<table>
<thead>
<tr>
<th>Speaker Name</th>
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<tr>
<td>Dr Claire Thorne</td>
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| Date                  | 06 April 2016      |
HIV in Eastern Europe

Claire Thorne
UCL Institute of Child Health
University College London

22nd Annual BHIVA Conference 2016, Manchester
Eastern Europe and Central Asia

Focus on former Soviet Republics

World Bank Classifications

Lower middle income
e.g. Ukraine, Tajikistan, Moldova

Upper middle income
e.g. Belarus, Kazakhstan

High income
Russia

Human Development Index (HDI)

- upper 20%
- higher 20%
- middle 20%
- lower 20%
- bottom 20%
- Far worse off

HDI: summary measure based on life expectancy & health, education and standard of living
HIV epidemic in EECA

• There were 142,000 new HIV infections in the European Region in 2014

• 77% were in EECA

- Estimated 1.7 million PLWH to date in EECA
- 70% in Russia and 20% in Ukraine
- 230 new HIV diagnoses per day in Russia in 2014
Epidemic Origins

Eastern Europe

1980s
Imported, sporadic cases

Early 1990s
HIV outbreaks in Black Sea ports, Ukraine, initial heterosexual spread

Mid 1990s
Explosive spread through IDU networks in Ukraine & other countries
High risk injecting practices

Central Asia

Late 1990s
Few, IDU-associated infections

2000s
Incidence increased steeply
Kazakhstan

Thomson et al 2007; Saad et al 2006
A syndemic perspective

Syndemics: clustering of diseases and conditions by person, time or place, where these interact synergistically.

Health threats disproportionately affecting key populations in EECA.
New infections: trends

Western and central Europe and North America

The number of new infections has remained fairly stable since 2000.

- **2000**: 87,000 [53,000–130,000]
- **2014**: 85,000 [48,000–130,000]

Eastern Europe and central Asia

In eastern Europe and central Asia, new infections rose by 30% between 2000 and 2014.

- **2000**: 100,000 [90,000–120,000]
- **2014**: 140,000 [110,000–160,000]

UNAIDS: AIDS by the numbers, 2015
HIV prevalence, Russia 2014

All aged 15-49: 0.9%
Men 1.1%
Women 0.7%

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</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>0.1%</td>
<td>0.4%</td>
<td>1.1%</td>
<td>2.0%</td>
<td>1.3%</td>
<td>0.6%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Men</td>
<td>0.0%</td>
<td>0.3%</td>
<td>1.1%</td>
<td>2.5%</td>
<td>2.0%</td>
<td>0.9%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Women</td>
<td>0.1%</td>
<td>0.5%</td>
<td>1.1%</td>
<td>1.4%</td>
<td>0.8%</td>
<td>0.4%</td>
<td>0.2%</td>
</tr>
</tbody>
</table>
HIV prevalence in pregnant women in Ukraine

![Graph showing the number of HIV+ pregnancies and antenatal HIV prevalence from 2009 to 2014.]

- Total number of HIV+ pregnancies
- % Antenatal HIV prevalence

Source: Dr N Nizova
Key populations

- PWID and their sexual partners
- MSM
- Sex workers
- Incarcerated people
- Migrants & their sexual partners

Alongside concentrated epidemics is a developing independent heterosexual epidemic unlinked to KPs

Cumulative total of major exposure groups among all HIV cases in Europe

Transmission route of new HIV infections, 2014

2008: main route shifted from IDU to heterosexual transmission
Transmission route of new HIV infections, 2014

Recent studies

- Misclassification of route among men in heterosexual group, with ~10% MSM and ~30% PWID
  Čakalo et al AIDS Behav 2015
- HIV diagnosis rate among MSM tested in a study in Kiev was up to 20 times higher than rate reported in national figures
  Simmons et al PLoS One 2015
MSM, stigma, HIV

• Homosexuality was criminalized in the Soviet era
• Decriminalized in Russia in 1992 but remained highly stigmatized
• Regional and federal legislation passed against “homosexual propaganda” in Russia in 2013, e.g. against providing information about same sex relationships to under 18 year olds
• Upsurge in homophobic attacks, homophobia in the mass media
• Major barrier to HIV prevention, treatment and care
Labour migration and HIV

• Huge scale of labour migration from Central Asia, mainly to Russia and Kazakhstan
  • In 2014, **4.5 million** citizens of Central Asian republics were officially reported as living in Russia
  • True number much higher
  • >15% of Tajikistan’s population work in other countries – mainly Russia
  • Many seasonal workers

Key population at risk of HIV

• Separation from family / spouse
• Multiple and concurrent sex partners
• High rates of use of sex workers
• Injecting drug use

Russian Federal Migration Service, 2014;
Labour migrants

• Study of male Tajik migrants working in Moscow
  • all married to Tajik wife
  • 92% used sex worker
  • 88% had regular sex partner in Moscow

• Migrants as bridge for HIV transmission to the general population – particularly women

• Barriers to accessing health care, including HIV testing, treatment and prevention, due to “undocumented status”

HIV prevalence in labour migrants:
0.9% in Uzbekistan
0.5% in Tajikistan and Kazakhstan

Injecting drug use in the former Soviet Union

- Very high rates of IDU
- Prevalence of IDU in adult population
  - 1-2% in Ukraine
  - 1.6% - 3% in Kazakhstan
  - 1.5% in Tajikistan
  - Global = 0.27%
- Russia has an estimated 1.5-3.0 million drug users
- Russia accounts for around one-fifth of annual global heroin consumption

EECA: drug trafficking routes

- Large-scale opiate trafficking started following dissolution of USSR
- Post-2001 – further increases in heroin entering Russia from Afghanistan
- Domestic opiate production in Central Asia
PWID: HIV and HCV seroprevalence

Bio-behavioural surveillance in 8 Russian cities
Respondent-driven sampling of ~2500 PWID who had injected in past month
73% male, mean age 28 years

HIV 59%
HCV 90%

HIV 13%
HCV 49%

HIV 64%
HCV 90%

HIV 9%
HCV 72%

HIV 15%
HCV 61%

HIV 13%
HCV 49%

HIV 15%
HCV 51%

HIV 57%
HCV 85%

http://www.biomedcentral.com/1471-2334/14/S6/S12
HIV prevalence estimates among PWID

Transmission enhanced by specific injecting practices, particularly use of pre-filled syringes and common containers

Jolley et al, BMJ Open, 2012
“Drugs have destroyed many people, but wrong policies have destroyed many more”

Kofi Annan
PWID and HIV in EECA: a “perfect storm”

- Criminalization of minor, non-violent drug offences
- Harsh, often violent, anti-drug policing
- Harm reduction services are implemented at insufficient scale
  - 14% of PWID in Russia had accessed harm reduction in previous month and 40% of PWID in Kazakhstan in previous year
- Legal prohibitions against effective harm reduction policy
- Stigma, discrimination, social marginalization
  - PWID must register with narcology services
- Limited access to ART among PWID
  - Across Region, <20% PWID living with HIV have access to ART
- GFATM: withdrawal/reduction of funding to middle income countries leading to cuts in harm reduction

Needle & syringe exchange programmes

• Recommended that >200 syringes / year per PWID are needed for NSP to be effective

• Region average = ~50 syringes

• Legal barriers: e.g. NSP is illegal in parts of Russia

• Figure: number of syringes distributed per PWID annually (2013 or latest year available)

Kazatchkine 2015 Vancouver
Opioid substitution therapy

- OST reduces risk of HIV transmission among opioid injectors by ~50%
- OST illegal in Russia, Uzbekistan and Turkmenistan
- Many pilots have not been scaled up, e.g. Ukraine – methadone was approved in 2008
- OST generally not available in the community or prisons
- Modelling suggests that if NSP+OST+ART were each provided at ~25% coverage, HIV incidence would decrease by 50% over 10 years among PWID

HIV treatment
Treatment increasing but not keeping up with the HIV epidemic


Cases from Turkmenistan and Uzbekistan excluded due to inconsistent reporting during the period; cases from Estonia excluded due to incomplete reporting on transmission mode during the period.
AIDS-related mortality: trends

Western and central Europe and North America

From 2000 to 2014, AIDS-related deaths fell by 12%.

2000 29 000 [12 000–96 000]
2014 26 000 [11 000–86 000]

Eastern Europe and central Asia

Globally, AIDS-related deaths decreased by 41% between 2005 and 2014

The number of AIDS-related deaths in the region more than trebled between 2000 and 2014.

2000 20 000 [11 000–45 000]
2014 62 000 [34 000–140 000]

UNAIDS: AIDS by the numbers, 2015
ART Coverage, adults

90-90-90 UNAIDS 81% Coverage Target

Percentage of all adults with HIV on ART in Central Asian/Eastern European Countries

Georgia: 33.70%
Estonia: 29%
Ukraine: 22.30%
Belarus: 20.70%
Armenia: 19.50%
Kyrgyzstan: 18.70%
Mongolia: 18.40%
Moldova: 17.90%
Montenegro: 17.80%
Russia: 14%
Iran: 7.40%
Pakistan: 5.50%

Slide courtesy of Andrew Hill
Cascade of HIV care – Russia 2013


*Slide courtesy of Andrew Hill*
Cascade of HIV care – Ukraine

2012, with 2015 updates

- Living with HIV: 237,903
- Diagnosed: 104,540 (44%)
- Linked to care: 223,000 by start 2015
- Retained in care: 57,066 (24%)
- On ART: 53,163 (22%)
- Viral Suppression (N/A): 41,520 (17%)

Total: 66,000 (30%) on ART by start 2015

Slide courtesy of Andrew Hill, updates from UNAIDS Country Progress Report
## ART costs: top 10 HIV epidemics worldwide

<table>
<thead>
<tr>
<th>Country</th>
<th>HIV Epidemic</th>
<th>Cost of TDF/FTC/EFV</th>
<th>Cost of TDF/FTC/DTG</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>6.3 million</td>
<td>$110</td>
<td>$110</td>
</tr>
<tr>
<td>Nigeria</td>
<td>3.4 million</td>
<td>$110</td>
<td>$110</td>
</tr>
<tr>
<td>India</td>
<td>2.1 million</td>
<td>$300</td>
<td>$300</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>1.6 million</td>
<td>$110</td>
<td>$110</td>
</tr>
<tr>
<td>Mozambique</td>
<td>1.5 million</td>
<td>$110</td>
<td>$110</td>
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<tr>
<td>Uganda</td>
<td>1.5 million</td>
<td>$110</td>
<td>$110</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1.5 million</td>
<td>$110</td>
<td>$110</td>
</tr>
<tr>
<td>Kenya</td>
<td>1.4 million</td>
<td>$110</td>
<td>$110</td>
</tr>
<tr>
<td>Russia</td>
<td>1.4 million</td>
<td>$2448</td>
<td>$7253</td>
</tr>
<tr>
<td>Zambia</td>
<td>1.2 million</td>
<td>$110</td>
<td>$110</td>
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*Slide courtesy of Andrew Hill*
Russia and UNAIDS 90-90-90: How many people would be on treatment for HIV?

Ref: The Joint United Nations Programme on HIV/AIDS. 90-90-90 An ambitious treatment target to help end the AIDS epidemic. 2014; JC2684

Target 1: 90% of HIV+ people diagnosed
- 1.36 million

Target 2: 90% of diagnosed people on ART
- 1.22 million
- 1.10 million

Target 3: 90% of people on ART with HIV RNA suppression
- 1.0 million

Slide courtesy of Andrew Hill
### How much would it cost to achieve 90-90-90 in Russia?

<table>
<thead>
<tr>
<th>1.1 million people</th>
<th>Current prices</th>
<th>Access prices</th>
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<tbody>
<tr>
<td>TDF/FTC/EFV</td>
<td>$2.7 billion</td>
<td>$121 million</td>
</tr>
<tr>
<td></td>
<td>184 billion roubles</td>
<td>816 million roubles</td>
</tr>
<tr>
<td>TDF/FTC/DTG</td>
<td>$8.0 billion</td>
<td>$121 million</td>
</tr>
<tr>
<td></td>
<td>544 billion roubles</td>
<td>816 million roubles</td>
</tr>
</tbody>
</table>

Assumes current costs:

- TDF/FTC/EFV in Russia = $2448 / year, vs access price $110
- TDF/FTC/DTG in Russia = $7453/year, vs access price $110
Tuberculosis

• In 2013, 85% of the ~360,000 reported TB cases in Europe were in Eastern Europe and Central Asia

• EECA is the global region most affected by MDR-TB
  • Often affecting key populations and those hardest to reach with services
  • 12–35% of new TB cases and 32–77% of retreatment cases in Latvia, Russia and Belarus are MDR-TB

• TB is the most common AIDS defining condition in the region

• Challenges include the vertical systems of care (HIV/AIDS Centres, TB Centres etc), sub-optimal diagnostics, low rates of drug susceptibility testing, complexities of treating MDR-TB, low coverage with ART

Elsen et al 2015 PLoS One
TB/HIV

• EuroCoord HIV/TB Study
  • Patients with HIV/TB in Eastern Europe had nearly 4 times higher mortality than those in Western Europe and Latin America
  • Probability of TB-related death was 23% in EE, 1% in Western Europe and 4% in Latin America
  • Only 18% of HIV/TB patients were on ART at TB diagnosis in EE vs 44% in WE, increasing to 67% and 92% respectively 12 months later
  • Modifiable risk factors for mortality included sub-optimal initial anti-TB regimens and lack of drug susceptibility testing

Podlekareva et al
Lancet HIV March 2016
>18,000 women with HIV deliver annually in EECA

Estimated MTCT rates, 2013

Kazakhstan* | Kyrgyzstan | Moldova | Russia | Ukraine | Uzbekistan
1.8 | 2.9 | 6.7 | 3.5 | 2.2 | 3.4

Kazakhstan estimate is for 2014, Source: UNAIDS 2013, Reports at Astana eMTCT technical meeting 2015
Key adolescent populations at risk of HIV infection – Ukraine example

• At least **1500 new HIV infections** are reported in youth (15-24 year olds) annually
• HIV prevalence is 0.3% among 15-24 year olds
• 1 in 60 adolescents aged 10-19 years are estimated to be most at risk adolescent population
  • Young PWID
  • Adolescent sex workers
  • Street youth
• HIV prevention services target older people and are therefore hard to reach by adolescents
Street youth

- Street children and youth constitute one of the most at-risk populations for HIV and BBVs
  - drug use
  - sexual exploitation
  - limited access to public services
  - extreme stigma and discrimination
- There are an estimated 30,000 – 100,000 street youth in Ukraine
Conclusions

• The HIV epidemic has highlighted the frailties of health care systems in EECA, and the widespread stigma, denial and neglect of health problems of poor/disadvantaged populations

• Can EECA (and particularly Russia) “break the epidemic by 2020”?

• With current trajectories, Federal AIDS Centre chief Vadim Pokrovsky estimates that 2 million Russians will be HIV-positive in four years time

• Low coverage of HIV treatment represents a major challenge

• Michel Sidibé “We should have the courage to explore all progressive policy options in eastern Europe and central Asia” (EECA AIDS Conference March 2016)

• This will require improvements in social justice and equity, including removal of laws and policies that hamper access to HIV prevention and treatment services for key populations
Thank you

With thanks to Ruslan Malyuta, Luba Okhonskaia, Natalyia Nizova, Anna Turkova, Heather Bailey, Andy Hill.