

HIV transmission among injecting and non-injecting drug users in Tallinn, Estonia

Anneli Uusküla
Don DesJarlais

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THE REGION

Indicator	EST	LAT	LIT	UKR	RF	EU-15	USA
Total population (millions), 2005	1.3	2.3	3.4	47	143	387	303
Infant mortality rate (per 1000), 2005	7.4	11.6	9.5	13.5	17.2	4.8	5.9
Life expectancy at birth, 2000-05	71	71	72	68	65	80	78
GDP per capita PPP (thousands, US\$), 2005	17	13	14	6	12	30	42
Gini coefficient, 2005	34	36	36	28	40	30	45

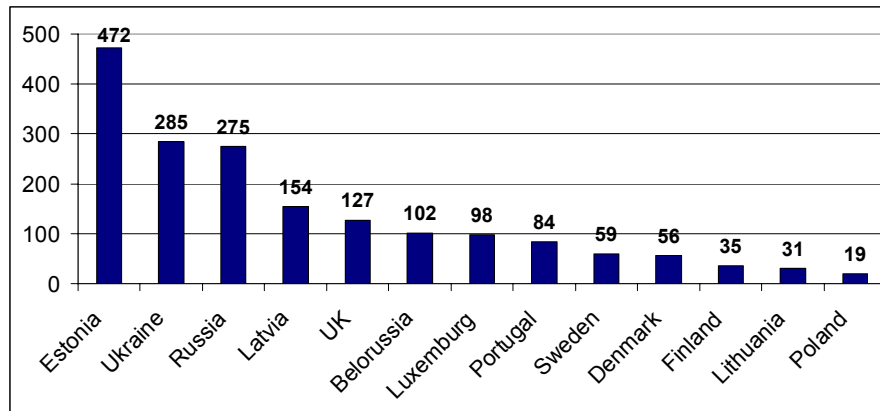
THE REGION

	IDU prevalence, among 15–64 year olds (%) ¹	HIV prevalence among IDUs ¹	Adult (15-49) HIV prevalence (%), 2007 ⁴
Russian Fed	1.8	37%	1.1
Ukraine	1.2	42%	1.6
Estonia	1.5 [2.4% ²]	72%	1.3
Latvia	NA	8% [22% ³]	0.8
Lithuania	0.2	2.4% [8% ³]	0.1

¹ Mathers BM, 2008; ² Uusküla A, 2007; ³ Rütel K, 2009; ⁴ UNAIDS 2008

THE REGION

Newly diagnosed HIV cases per one million population in selected European countries in 2007



(EuroHIV 2008)

IDU / HIV STUDIES [Estonia]

Year	Design / sampling	Site / N	Comment
2003	Randomized controlled trial Convenience sample	Tallinn / 262	HIV / drug Rx settings
2004	Cross sectional Convenience sample	Tallinn / 162	SEPs
2005	Cross sectional Respondent driven sampling	Tallinn / 350	Pilot sample in KohtlaJärve (N=100)
2007	Cross sectional Respondent driven sampling	Tallinn / 350 KohtlaJärve / 350	KohtlaJärve: IDU + their main sexual partners
2009	Cross sectional Respondent driven sampling	Tallinn / 400	IDU, NIDU Data collection – June 2009

IDU / HIV STUDIES [Estonia]

Year	Age (mean, range)	Gender (M %)	Sharing	Main drugs injected
2003	23 (16-45)	88%	51% ¹	Heroin 79% MAK ³ 29%
2004	22 (18-49)	88%	32% ¹	Heroin 59% Amphetamine 30%
2005	24 (15-43)	83%	29% ²	Fentanyl 59%; MAK ³ 20%; Amphetamine 19%

¹ Last 90 days; ² Last 28 days; ³ MAK= liquid derivate of opium poppy straw

IDU / HIV STUDIES [Estonia]

Year	HIV+ (self report)	HIV + (anti HIV ab testing)
2003	28%	43%
2004	21%	56%
2005	38%	54% [47%, 95%CI 40-54*]

* RDS estimate (adjusted for homophily and size of the network)

IDU / HIV STUDIES [Estonia, Tallinn]

	2005	2007
HIV PREVENTION SERVICES		
• Numbers of syringes distributed (N)	230000	444000
• Numbers of positions for methadone treatment (N)	360	419
NEW INJECTORS (injecting for <= 3 years) as % of total sample	22%	20%
Estimated HIV incidence among new injectors	20.9/100 py at risk (CI 14.1-31.0)	25.1/100 py at risk (CI 15.9-37.6)

¹ HIV incidence estimation assumptions among persons who recently began injecting drugs 1) all of them were HIV seronegative when they began injecting, 2) the HIV seropositives became infected at the midpoint between beginning to inject and the time of blood sample collection, and 3) no HIV seropositives are lost to AIDS or other causes among the new injectors

IDUs AND THEIR MAIN SEXUAL PARTNERS 1

SEX PARTNER RECRUITMENT STRATEGIES

- Four different strategies or options for recruiting sex partners, adapted from Witte *et al* (2004)

SEX PARTNER STATUS VERIFICATION SCREENING

- To ensure that dyads were indeed regular (main, primary) sexual partners a sexual partner verification screening (SPVS) instrument adapted from McMahon *et al* (2003) was administered

IDUs AND THEIR MAIN SEXUAL PARTNERS 2

Sexual partner recruitment strategies selected by IDU and the effectiveness of recruitment

	Proportion of IDUs choosing certain strategy	Effectiveness ¹
1 - Brokering approach	6%	4%
2 - Brokering plus written invitation	78%	80%
3 - Phone co-recruitment	12%	9%
4 - Face-to-face co-recruitment	4%	7%

¹ Effectiveness - measured as the percentage of sexual partners who were recruited through each strategy

Uusküla et al, submitted

PHARMACIES ...

- In Russia, more than 90% of IDUs acquired their syringes from pharmacies, as only a minority had ever had contact with a SEP (Sarang 2008)
- In Tallinn, Estonia, almost half of IDUs reported that pharmacies were their main source for clean syringes (Vorobjov 2009)
- In addition, the findings suggest that IDUs in the initial/earlier stages of their injection careers use pharmacies (Vorobjov 2009)

PHARMACIES ...

IDU: strengths of pharmacies - extended hours of operation, are usually in convenient locations.

"...Yes, it would be more comfortable in pharmacies, there are more of them. But they do not want us, because customers get scared when they see us, I guess. When a young man buys syringes then everyone looks at him with disapproval..."

PHARMACIES ...

Several strategies in place to 'regulate' IDU customers attending pharmacies:

- policy not to sell syringes,
- restricting sales by charging high prices,
- only selling syringes depending on the 'appearance and behaviour' of customers

COLLABORATORS

- Jack DeHovitz, James McMahon, Louise-Anne McNutt, Robert Heimer, Susan Holman (USA)
- Tim Rhodes, Lucy Platt; Natalia Bobrova (UK)
- Ave Talu, Katri Abel, Krista Fischer, Karolin Toompere, Mait Raag, Igor Sobolev, Aleksander Laanemann (Estonia)

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- Global Fund project in Estonia
- ENCAP (EU)

Future Research: MP3

- Multiple Prevention Programs Project for IDUs in Eastern Europe (Estonia)
- Funding from NIAID

MP3

- BASIC IDEA:
- NO INTERVENTION ELIMINATES RISK BEHAVIORS!
- WHAT CAN AN “OPTIMUM SET OF INTERVENTIONS ACHIEVE IN HIGH PREVALENCE EPIDEMIC?

MP3

- TARGET POPULATION: IDUS AND SEXUAL PARTNERS IN EASTERN EUROPE
- TALLINN, ESTONIA AS EXAMPLE LOCATION

MP3

- SPECIFIC AIM 1. SYSTEMATIC REVIEWS OF EXISTING INTERVENTIONS FOR IDUS AND SEXUAL PARTNERS
- ISSUE: APPROPRIATE DESIGNS FOR STRUCTURAL INTERVENTIONS?

PLANNED ADDITIONAL IDU / HIV STUDIES [Estonia]

Year	Design / sampling	N	Comment
2010	Cross sectional Respondent driven sampling	TLL 350	
2011	Cross sectional Respondent driven sampling	TLL 350	

MP3

- **SPECIFIC AIM 2. MODELING OF COMBINED INTERVENTIONS**
- **BASED ON META-ANALYSES AND CURRENT EPI DATA**
- **ISSUE: LACK OF CLOSE RELATIONSHIP BETWEEN RISK BEHAVIOR AND HIV INCIDENCE**

MP3

- SPECIFIC AIM 2. MODELING OF COMBINED INTERVENTIONS
- ISSUE: RAPID CHANGE IN IDU EPIDEMICS, HOPEFULLY REDUCTION IN INCIDENCE
- ISSUE: ETHNIC DIFFERENCES IN HIV AMONG IDUS

MP3

- SPECIFIC AIM 3. CONDUCT A PILOT TEST OF COMBINED INTERVENTIONS TO DETERMINE SAFETY AND ACCEPTABILITY
- ISSUE: SPECIFIC INTERVENTIONS NOT KNOWN AT PRESENT

MP3

- SPECIFIC AIM 4. DEVELOP RIGOROUS EVALUATION OF COMBINED INTERVENTIONS
- POTENTIAL DESIGN: STEPPED WEDGE RCT

MP3

- NEED FOR ADDITIONAL EASTERN EUROPEAN DATA FOR MODELING
- ALL PRESENT INVITED TO CONTRIBUTE DATA

CDRF AND MP3

- USING A BIG EPIDEMIC IN A SMALL COUNTRY
- NEED FOR ADDITIONAL EASTERN EUROPEAN DATA
- THINK GLOBALLY ABOUT IDU AND RELATED SEXUAL TRANSMISSION EPIDEMICS