contact. This is because of lower number of clientele but higher number

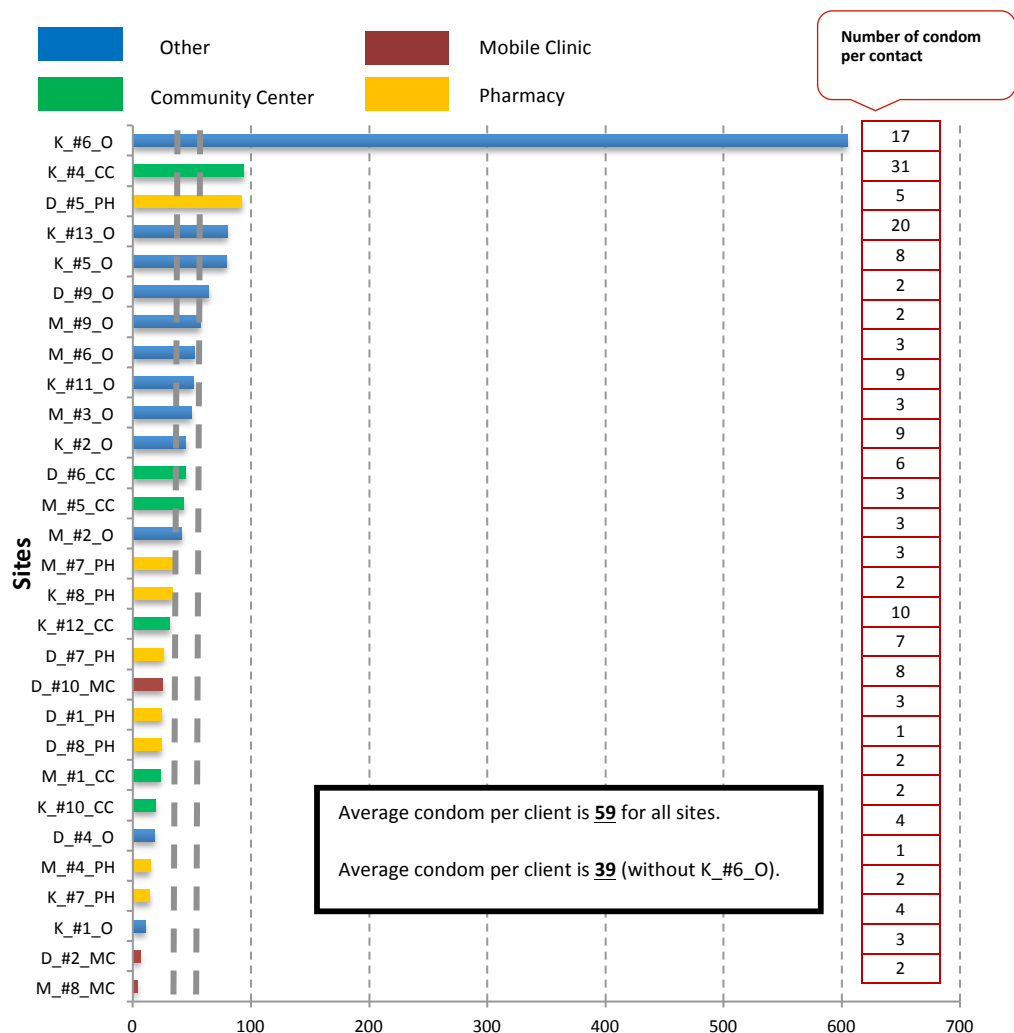
**Figure 14: Condom and IEC material distribution to clients accessing NSP sites in the study regions in Ukraine, July 2011 to June 2012**



Source: Study data, collected in 2012

of visits per client. Nevertheless, the site with highest condom per contact (31 condoms per contact) only translates to 94 condoms per client per annum. This is because the site has a higher number of clientele but lower number of visits per client.

Figure 15: Condom per client and contact for NSP sites in study regions in Ukraine, 2012



Source: Study data, collected in 2012

#### 4.1.5 PWID Demand and Access to NSP services

A number of issues negatively impact NSP coverage, including limited resources for advertising and promoting services to the PWID population. A number of service providers described approaches to promoting NSP services and gaining community trust such as spending time on the streets talking to people, visiting new areas with toys for the children of potential clients or in one case, posing as a client, all as a way to initiate contact. However, some clients felt that NSP services are not adequately promoted.

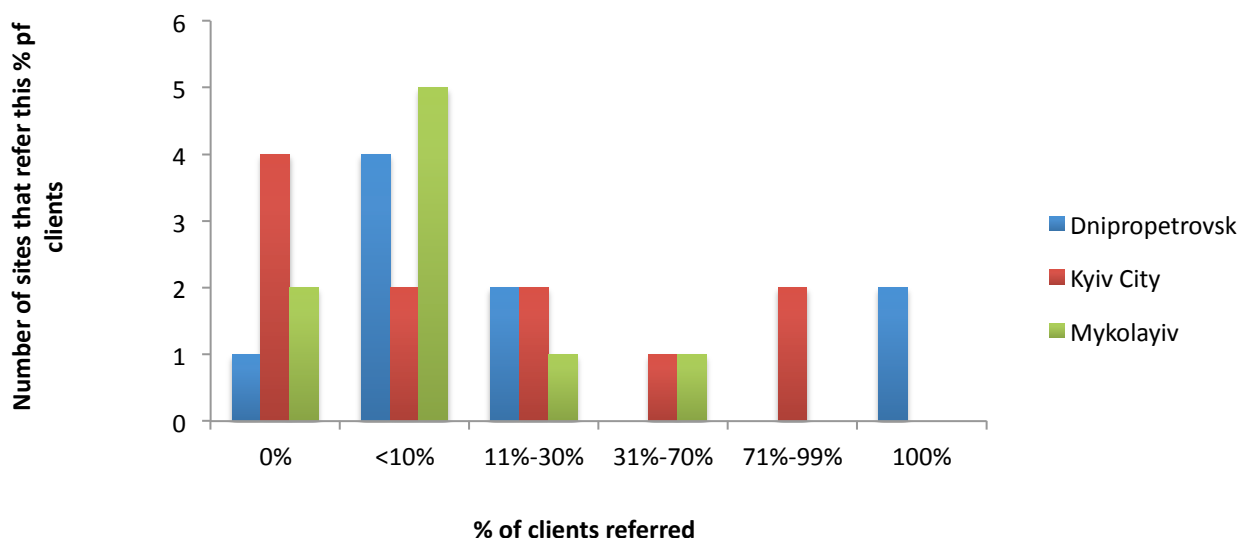
Outreach is considered to be essential for facilitating access to NSP programmes among PWID. Several outreach approaches were described by the key informants during the interviews: NSP clients described being approached in the street by outreach workers, through friends who had contact with outreach workers, and in pharmacies. However, some interviewees expressed feeling

exposed and a lack of privacy when collecting equipment or talking with NGO workers. Outreach workers also collect needles and syringes from the streets and visit apartments where injecting is known to take place. To bypass these difficulties, NSP workers and clients reported using mobile phones to make contact and arrange for the collection time and place. However, this system would involve significant delays in delivery and requires forward planning on the part of the clients. This may not always fit well with patterns of injecting drug use. Several NSP workers noted that clients did not always have funds for mobile phone credit and NSP workers were not always reimbursed for phone calls and often had to use their own funds.

#### 4.1.6 Linkages and Referrals Between Services

On the whole, NSPs appear to play a substantial role in referring clients to other healthcare services. Nonetheless, with the exception of Community Centers in Dnipropetrovsk, all service delivery models at the sites sampled have no clear system to manage referrals well. In Kyiv, referral percentages are low, with the exception of one Community Center, and to a lesser extent, one pharmacy. Referral data indicates that pharmacies play an important role in providing NSP services. Figure 16 shows that there is huge variation in the proportion of clients referred, for NSP sites within these three study regions, ranging from 0% to 100%. Compared to Dnipropetrovsk and Mykolayiv, nearly half of NSP sites in Kyiv City (four out of eleven sites) have zero proportion of clients referred, where out of all NSP sites, only two in Dnipropetrovsk have all client referred.

**Figure 16: Frequency with which NSP clients are referred at NSP sites in study regions in Ukraine, 2012**



*Note: Two Kyiv City NSPs sites are not offering needle-syringe services at the time of observation.*

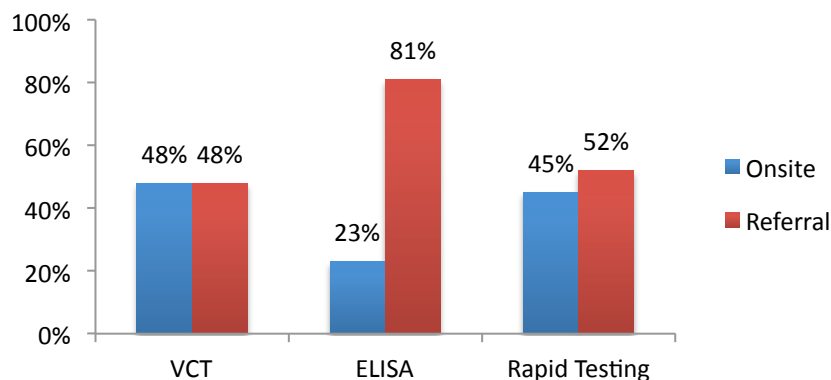
Source: Study data, collected in 2012

- a) **Linkage and referral to HIV testing services:** Up to 50% of sites offer referrals for counseling and HIV testing (Figure 19). Of these, 80% of sites offer referrals for ELISA testing, with all except one (referral to a district hospital) of these referrals going to the AIDS Center in the region. In addition, 50% of sites offer referrals for rapid testing, either to a mobile clinic, AIDS Center, hospital or to a Community Center.

Although all sites are supposed to offer testing services, including rapid HIV tests, as part of their core service package, it is unclear why some sites reported that they make referrals for HIV

testing. At NSP sites that provide rapid tests for HIV and hepatitis, clients whose results were positive, and/or required further testing were referred elsewhere such as to AIDS Centers and infectious disease units. With the referral mechanism being unclear, follow-up regarding client treatment status is then no longer within the scope of the NSP sites. In some sites clients are referred to the community center, a narcologist or social worker for overdose prevention. If clients are referred for condoms, they are directed to other NSP sites, pharmacies or the community center.

**Figure 17: % of NSP sites in study regions in Ukraine offering testing onsite and those referring for HIV testing, 2012**



Source: Study data, collected in 2012

- b) Linkage and referrals to NSP distribution locations:** Thirty percent of sites both offer and refer provision of needle and syringes, reflecting a network of interconnected sites. A possible explanation for NSP sites directing referrals to other sites is that could be to either (a) provide the clients with alternative options, such as sites that are more conveniently located or open at times better suited for the clients; or (b) to manage needle and syringe stock outs. The study showed that sites that refer more are also more effective at needle distribution.
- c) Referral for OST services:** Compared to Kyiv City, more than half of the NSP sites in Dnipropetrovsk and Mykolayiv (67% and 56% respectively) made referrals to OST. Only one third of NSP sites in Kyiv City made referrals to OST.
- d) Referral for social services:** Currently 50% of sites provide social support services onsite, and 29% refer. Furthermore, the qualitative review confirmed that although the NSP programs do offer a wide range of services, they reported that they were not able to meet any broader social support needs such as housing, legal assistance and assistance with employment that clients would like to be offered. While these services are not part of the core package of services, nor have the NGOs the capacity to provide broad social services, the sites did not report any established referral system to direct the clients to the social support services required.

## **4.2 NSP Program Funding, Unit Costs and Technical Efficiency**

### **4.2.1 Sources of NSP Program Funding**

NSP program expenditures in all the three cities in 2009 and 2010 made up less than 10% of the total spending for OST, NSP and ART programmes. Global Fund, through the Alliance, provides 100% of

funding to 19 out of 31 of the surveyed NSP sites (96% of total funding for all 31 NSP sites). There is currently a lack of funding to expand the geographical area of outreach services. There is also an overall need for more stationary stand-alone NSP sites as many are now located within other health services and not always in the areas where PWID live and use drugs.

#### 4.2.2 Unit Costs of Providing NSP Services

The unit cost analysis provides in-depth information about the unit cost composition, by capital, operational and program cost components. The analysis yields insights on how costs are split between capital, program and operations, whether sites are spending relatively more on program costs or on operational costs, and the key cost components are that drive the unit costs. The financial data calculated enables one to calculate the unit cost per PWID reached at each site.

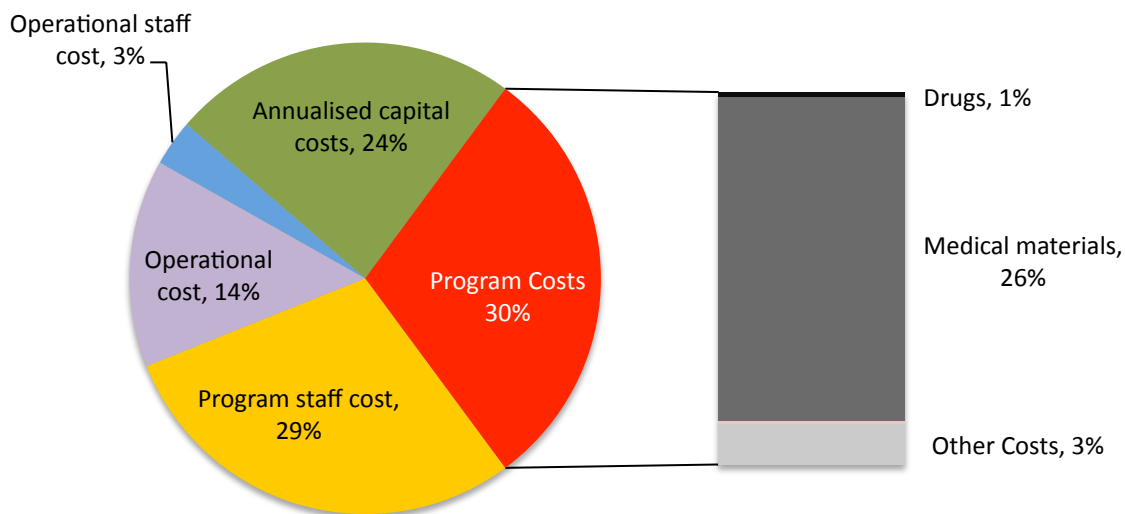
- a) **Total and average annual cost for providing services at NSP sites:** Table 12 below and Figure 20 summarises the total and average costs for providing NSP services at the 31 NSP sites in the study. As the table and figure shows, across the all sites, program and program staff costs represent the highest cost components (29% for each of the two cost components). Medical materials make up the majority of program costs, with the median percentage of expenditure on medical materials being 26% (Range 9% – 57%). This may be an opportunity for cost savings: to ensure that no site spends more than the average on medical supplies.

**Table 11: Total and average costs for providing NSP services at NSP sites in study regions in Ukraine, 2012**

Cost Components	Total cost (UAH)	Percentage of total cost	Average annual cost per site (UAH)	% of average annual cost per site
<b>Program Cost</b>	1,253,533.05	29.74%	40,436.55	<b>32.19%</b>
<i>Drugs</i>	18,841.65	0.45%	1,345.83	<b>0.42%</b>
<i>Medical Materials (incl. test)</i>	1,088,686.38	25.83%	35,118.92	<b>27.90%</b>
<i>Non-medical materials</i>	9,051.29	0.21%	1,131.41	<b>0.34%</b>
<i>Other Costs (including IEC materials, etc.)</i>	136,953.72	3.25%	4,722.54	<b>3.54%</b>
<b>Program staff Cost</b>	1,224,465.33	29.05%	39,498.88	<b>28.51%</b>
<b>Operational Cost</b>	600,387.09	14.25%	20,012.90	<b>12.09%</b>
<b>Annualized capital costs (discounted)</b>	1,002,619.72	23.79%	32,342.57	<b>25.13%</b>
<b>Operational Staff Cost</b>	133,549.68	3.17%	5,806.51	<b>2.08%</b>
<b>Grand Total</b>	<b>4,214,554.87</b>	<b>100.00%</b>	<b>135,953.38</b>	<b>100.00%</b>

Source: Study data, collected in 2012

Figure 18: Distribution of cost components for NSP sites

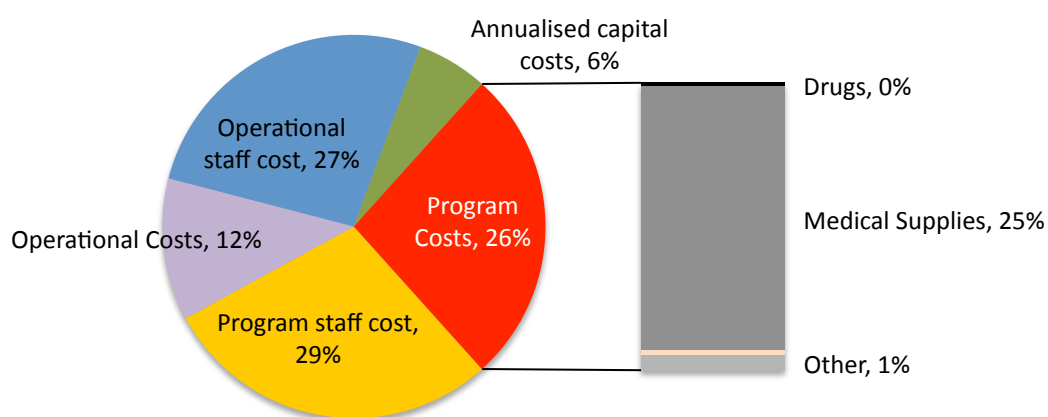


Source: Study data, collected in 2012

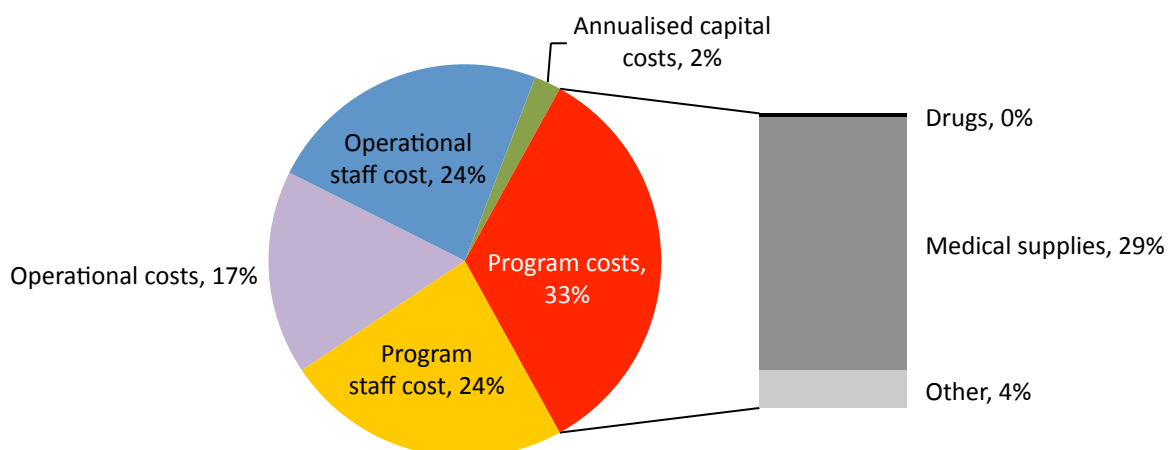
- b) **Variation in distribution of NSP site costs by study area:** There is great variation in the distribution of cost components by study area and by type of NSP site. Medical materials, program and operational staff costs, each constitute about one quarter of site costs in Dnipropetrovsk. Program costs consume a higher proportion of the budget in Kyiv City than in Dnipropetrovsk. Program staff costs consume a higher proportion of the budget in Mykolayiv than in either Kyiv City or Dnipropetrovsk, with four Mykolayiv sites spending more than 50% of their expenditure on program staff.

Figure 19: Variation in cost components for NSP sites in Ukraine in 2012, by study region

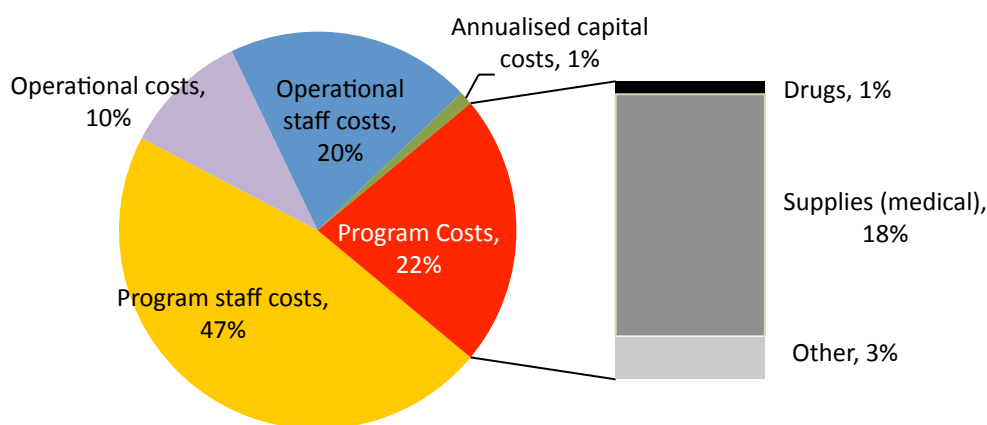
**Dnipropetrovsk**



**Kyiv City**



**Mykolayiv**



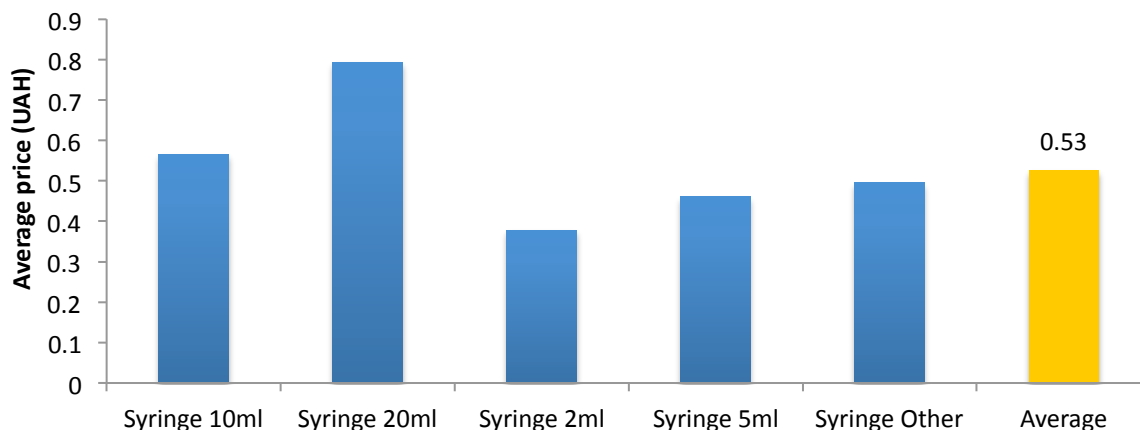
Source: Study data, collected in 2012

- c) **Costs differ by service delivery model:** Overall, the community centers (CC) within the three study regions have higher program staff costs (UAH 574,212) compared to other type of service delivery models within all NSP sites (pharmacy UAH 92,685, mobile clinic UAH 275,781 and others UAH 281,787). One of the community centers in Kyiv City had triple the program staff cost (UAH 174,861) and higher staff costs (both program and operational – UAH 296,153.82) than at other sites.
- d) **Nature of medical supply costs and unit cost per needle and syringe:** With the exception of two mobile clinic sites (in Dnipropetrovsk and Mykolayiv region respectively), All sites across three study regions spent 64% of medical supply cost on needles, syringes and alcohol swabs. The other 36% have been spent on condoms, HIV tests and other supplies. The unit cost of purchasing injecting paraphernalia (needles and syringes) differs for different kinds of syringes.

Figure 20 depicts the average price at UAH 0.53 per different syringe unit with the highest price of UAH 0.80 per 20ml syringe unit.



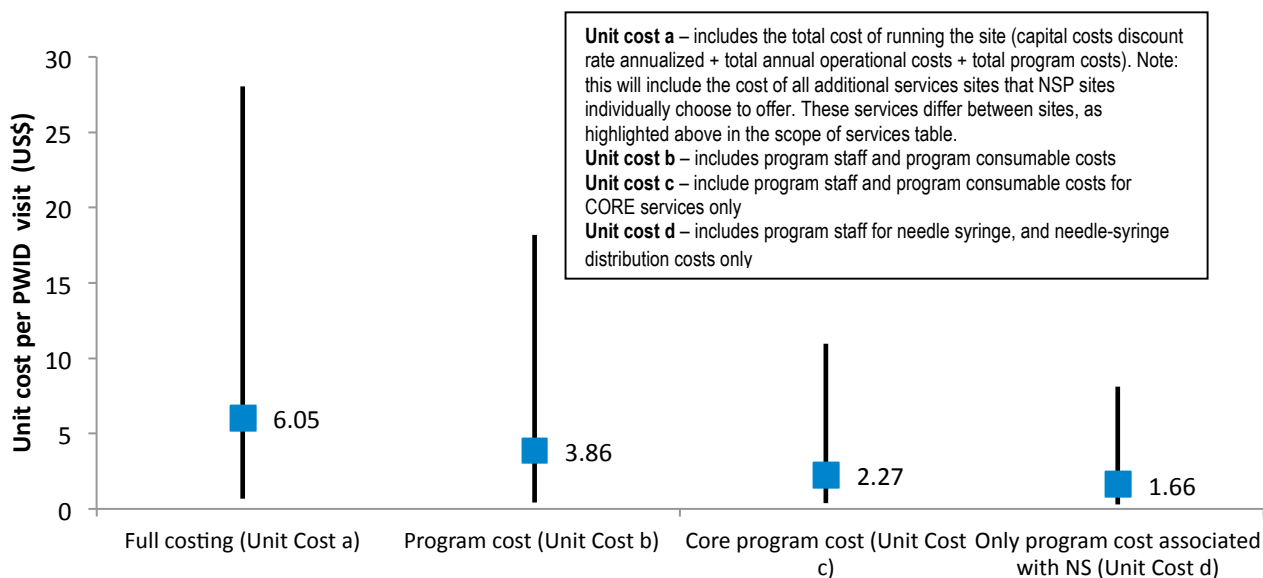
Figure 20: Unit cost per needle and syringe across the study sites in study regions in Ukraine, 2012



Source: Study data, collected in 2012

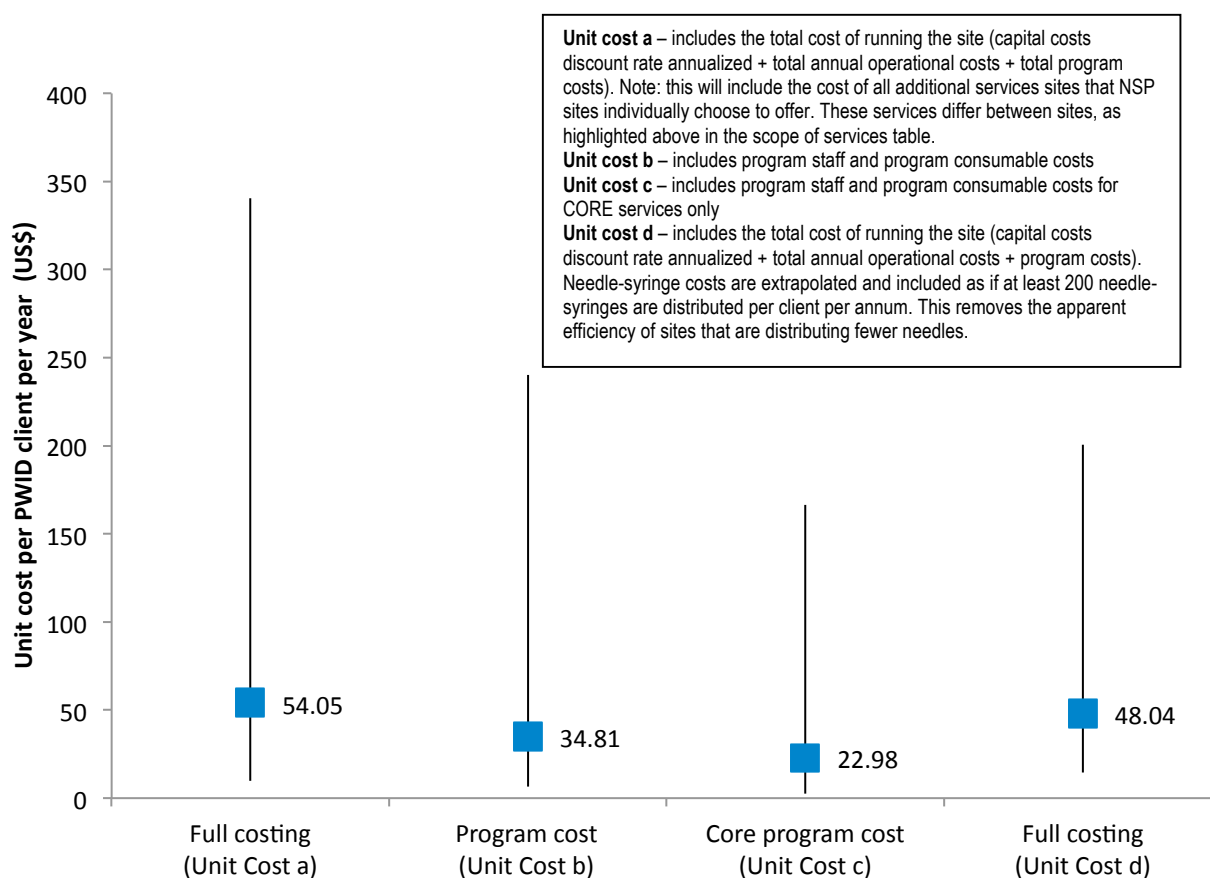
e) **Unit costs of providing NSP services – unit cost per visit and unit cost per client per year:** Unit costs for services delivered can be calculated in different ways, and is dependent on the cost components included in the unit cost estimation. This is detailed in the Figures below and overleaf.

Figure 21: Cost (USD) per visit to NSP sites in study regions in Ukraine, 2012



Source: Study data, collected in 2012

Figure 22: Cost (USD) per client at NSP sites in study regions in Ukraine, 2012



Source: Study data, collected in 2012

As figures 23 and 24 show, unit costs differ dramatically between sites. Table 12 below summarises these differences and makes recommendations as to where efficiency gains may be possible.

Table 12: Summary of variation in unit costs of delivering NSP services

	Unit cost a	Unit costs b and c	Unit cost d
Higher cost site (per client) characteristics by comparison	<ul style="list-style-type: none"> <li>Relatively lower number of clients</li> <li>Higher operational staff costs</li> <li>Higher medical material costs (in one case because of low number of clients)</li> <li>Electricity, water costs slightly higher (in one case)</li> <li>Higher capital costs (in one case)</li> </ul>	<ul style="list-style-type: none"> <li>Relatively lower number of clients</li> <li>Higher medical and IEC material costs, some distributing more needles per PWID</li> <li>Higher program staff costs</li> <li>Sites with relatively higher unit cost, b compared to unit cost c, incur higher non-core program costs (M_#8_MC, D_#2_MC)</li> </ul>	<ul style="list-style-type: none"> <li>Higher needle-syringe purchase price (in one case nearly double the lower purchase price).</li> <li>Despite needles and syringes being purchased centrally by Alliance, different sites buy different proportions of needle-syringe sizes which can affect the procurement cost of these materials.</li> </ul>

**Ukraine HIV Program Efficiency Study: NEEDLE AND SYRINGE PROGRAM**

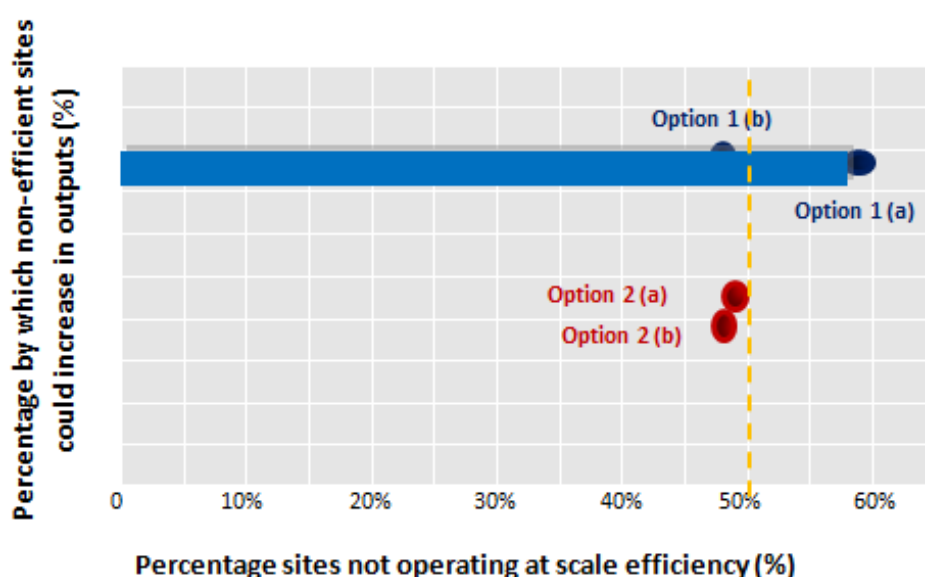
<p><b>Lower cost site (per client) characteristics by comparison</b></p>	<p>Lower operational staff costs</p> <p>Lower medical materials costs (program costs)</p> <p>Lower or no capital costs</p> <p>The nature of the pharmacy model, makes this model the lowest cost.</p>	<p>Lower medical and IEC material costs (distributing less)</p> <p>Lower program staff costs</p> <p>The nature of the pharmacy model, makes this model the lowest cost for unit cost b.</p> <p>When only core service costs are included the mobile clinic model becomes the lowest cost type of site. (</p>	<p>Lower program staff costs</p> <p>The pharmacy model is the lowest cost model under unit cost d (200 needles distributed per client).</p>
<p><b>Core service provision</b></p>		<p>Lowest cost performing site for unit cost b provides 4 of the 8 core services. (NSP distribution, alcohol swabs, condoms, IEC materials).</p> <p>Lowest cost performing site for unit cost c (core only costs) provides 4 of the 8 core services. (NSP distribution, alcohol swabs, condoms, IEC materials).</p> <p>Neither site provides the remaining core services: retrieval and disposal of used needles and syringes, distribution of disinfectants or overdose prevention.</p> <p>The highest cost site provides the same core services, with a small investment in disposal of used needles and syringes.</p>	
<p><b>Efficiency gain opportunities</b></p>	<p>Increase the number of clients to spread the capital and operational costs across a wider client base</p> <p>Bring operational staff costs into line (best achievable/ comparable salary)</p>	<p>All sites to achieve lowest possible (best) price on consumables (IEC, condoms)</p> <p>Consider reducing non-core services to reduce non-core program costs of some sites</p> <p>Bring program staff costs into line (best achievable/ comparable salary)</p>	<p>All sites to achieve lowest possible (best) price on purchase of needle-syringes</p>

### 4.2.3 Technical Efficiency of NSP Services Delivered

As per the data analysis plan for this study, Data Envelopment Analysis (DEA) was done to determine whether the technical efficiency of NSP services could be improved: As stated in the study methods, the technical efficiency for NSP services was calculated using two sets of inputs, and using the two sets of site data (a and b). The analysis revealed the following findings:

- a) **Capacity of NSP sites to increase scale (more PWID clients) without increasing input costs:** the DEA analysis shows that about 51% of sites across the three regions are not operating at optimal efficiency scale. Non-efficient sites can increase their distribution of needle syringes by about 20% without changing staff or program costs (see Figure 23 and table 13). Most sites in Dnipropetrovsk are operating at optimal scale efficiency when excluding operational costs. This implies that operational costs are too high. More sites in Dnipropetrovsk and Kyiv City than Mykovayiv are operating at optimal scale when including operational costs and that there are efficiency opportunities in Mykolayiv in relation to reducing operational costs.

**Figure 23: % of efficient NSP sites and % by which non-efficient NSP sites could increase outputs in study regions in Ukraine, 2012**



Source: Study data, collected in 2012

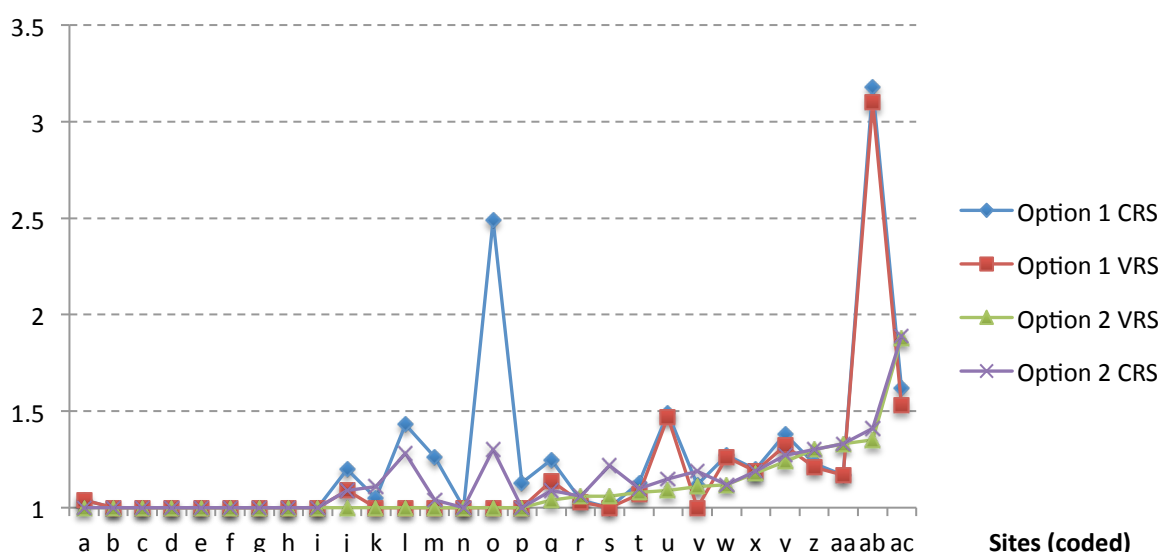
**Table 13: For different input options, sites that could increase outputs, and % of sites operating at scale efficiency**

	<b>Input Option 1: (use # of clinical staff and program costs (labour and non-labour) as inputs)</b>	<b>Input Option 2: (use # of clinical staff and NSP-only program costs (labour and non-labour) as inputs)</b>
<b>Output option 1: (Use outputs from all 29 NSP sites). Outputs are the number of clients, frequency of visits and the number of needle-</b>	Non-efficient sites could increase outputs by between 36% and 40%, with 41% of sites operating at scale efficiency.	Non-efficient sites could increase outputs by around 23%, with 51% of sites operating at scale efficiency.

<i>syringes distributed.</i>		
<b>Output option 2: (Use outputs only from NSP sites where unit costs do not fall more than 2.5 standard deviations from the mean)</b>	Non-efficient sites could increase outputs by around 41%, with 52% of sites operating at scale efficiency.	Non-efficient sites could increase outputs by around 20%, with 52% of sites operating at scale efficiency.

The graph illustrates potential efficiency gains at each site: showing both input options 1 and 2, and results with constant returns to scale (CRS) and variable returns to scale (VRS). Variability is most significant for a few sites, and less so for most of the sites.

**Figure 24: Potential efficiency – based on four points for each NSP site in study regions in Ukraine, 2012**

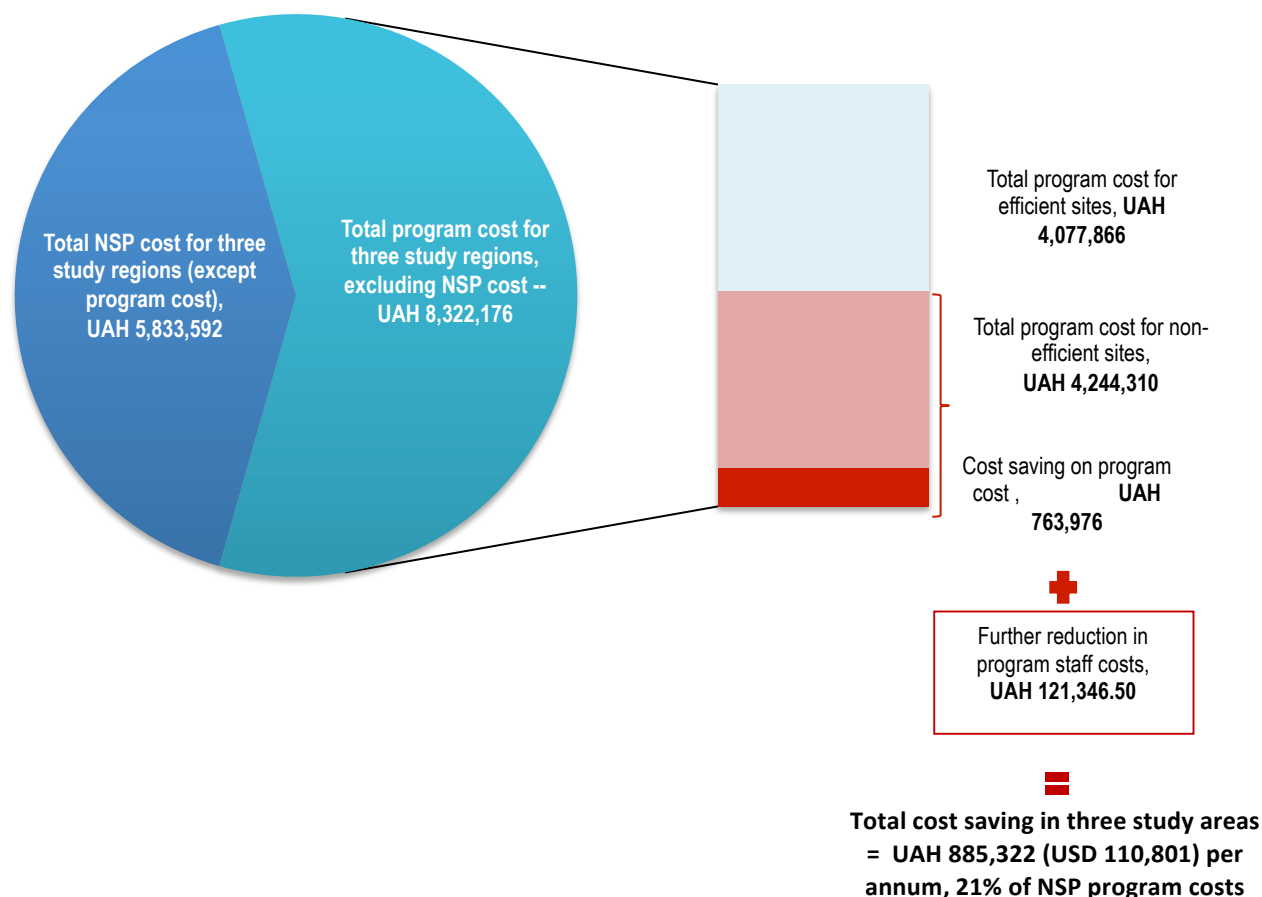


Source: Study data, collected in 2012

**b) For the same level of outputs, input costs can be reduced by 18%:** DEA can also be used to determine by how much can inputs be reduced while maintaining the same level of outputs. Based on the same input and output data from the NSP sample sites, it was found that inputs (program staff costs and associated consumable item costs) can be reduced on average by 18% while maintaining the same level of outputs, where the outputs are the number of clients, frequency of visits and the number of needle-syringes distributed.

In terms of the three study areas included in this study, this saving of 18% would equate to UAH 764,000 per annum. This figure is estimated based on applying the 51% non-efficient site proportion to the proportion of the three areas’ average annual 2009-10 program costs. In addition, using DEA slack measures, the DEA Analysis suggests that some sites within the study could further reduce their program staff costs (relative to those in the sample). Taken together, the estimated potential savings, calculated using the DEA techniques, are UAH 883,322 per annum (**USD 111,000**), or a **21% saving of the total NSP cost in the three study areas**. Note that this figure applies only to the three study areas. The absolute UAH value of the savings would be higher if all regions and sites within Ukraine are taken into consideration.

**Figure 25: Estimated potential savings in the NSP program area using DEA analysis through the reduction of input while maintaining the same level of output, applied to non-efficient sites in the study sample**



Source: Study data, collected in 2012

- c) **Different volumes of efficiencies can be gained in different study areas:** Statistical ANOVA analysis found that 'Region' was significantly associated with NSP program cost ( $p = 0.0191$ ). Sites in Mykolayiv were less efficient than sites in both Dnipropetrovsk and Kyiv City. This may be due to the fact that Mykolayiv sites have relatively higher program staff costs, but lower number of client visits: Sites in Mykolayiv spent on average 41% of their total expenditure on program staff (compared to 23% in Kyiv City and 25% in Dnipropetrovsk). Yet, sites in Mykolayiv had less client visits per hour per staff member (Mykolayiv <1 visit, Dnipropetrovsk and Kyiv City between 1 and 2 visits per hour per staff member). This means that the number of client visits per hour per staff number was on average less in Mykolayiv at 0.87, than in Dnipropetrovsk and Kyiv City (1.68 and 1.36 respectively). All other variables – including other variables included years of operation, degree of integration (referrals), management score, guidelines used, number of hours site is open, number of clients and service delivery model – were non-significant. The dependent variable was core cost per needle-syringe distributed.
- d) **"Ideal" staff complements at the most efficient sites:** Because the staff composition at a specific site most likely depends on the specific context in which the site is operating, it is not possible to determine an 'ideal' staff complement for each service delivery model. That said, the study found

that the 6 most efficient sites (by DEA measure) have the following staff composition characteristics:

### Staff composition at non- pharmacy sites (n= 4):

- *Doctors:* Sites have between 0 – 3 doctors. Sites with multiple doctors have doctors in different medical specialties.
- *Nurses:* Sites have between 0 – 1 nurse.
- *Social worker:* All sites have access to 1 – 2 social workers.

### Staff composition at pharmacy sites (n=2)

- *Pharmacists:* sites have 1 and 2 pharmacists, respectively.
- *Social Workers:* one pharmacy has access to 1 social worker.

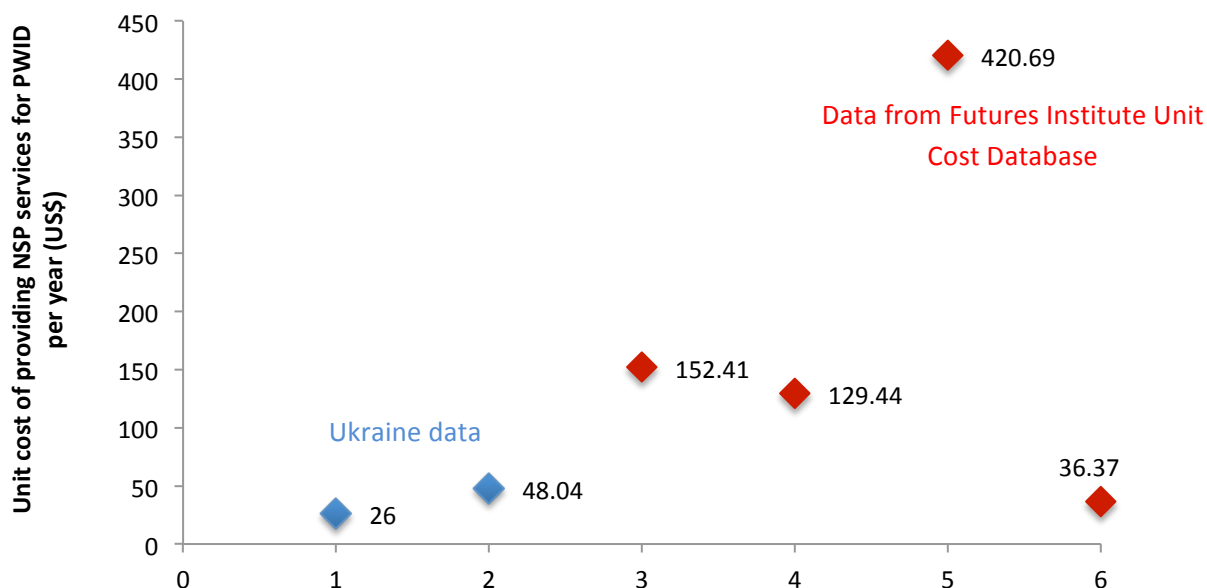
#### 4.2.4 Unit cost comparison to other studies

Because of different approaches, it is difficult to compare unit costs of NSP services provided. That said, we did attempt in this study to compare the data from the Ukraine study to the data from the Futures Institute HIV Program Unit Cost database. Many of the services included in the NSP package in the Futures Institute Unit Cost database are not core services for NSP in Ukraine; therefore, it is not surprising that a comparison between the Ukraine unit costs for delivering core NSP services and the unit costs of delivering NSP services in other countries, illustrated in

Figure 26, suggests that Ukraine's unit costs of delivering NSP services are low compared to that of other countries. In Figure 26, the unit costs that are compared, are as follows:

1. *From the World Bank's Ukraine HIV program efficiency study: Average across all site types in 3 regions on core costs of providing NSP per client per year, weighted to cover 200 NS per person per year.*
2. *From the World Bank's Ukraine HIV program efficiency study: Average across all site types in 3 regions with total cost per NSP client per year, weighted to cover 200 NS per person per year.*
3. *Based on Financial cost US\$2011 in Futures Institute database (Pakistan data): Drop-in center (intervention included: Syringe distribution and return, community awareness and advocacy, VCT, detox and rehabilitation, condom distribution.)*
4. *Based on Financial cost US\$2011 in Futures Institute database (Pakistan data): Drop-in center, Mobile clinic (intervention included: Syringe distribution and return, community awareness and advocacy, VCT, detox and rehabilitation, condom distribution.*
5. *Based on Financial cost US\$2011 in Futures Institute database (Pakistan data): Mobile clinic: (intervention included: Syringe distribution and return, community awareness and advocacy, VCT.)*
6. *Outreach and needle/syringe exchange for PWID USD (Eastern Europe) based on Bernhard Schwartländer, John Stover, Timothy Hallett, et al. "Towards an improved investment approach for an effective response to HIV/AIDS", Lancet 2011; 377: 2031–41; SUPPLEMENTAL MATERIAL - Towards an improved investment approach for an effective response to AIDS; Schwartländer et al. May 2011; [http://policytools.futuresinstitute.org/UC/unit\\_cost\\_db.aspx](http://policytools.futuresinstitute.org/UC/unit_cost_db.aspx)*

Figure 26: Cost per client for NSP sites in Ukraine in 2012, comparison with other studies (USD)



Source: Study data, collected in 2012 and data from the Future Institute's HIV Program Unit Costing Database

### 4.3 Management of and Information about NSP sites

#### 4.3.1 Operational Characteristics of NSP Sites

The analysis reveals considerable variations in the implementation practices across the different sites, regardless of the fact that all NSP sites are funded by (and thus contractually regulated through the guidelines provided by) only one donor.

- a) **Hours of Operation:** The selection of days that the services are open and the number of hours that sites operate per week vary significantly between the sites, even when comparing the same service delivery model sites. In Dnipropetrovsk, the sites operate from 9 hours to 84 hours per week, and similarly, the number of clients per hour varies from 0.3 clients to 8.6 clients per hour. Three of the Kyiv City sites are very small operations in terms of hours and days open per week (less than 10 hours a week). The top three sites in terms of client visits per hour are open ten or less hours per week in Kyiv City. Two sites served by the mobile clinic in Kyiv City did not report NSP clients. In Mykolayiv, many of the NSP sites are only open a few days a week and for a few hours a day. While flexibility in terms of operational hours is required to meet the needs of the PWID and other clients, the low number of clients served in selected sites suggests that the sites are under-utilized. This could be because the operating hours are not matched to client need, or that the site is located in the wrong area, or that there is not demand for services. The qualitative interviews corroborated this finding.
- b) **Where sites are located:** Furthermore, location appears to be an important factor for access to the NSP sites, in particular in the rural areas. In a street-based model observed in a rural setting in Mykolayiv, the key issue was the clients' access to the site, considering the village does not have a public transportation system and some clients reported having to walk thirty minutes to reach the site. During site observations in this study, both site staff members and clients of the street-based NSP have also pointed out that the arrangement is inconvenient during winter when outdoor conditions are harsh.

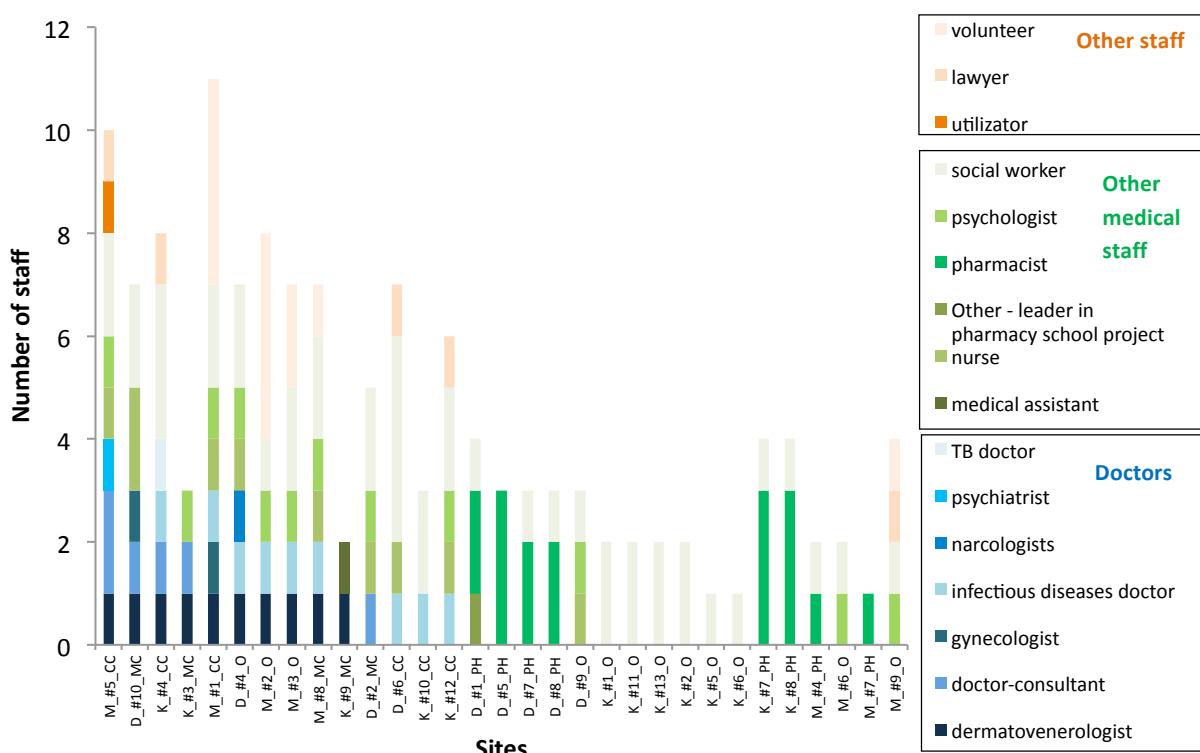


These findings were corroborated by interviews with clients who believe that other PWID face difficulties in getting to NSP locations. PWID cited the lack of public transportation in some cities and rural areas, the absence of services in rural areas and limited number of sites in some larger cities as impediments to regular access to the NSP sites.

- c) **Staff profiles at NSP sites:** The NSPs are implemented through a multi-disciplinary team assigned to the sites, and are part or full-time hires through contractual agreement with the HIV Alliance. The team profile varies based on the service delivery model. Staff may include infectious disease doctors, narcologists, dermato-venereologists and gynecologists, nurses, pharmacists and other medical and administrative staff.

Figure 27 depicts the staff profile operating at the sample sites, and it indicates that at many sites, in particular the mobile clinics, a multi-disciplinary team provides the services. More than 90% of the sites have a social worker assigned which, at the majority of sites, is also the first contact point with the client. In addition, some sites feature the specialized services of other professional staff, including lawyers.

Figure 27: Profiles of staff at the NSP sites in study regions in Ukraine, 2012



Source: Study data, collected in 2012

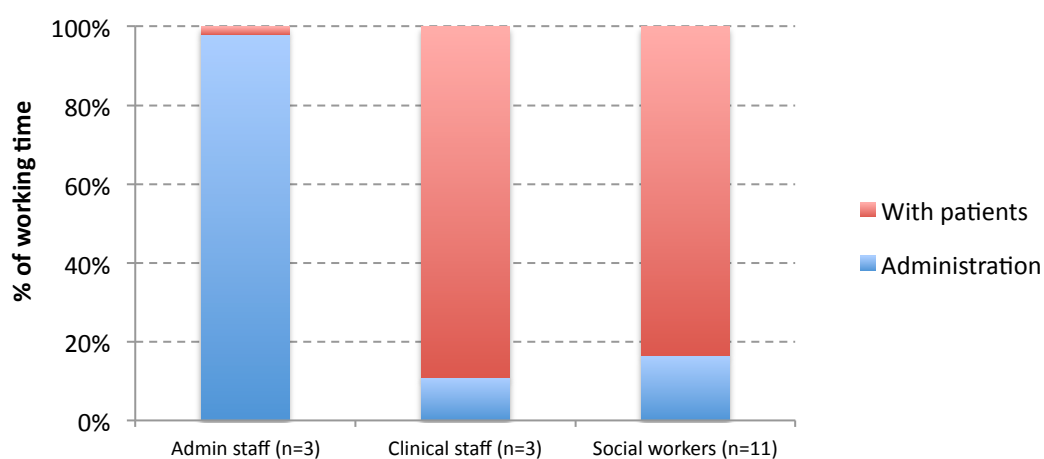
- d) **Management and decision-making at the NSP site:** Across the three study areas, decision-making varies between sites, although donors are involved with purchasing decisions at most sites (see Table 14). Syringes are centrally purchased by the HIV Alliance-Ukraine, therefore, the ultimate decision for procurement rests with the donor. Recruitment and dismissal of staff are the responsibilities of the sites' Organization Directors. The organization directors make the decisions about the site operating hours.

**Table 14: Key decision makers within NSP sites in study regions in Ukraine, 2012**

	Site financial decisions	Purchasing of drugs and supplies	Work schedule decisions	Recruitment or dismissal of staff decisions	Building/ infrastructure decisions
Organization Director	√	√	√	√	√
Board of Directors	√	√		√	√
Site Director	√	√	√	√	√
Doctor	√				
Nurse	√				
Coordinator	√	√	√	√	√
Financial Accountant	√				
Manager	√				
Donor		√	√		
Financial Officer		√			

Source: Study data, collected in 2012

- e) **Staff time spent on service provision:** Clinical staff reported varying degrees of their time spent with patients, ranging from as low as 10% (in a pharmacy-based NSP in Dnipropetrovsk) through to 90% (in a community center in Mykolayiv) – Figure 28. Administrative staff are shown to spend, on average, less than half their time on administration and external matters (33% and 19%, respectively). The rest of their time is occupied with other tasks including management meeting attendance, training and supporting staff. Social workers spend the majority of their time with patients (62%).

**Figure 28: % of time spent on administrative matters and with clients at NSP sites in study regions in Ukraine, 2012**


Source: Study data, collected in 2012

### 4.3.2 Monitoring & Evaluation of NSP Programme

NSP monitoring is performed as part of general monitoring of harm-reduction programmes, implemented by Alliance sub-grantors. There are few major sources of data about the programmes' performance:

- *Quarterly reports from NGOs:* Information on work done from SyrEx<sup>41</sup>: Data from SyrEx is regularly updated, and gives program managers an opportunity to track the key performance indicators permanently (clients records and their socio-demographical data, services provided for clients and events organized). This software also allows matching of data about commodities given to clients (condoms, syringes, IEC etc.) from two sources: social worker's documents and storage records. Storage Information helps manage supplies and avoid shortages.
- *Monitoring visits by Alliance program managers:* Visits are done by Alliance program managers biannually to assess each NGO against standardized indicators: execution of working plan for given a period, matching information from SyrEx and primary documentation, observation on sites, interviews with clients about service satisfaction, tests for social workers on professional knowledge, check of program documents and employees' salaries, and storage security checks. Following the first visit, each NGO receives a report with a feed-back and recommendations. Checking whether recommendations have been adhered to, is done via the NGO's report about actions taken for improvement and during next monitoring visit.
- *Bio-behavioural surveys:* Another important source of data are integrated bio-behavioral studies (IBBS), regularly undertaken for all most-at-risk populations (MARPs). The IBBS data are used for determining the design of projects; for example, IBBS data in 2007 indicated that the first experience of injection drug use in 35% of cases happens between 18 and 20 years, young PWID are less covered with harm-reduction programmes. These findings led to the of the Peer Driven Intervention model (PDI) in 2008. This project was tailored to responding to the needs of young male and female PWID. Furthermore, all IBBSs estimate the size of MARPs and include recommendations for future work with these population groups.

## 4.4 Institutional Efficiency and Exogenous Factors

### 4.4.1 Legislation and Enforcement

The current legislation impedes the ability of services to increase coverage of services, leading to inefficient service delivery: The coexisting punitive law on drugs and health policy and a police presence remains the biggest barrier for effective intervention. Although efforts to sensitize law enforcement agencies have been implemented, outreach workers continue to report harassment by police during needle distribution. Outreach workers reported instances of being stopped by police or even arrested while carrying out their work. Service providers also described police presence as having a direct negative impact on client access: Drug users are concerned with being identified as drug users if seen talking with NSP workers, or for carrying a NSP service card or injecting equipment. Service providers reported trying to encourage their clients to wash out the syringe as a way of allowing them to return equipment without the risk of being arrested for carrying a small amount of drugs (police can prosecute PWID for the drug residue left in a syringe after injecting). However, one NSP worker noted that it is often not feasible for PWID to wash syringes.

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<sup>41</sup> SyrEx: database management system, used for monitoring and recording in HIV prevention programmes among all vulnerable groups.

Some NSP workers in some areas indicated that they have provided harm reduction education to police to reduce the level of harassment clients experience when returning used equipment.

Specific legal issues regarding the quantities of narcotic drugs as a result of Order of MOH #634 (2010), Amendment of Order #188 (2000):

- Drug users can now be criminally charged for the small quantity of drugs in their possession such as the remainder in used syringes after injection. This has led to the detention of PWID near NSP sites by the police.
- Transportation of used syringes by social workers of HIV service NGOs also has potential legal consequences now.
- Impact on the number of used syringes collected—drop in the number of used needles and syringes collected between 2010 and 2011, by more than 1 million units.

#### **4.4.2 Medical Waste Storage and Disposal**

The conditions set by the Ministry of Health for the disposal of droppers, syringes and needles at NSP sites is perceived as restrictive by several interview respondents. Order #223 (which pertains to needles, including those used by PWID as well as needles used for sterilization purposes) prescribes a detailed method for the storage and sterilization of syringes and needles. It is a costly process which some argue deters NGOs from offering these services. Concerns about the lack of provision for the disposal of used needles and syringes was frequently raised as an impediment to the implementation of NSP in some sites.

### **4.5 Summary of Findings Relating to Program Efficiency of NSP Sites in Ukraine**

#### **4.5.1 NSP Programme's Successes**

- a) The study confirmed that the existing network of the NSP sites established in the three regions is functional, the sites are well equipped, and a multi-disciplinary team of human resources are integrated and budgeted for in the NSP program package.
- b) There is one programmatic package of NSP services agreed upon at the national level that guides NSP program design and delivery by all the various implementing partners, including NGOs and community based organizations. The programmatic package defines the core set of services to be provided through the NSP programmes, and it includes a monitoring framework in an attempt to regulate frequency and intensity of implementation as measure of quality assurance. The presence of only one donor managed by HIV Alliance has to some extent facilitated coherence of the core packages and service delivery design of the NSP programmes. However, considerable variability in the provision of core services between sites persists.
- c) The diversity of the service delivery models adopted to deliver NSP programmes provides the opportunity to reach different sub-populations of the PWID with services and expand reach and coverage of NSP programmes.
- d) The network of sites is operational, and there is a critical mass of health professionals that have training and experiences on addressing the needs of the PWID, and more importantly, the community-based organizations have acquired experience and trust delivering NSP services to the PWID communities.

- e) The startup costs of NSP services have already occurred in the three regions; and most of the staff has been trained on NSP programmes and service delivery. The unit cost of NSP per client is comparable to international standards, which suggests that NSP programmes are sustainable.
- f) The current modality of the HIV Alliance sub-contracting the NSP services to NGOs has established the knowledge and practice of results-based contractual agreements with civil society, which can be adopted and utilized by the Government entities in the likelihood scenario that NSP program are funded through government and regional funding.

#### **4.5.2 NSP Programme Challenges and Proposed Solutions**

However there are several issues that have contributed to inefficient program implementation and service delivery:

- a) **Service provision:** Despite the agreement between the HIV Alliance and the implementing partners to deliver the core package of services, the study revealed considerable variations in the services provided. The majority of the observed sites provide various ranges of services, but the provision of core services are still inadequate, comprising on average 28% of total services. The non-core services, which are not defined based on the evolving PWID' needs, absorb considerable budget resources allocated for NSP programmes.

Several sites' operations are not tailored to the needs of the PWID community they service due to limited utilization of strategic information about the targeted community. The location and opening hours are not adjusted to the PWID' needs and have resulted in low service utilization, low coverage, and subsequently in low capacity utilization of the NSP programmes' higher unit cost per client reached. Some sites are open for a limited time during peak hours, resulting in fewer clients turning up.

While the contact rate among *repeat* PWID is high, the syringes distributed per year remains inadequate (less than 100 per PWID). The quality of services varies substantively between the sites: the number of needle-syringes distributed ranges from about 10 to 300 syringes per PWID per year. The international guidance suggests that the optimal number of 200 syringes per PWID per year is likely to lead to sustained safe injecting behavior and prevent HIV transmission, while the International Alliance-Ukraine requires that each PWID receive an average of 130 syringes per year. The cost of these syringes is covered by the GF funds.

- b) **Human Resources:** Staff composition is not regulated and has resulted in the under-utilization of staff capacity and correspondingly, overstaffing at some sites. In general, all NSP staff understand their roles and responsibilities clearly and decision making varies between sites. Sites where fewer clients turn up may appear to be overstaffed. However this could be a result of the lack of planning prior implementation of NSP.

- c) **Monitoring and Evaluation**

The partners do not conduct a regular mapping of the locations of PWID nor do quick qualitative surveys to better understand their specific needs in terms of hours of services, type of services, and access/utilization. The decision-making for hours of operation rests with the site management.

**d) Law and regulations**

The current legislation impedes high coverage of services, which causes inefficient service delivery: The coexisting punitive law on drugs and health policy along with police presence remains the biggest barrier for effective intervention. Gaps exist in the legal framework regulating storage and utilization of medical waste and requirements for the disinfection of used syringes.

**e) Clients – challenges in terms of accessibility to NSP and promotion**

Accessibility can limit utilization of services, with issues such as:

- Poor public transport in some cities and rural areas.
- Absence of services in rural areas.
- Limited number of sites in some big cities, such as those in Mykolayiv, but also relevant to other cities not included in this study.

These structural challenges are beyond the scope of NSP programs to respond to, although they need to be noted as limits.

Inadequate promotion can also limit utilization of services, and could be address through targeted interventions such as:

- spending time on the streets talking to people,
- visiting new areas with toys for the children of potential clients
- peer-led information campaigns

**f) Linkages and referrals system:** Linkages and referrals are not regulated, which leads to an interruption of services for PWID. The inter-linkage of services with other healthcare providers are still lacking with only about half of the observed sites providing referral to counseling, testing and treatment. This is particularly important for optimizing contact with PWID to refer OST, and use HIV testing as an entry point to other services, in particular TB and HEPC and, if need be, to ensure access to treatment. Evidence suggests that only one intervention type is not sufficient to prevent HIV transmission and yield population level impact reduction of HIV incidence. In a systemic framework that hinges on value for the patient, the concept of the care delivery value chain (CDCV) (Kim, J. et al. Lancet) can guide the design and delivery of integrated services and effective referrals to ensure that the synergies of the various interventions in the cycle of prevention and care yield value for the client.

**g) Program efficiency:** Overall, comparison of the three regions indicate that sites in Dnipropetrovsk and Kyiv City are more efficient than those in Mykolayiv. Most sites in Dnipropetrovsk are operating at optimal scale when excluding operational costs.

Half of the sites in this study are not operating efficiently in comparison to their peers. A comparison between regions found that the higher efficiency in Dnipropetrovsk and Kyiv City compared to Mykolayiv was due to poor client turn-out in Mykolayiv, contributing to a higher unit cost per client. Attributable reasons for this could be the limited operating hours during peak periods and overstaffing. Non-efficient sites within each of the three regions also distributed less needles and syringes than what was required. These sites can **increase their distribution of needle syringes by about 20%** without changing staff or program costs.

- NGOs have to sign special agreements with healthcare facilities or third party companies that offer the service (on a case-by-case basis), and are responsible for purchasing the required means for the disinfection and utilization of syringes.

### **4.5.3 Recommendations to Improve HIV Program Efficiency in NSP Sites in Ukraine**

Recommendations include both those to support the implementation of NSP service delivery and to improve efficiency at Health service sites.

#### *Broad environmental recommendations*

- 1) The lack of inter-linkage of services could be addressed with a nationally led collaboration and networking with related providers. Most importantly, a harmonized policy environment is greatly needed for effective intervention.
- 2) A clear strategy or protocol on accepting used needles and syringes is needed, especially at exchange sites outside of state healthcare facilities (i.e., NGO sites).

#### *Health service sites*

- 1) Non-efficient sites can **increase their distribution of needle syringes by about 20%** without changing staff or program costs.
- 2) Revise the operating hours to better accommodate clients, thereby increasing client access to services. Any potential cost impact of different operating hours is likely to be minimal. This could have a flow on effect to increase utilization of the services.
- 3) Modifications can be made service sites to: a) align the staff profile with the specific needs of the PWID served by the specific service delivery model; and b) increase demand for services and coverage to maximize the productive use of staff time. This includes some sites, particularly those in Mykolayiv which can reduce staff numbers, without affecting service provision.
- 4) Due to overall inefficiencies as a result of low demand and uptake of services, inefficient sites should revise standardized operating procedures, including prioritizing provision to increase uptake of services and effective service delivery.
- 5) To improve and optimize coverage for NSP, sites should conduct rapid assessment of the population dynamic, mapping and resources needed as is necessary to appropriately plan the opening hours and staff composition tailored to the PWID community served by the site.

## 5 RESULTS AT THE PROGRAMME LEVEL: OPIOID SUBSTITUTION THERAPY

The opioid substitution therapy program was launched in accordance with Article 3 (Paragraph 2) Order of the President of Ukraine and two Orders of the Ministry of Health, Ukraine. These include the allocation of medication to health facilities providing OST services and regulation of the provision of methadone and buprenorphine for individuals with opioid addiction at state and non-state facilities. The Ministry of Health Order #476 (2008) on ‘the Standard of Treatment for HIV-positive People who are Injecting Drug Users’ stipulates that opioid substitution maintenance therapy (i.e. OST) is the most effective treatment, particularly for HIV-positive PWID in need of HIV treatment. The Order emphasized that the fact of drug use should not affect the decision for the prescription of ART, and PWID should have access to treatment just as other patients do. It also stated that medical care should be provided in conjunction with psychosocial support.

OST is funded by GFATM resources, provided through the International HIV Alliance as well as from local budgets, in collaboration with the Ukrainian Institute of Public Health Policy (UIPHP). The program is implemented by 34 NGOs collaborating with state healthcare facilities. Delivery of services is made through collaborative agreements established between the International Alliance and government health authorities. An OST Working Group under the MOH provides oversight. This collaborative agreement includes provision of medical, psychological and social follow-up to OST patients; building the capacity of healthcare facilities in terms of OST introduction through improvement of their material and technical resources; and the provision of OST medications (methadone and buprenorphine therapy).<sup>42</sup> Although the roll-out of the OST program initially faced legal barriers, it is now being scaled up throughout Ukraine.

The treatment guidelines for OST follow the protocol issued by the Ukrainian National Narcology Association, each for buprenorphine and methadone opioid substitution therapy. These guidelines cover the roles of various professionals in OST, health monitoring, dosages and criteria for the removal of patients from OST programmes.<sup>43</sup>

In Ukraine, the implementation of OST programmes has been challenging, including several attempts by the government and police to intervene in ways that drug users can access the treatment. In March 2012, the Ministry of Health of Ukraine approved the Order #200 on “Procedure for substitution therapy in patients with opioid dependence”. This order (or “*nakaz*”) contained many points which presented serious barriers for scaling up OST or even maintaining the same number of patients. It also created complications for patients. Before being admitted into an OST program, a potential beneficiary must first provide ‘official’ documented proof of two failed rehabilitation attempts—without medication—during the past year. This administrative hurdle was not only onerous for people seeking medical help; it was contrary to addiction treatment best practices.

The Order also listed a number of reasons for which patients can be disqualified from treatment—permanently, without further notice or any opportunity for withdrawal management—including:

- 10 days absence from the program
- A positive urine test for opioids
- Any violations, which also meant that an OST patient who gets something as minor as a jaywalking ticket for crossing the street on a red light, can be kicked out of the program and denied access to therapy

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<sup>42</sup> Alliance, 2010.

<sup>43</sup> Aizberg, O. (2008). Opioid Substitution Therapy in Selected Countries of Eastern Europe and Central Asia. Eurasian Harm Reduction Network (EHRN), Department of Psychiatry and Narcology, Belarus Graduate School of Medicine, Minsk. International AIDS Society.



- Any driving-related prohibition

The controversial Order stirred massive public debate among activists and NGOs with active involvement and appeal by the International HIV Alliance and Association of Substitution Treatment Advocates in Ukraine (ASTAU) to the Ukrainian court in February 2013. As a result, the Order was amended in March 2013 by the Order #238.

The document has been substantially modified towards expanding the availability of assistance to those suffering from addiction in Ukraine. The stipulation on the requirement of proof of two rehabilitation attempts was successfully excluded from the list. The current criteria for inclusion in OST are as follows: patient’s age of 18 or older; patient’s written request to initiate OST; and signed informed consent form (Form #129-1/o).<sup>44</sup> Individuals under 18 years of age can now also receive OST, but this requires a written request from their parents or legal representatives. Before initiating OST, a patient is also asked to provide results of testing for HIV, Hepatitis B and C, and TB. The legislation also defines a list of circumstances that might result in out-of-turn inclusion into the OST program. This includes an HIV diagnosis, Hepatitis B, Hepatitis C, TB, pregnancy, septic conditions and cancer.

The waiting time for inclusion into the OST program depends on a few factors, such as the patient’s commitment, the fulfillment of the required formal procedure and the availability of a chosen drug. The patient’s commitment to participating in OST would result in speedier compliance regarding the provision of testing results and all required documentation. The support of an NGO is also important in this regard.

Additionally, a simplified mechanism for receiving OST in different health care facilities in the regions has been introduced to help in cases of change of place of residence, vacation, business trips, etc. To receive OST in another region, OST patients must submit a statement from his local site that records the patient’s name, diagnosis, reason for the continuation of OST at a different site and region, the name and dose of medication that patient receives, the term of extension for treatment in another region and additional documents confirming the need to obtain OST in another region.

The criteria for exclusion/termination from the OST program have been modified as well. In particular, norms on administrative violations were removed from the list. In order to ensure consistency in OST provision, the new Order also stipulates expediting the process of OST medication transfer between different healthcare facilities and limits the number of days (three days) during which all necessary changes should occur.

## **5.1 Scope, Scale, Coverage and Utilisation of OST Services in the Three Study Areas**

### **5.1.1 Summary: OST Program Capacity and Coverage Indicators**

**Table 15: Performance indicators for OST sites**

<b>OST</b>	<b>Indicators</b>	<b>Year</b>	<b>Data</b>
<b>Site Availability</b>	There are <b>145</b> sites where OST is prescribed in Ukraine	As of 1 Sep 2012	<i>Secondary</i>
	There are <b>0.53</b> OST sites per 1000 opioid injectors in Ukraine	2011	<i>Secondary</i>

<sup>44</sup> <http://zakon4.rada.gov.ua/laws/show/z0637-13>

**Ukraine Program Efficiency Study: OPIOID SUBSTITUTION THERAPY**

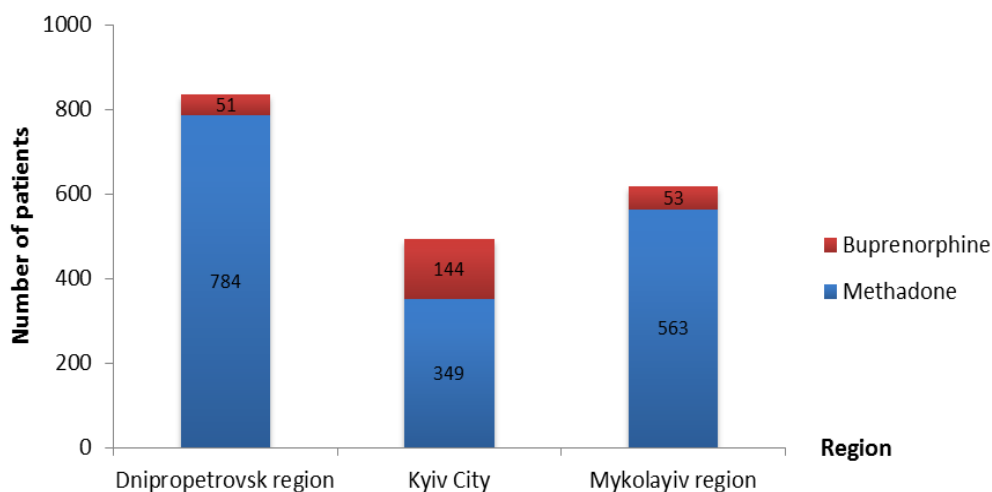
<b>OST</b>	<b>Indicators</b>	<b>Year</b>	<b>Data</b>
<b>Coverage</b>	There are <b>7,102 clients</b> on OST in Ukraine	As of 1 Sep 2012	<i>Secondary</i>
	There are <b>6,632 clients</b> on OST in Ukraine	2011	<i>Secondary</i>
	There are <b>5,078 clients</b> on OST in Ukraine	2009	<i>Secondary</i>
	There are <b>547 clients</b> on OST in Ukraine	2007	<i>Secondary</i>
	There are <b>2.8%</b> opioid injectors on OST (Low) (7,102 people on OST at census date divided by estimated number of injection opioid users 250,000) <i>Targets: Low: &lt;0.2; Medium: &lt;0.2–&lt;0.4; High: &gt;0.4</i>	2011	<i>Secondary</i>
<b>Quality</b>	<b>All (100%)</b> OST sites reported using MOH guidelines. 1 site also used WHO guidelines, 1 UNAIDS and 5 cited adhering to donor (Alliance) requirements. 8 sites provided staff training on those guidelines.	2011 – 2012	<i>Primary</i>
	<b>100%</b> of OST program providing psychosocial support in Ukraine	2011 – 2012	<i>Primary</i>
	<b>1,519</b> individuals on OST have received psychosocial support in the last 12 months in 3 regions (Dnipropetrovsk, Kyiv City, Mykolayiv)	2011 – 2012	<i>Primary</i>
	<b>1,540</b> individuals were receiving OST in the last 12 months in 3 regions (Dnipropetrovsk, Kyiv City, Mykolayiv)	2011 – 2012	<i>Primary</i>
	<b>98.6%</b> individuals on OST receiving psychosocial support in 3 regions (Dnipropetrovsk, Kyiv City, Mykolayiv)	2011 – 2012	<i>Primary</i>

The OST program is currently operating in 27 regions, within 145 healthcare establishments.<sup>45</sup> The number of clients who accessed the OST services increased tremendously in the past five years. As of September 2012, just over 7,100 patients received OST. Of these, 88% received methadone and 12% of patients received buprenorphine. The average dose for methadone was 77 ml and 10 mg for buprenorphine. In the three study regions, a total of 1,540 individuals received OST in the last 12 months.<sup>46</sup> Figure 29 shows the number of patients who accessed OST programmes in Kyiv City, Dnipropetrovsk and Mykolayiv regions.

<sup>45</sup> Ministry of Health Ukraine, 2012. Ukraine Harmonized AIDS Response Progress Report (UNGASS) 2012.

<sup>46</sup> July 2011 – June 2012.

Figure 29: The number of patients accessing OST programmes in Dnipropetrovsk, Kyiv City and Mykolayiv as of September 2012



Source: Ukrainian Institute of Public Policy, 2013

Despite the number of clients increasing nearly 13-fold over the past five years, this is still very low in terms of coverage. In 2011, there were just 0.53 OST sites for every 1,000 injectors in the country.<sup>47</sup> This translates to 2.8% of the total estimated opioid injectors in the country who are receiving OST in 2011, substantially lower than the indicative target levels set in the technical guide.<sup>48</sup>

The number of persons on OST in Ukraine is limited by the drug availability. Availability of OST depends on the target and actual allocation (availability) of drugs. Data shows that the actual coverage is lower than planned: by 1<sup>st</sup> July 2012, there were 1,760 places available in the OST program (298 in Kyiv City and 113 in Dnipropetrovsk).<sup>49</sup> The situation, however, varies across different regions. In Mykolayiv, for example, although the target was to provide 592 places in the OST program, there were 601 patients of OST.

The targeted numbers of patients are determined by requests put forward from the oblast level. As some patients may need less than the average dose, there is a possibility for additional number of patients. Furthermore, throughout the year the MOH may increase the number of patients admitted into the program. For instance, the MOH Order #613 on “The schedule of ‘Metadol’ allocation according to the needs of the regions” complements Order #1036 for the allocation of drugs across regions. It allows for the extension of access to OST up to 1,423 patients. Through this Order, Mykolayiv received an additional supply of drugs for an extra 30 patients in 2012.

### 5.1.2 OST Service Delivery Models

a) **Service provision through centralized drug dispensaries at oblast level:** Methadone substitution therapy for PWID is delivered through oblast-level organizations at a number of highly regulated

<sup>47</sup> Ministry of Health Ukraine, 2012. Ukraine Harmonized AIDS Response Progress Report (UNGASS) 2012.

<sup>48</sup> WHO, UNODC, UNAIDS Comprehensive Package for HIV Prevention, Treatment and Care among People Who Inject Drugs (PWID) presents indicative target levels for selected indicators, defined broadly as low, mid or high. Low: <0.2, Medium: <0.2 – <0.4, High: >0.4.

<sup>49</sup> Ukrainian CDC statistical report on OST (by 1.07.2013)  
<http://ucdc.gov.ua/uk/statystyka/profilaktyka/zamisna-pidtrimuvalna-terapiya>

centralized drug dispensaries by licensed medical staff.<sup>50</sup> The dispensaries often receive patient referrals for OST services from other organizations. OST services are delivered in two- or three-roomed facilities renovated and established adjacent or within government-owned health clinics.

**b) Movement towards integration of OST services:** Integration of OST services into other medical services is increasingly adopted in Ukraine. As of October 2011, there were 34 centers of integrated care. These centers have the potential to launch multidisciplinary care for OST patients with co-morbidities such as drug addiction, HIV and tuberculosis. By January 2012, centers of integrated care for OST patients were located in Mykolayiv, Sumy, Poltava, Vinnista, Ivano-Frankivsk, Kherson, Odessa, Zaporizhzhya, Riyne, Ternopil regions, and the city of Kyiv. The nine OST and two integrated services sites in this study were operated by the government/public sector.

Although some key services (e.g., dispensing medications for HIV and TB treatment) must still be provided at other sites, all care is coordinated through the IC program's multi-disciplinary collective team of medical specialists. Some professionals, including social workers, a lawyer and a gynaecologist are provided by the local harm reduction organization. Generally, IC programmes are able to provide a full-time narcologist, narcological nursing staff, psychologist and a social worker. AIDS and TB specialists attend once per week. The first contact person for an individual client will be a social worker and/or a case manager who act as the conduit between patients and doctors.<sup>51</sup>

The integrated care program within the City AIDS Center in Dnipropetrovks is a good example. This IC program is able to provide on-site HIV, narcological, gynaecological, case management and social support essentially on demand. A psychologist and TB specialist are each available roughly once per week, and a psychiatrist is in attendance once a month. Unlike at the narcological dispensaries, TB medications are dispensed alongside OST, allowing for a more efficient directly-observed therapy system. This program is staffed with AIDS, TB and narcological specialists, psychiatrist, nurses and social workers.

Even though NGOs usually lack the infrastructure to provide complex medical care, they often have different and complementary skill sets to clinical staff, and sources of funding that are not always available to government clinics. In Kryvyi Rig, for example, an NGO provides harm reduction, gynaecological and social support services to IC patients. Similarly, an NGO in Dnipropetrovsk offers case management, counseling and overdose prevention through IC.<sup>52</sup>

### 5.1.3 Scope of Services Provided at OST Sites

Based on the Order of the Ministry of Health, the treatment for drug addiction among HIV-positive PWID is to be provided through the following services:

- i. *Within programmes focused on the rejection of drug use*
  - a. Detoxification.
  - b. Rehabilitation and training on adherence to ART.
  - c. Anti-recurrence and maintenance treatment.
  - d. Participation in self-help groups.
  - e. Re-socialization.

<sup>50</sup> Measure Evaluation. (2011). Data Quality Audit of four USAID HIV Projects in Ukraine: Final Audit Report. Submitted to U.S. Agency for International Development 19 Nizhniy Val 04071 Kyiv, Ukraine.

<sup>51</sup> For further discussion see Matt Curtis. (2010). Building Integrated Care Services for Injection Drug Users in Ukraine. World Health Organization Regional Office for Europe.

<sup>52</sup> Ibid.

- ii. *Within substance maintenance therapy programmes (OST)*
  - a. Examination, prescription of OST and induction of the therapy.
  - b. Stabilization.
  - c. Maintenance and training on adherence to treatment.
  - d. Re-socialization.

Table 16 presents the cumulative list of services provided by the OST sites sampled in this study. A sub-set of these services are identified as ‘core’ based on comparisons to the UNAIDS technical guide on services that sites need to provide in order to effectively deliver intervention. These core services are indicated as such in the table below.

**Table 16: Scope of services provided at OST sites**

<i>Relationship to comprehensive package - OST components</i>		<i>Number of sites that offer service (n=11)*</i>
<b>Diagnosis and dosing – core services for OSTs</b>		
Diagnosis and assessment of opioid dependence	Core	11
On-site dosing of methadone	Core	10
On-site dosing of buprenorphine	Core	4
Distribution of IEC materials for behavior change	Core	6
Social and psychological support for OST adherence	Core	11
<b>Additional health services</b>		
Screening for TB co-infection	Core for comprehensive package	6
ART follow-up services	Core for comprehensive package	5
Provision of primary health care		5
Diagnosis of mental health disorders (apart from opioid dependence)		2
Treatment of mental health disorders (apart from opioid dependence)		2
<b>Others</b>		
Other—includes counselling and testing for HIV	Core for comprehensive package	2

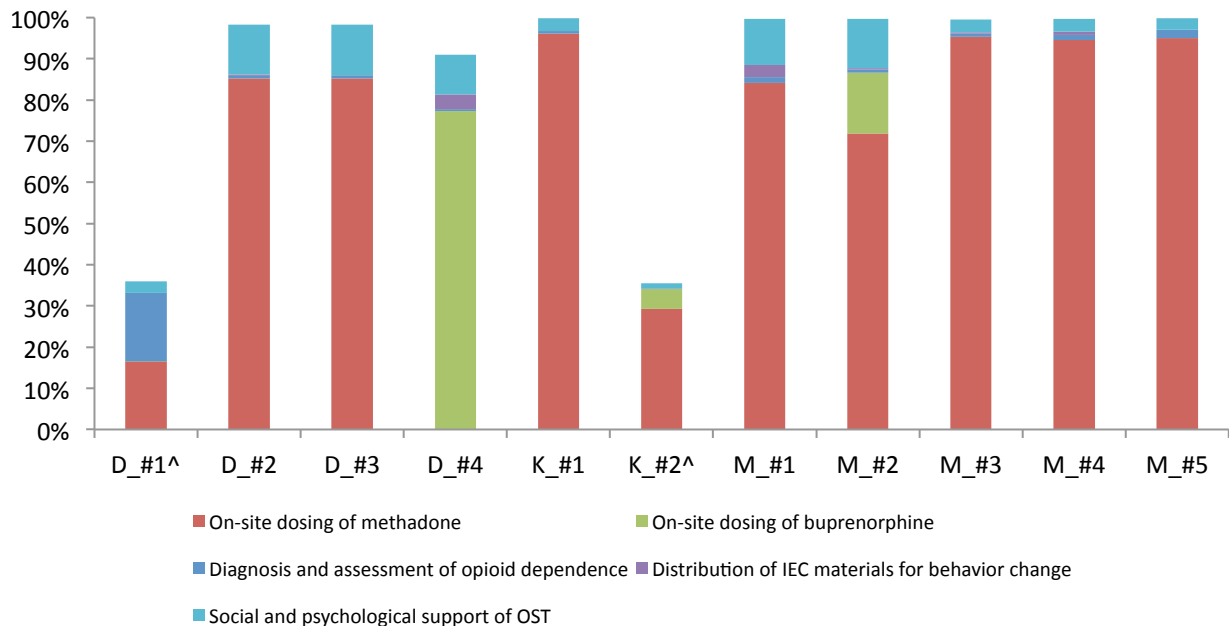
\* OST sites plus two integrated sites

Not all OST sites offer the same range of services. Out of the eleven included in this study, four offer buprenorphine; three of which are in addition to methadone. Of these three, one site did not have buprenorphine available on the day of the site survey. This site reported very low numbers of clients using buprenorphine (three). Not all sites distribute IEC materials but all provide psychosocial support.

Up to 98.6% of OST clients covered by the study sites were receiving psychosocial support on top of total services provided.

Figure 30 presents the proportion of core service provision (measured by volume of client visits) of each site, in relation to total services provided.

**Figure 30: Volume of visits for core services as percentage of total visits for all OST-related services in Ukraine, June 2011 – July 2012**



Source: Study data, collected in 2012

## 5.2 OST Program Funding, Unit Costs and Technical Efficiency

### 5.2.1 Sources of OST Program Funding

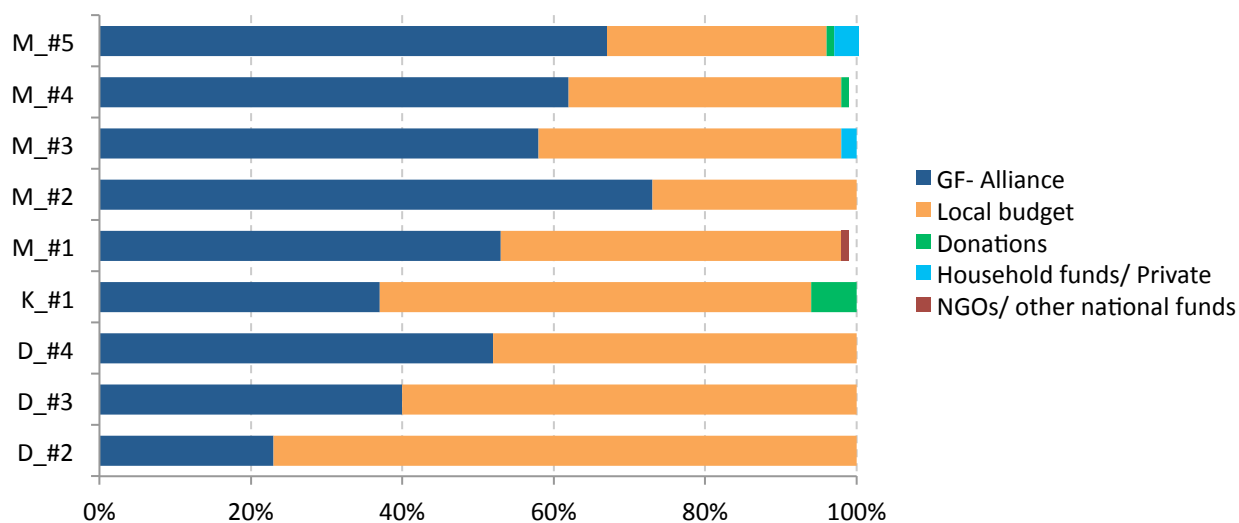
Funding for the OST program is based generally on the combined resources of public funds, the Global Fund grant and through project SUNRISE which is supported by USAID (see Figure 31). The local Government budget covers mostly infrastructure and personnel expenses while the GF fund is used for the procurement of drugs.

Among the sampled OST sites (non-integrated sites), funding support is split evenly between Global Fund (49%) and the Local government (49%). Spending on OST represents between 2 – 4% of total HIV expenditure at the oblast level.

Funding for each of the integrated sites is shared fairly evenly between two funders:

- The Kyiv City site is funded by the National Government (44%) and the Local Government (41%).
- The Dnipropetrovsk site is funded by Global Fund-Alliance (48%) and the Ukraine National Government (41%).

Figure 31: OST funding sources (non-integrated sites) in study regions in Ukraine, 2012



Source: Study data, collected in 2012

The local governments support the OST work of these integrated sites with capital and operational purchases, including both operational and program staff. Sites in Dnipropetrovsk and Kyiv City receive more of their funding from local government than those in Mykolayiv.

### 5.2.2 Total Costs of Delivering OST Services

Not surprisingly, sites offering buprenorphine have higher expenses than those offering methadone, due to the higher cost of buprenorphine. There are historical, cultural and medical reasons for buprenorphine being provided.

Human resource costs and drug prices varied across the OST sites. However, program staff costs constituted the highest proportion of site costs. Drug costs represent the second highest proportion of costs per site across most sites (see Figure 32).

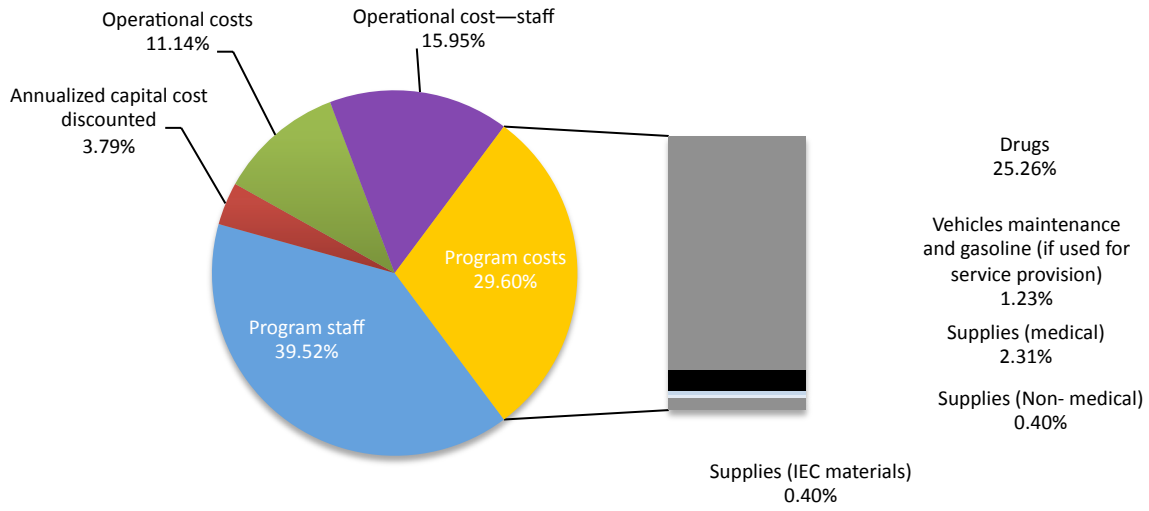
Total site costs ranged from UAH 76,343 to 718,342.47. Program staff costs, drug purchases and operational staff costs represent 80% of total cost of all nine stand-alone sites. Program staff costs constitute the highest proportion of site costs (on average, 39.5% of total site costs), with four sites spending over 50%<sup>53</sup>. Drug costs represent the second highest proportion of costs per site (on average 25.3% of total site costs). All sites reported Global Fund-Alliance only funding for drug purchases. From all the program staff costs<sup>54</sup>, about one third of the funding came from GF-Alliance with the remaining funding coming from the Local Budget.

For the two sites that provided integrated services, the combined total operational cost comprised 4.6% of total cost; lower compared to 11.1% for the nine stand-alone OST sites, but higher compared to 2.3% for the ten stand-alone ART sites.

<sup>53</sup> Includes the additional Global Fund payments

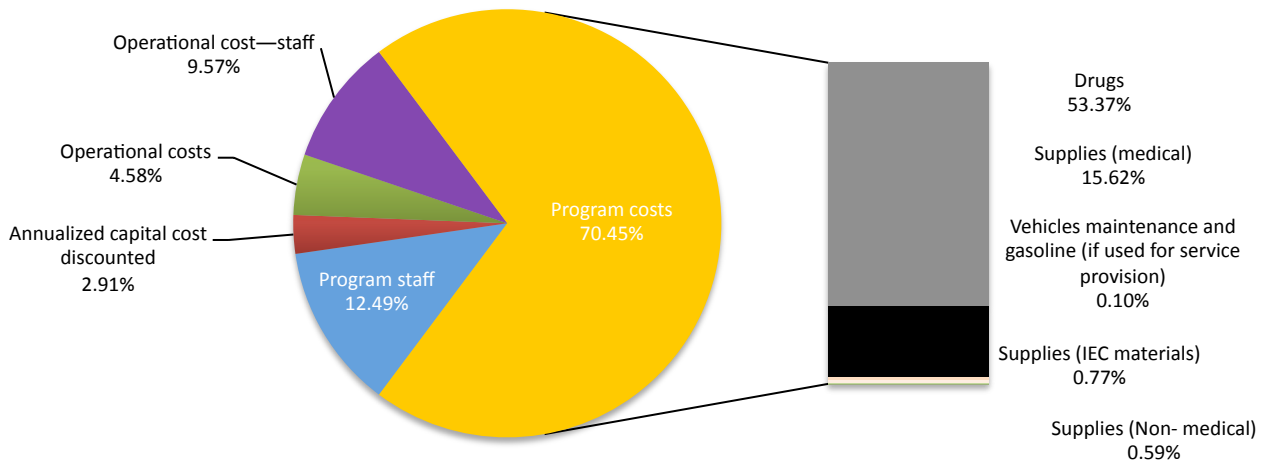
<sup>54</sup> Cost may include staff providing other services within the OST site, e.g., screening for TB, social and psychological support of those on OST

Figure 32: Cost components for non-integrated OST sites



Source: Study data, collected in 2012

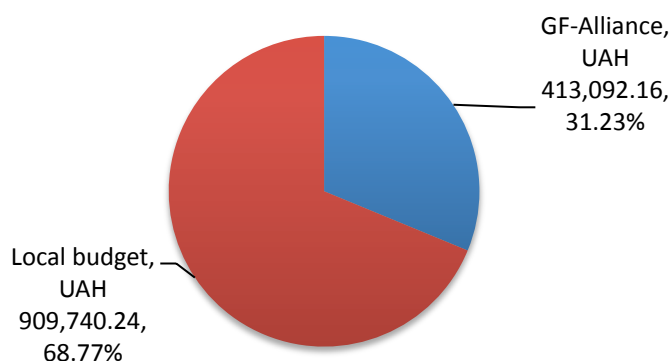
Figure 33: Total cost of OST service delivery for integrated sites



Source: Study data, collected in 2012



Figure 34: Program staff cost for OST sites in three study regions in Ukraine, 2012



Source: Study data, collected in 2012

The program costs for two out of three sites in Dnipropetrovsk were relatively higher than those in Kyiv City and Mykolayiv, mostly due to the fact the sites provided buprenorphine, which is much more expensive than methadone.

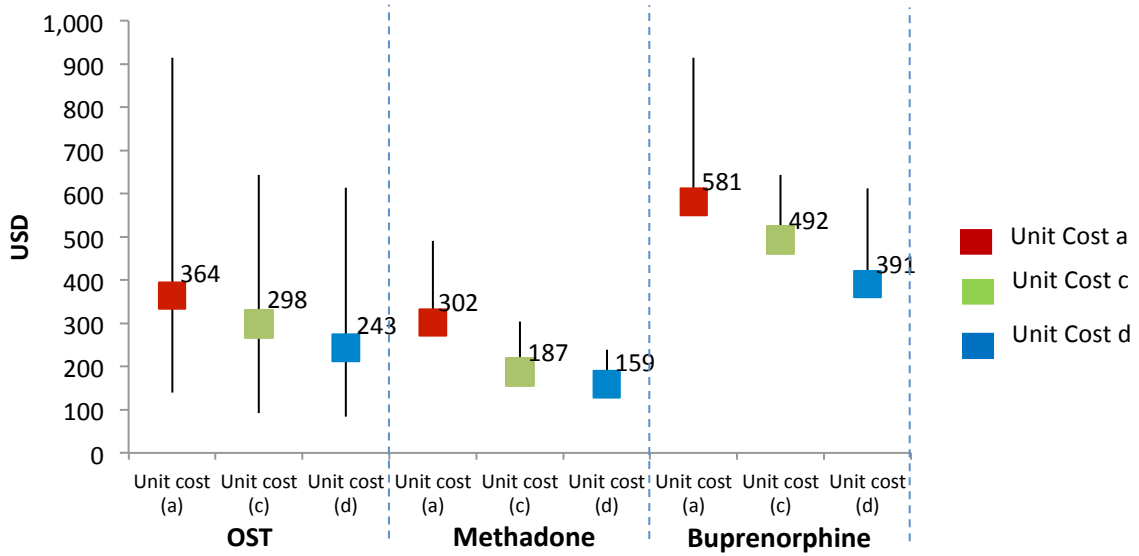
The cost of running an integrated site is relatively higher than stand-alone OST sites (3 – 4% of the total cost for an integrated site). For the two integrated sites, the major portion of the budget was allocated for program costs. Compared to Kyiv City, the integrate site in Dnipropetrovsk spent minimal portion on staff cost (both program and operational), operational costs and annualized capital costs.

### 5.2.3 Unit Costs of Delivering OST Services

Four different unit costs were calculated (Figure 35 summarises the different unit cost results):

- Unit cost (a) = the total cost of running the site (capital costs discount rate annualized + total annual operational costs + total program costs). Note: this will include the cost of all additional services sites individually choose to offer. These services differ between sites, as highlighted above in the scope of services table.
- Unit cost (c) = program staff and program consumable costs for CORE services
- Unit cost (d) = only OST costs (program and staff) (methadone and buprenorphine)

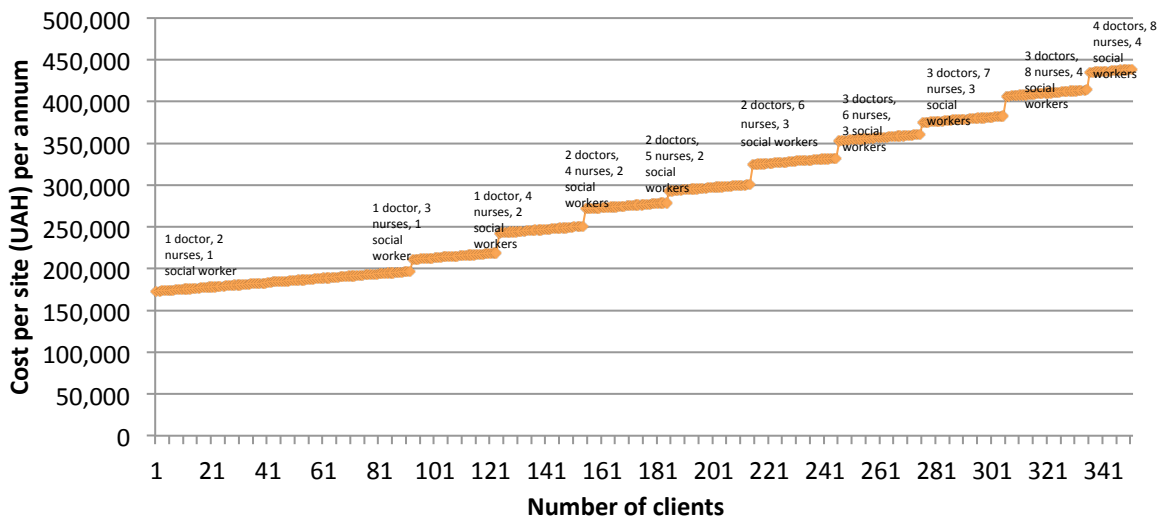
Figure 35: Unit cost(s) (USD) per OST client per year at OST sites in study regions in Ukraine, 2012



Source: Study data, collected in 2012

Using data from the sample sites a total cost per site can be estimated. Figure 36 shows total cost per annum including cost increments as client numbers increase. This graph demonstrates potential annual site cost based averages of annualised capital costs and operational costs; average cost of program staff per client (UAH 544.09), and an average of the lowest three core program costs (methadone, not buprenorphine – UAH 262.49)). Staff composition complies with Order #200 (one specialist doctor and two nurses) plus one social worker, but increases based on staff-to-client ratios as client volume increases. This provides a reference from which to compare other sites and identify potential benchmark savings. If a site with 100 clients doubles its client base to 200 clients, costs would increase by 40%. This illustrates the degree of economies of scale that is possible: the additional costs of an additional 100 clients only increase the program staff costs and consumable costs of a site.

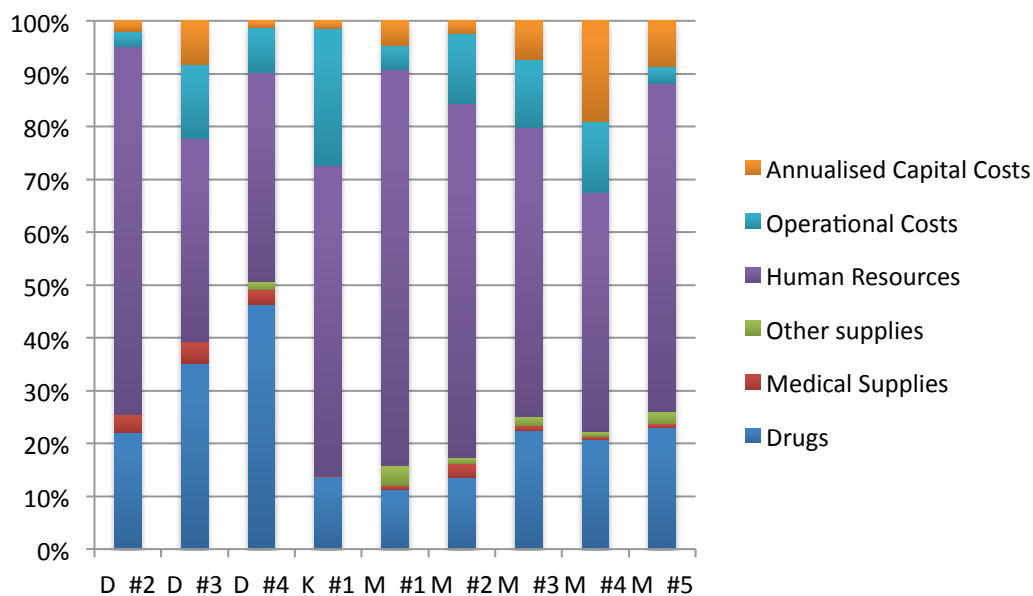
Figure 36: Total costs (core programmes only) per reference site in study regions in Ukraine, 2012



Source: Study data, collected in 2012

Figure 37 below summarises the unit cost breakdown by site and by cost component. It underlines the vast variety in unit costs and what funding is spent on.

**Figure 37: Unit cost per client by cost component, at OST sites in study regions in Ukraine, 2012**



Source: Study data, collected in 2012

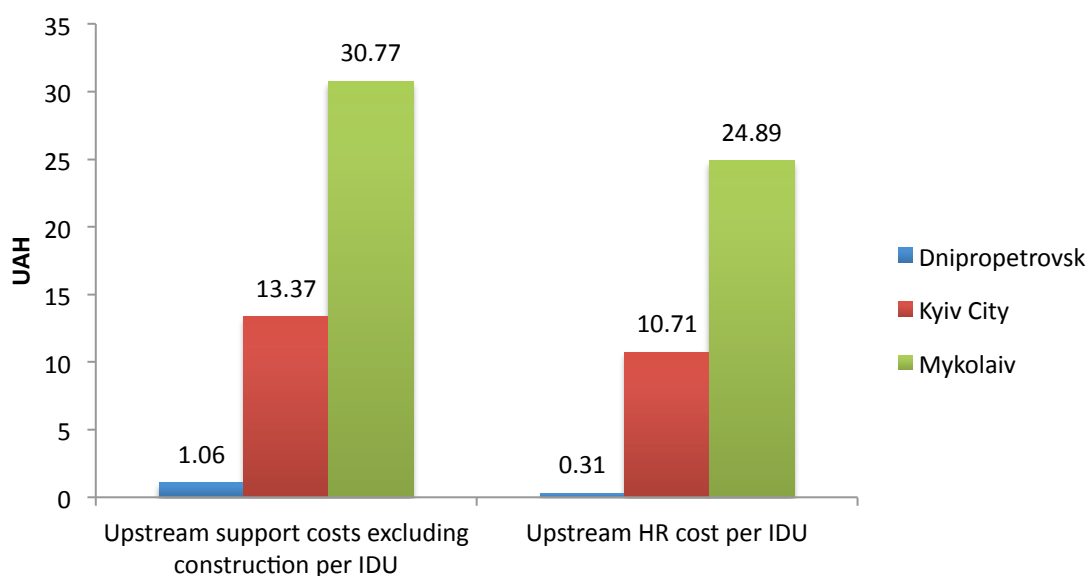


	Unit cost (a)	Unit cost (b)	Unit cost (c)	Unit cost (d)
<b>Higher cost site (per client) characteristics by comparison</b>	Lowest number of clients Higher operational staff costs (largest non-program factor) Higher operational costs (particularly for non-service provision vehicles, training, electricity/water)	Higher cost of buprenorphine drives up program costs Higher program staff costs Sites with relatively higher unit cost (b) compared to unit cost (c), incur higher non-core program costs (D_#2)		
<b>Lower cost site (per client) characteristics by comparison</b>	Lower operational staff costs None or low operational costs (none/low costs for non-service provision vehicles)	Lower cost of methadone Lower program staff costs		
<b>Efficiency gain opportunities</b>	Increase the number of clients to spread the capital and operational costs across a wider client base. Consider need or reduce non-service provision vehicle expenditure Bring operational staff costs into line (best achievable/comparable salary)	Consider reducing non-core services to reduce non-core program costs of some sites. Bring program staff costs into line (best achievable/comparable salary)		

### 5.2.4 Regional Upstream Costs

Regional upstream costs were estimated based on regional upstream costs and the size of the PWID population (see Figure 38).<sup>55</sup> Mykolayiv has the highest regional upstream cost<sup>56</sup> per PWID, largely due to the fact that the population of PWID in the region is lower than in the other regions. For example, although Kyiv City has higher upstream support cost and upstream HR cost compared to Mykolayiv, when we calculate the cost per PWID, Kyiv City has higher PWID population than Mykolayiv (38,000 vs 10,109).

**Figure 38: Regional upstream cost (UAH) per PWID for OST at OST sites in study regions in Ukraine, 2012**



Source: Study data, collected in 2012

### 5.2.5 Technical Efficiency Analysis for OST

**Standalone OST sites are more expensive:** On average the methadone stand-alone OST sites are two times the cost of the best performing sites when considering OST staff costs and the costs of methadone for 365 client visits a year. However, the cost difference increases to 2.3 times when including all costs (non-integrated sites).

**Significant cost savings are possible:** The unit cost of the best performing site is UAH 672 per client when considering OST staff costs and the costs of methadone for 365 client visits a year. If all the sites can achieve the unit cost of the best performing site, the sites can on average save at least half (50%) of their unit cost per client for methadone stand-alone OST, and 43% of the unit cost per client when including all costs (non-integrated sites).

<sup>55</sup> There are some limitations to these estimates. Note, this estimate is based on the average spending from NASA 2009, 2010 and estimated PWID population per region.

<sup>56</sup> Upstream costs are those that occur in the support organizations to ensure that services are delivered. They may include construction, expansion, repair and renovation of working space, modernization of laboratory equipment, organizational and logistics services of decentralization, sentinel surveillance, training for medical staff/non-medical staff, advocacy and human rights and stigma reduction.

Site M#3 has the lowest unit cost<sup>57</sup> (UAH 672) across all input metrics, when all costs accounted for. It is the most efficient OST site, with the highest number client visits for methadone per hour open per staff member at 17.5, compared to the average of 7.5.

Characteristics of this site include:

- Highest number of clients per staff member per hour open (2.3 times the average).
- Global Fund is the primary funder, and purchasing decisions are made by the donor (other sites have MOH)—drug costs are a lower cost component compared to other sites, but not the lowest.
- Open every weekday—fewer hours per day than some others (4 hour per day), weekends (2 hours per day).
- Only rural site in sample.

**Cost drivers:** Regression analysis (with the annual OST program cost per client was the dependent variable) showed that the type of opioid substitution treatment was significantly associated with OST program cost (p=0.0388). Sites that used Methadone were more efficient than sites that used Buprenorphine. All other variables were insignificant. Other variables included years of operation, degree of integration (referrals), management score, guidelines used, number of hours the site was open, number of clients and service delivery model.

### 5.2.6 Comparing Ukraine’s OST Unit Costs to those of Other Countries

Ukraine’s OST unit costs are in line with other international figures (Table 17). Program staff costs (and drug purchases) represent the highest proportion of site costs.

**Table 17: OST unit cost comparisons with international figures**

Type of drug	Ukraine (this study)		International references (Schwartländer et.al, 2011) <sup>58</sup>	
	Full cost of providing OST <sup>a</sup>	Cost per client on OST for 12 months <sup>b</sup>	Drug substitution – Financial Unit Cost	Unit cost of OST
Methadone	USD 140 – 491 (Average USD 302)	USD 84 – 239 (Average USD 159)	USD 260 – 346	USD 364 – 1,057
Buprenorphine	USD 914	USD 613	-	USD 1,236 – 3,167
Not specified	-	-	USD 129 – USD 420	-

<sup>a</sup> Including additional health services (operational and annualized capital cost). Assume 365 visits per client.

<sup>b</sup> Only with program costs, excludes operational and capital costs. Assume 365 visits per client.

<sup>57</sup> This unit cost per client on OST for 12 months are based on the assumption of 365 visits per client and only OST costs (program and staff) (methadone and buprenorphine) included.

<sup>58</sup> Schwartländer, B., Stover, J., Hallett, T., et al. 2011. Towards an improved investment approach for an effective response to HIV/AIDS, *Lancet* 2011; 377: 2031–41 Supplementary material.

### 5.3 Management and Information about OST Sites

#### 5.3.1 Operational Characteristics of OST sites

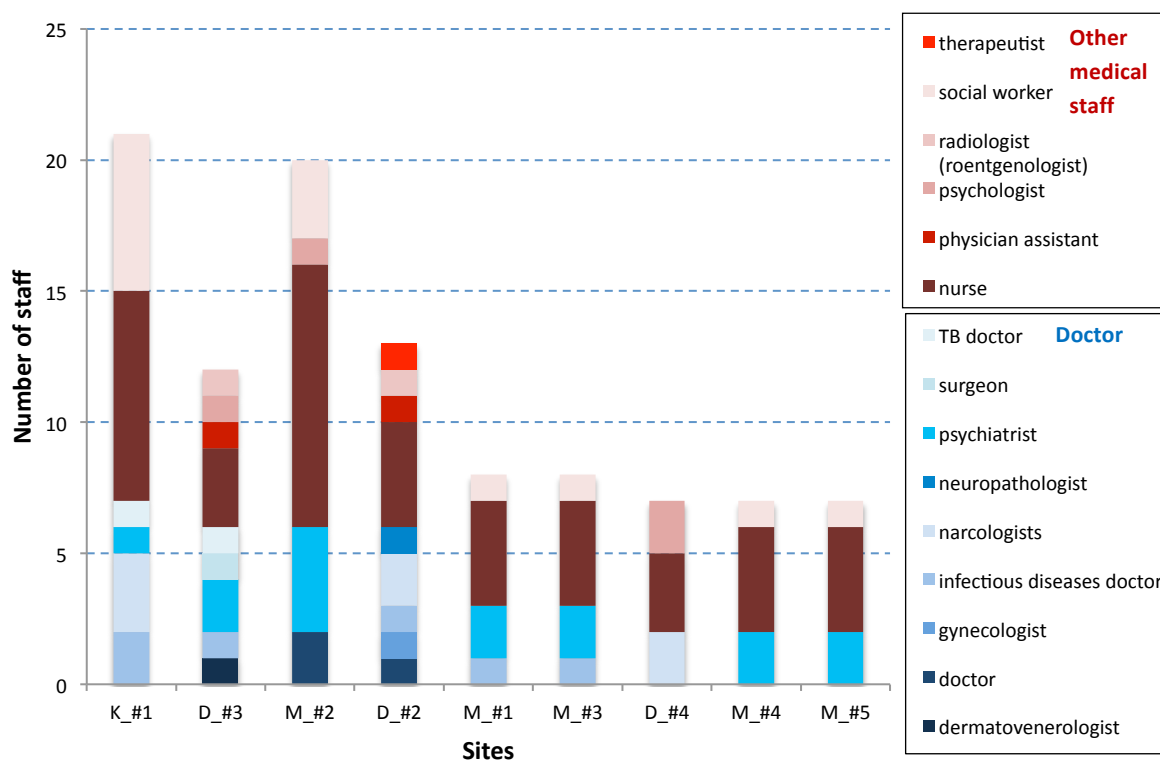
**a) Time spent with patients:** Staff interviewed from the OST sites reported a high administrative workload. One clinician reported spending 88% of their time on administrative matters. On average, clinical staff reported spending half their time with patients (49% of working hours). A number of sites indicated that they needed additional staff to cope with the workload or meet the range of client needs.

**b) Waiting times at facilities:** Observations at two sites found that clients wait on average 7.2 minutes to be seen, with the longest wait time being 11 minutes.

**c) Staff composition:**

Figure 39 illustrates a mix of full and part-time staff types operating at OST sites.

**Figure 39: Staff composition at OST sites in study regions in Ukraine, 2012**



Source: Study data, collected in 2012

**d) Opening hours:** Three of the eleven sites have been operating for seven years, the rest have been operating between three and five years. All the OST sites sampled in this study are open seven days a week. OST program opening hours were seen by clients and some staff as limiting access and inconvenient because they were open for only a few hours each day, especially since clients were required to be on-site to take their methadone every day of the week. On average, sites have 28 client visits for every hour that they are open. The number of clients per staff member per hour open ranges from 3.5 to a high of 17.5. Most clients' first point of contact is a nurse.

**e) Management and Decision Making:** The management structure of the OST program at the national level is one of subordination from the MOH to the network of people living with HIV and the HIV/AIDS Alliance, down to local NGOs who manage the service provision sites. At a local operational level, the responsibility for the operation of OST programmes is vested in a regional chief drug treatment specialist who is also the chief physician at the regional hospital. According to one key informant, chief physicians operate local hospitals with a significant degree of personal discretion as there is no 'strict subordination'.

Despite the existing management structure, some interview respondents during Phase 2 of the study expressed concern over what they perceived as a decentralized system. Some felt that divulging power to regional chief drug treatment specialists could be positive in that regional specialists may have more localized knowledge to appropriately tailor treatment programmes. On the other hand, other respondents feared a decentralized system resulted in a lack of accountability and consistency, posing challenges for the equitable and efficient operation of programmes.

In the key informant interviews in Phase 2 of the study, it was noted that while the MOH had the responsibility for public health initiatives in Ukraine, there is also a Working Group operating under the guidance of MOH. The group includes MOH representatives, the Network of PLWH, sponsor organizations and NGOs. There is no permanent composition to this body; it is an ad-hoc group with a rotating membership. Several interview respondents commented that consultation with stakeholders and external experts was not a mandatory component of the monitoring system for the OST program. For instance, there was a view from one respondent that physicians, who have a key role in the implementation of treatment programmes, were disengaged from the process. Other respondents also noted the lack of a consumer participation culture, with the consumers being the PWID, who were said to be perceived as "a category of patients with whom there is nothing to consult". The lack of consultation on the development of the OST guidelines was believed to result in an inaccessible program model. This view, however, was contradicted by another respondent who stated that PWID were "definitely engaged" in consultations.

In terms of decision-making, purchasing decisions are for the most part deferred to the Ministry of Health and/or the donor. Decisions on staffing, site finances and the use of building and facilities, however, are decentralized to the site's Organizational Director. Decision-making generally depends on the management of each site. This has been reported to result in uneven distribution of services afforded to different sites.

Among all eleven OST sites in the study regions, WHO, MOH, UNAIDS and/or Alliance guidelines on the implementation of OST intervention were used. Three sites, however, did not provide staff training on these guidelines. Interviews with key informants revealed that OST continues to be viewed by some as a Western practice. The adoption of the OST guidelines was heralded as a positive shift towards and a client-centred understanding of drug treatment.

Sites that demonstrated good management practices had the following characteristics:

- Have defined objectives or targets, which staff were aware of.
- Reporting lines clearly established and understood by both staff and managers.
- Roles and responsibilities can be modified, a staff work schedule is available, managed and allow short-notice changes.

Sites with the poorest management practices were those where not all staff were observed to be aware of the sites' objectives and/or have schedules that do not account for on-call or emergency needs.

### 5.3.2 Monitoring & Evaluation

Monitoring of OST in Ukraine at the national and regional levels is performed by Ukrainian AIDS Center (UCDC) on the monthly basis. It includes the following indicators: region, site, type of the drugs, number of patients as well as characteristics of patients (gender, average age, number of pregnant women), the dosage, the number of HIV-positive patients, patients with hepatitis B, C and TB, the number of patients who are taking or waiting to start ATR and the number of patients who have left the program. The collected data is used for analysis, for example in 2010 The Ukrainian Institute on Public Health Policy did an analysis of average methadone dosages given to clients. The analysis revealed that actual average dosages are significantly lower than estimated. The results of the analysis were presented to MOH with the recommendation of monitoring visits to sites with low average drug dose.

The OST monitoring is also done by Alliance as one of the funders of services. Similarly to NSP, OST information is collected via different sources: SyrEx database, monitoring visits and quarterly reports from organizations. Unlike the NSP, monitoring visits to OST sites are done not only by Alliance representatives but, since 2012, the monitoring team includes a representative of UCDC. The joint monitoring team has wider access to facilities and information (especially when talking about clients' medical records). The UCDC representative, as a result of monitoring visit, provides a report to the Head of Health care department in oblast. Evidently, recommendations given by UCDC representative to local officials are more likely to be taken into consideration, which gives wider opportunities for service improvement. Similarly to NSP monitoring procedure, the OST monitoring visits' tasks include assessment of working plan fulfillment, on-site observations and check of project documents.

The UCDC collects quantitative data from OST sites on epidemiological monitoring including morbidity and clinical death rates, but key informant interviews suggest that reliable data on the number of PWID accessing and being retained at OST sites is not being collected accurately. As commented by one Program Director of an NGO, *"Unfortunately, we have no statistics of how*

## 5.4 Institutional Efficiency and Exogenous Factors

### 5.4.1 Barriers to OST Service Provision

- **Coverage of OST facilities:** Distance is barrier to access. Some sites are too far for clients to commute daily. Travel times to OST program sites varied but two clients described having to travel for over an hour each way every day because no doctor or service in their city was willing to offer OST.

*"We have to come a long way here, 25 km. We spend UAH 50 for the two of us to come, and when we had no money, we came every other day. ...Though we have a district hospital and the local drug treatment doctor has the same authority, but she does not want to work with OST patients"*

Client10B, female, 22, OST

- **Hours of operation:** Clients and staff noted that the current hours did not make it easy for people on the program who were employed.

*"The site has to open earlier. Simply [speaking], at 8:30 a.m. there is a queue of 30 – 40 people already, these are people who have to get to their jobs. It operates for half an hour and then closes, during this time 15 people manage to come through;"*

Client 02A, male age 35, OST & ART program



- **Access to OST program:**
  - Regulation on the distribution and reporting of methadone in liquid form, based on the “Law and Rules on prescribing and receipts of drugs... #360” 2005 (updated 2010) sets the limit of methadone that can be prescribed and dispensed at any one visit at 0.3 grams. There are concerns however, that legal drugs for OST might be sold on the black market.
  - In the three oblasts studied, OST patients who require at-home treatment were not able to access OST<sup>59</sup>.
  - Some OST clients have limited access to OST if they require hospitalization at healthcare facilities that do not hold a “Licence for carrying out activities in circulation of narcotic substances” which allowed the facility to provide OST

### 5.4.2 Legislation and Regulations

Regarding the implementation of harm reduction programmes, including OST, in prisons and other correctional facilities, the MOH, the Ministry of Internal Affairs, the Ministry of Justice and the State Service on Drugs Control issued Order #821/937/1549/5/156 “*On approval of the interaction between healthcare, police, pre-trial detention facilities and prisons on ensuring continuity of substitution maintenance therapy*” (October 2012), which defines treatment provision procedures and the responsibilities of institutions.<sup>60</sup>

Overall, key issues affecting the provision of OST services in Ukraine are legislation and regulation which is complex and prohibitive to OST program delivery and patient access to services, law enforcement which targets doctors and patients associated with OST programmes, inter-ministerial differences of interpretations of regulation and service provision of OST drugs, and funding sustainability (a large proportion of funding comes from international donors). Implementation challenges faced by OST programmes have included bureaucratic and legal barriers both in terms of providing and scaling up treatment, including Order #200 on “*Procedure for substitution therapy in patients with opioid dependence*”. Despite the amendment to this order in March 2013, the risk of legal implications associated with PWID accessing OST programmes and therapy persist, as do other geographical and institutional barriers patients experience to accessing of access to OST.

- Complex and prohibitive regulations, along with complicated licensing procedures become a hindrance for institutions to set up OST programmes.
  - In accordance to the laws of Ukraine, there is no age limit for clients of OST. Key informants have suggested that the norms adopted at local and regional levels (e.g., Kyiv City) can introduce age limits. In interviews, key informants stated that in Kyiv City, PWID under the age of 18 are unable to access the program.
  - Clients at OST clinics are required to register, whereas previous participation in the program can be anonymous. There is concern about breach of confidentiality and the disclosure of OST client information. For example, there have been claims that the police would press medical doctors to disclose their clients’ confidential information.
  - Unusually restrictive national narcotic laws and regulations set unreasonable security requirements (e.g., alarms, safes, etc.) for even the minimal supplies of narcotics that cannot be met by most medical facilities.
- **Role of law enforcement authorities:**
    - Doctors and patients associated with OST programmes are being targeted by police drug enforcement units.<sup>61</sup>

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<sup>59</sup> Note however that home-based treatment is available in some other oblasts such as Ivano-Frankivsk

<sup>60</sup> <http://zakon2.rada.gov.ua/laws/show/z1868-12>

<sup>61</sup> International HIV/AIDS Alliance in Ukraine, Canadian HIV/AIDS Legal Network & EHRN, 2012

- Inter-ministerial differences:
  - Different ministries i.e., stakeholders participating in the process (including Ministry of Health, Ministry of Internal Affairs) may have different interpretations of the issues surrounding the regulation and service provision of methadone and buprenorphine.
- Sustainability of funding and budgeting:
  - Even though the OST program is supported by the Ukraine government, a large proportion of funding comes from international organizations (GFATM grant and project SUNRISE<sup>62</sup> (2004 – 2011) supported by USAID). Different funding sources also contribute to cost variations between different service providers.
  - OST is not budgeted in the state budget because of political reluctance to invest in the OST program.

## 5.5 Summary of Findings Relating to Program Efficiency of OST Service Delivery in Ukraine

The OST program, funded in Ukraine by GF resources provided through the International HIV Alliance as well as local budgets, is considered to be the most effective treatment, particularly for HIV-positive PWID in need of treatment. OST services are delivered in licensed two or three-roomed facilities that are renovated and established adjacent to or within government-owned health clinics with highly regulated centralized drug dispensaries run by medical staff. OST program service provision sites are managed by NGOs who are under the authority of the MOH and HIV alliance. Additionally, integration of OST services into other medical services is being increasingly adopted in Ukraine as a way to increase accessibility and efficiency. Many participants believe this is a best practice model as it maximizes efficient and equitable treatment by providing a team of specialists (therapists, drug treatment specialists, infectious disease specialists and social workers) to respond to the various, and often inter-related needs of PWID. However there is some concern over prevailing attitudes that prioritizes law enforcement over harm minimization.

Despite the nearly 13-fold increasing number of clients over the past five years, overall coverage has remained very low. In 2011, there were just 0.53 OST sites for every 1,000 injectors in the country.<sup>63</sup> This translates to 2.8% of the total estimated opioid injectors who are receiving OST in the country in 2011, substantially lower than the indicative target levels set in the technical guide.<sup>64</sup>

Most observed sites provided core services. Across all three regions total of 1,540 individuals received OST, with 98.6% individuals on OST having received psychosocial support in the 12 months prior to the study period. However, not all OST sites offer the same range of services: out of the 11 sites included in this study—four offered buprenorphine; three of which offered this option in addition to methadone. Not all sites distributed IEC materials, but all provided psychosocial support

The availability of OST depends on the numbers of targeted patient determined by requests from oblasts and subsequent allocation of drugs. Regional data indicates that the actual coverage is lower than planned: by 1<sup>st</sup> July 2012, there were 1,760 places available in the OST program (of which 298 are in Kyiv City and 113 are in Dnipropetrovsk); the situation however is not uniform across the regions nor is it necessarily rigid. Mykolayiv, for example, provided 601 patients with OST despite having a target of only 592 places. This is indicative of the degree of flexibility in that a revision of

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<sup>62</sup> USAID Project Sunrise: Medication-assisted treatment as part of an integrated package for people who inject drugs (2004-2011).

<sup>63</sup> Ministry of Health Ukraine, 2012. Ukraine Harmonized AIDS Response Progress Report (UNGASS) 2012.

<sup>64</sup> WHO, UNODC, UNAIDS *Comprehensive Package for HIV Prevention, Treatment and Care among People Who Inject Drugs (PWID)* presents indicative target levels for selected indicators, defined broadly as low, mid or high. Low: <0.2, Medium: <0.2–<0.4, High: >0.4.

targeted numbers can take place when necessary, with capacity at the regional level to increase coverage and obtain additional funding when the actual need for drugs exceeds planned coverage.

Although some key informants revealed that OST continues to be viewed by some as a Western practice, the adoption of the OST guidelines was heralded as a positive shift towards a client-centered understanding of drug treatment. Nurses comprised the greatest number of staff at all sites, and were most clients' first point of contact. However, staff interviewed from the OST sites reported a high administrative workload, with a number of sites indicating the need for additional staff.

Sites in this study that demonstrated good management practices were those that had defined objectives, clearly established reporting lines which are understood by staff, and flexibility of roles and responsibilities. However, it was observed that sites with the poorest management practices were those where not all staff were aware of the sites' objectives and/or had schedules that did not account for on-call or emergency needs.

Among the three study regions, Mykolayiv had the weakest referral, and lowest service coverage. Seven out of 11 OST sites reported offering and referring for ART. All referrals to ART services are made either to hospitals or AIDS Centers. Clients reported coming to OST and ART services as a result of both informal and formal referral processes. For the two OST-ART integrated sites that were included in this study, client referrals and service coverage were good. OST sites in general were less consistent in providing referrals to ART services.

### 5.5.1 Unit Costing Analysis

Among the sampled OST sites (non-integrated sites), funding support is split evenly between Global Fund (49%) and the Local government (49%). Spending on OST represents between 2 – 4% of total HIV expenditure at the Oblast level. Funding for the Kyiv City integrated site is funded by government whereas the Dnipropetrovsk site is funded by Global Fund-Alliance and the Ukraine National Government.

Two thirds of the sites allocated more than 50% of total costs to staff cost, followed by drug prices. The relative cost of program components, including staff cost and drug prices also vary across non-integrated OST sites, whereas program costs are the largest cost at both of the two integrated OST sites. When unit costs were analysed in terms of service provision, the study found that the site with the lowest unit cost across all cost inputs had the highest number of clients per staff member per hour open. The site was open every day with Global fund as the primary funder and purchasing decision maker. It was the only rural site in the sample.

While the site with the lowest unit cost was in Mykolayiv, it was this region that has the highest regional upstream cost per PWID, largely due to the fact that its population is lower than in the other regions. For example, although Kyiv City has higher upstream support and HR cost compared to Mykolayiv, when we calculate the cost per PWID, Kyiv City has higher PWID population than Mykolayiv (38,000 vs. 10,109). In contrast, the unit cost is calculated from the program, operational, annualized capital and staff cost (both program and operation) and divided by number of clients who visit this site.

In summary:

- Ukraine's OST unit costs are comparable with unit cost estimates from other countries, although the costs are on the low side.

- For non-integrated sites, program staff costs constitute the highest proportion of site costs, with four sites spending over 50% (includes the additional Global Fund payments). Drug costs represent the second highest proportion of costs per site.
- Buprenorphine is driving up program costs; as a result, sites dispensing methadone was more efficient than sites that used Buprenorphine.
- The unit cost of the best performing site is UAH 672 per client per year.

### 5.5.2 Recommendations to Improve the Program Efficiency of OST Service Provision in Ukraine

- **Can improve scale efficiency:** In general, there is capacity at the regional level for an increase in coverage if all available treatment slots are filled. With additional funding, there is also scope for increasing the OST treatment slots. Scale efficiency can also be increased by changing the venues where treatment is provided, and by changing the opening hours.
- **Can reduce unit costs:** The high administrative workload of clinical staff should be reduced, for example, by transferring the tasks to administrative staff to free up clinician time, reducing both waiting time and potentially program costs. If all the sites can achieve the unit cost of the best performing site (UAH 672 per client), the sites can save on average at least half (50%) of their unit cost per client for non-integrated methadone OST sites and 43% of the unit cost per client when including all costs (non-integrated sites).
- **Can improve management and M&E for better decentralised decision making:** Sites in this study that demonstrated good management practices were those that had defined objectives, clearly established reporting lines which are understood by staff, and flexibility of roles and responsibilities. However, it was observed that sites with the poorest management practices were those where not all staff were aware of the sites' objectives and/or had schedules that did not account for on-call or emergency needs.
- **Can integrated HIV services better:** An integrated model concentrates services on one site to increase accessibility and efficiency. Many participants believe this is a best practice model as it maximizes efficient and equitable treatment by providing a team of specialists (therapists, drug treatment specialists, infectious disease specialists and social workers) to respond to the various, and often inter-related needs of PWID. This also enables consultation on a raft of health, drug-related and ancillary matters to generate a comprehensive picture of patient needs.

*'Practical experience shows that our doctors majoring in infectious diseases give a lower, or no priority to social and drug use issues'.* (International NGO representative)

One participant highlighted the importance of this approach for rural and remote areas.

*'It is important to concentrate services as close as possible to one another so that everything is in one place....as regards less affected areas, the services there, in principle, can be integrated into other networks providing social, medical or educational services'.* (Policy-maker, Departmental organization)

*'it is necessary to make a shift to a more efficient prevention model'.* (Representative, International donor organization)

*'The potential for integration is very large. To date, unfortunately, they have been few of them, but I think it's a very good model'.* (Program Director, NGO)

However, some worry that prevailing attitudes prioritizes law enforcement over harm minimization.

*'There is no satisfactory definition of an integrated service site in the Ukraine, there are no legal frameworks for them, integrated service sites...are not prescribed in the Ukrainian health reform concept—thus, it is troublesome'* (Medical professional, metropolitan public hospital).

*'The authorities might be staying away to avoid pain in their necks as it is associated with the state controlling bodies as with the drug control services. In our country, it is a complicated issue'*. (Medical professional, departmental AIDS organization)

An example of the acute need for more integrated services is the low incidence of tuberculosis (TB) clients accessing ART services. There is a high prevalence of TB among HIV-positive patients in the Ukraine. One reason for this low uptake of ART services may be the insufficient interaction and referral linkages between TB and AIDS services.

*'Not all AIDS centres have TB clinicians and not all TB services have infectious disease specialists'* (Policy-maker, Departmental organization).

A medical professional working in an oblast AIDS organization explains the effect of non-integrated service provision.

*'There is a high mortality rate of patients living with co-infection and there is a lack of specialists'* (Medical professional, departmental AIDS organization)

## 6 RESULTS AT THE PROGRAMME LEVEL: ANTIRETROVIRAL THERAPY

Antiretroviral therapy is a key element of Ukraine's HIV response. The provision of antiretroviral therapy for people living with HIV/AIDS (PLHIV) eligible for treatment in Ukraine is done based on WHO's Patient Evaluation & Antiretroviral Treatment for Adults and Adolescents Clinical Protocol for the WHO European Region (2006). Financing for ART is provided by the International HIV/AIDS Alliance through GFATM grants, as well as the government.

Despite the increase in the number of patients on ART in Ukraine, the growth of ART uptake has not been on par with the growth in the number of PLHIV eligible for treatment and has therefore been insufficient.

A key issue for ART provision in Ukraine, is inequity in service delivery. PWID are the main epidemic drivers in Ukraine, but only a small proportion of PWID are receiving ART. PWID continue to face difficulties in accessing services, with only 8.3% of HIV-positive PWID receiving ART in 2012. In 2012, of those who died from HIV-related causes, 52% were PWID.<sup>65</sup> HIV-positive prisoners, many of whom have a history of drug use, and who have access to ART while incarcerated, are believed to not have the same quality of services available to PLHIV in community settings.

### 6.1 Scope, Scale, Coverage and Utilization of ART Services in the Three Study Areas

#### 6.1.1 Summary: ART Program Coverage Indicators

At the beginning of 2012, just over 27 000 PLHIV were receiving ART, including 2,268 children. This corresponds to only 22% of those who were eligible for treatment. Table 18 provides more details.

**Table 18: Performance indicators for ART sites**

ART	Indicators	Year	Data
<b>Availability</b>	ART is available to people who are active PWID <i>Note: Decentralization of ART services is on-going with new ART sites have been opened (in total 145 sites offer ART).</i>	2011	<i>Secondary</i>
<b>Coverage</b>	<b>2,873</b> PWID receiving ART as at 1 July 2012 in Ukraine	2012	<i>Secondary</i>
	<b>4.10%</b> of all HIV positive PWID receiving ART in 2012, Ukraine <sup>66</sup>	2012	<i>Secondary</i>
<b>Quality</b>	<b>26,720</b> ART recipients in 2012	2012	<i>Secondary</i>
	<b>30%</b> of ART sites adhering to WHO guidelines on ART. All sites (10 stand-alone and 2 integrated) reported using the MOH treatment protocol. All 3 sites provided staff training on those guidelines.	2012	<i>Primary</i>

<sup>65</sup> Announced at WHO conference, "The study on mortality reasons among HIV-positive people in Ukraine." – Under review for publication.

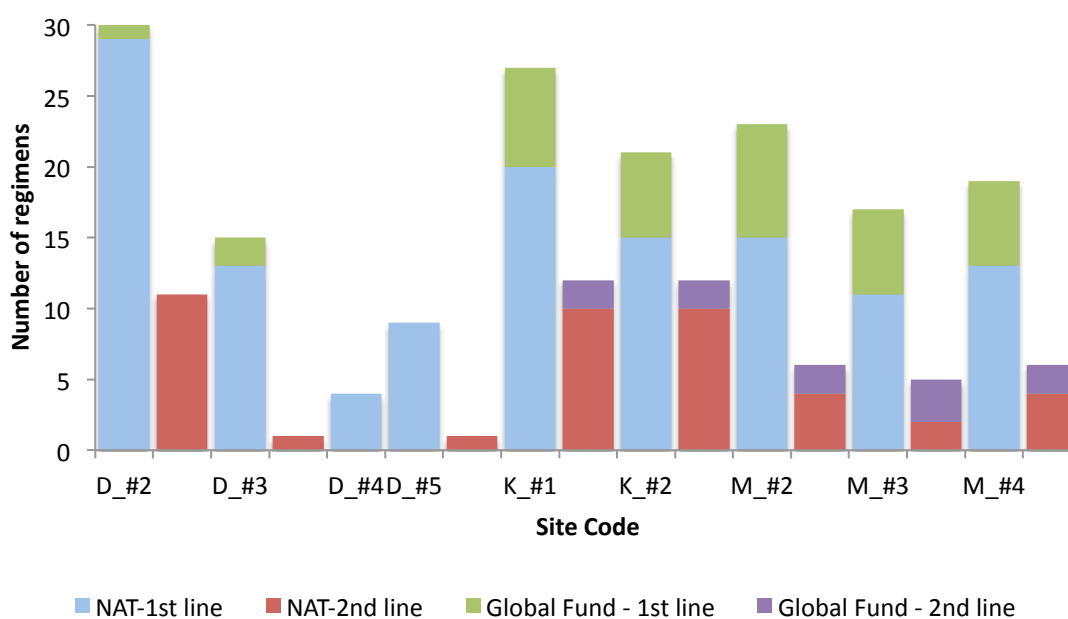
<sup>66</sup> This is lower than previous estimates: during a reporting period of January 2010 – December 2011, the percentage of HIV-positive PWID receiving ART was 8.3%. See Ukraine Harmonised AIDS Response Progress Report, p 68.

### 6.1.2 ART Service Delivery Models and Regimens

**ART Service Delivery Models:** In Ukraine, HIV diagnostic tests and ART are provided in specialized AIDS Centers that are government-owned and managed, with some regions having decentralized ART service delivery beyond the AIDS Centers. The AIDS Centers include specialized medical personnel (doctors, nurses and laboratory staff) and exist in parallel with other health institutions that care for other non-HIV aspects of medical care, including TB, STIs, narcology and women’s health. Some AIDS Centers have an in-patient ward, but the majority of AIDS Centers function as outpatient clinics, relying on the department or hospital of infectious diseases to care for HIV patients who require hospitalization.

**ART regimens:** Some sites, under the National scheme have provided up to 29 different first line regimens during the study period. The Global Fund has a maximum of eight different regimens (Figure 40).

**Figure 40: Number of ART regimens for 1<sup>st</sup> and 2<sup>nd</sup> line treatment, per ART in study regions in Ukraine, 2012**



Source: Study data, collected in 2012

### 6.1.3 Scope of Services Provided at ART Sites

Table 19 presents the cumulative list of services provided by the ART sites sampled in this study. A sub-set of these services are identified as ‘core’, based on comparisons with the UNAIDS technical guide on services that sites need to provide in order to effectively deliver intervention. These core services are indicated as such in the table below. According to the country clinical protocol which is based on WHO recommendation (approved under MOH Order #580), the initiation of ART treatment is at CD4 count of 350 cell/mL and below.

**Table 19: Summary of scope of services provided at ART sites**

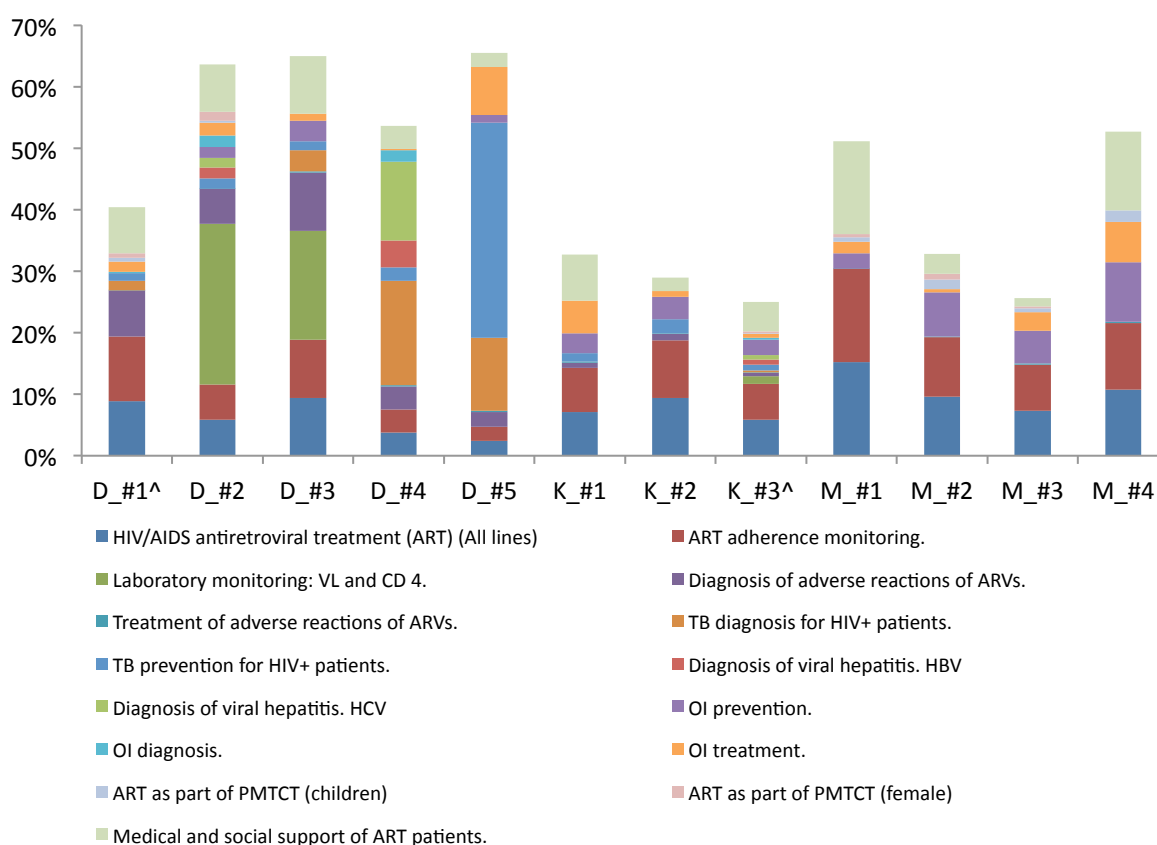
Relationship to comprehensive package - ART components		Number of sites that offer service (n=12)
<b>Provision of ART - core business for ART sites</b>		
HIV/AIDS antiretroviral treatment (ART) (First, Second, Third)	Core	12, 12, 8
ART adherence monitoring	Core	12
Laboratory monitoring: VL and CD4	Core	3
ART as part of PMTCT (children)	Core	7
ART as part of PMTCT (female)	Core	6
Medical and social support of ART patients.	Core	12
Diagnosis of adverse reactions to ARVs	Core	12
Treatment of adverse reactions to ARVs	Core	12
<b>Diagnosis and Laboratory monitoring - core for comprehensive package</b>		
Laboratory monitoring: biochemical and general clinical screening	Core for comprehensive package	6
TB diagnosis for HIV+ patients	Core	5
TB prevention HIV+ patients	Core	8
X-ray film and referral for diagnosis of TB	Core for comprehensive package	3
Diagnosis of viral hepatitis. HBV	Core	3
Diagnosis of viral hepatitis. HCV	Core	3
OI prevention	Core	12
OI diagnosis	Core	4
STI diagnosis	Core for comprehensive package	3
<b>Treatment - TB, STI and viral hepatitis treatment core for comprehensive package</b>		
Outpatient treatment of TB for HIV+ patients	Core for comprehensive package	1
Outpatient treatment of viral hepatitis	Core for comprehensive package	2
STI treatment	Core for comprehensive package	2
OI treatment	Core	12
Treatment-related transport and logistics services		4
<b>Additional services</b>		
Post-exposure prevention for medical staff		5
Post-exposure prevention for others		3
Clinical observation for Dispensary Group (HIV+)		3
Self-help groups for HIV+ patients		2
Blood sampling (including transportation to the laboratory at another facility):		
<ul style="list-style-type: none"> <li>▪ biochemical screening, CD4, VL, HBV, HCV, and OI.</li> </ul>		

\* 10 ART sites plus 2 integrated sites



Sites vary significantly in their service offerings, with only 8% of clients visiting sites for the purpose of receiving ART treatment.. Figure 41 shows the volume of client visits for core services, as a percentage of total visits and services at each of the twelve ART sites. At several sites, fewer than 50% of clients visit for the purpose of accessing core services, suggesting that a revision of the core package (to include some of the currently-listed non-core services), as well as increasing uptake through demand-side interventions, is probably warranted.

**Figure 41: Volume of visits for core ART-related services as a percentage of total visits for all services at ART sites in study regions in Ukraine, 2012**



Source: Study data, collected in 2012

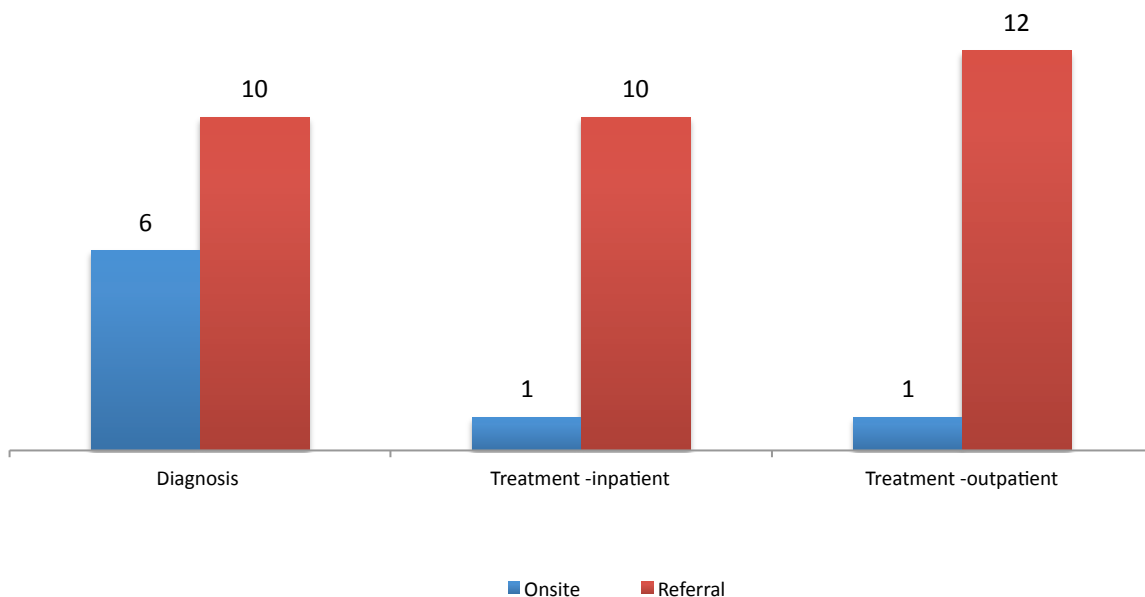
#### 6.1.4 Referrals

The proportion of clients accessing opportunistic infection (OI) treatment and testing services at ART sites varies across the three study regions and sites. It is lower at integrated sites compared to non-integrated sites. Among the three study regions, Dnipropetrovsk sites have higher proportion of clients accessing OI and testing services compared to Mykolayiv and Kyiv City sites. One of the sites in Dnipropetrovsk (D\_#4) indicated the highest proportion of clients in TB diagnosis for HIV+ patients, diagnosis of viral hepatitis HBV and diagnosis of viral hepatitis HCV. Similarly, Dnipropetrovsk sites have also indicated higher proportion of visits for viral load and CD4 laboratory monitoring, TB diagnosis for HIV-positive patients and diagnosis of hepatitis C (HCV), compared to Mykolayiv and Kyiv City sites.

Complex cases have often been referred to the Lavra Clinic<sup>67</sup> and the Kyiv City AIDS Center for management. Sites in Mykolayiv have a weaker referral system than those in the other two regions. According to clients interviewed, they mostly arrived at ART services through a formal referral process from other health services. However, these methods are not always necessary—some patients have claimed that they are able to seek ART services without having formal referrals. As current coverage is very low (with only 8.3% of PWID on ART), there is a large unmet need and scope to significantly increase demand and referrals for ART. Alternatively, HIV testing is not offered to patients at sites where they were diagnosed with hepatitis B or hepatitis C viral infections (most likely in infectious disease facilities). Furthermore, coverage of TB patients with HIV testing is not monitored by HIV or TB service at national level. Consequently, both of these were evaluated as “missed opportunities for early HIV diagnosis and engagement in HIV treatment and care of co-infected patients”. Currently, testing, diagnosis, vaccination and treatment for STIs and HCV for most at-risk populations are only implemented on a project basis and funded internationally.

Six out of twelve sites were offering on-site services for TB diagnosis and one site was offering on-site TB treatment (inpatient). Most sites offered referral services for TB diagnosis or treatment (Figure 42). Referring locations for diagnostics and treatment include City Antituberculosis Dispensary, Kryvyi Rig Antituberculosis Dispensary #2, Dnipropetrovsk City Clinical Hospital #2, Pavlograd Antituberculosis Dispensary and the TB treatment room of the Voznesensk Central District Hospital. On average there were two visits per client for TB diagnosis for HIV+ patients per annum and X-ray film and referral for diagnosis of TB, while there were four visits per client per annum for outpatient treatment of TB for HIV+ patient (Figure 43)..

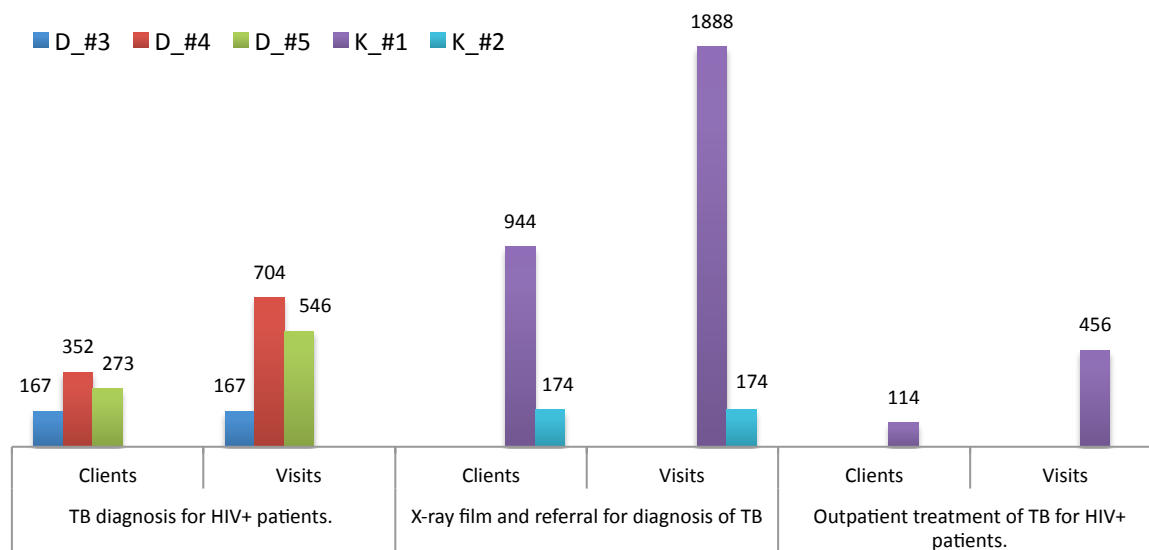
**Figure 42: Number of sites offering or referring for TB diagnosis or treatment in three study regions in Ukraine, 2012**



Source: Study data, collected in 2012

<sup>67</sup> This clinic is no longer in operation.

Figure 43: Number of clients (and visits) per annum for TB diagnosis and treatment in study regions in Ukraine, 2012



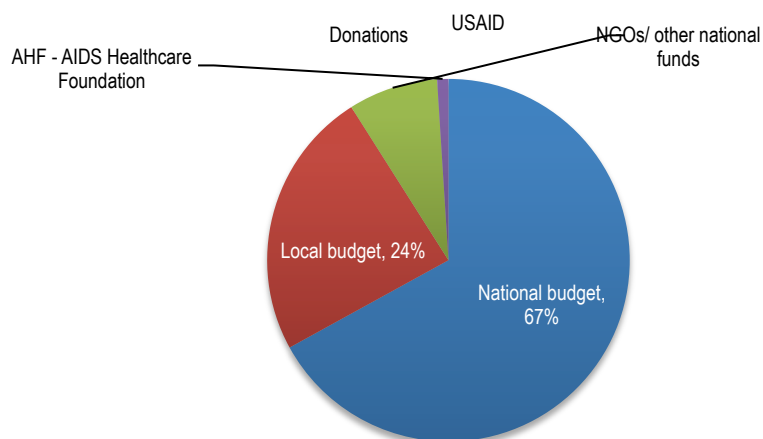
Source: Study data, collected in 2012

## 6.2 ART Program Funding, Unit Costs and Technical Efficiency

### 6.2.1 Sources of ART Funding

ART is primarily financed from the national budget (67%), supported by local government budgets (24%). International donors account for just 9% of ART funding (Figure 44). The majority (80.1%) of patients were covered by the state budget on first line treatment, and the remaining patients were covered by the GFATM Fund (Round 6). Patients covered by the Global Fund were mostly patients with dual HIV-TB and triple HIV-TB-PWID co-morbidities, who were covered on 2<sup>nd</sup> line treatment.

Figure 44: Funding sources for ART sites in study regions in Ukraine, 2012

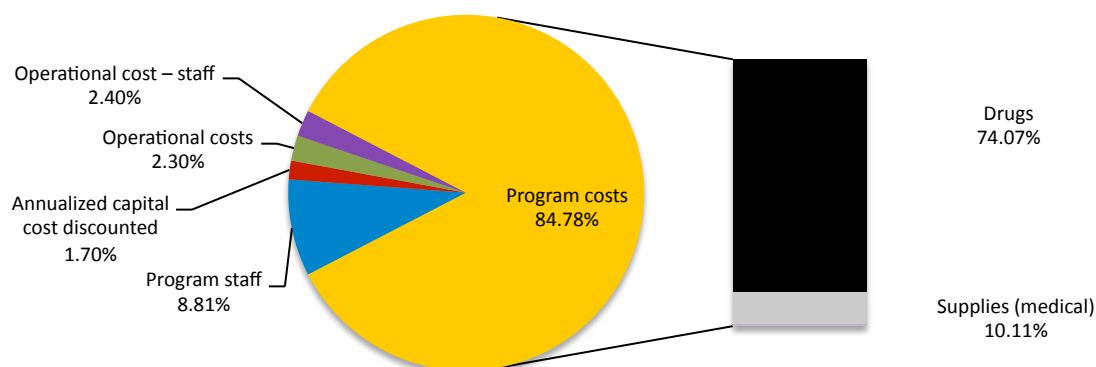


Source: Study data, collected in 2012

### 6.2.2 Overall Costs of ART Service Delivery, and Cost Components

The procurement of drugs is by far the dominant cost for ART sites. As Figure 45 shows, drugs can rise to up to 80% of site costs.<sup>68</sup>

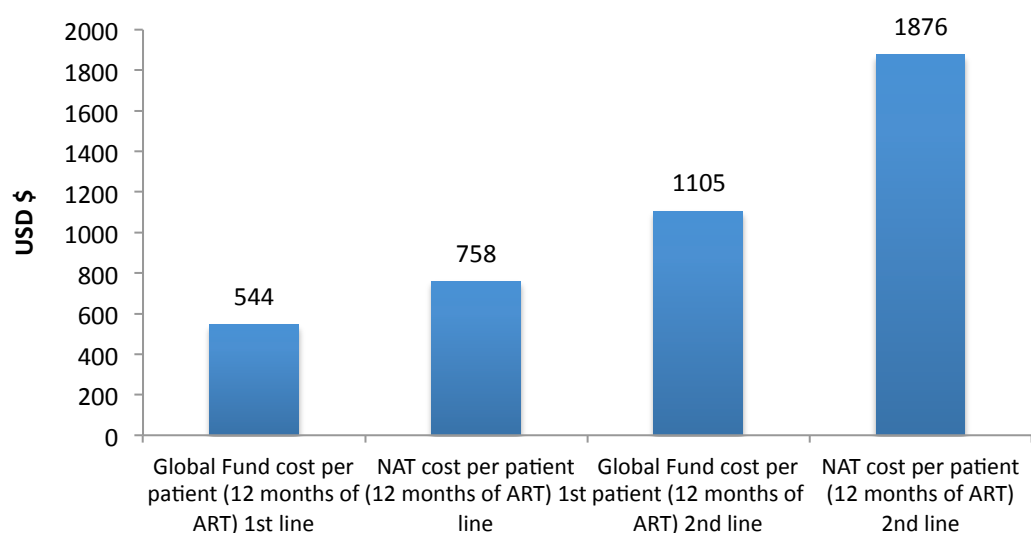
**Figure 45: Cost components for ART sites in study regions in Ukraine, 2012**



Source: Study data, collected in 2012

Ukraine’s first line ART prices are above (4.0 to 5.5 times) that of other LMIC countries. The prices Global Fund secures for second line ART in Ukraine are in line with other LMICs, while those the National Government is achieving are 42% above those prices.<sup>69</sup> Figure 47 provides a detailed breakdown.

**Figure 46: First and second line prices per ART site (USD) in study regions in Ukraine, 2012**

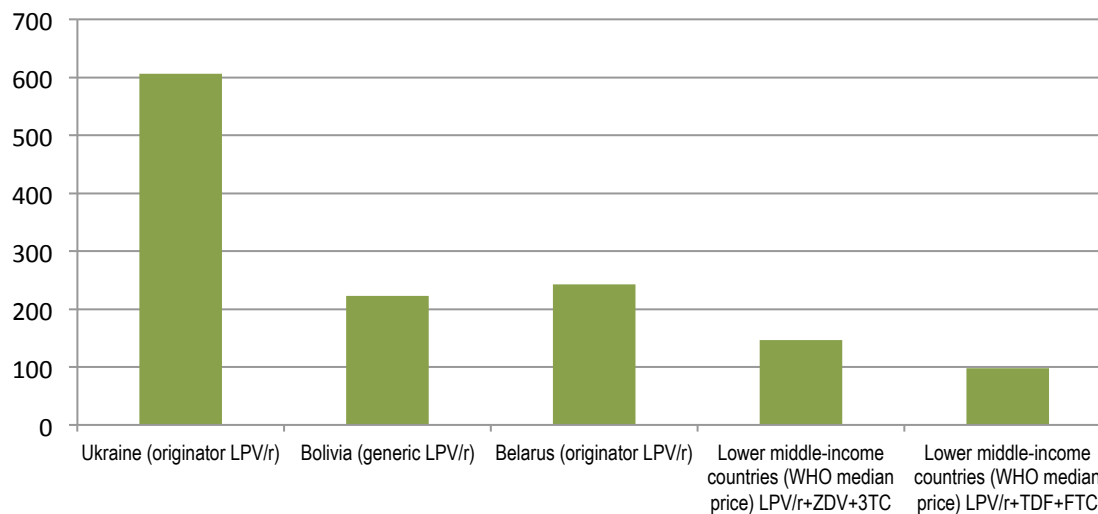


Source: Study data, collected in 2012

<sup>68</sup> For one site, the non-ART costs are exceptionally high due to the low number of clients. Only 26 clients were on first-line ART. Their capital, operational and program costs are comparable in absolute terms to others in the region (Dnipropetrovsk). Another site also has only a few clients (28), but has lower operational and program costs.

<sup>69</sup> Schwartländer et al (2011) reported that ART prices for LMIC countries will likely drop from USD141 (2009) to USD134 (2015) for 1<sup>st</sup> line regimens, and USD1,378 (2009) dropping to USD808 (2015) for second line regimens.

**Figure 47: Comparison of second line ARV drug prices (USD) in LMICs compared to that of Ukraine (2012 prices)**

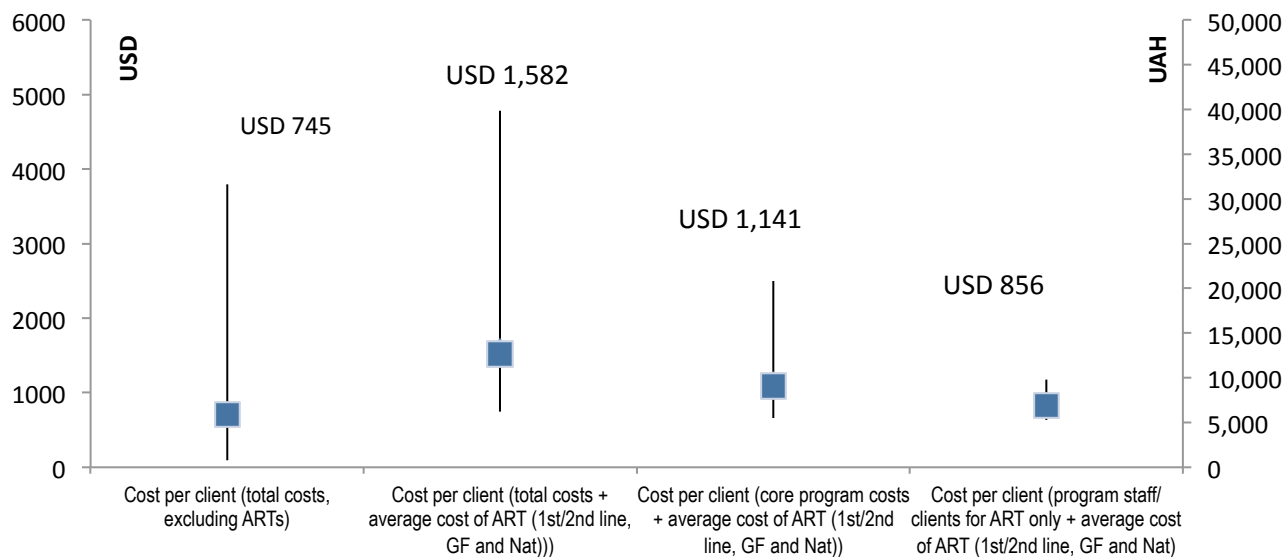


Source: WHO Global Price Reporting Mechanism (GPRM), 2013 and study data, collected in 2012

### 6.2.3 Unit Costs of ARV Services

Figure 48 summarises the variation in unit costs for service provision in Ukraine, whereas the table below it, suggests ways in which efficiency could be improved:

**Figure 48: Cost per client (USD & UAH) for 11 sampled ART sites in Ukraine, 2012**



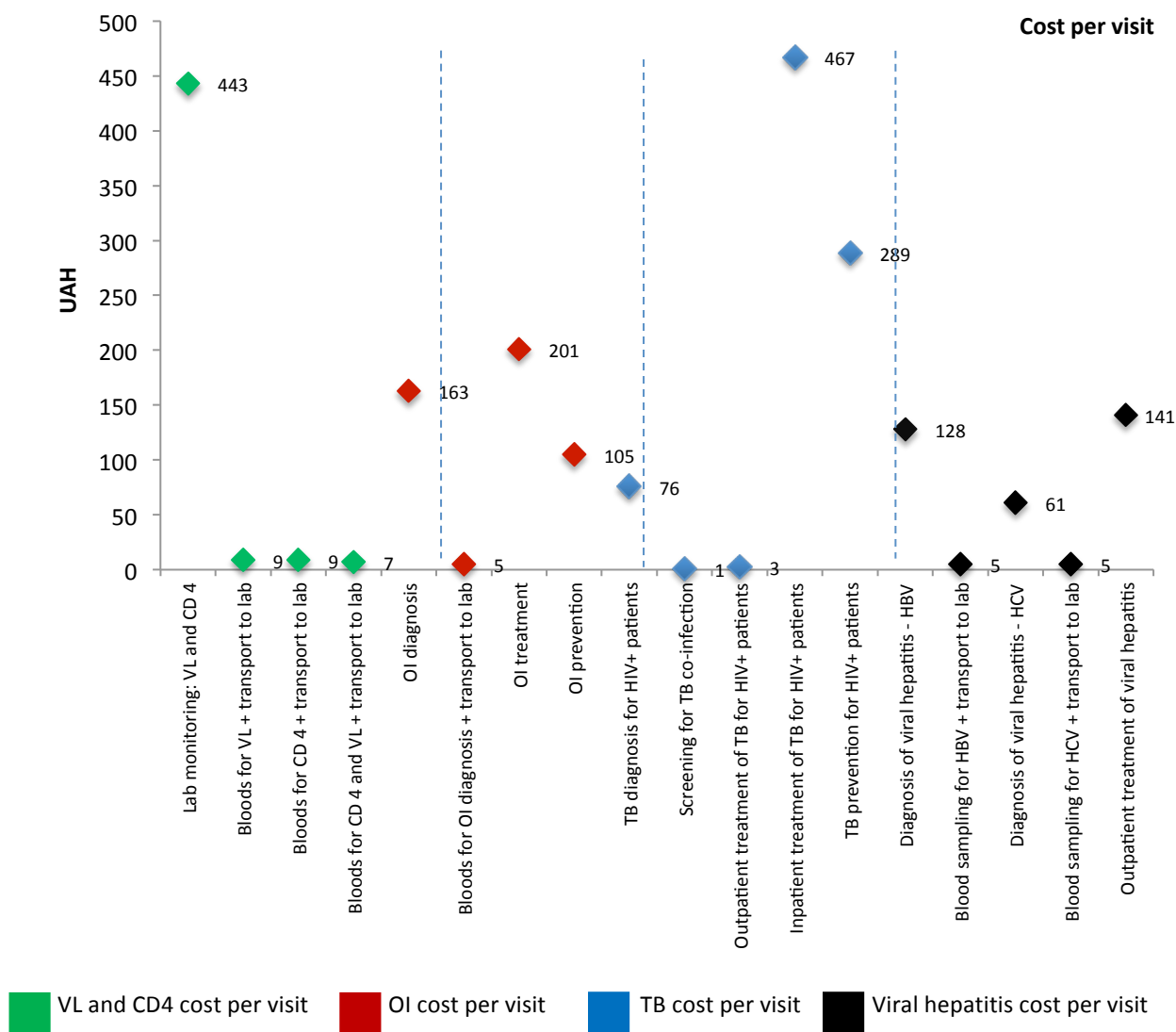
Source: Study data, collected in 2012

SHOWS UNIT COST DIFFERENCES (ART) 

	<b>Cost per client = Total cost of running the site (capital costs discount rate annualized + total annual operational costs + program costs excluding ARTs). Note: this will include the cost of all additional services sites individually choose to offer. These services differ between sites, as highlighted in the scope of services section.</b>	<b>Cost per client (total costs + average cost of ART (1st/2nd line, GF and Nat).</b>	<b>Cost per client (core program costs + average cost of ART (1<sup>st</sup>/2<sup>nd</sup> line, GF and Nat).</b>	<b>Cost per client (program staff/clients for ART only + average cost of ART (1<sup>st</sup>/2<sup>nd</sup> line, GF and Nat).</b>
<b>Higher cost site (per client) characteristics by comparison.</b>	Relatively lower number of clients (for two sites) Higher capital costs. Higher operational costs (particularly for water, electricity, maintenance of equipment, non-service provision vehicles). Higher operational staff costs.	Higher ART costs (purchase price, purchaser, regimen, numbers on second line). Higher program staff costs. Sites with relatively higher cost per client (total program costs) compared to cost per client (core program costs only), incur higher non-core program costs (D_#5, D_#4).		
<b>Lower cost site (per client) characteristics by comparison.</b>	Lower capital, operational costs. Low/no operational staff costs.	Lower program staff costs. Lower ART costs (purchase price, purchaser, regimen, numbers on second line).		
<b>Efficiency gain opportunities.</b>	Increase the number of clients to spread the capital and operational costs across a wider client base Bring operational staff costs into line (best achievable/ comparable salary)	All sites to achieve lowest possible (best) price on purchase of a small set of preferred ART regimens. Bring program staff costs into line (best achievable/ comparable salary). Consider reducing non-core services to reduce non-core program costs of some sites.		

As Figure 49 shows, the costs of conducting CD4 and VL monitoring as well as OI diagnosis, prevention and treatment per visit, vary between sites. This variability is correlated with whether the site offers or refers for the service: particularly whether they are performed in-house or at an external laboratory.

Figure 49: Cost of CD4, VL and OI services per visit



Source: Study data, collected in 2012

**Laboratory costs for ART patients is low compared to drug costs.** Most of the sites indicated that the OI and testing cost per client per test is less than UAH 50 (see Table 20). However, a few sites indicated very high cost per test, for example, the integrated site in Kyiv City indicated the cost per client for Laboratory monitoring: VL and CD 4 is UAH 2,512.71; each site in Dnipropetrovsk and Kyiv City indicated the average cost per client for TB diagnosis for HIV+ patients is UAH 180 and one site in Dnipropetrovsk region reported the cost for diagnosis of viral hepatitis – HBV and HCV is UAH 465.67 and UAH 354.57 respectively. The proportion of total client cost for OI and testing ranged from 0% – 3% across all sites except one of the integrated sites in Kyiv City reported 23% for laboratory monitoring.

**Table 20: HIV viral load and CD4 laboratory monitoring and diagnostic services for opportunistic infections, tuberculosis and viral hepatitis – Unit cost per client and proportion of total client costs – in study regions in Ukraine, 2012**

	No. of sites	Cost per client (UAH)		Proportion of total client costs (%)		
		Average	Range (min-max)	Average	Range (min-max)	
<b>HIV (VL and CD4)</b>						
Laboratory monitoring	3	911.86	46.96 – 2,512.71	8.6%	0.4 – 23.0%	
VL blood sample and transport	5	17.78	5.28 – 29.24	0.3%	0.1 – 0.7%	
CD4 blood sample + transport	5	27.69	5.28 – 43.86	0.5%	0.1 – 1.1%	
VL+CD4 blood sample +transport	1	22.07	-	0.2%	-	
<b>Opportunistic infections</b>						
OI diagnosis	4	260.91	3.64 – 966.18	0.9%	0.05 – 2.6%	
OI blood sample + transport	2	5.19	2.64 – 7.74	0.07%	0.06 – 0.08%	
<b>Tuberculosis</b>						
TB diagnosis (HIV+)	5	99.01	44.40 – 181.13	0.6%	0.3 – 1.6%	
Screening TB co-infection	1	0.86	-	0.01%	-	
<b>Viral hepatitis</b>						
HBV diagnosis	4	165.91	8.33 – 465.67	0.5%	0.1 – 1.3%	
HBV blood sample + transport	2	5.19	2.64 – 7.74	0.07%	0.06 – 0.08%	
HCV diagnosis	3	136.01	9.48 – 354.57	0.5%	0.1 – 1.0%	
HCV blood sample + transport	3	5.19	2.64 – 7.74	0.07%	0.06 – 0.08%	

Source: Study data, collected in 2012

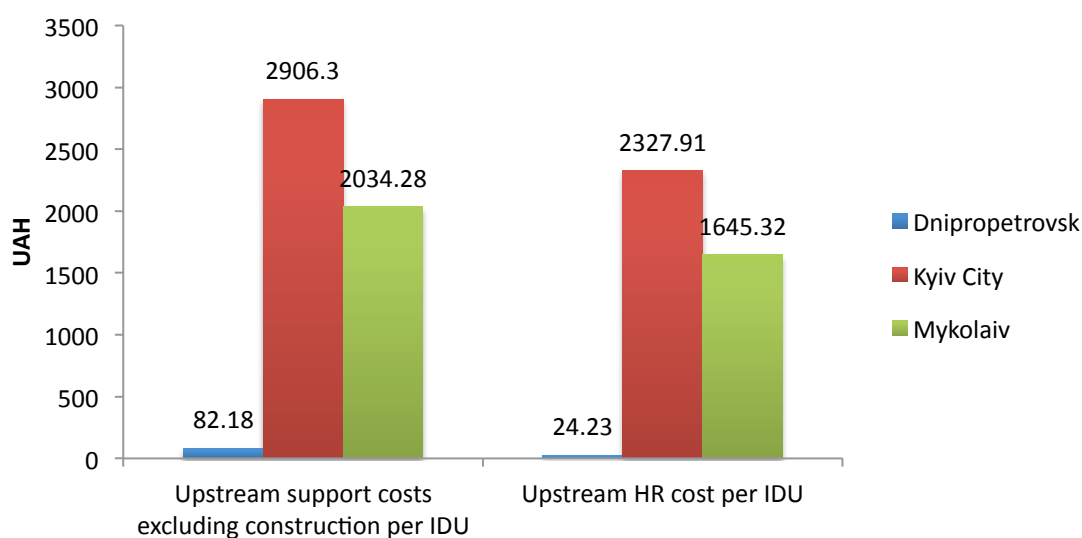
#### 6.2.4 Regional Upstream Costs

Regional upstream costs were estimated based on regional upstream costs and the size of the population on ART. These estimates are based on the average spending from NASA 2009, 2010 and estimated people on ART per region.

There is significant variation in upstream costs per PWID between the regions (see Figure 50). Kyiv City has the highest regional upstream cost per person receiving ART, with less people on ART in the region compared to the other two regions. Dnipropetrovsk has the lowest costs per PWID due, in large part, to having considerably more individuals in on ART than the other two regions.



Figure 50: Regional upstream costs per PWID for ART in study regions in Ukraine, 2012



Source: Study data, collected in 2012

### 6.2.5 Analysis of ART Service Provision Efficiency: Cost Savings with ARV Drugs

ARV drugs purchased by the National Government are much more expensive than those purchased by the Global Fund, as Table 21 below shows.

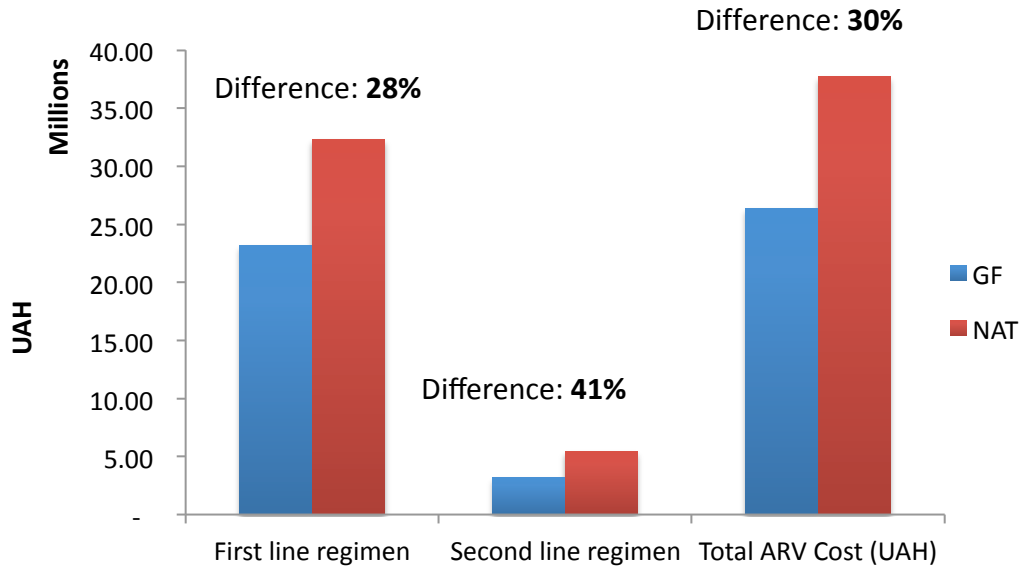
**Table 21: Cost savings possible if all ARV drugs were procured at GF prices, in study regions in Ukraine, 2012**

ARV cost (USD)	GF	NAT
First line ARV drug regimen	2,899,520.00	4,040,140.00
Second line ARV drug regimen	401,115.00	680,988.00
<b>Total</b>	<b>3,300,635.00</b>	<b>4,721,128.00</b>

Source: Study data, collected in 2012

For the first and second line prices per site, national government is paying much higher prices for ART: 28% higher for 1<sup>st</sup> line regimens, and 41% higher for 2<sup>nd</sup> line regimens. Drug purchases are the single highest cost component (on average 74% of total site costs). Change here represents opportunities for efficiency gains. Taking the average cost, if ART clinic sites used the **Global Fund price** per person instead of the **National price** per person for the ARV drugs, on average, National Government prices could be reduced by 30% (Figure 51).

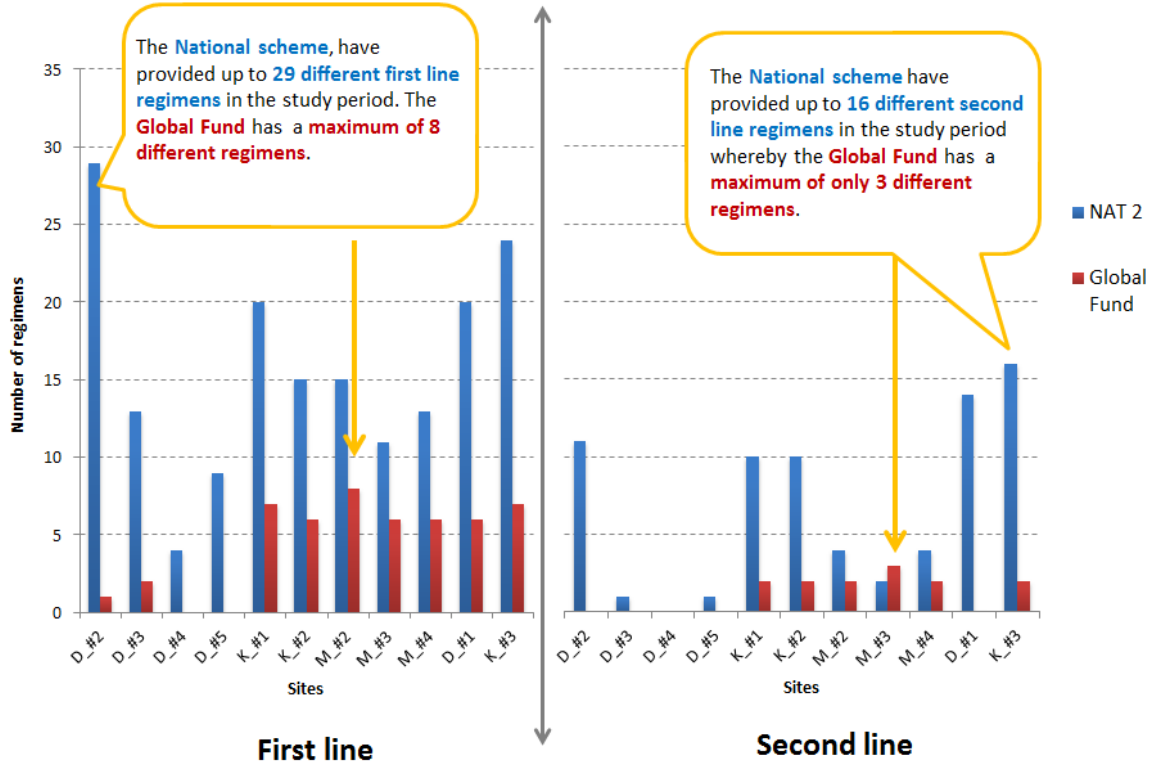
**Figure 51: Potential Cost Savings with less expensive ARV drug purchases in Ukraine, based on 2012 prices**



Source: Study data, collected in 2012

ARV drug prices differ, in part, because of the lack of a national set of ART guidelines with prescribed 1<sup>st</sup> line and 2<sup>nd</sup> line drugs, as Figure 52 illustrates:

**Figure 52: Number of 1<sup>st</sup> line and 2<sup>nd</sup> line ART regimens in study regions in Ukraine, 2012**



Source: Study data, collected in 2012

### 6.3 Management of and Information about ART Sites

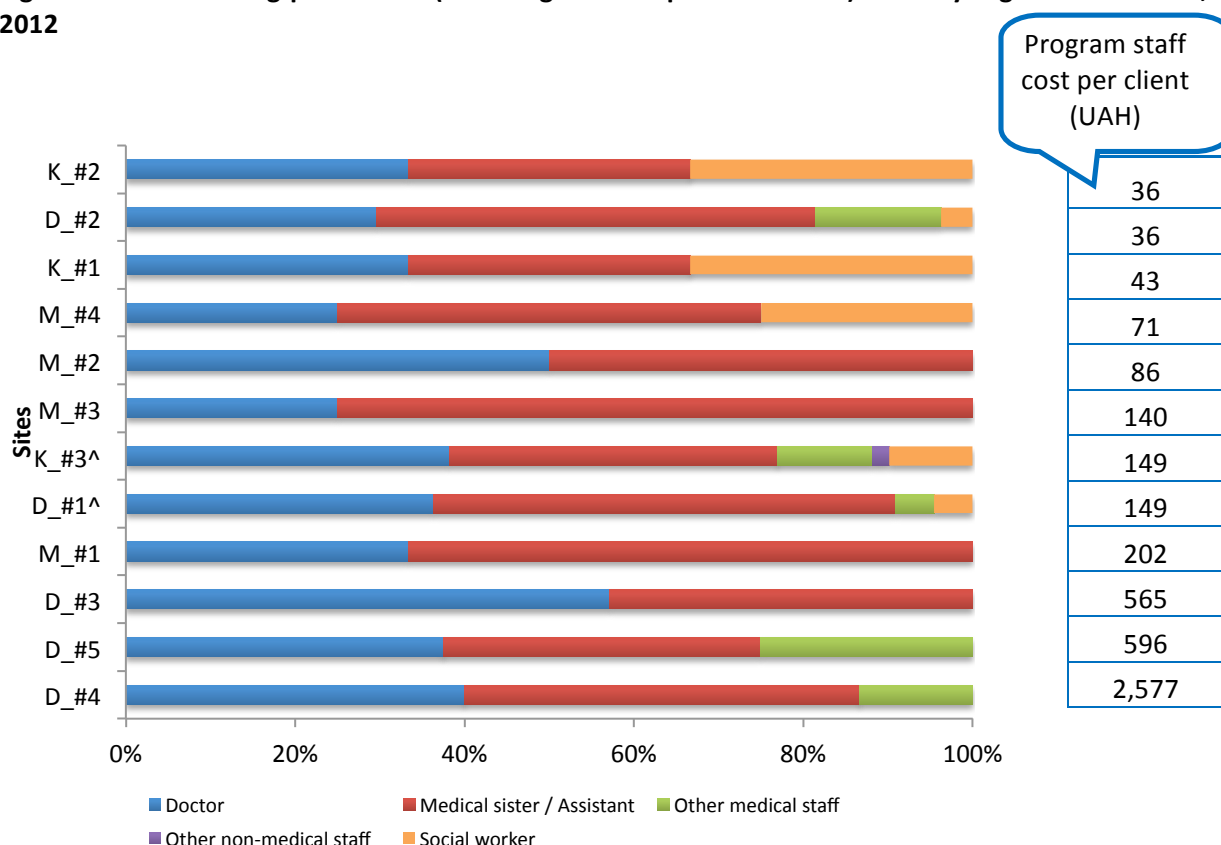
#### 6.3.1 Management and Decision-making

Most sites have MOH and/or donor involvement in purchasing decisions with doctors creating the work schedules. All 12 ART sites reported using the MOH treatment protocol but only three also used and provided staff training on the WHO guidelines.

#### 6.3.2 Staffing

Globally, there no consensus on the number of staff needed to run the ‘ideal’ ART service. One study found the average number of healthcare workers required to provide ART to 1,000 patients is 1 – 2 physicians, 2 – 7 nurses, up to three pharmacy staff, and a wide range of counselors and treatment supporters.<sup>70</sup> Staffing patterns will vary according to many factors such as task assignments, service delivery models, other staff responsibilities and program sizes. The primary care model allows providers to develop some expertise in ART, but also requires that they spend time caring for PLHIV who are not on ART, and in the management of HIV/AIDS and comorbid conditions. The provision of comprehensive care for all PLHIV will require more staff per patient on ART than a model that provides only ART. However, there are benefits – it allows for a more integrated approach and would facilitate access to ART and appropriate support for patients. Figure 53 provides details.

**Figure 53: ART staffing profile mix (including full and part-time staff) in study regions in Ukraine, 2012**



Source: Study data, collected in 2012

In terms of program staff cost, site D#4 is an outlier site with a high program staff cost per client (UAH 2,577). This site is a hospital with 15 clinical staff but only 26 ART clients.

<sup>70</sup> Lisa R Hirschhorn, Lulu Oguda, Andrew Fullem, Norbert Dreesch, Paul Wilson. (2006). Estimating health workforce needs for antiretroviral therapy in resource-limited settings. Hum Resour Health. 2006; 4:1.

It is important for ART sites to have the adequate number of staff. Furthermore, a more optimal selection of treatment regimen options will help to reduce the workload of clinicians. Findings from the qualitative interviews further illustrated the staffing issues:

*“Besides, there is a staffing issue, because the staff of our facility includes myself and a nurse. And this is definitely not enough, if we consider all the reporting, record keeping and so on. It would be very good to also have a social worker and a psychologist to at least help with VCT which takes time and should be actually delivered by trained specialists, then I will be able to fully dedicate myself to providing medical services to clients. Also, it is very important to have drugs which can be taken once a day. It will help both us and patients. Really, we do not have enough time to call everyone and to check who has showed up and who has failed to, and we have got 34 patients on ART...there are just not enough hands to handle it all, plus to assure clinical examination at the proper level.”*

*SP1B, Infectious Disease*

*Specialist, ART*

*“Every year we have an increasing number of people requiring ART treatment. In fact, the staff is the same as it was 4 – 5 years ago, and the number of patients and workload have increased very significantly. For example, I myself have 460 people on ART.”*

*SP2A, Infectious Disease*

*Specialist, ART*

On average clinicians spent 56% of their time with patients; this average was brought down by one clinician who spent only 14% of their time with patients and 56% of their time on administration. Site staff indicated they would like greater assistance with administrative tasks such as record keeping, in order to reduce workload and allow them to focus on patients’ needs and improve their capacity to meet all the clinical aspects of ARV treatment.

The best performing sites are in AIDS Centers, and Global Fund additional funds are paid to 2 of the 3 lowest cost sites. These sites have the following staff complement:

- a) At least 1 doctor, 1 nurse and 1 social worker each serving and average 180 clients, with an average program staff cost per client of less than UAH 50.
- b) Sites with a social worker tend to serve more clients, and help reduce the workload of the nurse.

### **6.3.3 Monitoring and Evaluation**

In 2008, in order to assess the effectiveness of HIV treatment in Ukraine, the integrated system of ART monitoring was established. It is based on principle of the cohort observation method aligned to WHO recommendations. The data are collected at the regional level according to statistical Form #56 (“Report on providing ART for HIV-positive patients and people with AIDS”) and #57 (“Report about adults and kids, who started ART and are getting treatment for 6, 12, 24 and 36 months”). The total demand of ART is assessed by Form #56, where the number of people getting ART and waiting for ART is indicated as a total, and separately for men/women, kids/adults, people with TB and PWID. The line of treatment data, source of funding and age are also available through Form #56.

The process of treatment and the patients’ adherence data are collected through Form #57, which includes indicators on stopping the ART (due to medical/non-medical reasons or death), the lines of treatment used, the number of people tested for CD4 cells, the health status of patients and level of adherence to ART.

Public sector institutions use the standard state statistic forms, while NGOs working with PLHIV track their own records on ART process using the appendix to client’s records. This appendix include information such as dates, dosage and form of drugs given to clients, violation of ART rules (including date and reason of violation), records on CD4 and VL tests reasons for stopping ART and possible actions to be taken for ART resumption, possibly on a new regimen.

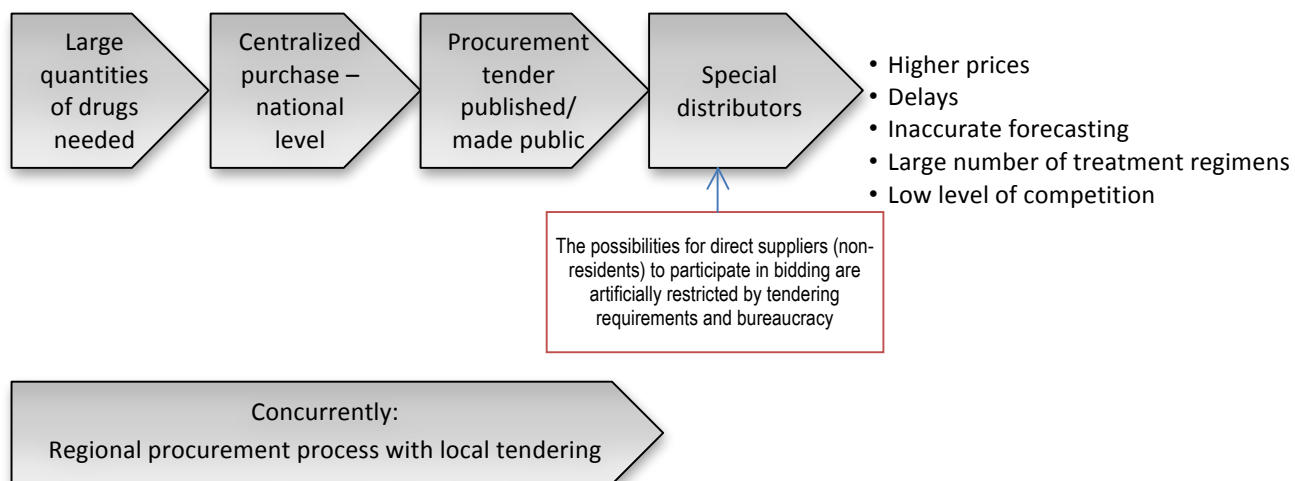
**6.3.4 Procurement of ARVs**

The supply system in Ukraine is governed by legislation and clinical protocols, and entails various aspects of laboratory management, logistics and delivery of drugs and medical supplies, program coordination and monitoring.

The Ukrainian Center for Socially Dangerous Disease Control (UCDC) is responsible for monitoring of ARV drug usage at the regional level, while supply, storage and distribution of drugs and medical supplies are conducted according to MOH’s Schedule of Distribution. Commodities for HIV/AIDS program are supplied directly to the regional AIDS Centers, which are responsible for collecting information regarding drug stock requirements for six months. The Reference Laboratory is responsible for distributing test kits and equipment procured via the state budget to HIV/AIDS reference laboratories.

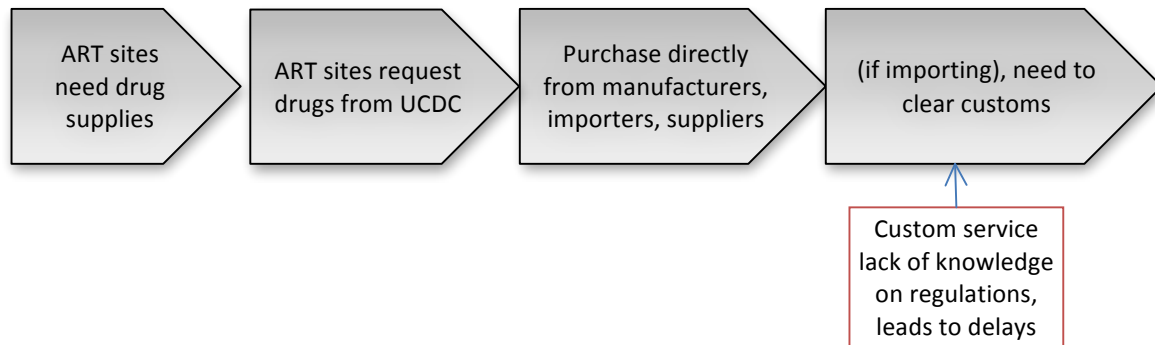
The components of the current procurement and supply system are: forecasting of future country needs, monitoring of national and international prices for drugs and medical/non-medical supplies and equipment, and procurement of supplies and drugs.<sup>71</sup> Procurement of products is supported by the *National List of Essential Drugs and Medical Supplies*. There are two main national procurement systems used in Ukraine to support ART drug procurement, each with its own challenges, as described hereunder.

**1) Government procurement system, centrally led by the Ministry of Health, State Penitentiary Services and legal entities subordinated to the National Academy of Medical Sciences (large number of different types of drugs to procure)**



<sup>71</sup> Includes, condoms, syringes and other supplies used in prevention services, tests, laboratory and diagnostic equipment, reagents and supportive materials and other commodities.

## 2) Procurement managed and funded by GF principal recipient (smaller number of drugs to procure and higher competition)



**Country's pharmaceutical standards not followed in procurement of drugs:** According to the country's national pharmaceutical guidelines, the procurement of products (ARVs) should be subject to it being registered, and that the drugs are meant to be registered and meet the regulatory requirements of FDA (US), WHO, or is registered in a country considered to have a Strict Regulatory Authority, or is a PIC/S country and the manufacturing process meets Good Manufacturing Practice (GMP) requirements; and that the primary packaging is preserved. According to key informant interviews, the inclusion of WHO prequalified products (with known price and assured quality) into the tender requirements was recommended to the Government several times. However, the thematic report on the evaluation of the national AIDS response noted that this recommendation was not implemented.

**Insufficient volume of ARVs procured:** There is inadequate procurement and supply management of ARVs and commodities. A CSIS report in 2012 on Injecting Drug Use in Ukraine reported on the delay of placing ARV drug orders for the upcoming year. This delayed procurement of ARV drugs was said to be a recurring issue and resulted in subsequent clinic and hospital 'stock outs' of ARVs, with many patients experiencing treatment interruptions.<sup>72</sup> Late orders for medications have resulted in an inability to use the normal tender and purchase system, resulting in the need for "sole-source" purchases, at much higher costs to the government.

**Low level of competition during procurement process:** Another cause of higher prices is the low level of competition due to limited number of bidding participants. For example, in 2013, from among 6,500 companies certified to trade in Ukraine only 6 took part in bidding for ARVs<sup>73</sup>.

**Rigid supply and demand forecasting and large variety of ARVs allows little room for variation:** The annual supply process gives a very limited flexibility for stock re-adjustments to meet patient needs or respond to changed regimens. Such stock limitations can lead to the continued supply of a prescribed but no longer suitable regimen.

Overhauling the procurement regulations that govern ARV drug procurement and the procurement process, as well as common set of ARV drug regimens for first line and second line treatment, seems like an enormous and urgent challenge in Ukraine.

<sup>72</sup> Nieburg, P. & Carty, L., 2012. Injecting Drug Use in Ukraine: The challenges of providing HIV prevention and care. CSIS, March 2012.

<sup>73</sup> "Who makes money on epidemics of HIV/AIDS and TB in Ukraine", 2013

## 6.4 Institutional Efficiency and Exogenous Factors

Key issues surrounding the provision of ART include:

- **Inequity of access to treatment for HIV-positive PWID.** Compared to other PLHIV in Ukraine, HIV-positive PWID who are in need of ART are about 85% less likely to be receiving it, despite being the population with the highest HIV prevalence and injecting drug use being the main driver of HIV transmission in Ukraine.<sup>74</sup> There are also reports of discriminatory practices by healthcare providers who refuse ART treatment to patients who are PWID and in need of ART, judging that PWID are not stable patients and are not likely to properly adhere to the treatment regimens.
- **Variable quality of service provision because of variable regional guidelines.** Within the framework of existing national regulations, many regions have developed their own local approaches to the provision of ART, leading to stark discrepancies between regions in how the treatment process is organized. Furthermore, referral to other specialized clinics for opportunistic infections follows health system regulations, which also vary between regions. All of this affects the ability of AIDS Centers to deliver.
- **Weak referral systems and a lack of an integrated approach,** particularly for the prevention, treatment and diagnosis of opportunistic infections on HIV, TB and drug addiction. High prevalence of co-infections and opioid dependence means that PWID are often reliant on multiple services and treatment that is often uncoordinated or inappropriate, pointing to a need for integrated approaches such as the model developed and implemented by the Kyiv City AIDS Center.
  - HIV testing not offered to patients at sites where they were diagnosed with hepatitis B or hepatitis C viral infections (most likely in infectious disease facilities).
  - Coverage of HIV testing among TB patients is not monitored by HIV or TB programmes at the national level.
  - Missed opportunities of early HIV diagnosis and engagement in HIV treatment and care of co-infected patients.

## 6.5 Summary of Findings Relating to Program Efficiency of ART Service Delivery in Ukraine

**Low coverage:** Only 22% of those eligible for treatment, received it. Despite clients' increased access to ART in recent years, coverage continues to be inadequate among some key population groups. In particular, the coverage of ART among PWID is still not commensurate with the burden of disease in this population. In 2012, only 8.3% of HIV-positive PWID received ART, and 52% of all persons who died from HIV were PWID. Similarly, HIV-positive prisoners, many of whom have a history of drug use, and who also have access to ART while in prison, are believed to not have access to the same quality of services that are available to PLHIV in community settings.

**Domestically financed:** But, the ART program was mostly domestically financed, which is not the case for the NSP or OST programmes.

**Lack of delivery of a core package of services in all ART sites:** Although all sites reported using the MOH protocol (and three were also reported as referencing to MOH guidelines), there is still a high level of diversity in the implementation of the programmes. The proportion of OI and testing of

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<sup>74</sup> Nieburg, P. & Carty, L., 2012. Injecting Drug Use in Ukraine: The challenges of providing HIV prevention and care. CSIS, March 2012.

clients at ART sites varies across the three study regions and at the types of sites. Integrated sites have a relatively lower proportion of OI and testing of clients compared to non-integrated sites, Dnipropetrovsk sites have highest proportion of OI and testing of clients among the three regions. There was some variability of core service provision among 12 ART sites this study visited. While all 12 sites provided ART, ART adherence monitoring, medical support for patients, OI treatment and diagnosis and treatment of adverse reactions to ARV, only 3 sites provided laboratory monitoring of VL and CD4, and 6 sites provide ART as part of PMTCT.

**Lack of standardised ART drug regimens:** Some sites provided up to 29 different first line regimens during the study period.

**Relatively good referrals (compared to NSP and OST), but missed opportunities for integration:** In terms of referral to ART services, interviewed clients commented that they mostly arrived at ART services through a formal referral process from other health services. The management of complex cases is often referred to the Lavra Clinic and the Kyiv City AIDS Center. However, sites in Mykolayiv have a weaker referral system than those in the other two regions. The findings from the study revealed that the integration of services across disease areas is often inadequate, including the provision of HIV testing sites where patients receive diagnoses of hepatitis B or hepatitis C viral infections, or provision of TB testing and treatment. Both of these situations have led to “missed opportunities” for early HIV diagnosis, treatment and care of co-infected patients.

**Administrative workload reduces patient time.** On average, clinicians spent 56% of their time with patients. Staff indicated the need for assistance with administrative tasks to allow them to focus on patients’ needs and to improve their capacity to meet all clinical aspects of ART treatment.

Following regional guidelines significantly impacts ART site program costs, yet the procurement of drugs are, by far the most dominant, averaging 74% of the total ART site cost. Ukraine’s national government is on average paying higher prices for ART than Global Fund and notably, Ukraine’s first line ART and Second line prices are also above that for other LMIC countries, while the prices Global Fund are securing for second line ART in Ukraine are in line with other LMICs.

Key issues surrounding the provision of ART include:

- Inequality of access to treatment for HIV-positive PWID who are about 85% less likely to receive ART compared to other PLHIV.
- The quality of the provision of ART varies across the three regions. There is also generally a weak referral system and lack of an integrated approach across the sites, particularly for the prevention, diagnosis and treatment of opportunistic infections.
- There are stark discrepancies between regions in how the treatment process is organized and in the capacity of AIDS Centers and inadequate procurement and supply management of ARVs and commodities due to legal and organizational factors, for example, the lack of well written procurement law and flexibility of stock re-adjustments.
- National Government procurement processes and tender requirements have inflated the costs of ART, particularly in comparison to the Global Fund and other countries.
- The number of first line treatment regimens offered by the sites sampled are as high as 29. The WHO guidelines, on the other hand, recommend only a maximum of eight regimens. Similarly, for the second line treatment, sites are offering up to 16 different regimens under the national scheme whereas the Global Fund registers only a maximum of three different regimens.

#### **6.5.1 Recommendations to Improve the Program Efficiency of ART Service Provision in Ukraine**

- ART sites should use WHO guidelines to ensure consistency of ART program implementation and service provision to clients.



- Appropriate regimen selection for both first and second line offers significant saving opportunities. Reducing the number of regimens to align with WHO treatment regimen guidelines will contribute to a reduction in ART purchasing costs.
- Changes in drug purchasing procedures in Ukraine present opportunities for efficiency gains. If all sites adopted the **Global Fund price** per person for ARV drugs compared to the **national price** per person, National Government prices could be reduced by an average of 30%.
- Reduce discriminatory perceptions and practices among ART service staff that impede PWID access to ART treatment. Doing so may also help to improve ART coverage of this population group.
- Clinic sites should ensure that activities are delegated to the appropriate staff members. In particular, additional administrative assistance for doctors would reduce the amount of time they spend on administrative tasks, enabling them to allocate and better focus their time towards the clinical care of patients.
- Improvements to the referral systems would help avoid missed opportunities for treatment and care of HIV-positive patients.

## 7 KEY ACTIONABLE AREAS & RECOMMENDATIONS

### 7.1 Needle and Syringe Program (NSP)

KEY ISSUES	ACTIONABLE AREAS	RECOMMENDATIONS	POTENTIAL IMPACT
<b>Service provision</b>	Lack of prioritization in the scope of services provided.	Clear identification of core versus non-core services, to be included in the operational guidelines.	Cost-saving not only at the site level but for overall program implementation.
		The staffing and resource mobilization of NGOs to reflect the prioritization of core services and fund availability.	A better depth and quality of service provision can be achieved with the removal or minimization of non-core/low impact interventions and services.
		Fund allocations (mostly in the case of NGOs) to be tied to specific lists of services, for which the recipient organization is obliged to report on fund utilization.	Create accountability of fund utilization among fund recipients.  Improved ability to monitor and evaluate cost-impact attribution.
<b>Law and regulations</b>	Changes in the law relating to possession of small amounts of drugs.	Review and amend the recent legislation relating to possession of small amounts of drugs which decreased the effectiveness of needle-syringe exchange and reduced the number of used syringes collected.	Increase coverage of NSP and the number of used syringes collected and disposed.
	Police harassment towards needle syringes program client.	Reduce police harassment towards social workers and outreach workers who work at surrounding NSP sites, which may restrict access of NSP clients. Thus, this reduces the coverage of the NSP program.	
<b>Clientele</b>	Lack of client enrolment.	Increase the number of clients to spread the capital and operational costs across a wider client base.	Efficiency gains on capital and operational costs per client.
	Lack of clientele.	Increase the number of clients per staff member per	Coverage and efficiency improvement in

**Ukraine HIV Program Efficiency Study: KEY ACTIONABLE AREAS & RECOMMENDATIONS**

KEY ISSUES	ACTIONABLE AREAS	RECOMMENDATIONS	POTENTIAL IMPACT
		hour either by increasing the number of clients (new clients) or reduce the number of staff.	program areas.
<b>Referrals system</b>	Weak linkages between NSP sites and HIV testing.	All NSP sites should be able to offer referral for HIV testing.	Coverage of testing and ART increased.
	Lack of standardization of referral system.	Referral standards need to be consistent nation-wide and aligned to M&E reporting and funding.	Increased effectiveness of referrals system.
<b>Human Resources</b>	Issue of overstaffing.	Avoid overstaffing at sites to ensure that staff and client volumes are balanced.	Cost-saving not only at the site level but for overall program implementation.
	Optimal level of staff cost.	Staffing at sites should better reflect core service priorities to effect an optimal level of both operational and program staff with comparable salary to achieve the maximum output.	
<b>Site operations</b>	Flexibility of opening hours.	Optimize opening hours and the potential for increasing coverage by understanding the population in the site area and timing preferences of clients.	Impacts on increasing coverage of NSP and improving efficiency.
		<p>Concentrate opening hours (during the day and week) when clients most frequently visit, and staff accordingly.</p> <p>Non-efficient sites can increase their distribution of needle- syringes by about 20% without changing staff or program costs. (based on DEA)</p> <ul style="list-style-type: none"> <li>- All sites to achieve lowest possible (best) price on consumables (IEC, condoms).</li> <li>- All sites to achieve lowest possible (best) price on purchase of needle-syringes.</li> </ul>	

7.2 Opioid Substitution Therapy (OST)

KEY ISSUES	ACTIONABLE AREAS	RECOMMENDATIONS	POTENTIAL IMPACT
<b>Laws and regulations</b>			<p>A concerted response to the epidemic that pulls together elements of medical and epidemiological intervention, along with a cohesive support from the legal and law enforcement authorities, while keeping in line with international standards of ethics and human rights.</p> <p>Removal of discriminatory laws and intrusive law enforcement can help improve access to services and coverage of the programmes.</p>
<b>Clientele</b>	Lack of client enrolment	<p>Increase the number of clients to both improve coverage and to spread the capital and operational costs across a wider client base.</p> <p>Improve coverage and utilization of services through targeted outreach and peer-led interventions</p>	Efficiency gains on capital and operational costs per client.
<b>Service provisions</b>	Lack of clear guidelines.	Establish clear guidelines and service provider agreements to support where to best provide OST and ART interaction and provision of services.	Efficiency opportunity for sites with high non-core program costs.
		Curtail non-core services to reduce non-core program costs of some sites.	
<b>Referrals system</b>	Weak linkages between prevention program and ART.	All sites to offer referral for ART.	Impact on increasing ART coverage
	Lack of standardization of referral system.	Referral standards need to be consistent nation-wide and aligned with M&E reporting and funding.	Increased effectiveness of referrals system.
<b>Human resources and</b>	Staffing issues.	Reduce the high volume of administrative workload as reported by clinicians.	Reducing waiting times for clients, potentially improving coverage.

## Ukraine HIV Program Efficiency Study: KEY ACTIONABLE AREAS & RECOMMENDATIONS

KEY ISSUES	ACTIONABLE AREAS	RECOMMENDATIONS	POTENTIAL IMPACT
<b>site operations</b>		In conjunction with above, bring staff-to-client visit ratios in line with site benchmark (per hour open) (And consistency with Order 200 on the presence of one doctor and two nurses).	
	Optimal level of staff cost.	To obtain optimal level of both operational and program staff to achieve the maximum output with comparable salary.	Impacts on efficiency by better utilization of existing staff.
	Global Fund additional payments.	Identify exit strategy for cessation of Global Fund additional payments.	Gains in human resource costs.
	Vehicle expenditure not associated with service provision.	Reconsider need/reduce the use of vehicles for non-service provision purposes.	Increase operational efficiency of sites with non-service provision vehicles.
<b>Site operations</b>	Lack of clientele.	Increase the number of clients per staff member per hour, either by increasing the number of clients (new clients) or decrease the number of staff. Given the low coverage levels, the former option best achieves the dual goals of increasing coverage and efficiency.	Impacts on increasing coverage of OST and improving efficiency.
	Costing issue.	Reduce costs at site level compared to benchmark: Methadone stand-alone OST sites are two times the cost of the best performing site when considering OST staff and costs, at 365 client visits a year.	
	Flexibility of opening hours.	Review hours open per site in terms of both client accessibility and staffing costs (the best performing site is open 4 hours per day (weekdays) 2 hours per day (weekend), while others are open >60% longer per week.	Impacts on (accessibility) and coverage.
<b>Prices and purchasing</b>	Lack of purchasing practices at site level.	Identify purchasing practices at the site level that allows for lower prices when the donor is involved.	Lower the cost of drug purchases.

### 7.3 Antiretroviral Therapy (ART)

KEY ISSUES	ACTIONABLE AREAS	RECOMMENDATIONS	POTENTIAL IMPACT
<b>ARV drugs – regimens, availability and stock</b>	Procurement issues.	Remove barriers that are inflating purchasing prices of ART.	Impacts on increasing coverage.
<b>Human resources and site operations</b>	Workload issues.	Reduce administrative workload of clinicians.	Efficiency gains
	Optimal level of staff cost.	To obtain optimal level of both operational and program staff to achieve the maximum output with comparable salary.	
	Global Fund additional payment.	Identify exit strategy for the cessation of Global Fund additional payments after 2016.	
	Lack of client enrolment.	Increase the number of clients to spread the capital and operational costs across a wider client base.	
<b>Clientele</b>	Lack of service agreement with service providers.	Establish service level agreements with service providers, determine services based on local context and effectiveness of all services noting large variations between sites.	Efficiency gains on capital and operational costs per client.
<b>Service provision</b>	Lack of service agreement with service providers.	Reduce non-core services to reduce non-core program costs of some sites.	Efficiency opportunities
	Lack of clientele.	Significantly reduce the number of regimens available.	
		Increase the number of clients per staff member per hour either by increasing the number of clients (new clients) or reduce the number of staff.	

## Ukraine HIV Program Efficiency Study: KEY ACTIONABLE AREAS & RECOMMENDATIONS

KEY ISSUES	ACTIONABLE AREAS	RECOMMENDATIONS	POTENTIAL IMPACT
<b>Prices and purchasing</b>	Procurement issues.	All sites to achieve lowest possible (best) price on purchase of a small set of preferred ART regimens. ART is a significant proportion of the total AIDS budget (39% – 63% of regional budgets, 2009 – 2010), savings identified here thus can have a significant impact. On average National Government prices could be reduced by 28% for first line regimens and 41% for second line regimens (in comparison to Global Fund prices)	Savings on purchase prices.

### 7.4 Cross Cutting Areas to Address

KEY ISSUES	ACTIONABLE AREAS	RECOMMENDATIONS	POTENTIAL IMPACT
<b>Coverage</b>	Lack of application of clear standard operational guidelines and/or protocols.	Conduct an extensive review of all existing documentation on service provision models, and re-align these to regional best practices, and consider cost-effectiveness modelling to produce a national standard of service provision, and monitor its implementation.	Overall increase in access and coverage can align response efforts closer to the international recommended minimum threshold of program coverage, to achieve an actual impact in reducing transmission and morbidity.

**Ukraine Program Efficiency Study: KEY ACTIONABLE AREAS & RECOMMENDATIONS**

KEY ISSUES	ACTIONABLE AREAS	RECOMMENDATIONS	POTENTIAL IMPACT
<p><b>Service provision</b></p>	<p>Lack of clear standard operational guidelines and/or protocols.</p> <p>No clear, comprehensive and universal system of client referrals among the listed programmes</p> <ul style="list-style-type: none"> <li>• Most HIV-service NGOs develop individual referral systems:               <ul style="list-style-type: none"> <li>○ one NGO does not/should not be expected to have the capacity to provide all the services required by their clients.</li> </ul> </li> <li>• Referral systems of most NGOs:               <ul style="list-style-type: none"> <li>○ engagement of needed specialists as consultants (individual fee-based contracting)</li> <li><u>OR</u></li> <li>○ collaboration with individual health care facilities as a whole based on the</li> </ul> </li> </ul>	<p>Multi-sectoral collaboration and consultative process with stakeholders in the formulation of the NAP and the specific program protocols.</p>	<p>Minimize variations in service delivery models between sites and regions. This in turn can improve efficiency and reduce overall costs.</p>



## Ukraine HIV Program Efficiency Study: KEY ACTIONABLE AREAS & RECOMMENDATIONS

KEY ISSUES	ACTIONABLE AREAS	RECOMMENDATIONS	POTENTIAL IMPACT
	<p>cooperative agreements signed with each institution.</p> <ul style="list-style-type: none"> <li>• NGO referrals could be classified as one of the following: <ul style="list-style-type: none"> <li>○ Internal referrals.</li> <li>○ Referrals for services provided by other NGOs.</li> <li>○ Referrals to state healthcare facilities.</li> </ul> </li> </ul>	<p>Established clear and comprehensive referral services, possibly adopting Alliance’s approach. The pilot ‘Case Management’ aim is to increase effectiveness in ART referral. Based on available resources, the system focus on the process of navigating a client who is prescribed the ART through the process, ensuring successful HIV treatment by the most efficient route. This includes assessment of the client’s status and needs, defining the main barriers for getting ART, analysis of resources available, assistance planning, representing the client’s interest at facilities and implementation monitoring. The system is currently implemented in 16 sites.</p>	<p>Ensures that the priorities and concerns of different Ministries, authorities and other stakeholders are being taken into consideration. The operational guidelines can then be formulated to incorporate these, and in turn, the respective stakeholders will have sufficient buy-in to support the effective implementation of the programmes.</p>
<b>Referrals system</b>	Weak linkages between prevention program and treatment (including HIV testing).	All prevention programmes should be able to offer referral for HIV testing and ART.	Increased coverage of ART intake.
	Predicted funding gaps in HIV response and allocation inefficiencies.	To ensure sustainability of funding from local government.	Increased coverage of HIV testing and ART.
<b>Funding gaps</b>	Optimal level of staff cost.	To obtain optimal levels of both operational and program staff to achieve the maximum output with comparable salary.	Sustainability of the program.
<b>Human Resources</b>	Lack of client enrolment.	Increase the number of clients to spread the capital and operational costs across a wider client base.	Impacts on efficiency by better utilisation of existing staff.
<b>Clientele</b>	Lack of clientele.	Increase the number of clients per staff member per hour, either by increasing the number of clients (new clients) or reducing the number of staff.	Efficiency gains on capital and operational costs per client.

**Ukraine Program Efficiency Study: KEY ACTIONABLE AREAS & RECOMMENDATIONS**

<b>KEY ISSUES</b>	<b>ACTIONABLE AREAS</b>	<b>RECOMMENDATIONS</b>	<b>POTENTIAL IMPACT</b>
<b>Program efficiency</b>			Coverage and efficiency improvements in program areas.