British HIV Association
BHIVA

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Speaker Name	Statement
Dr Claire Thorne	None declared
Date	06 April 2016

HIV in Eastern Europe

Claire Thorne
UCL Institute of Child Health
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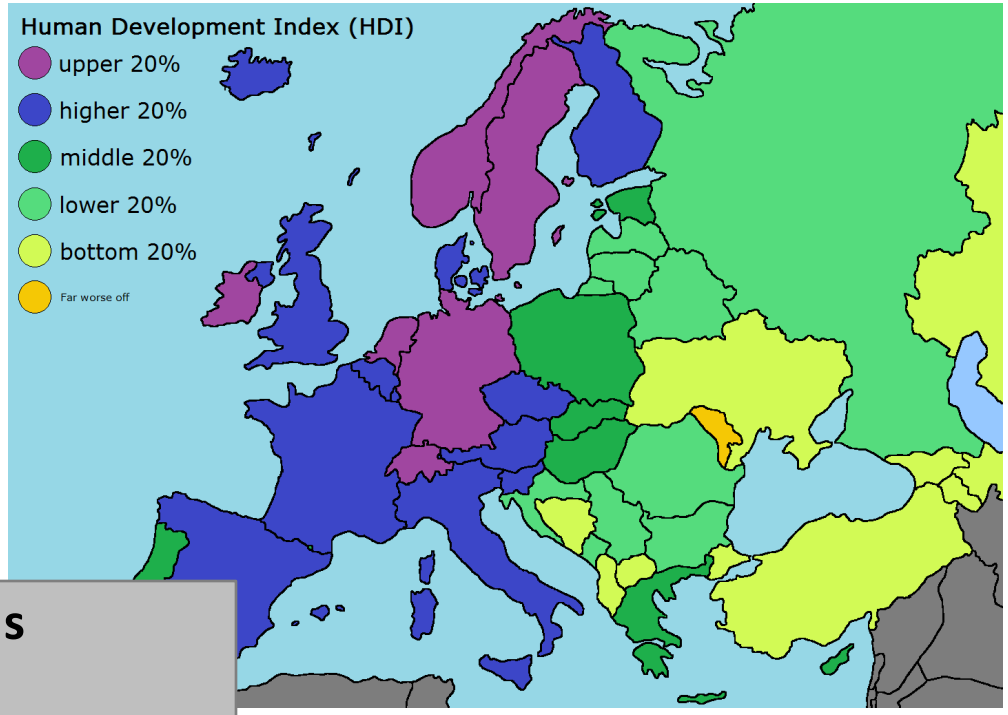
22nd Annual BHIVA Conference 2016, Manchester

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

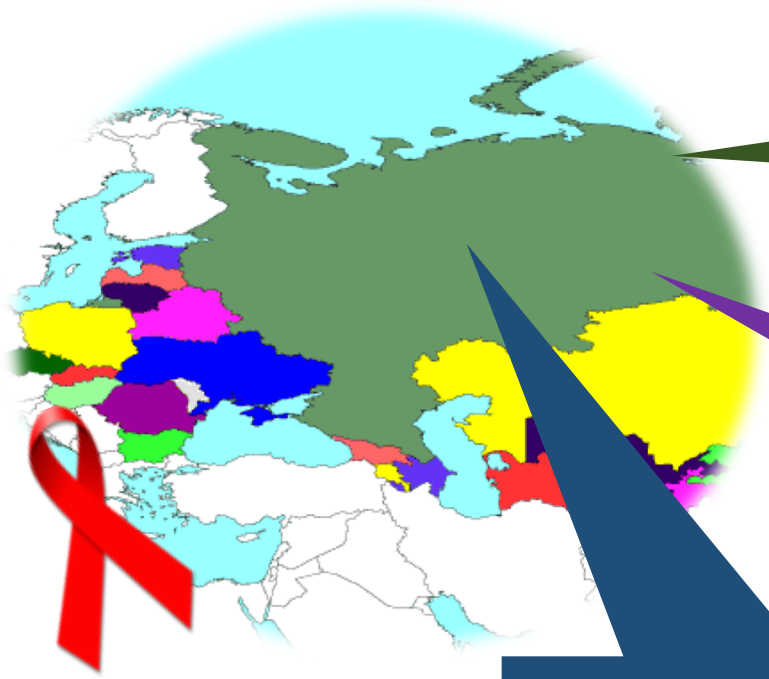
High income

Russia

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**

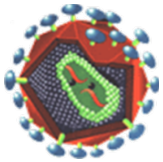


Estimated 1.7 million PLWH to date in EECA

70% in Russia and 20% in Ukraine

230 new HIV diagnoses per day in Russia in 2014

Epidemic Origins



Sub-type A predominates

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

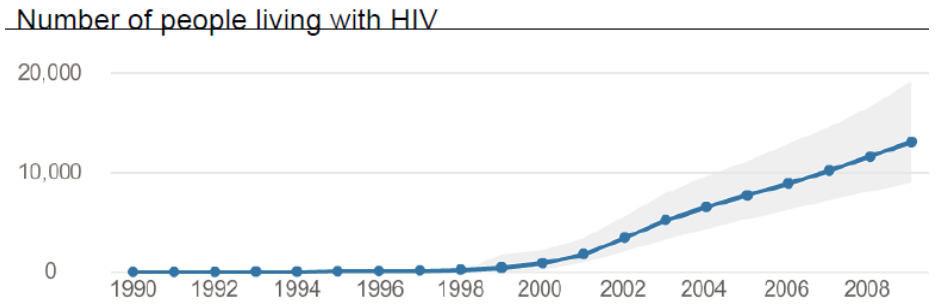
Late 1990s

Few, IDU-associated infections

2000s

Incidence increased steeply

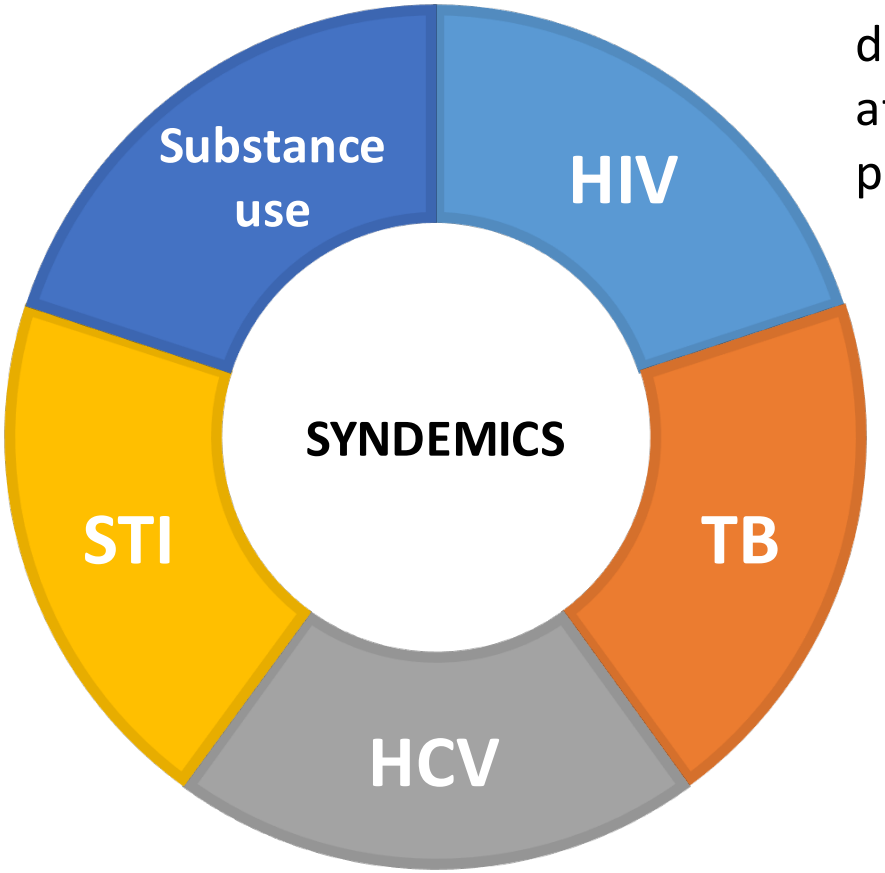
Kazakhstan



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

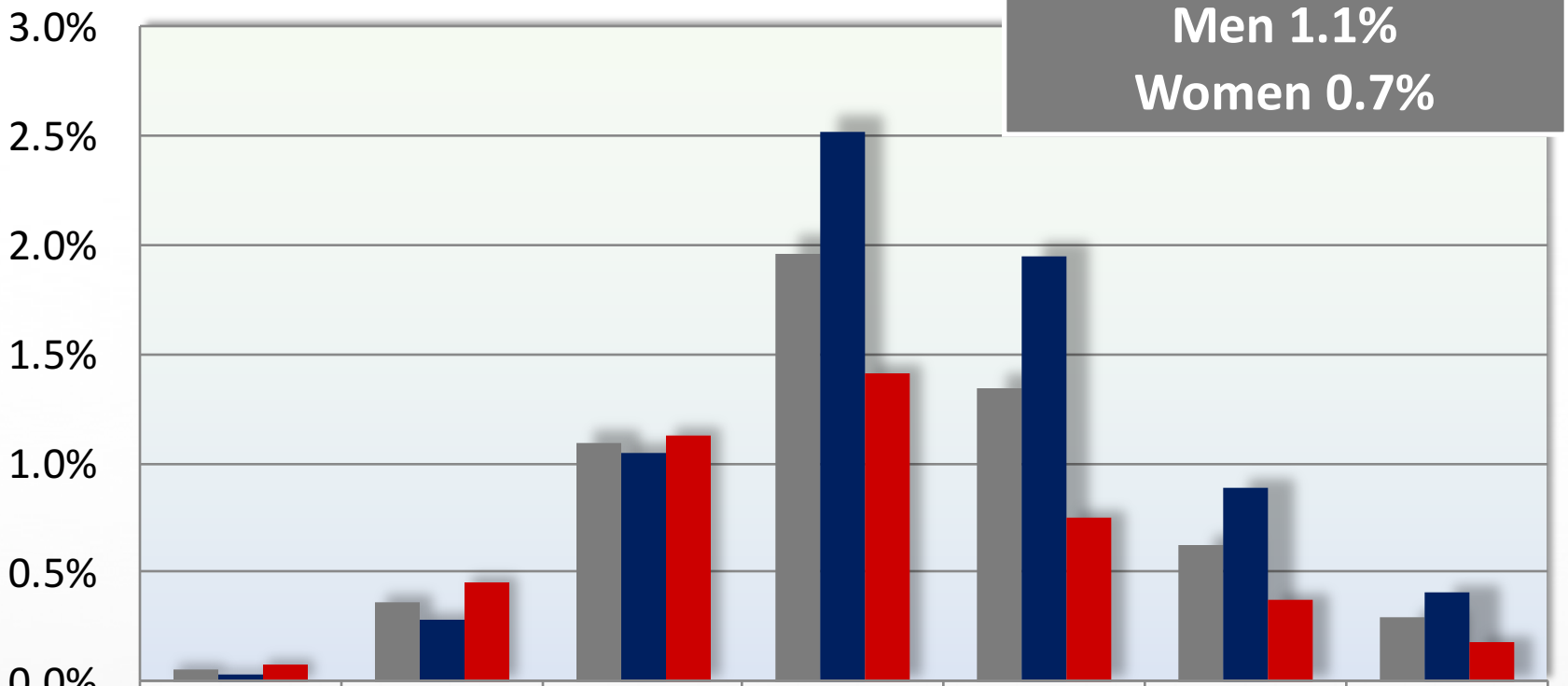
In eastern Europe and central Asia, **new infections rose by 30%** between 2000 and 2014.

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%



	15-19	20-24	25-29	30-34	35-39	40-44	45-49
All	0.1%	0.4%	1.1%	2.0%	1.3%	0.6%	0.3%
Men	0.0%	0.3%	1.1%	2.5%	2.0%	0.9%	0.4%
Women	0.1%	0.5%	1.1%	1.4%	0.8%	0.4%	0.2%

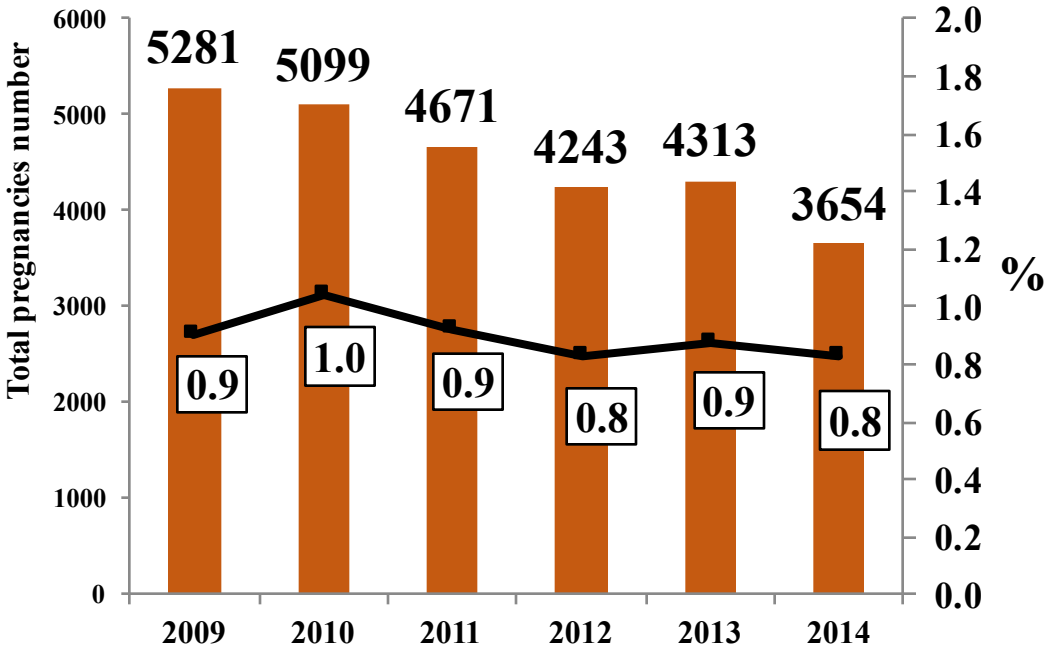
Federal Research and Methodological Center for Prevention and Control of AIDS

ФЕДЕРАЛЬНЫЙ ЦЕНТР СПИД

HIV prevalence in pregnant women in Ukraine

Total number of HIV+ pregnancies

% Antenatal HIV prevalence

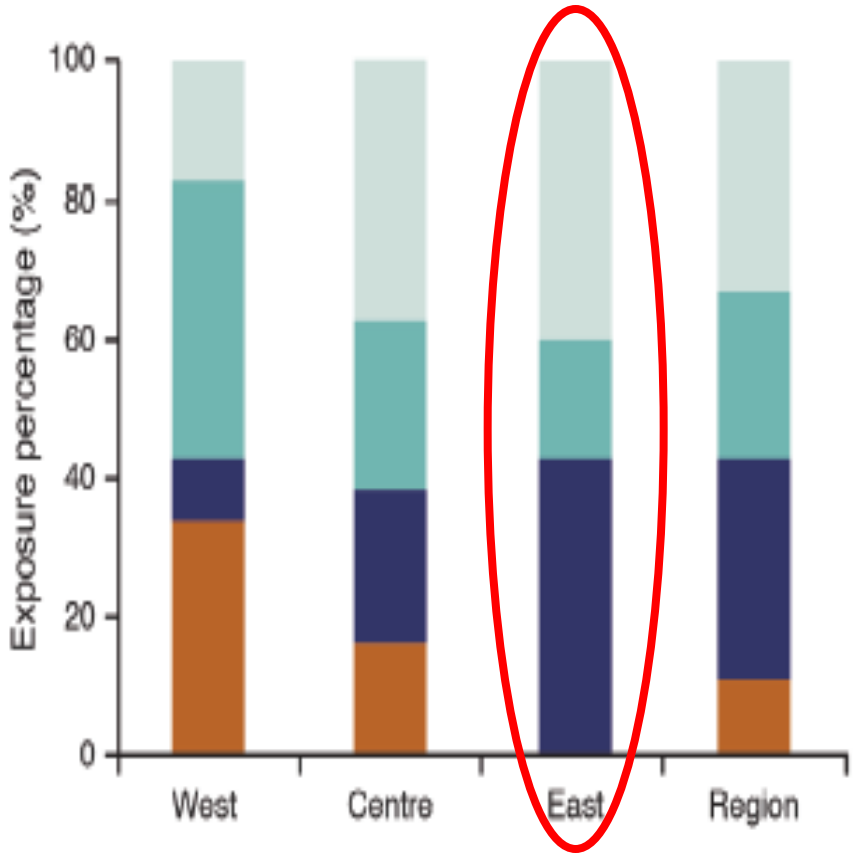


Source: Dr N Nizova

Ukrainian Center for Socially Dangerous Disease Control of The Ministry of Health of Ukraine

UCDC

Key populations



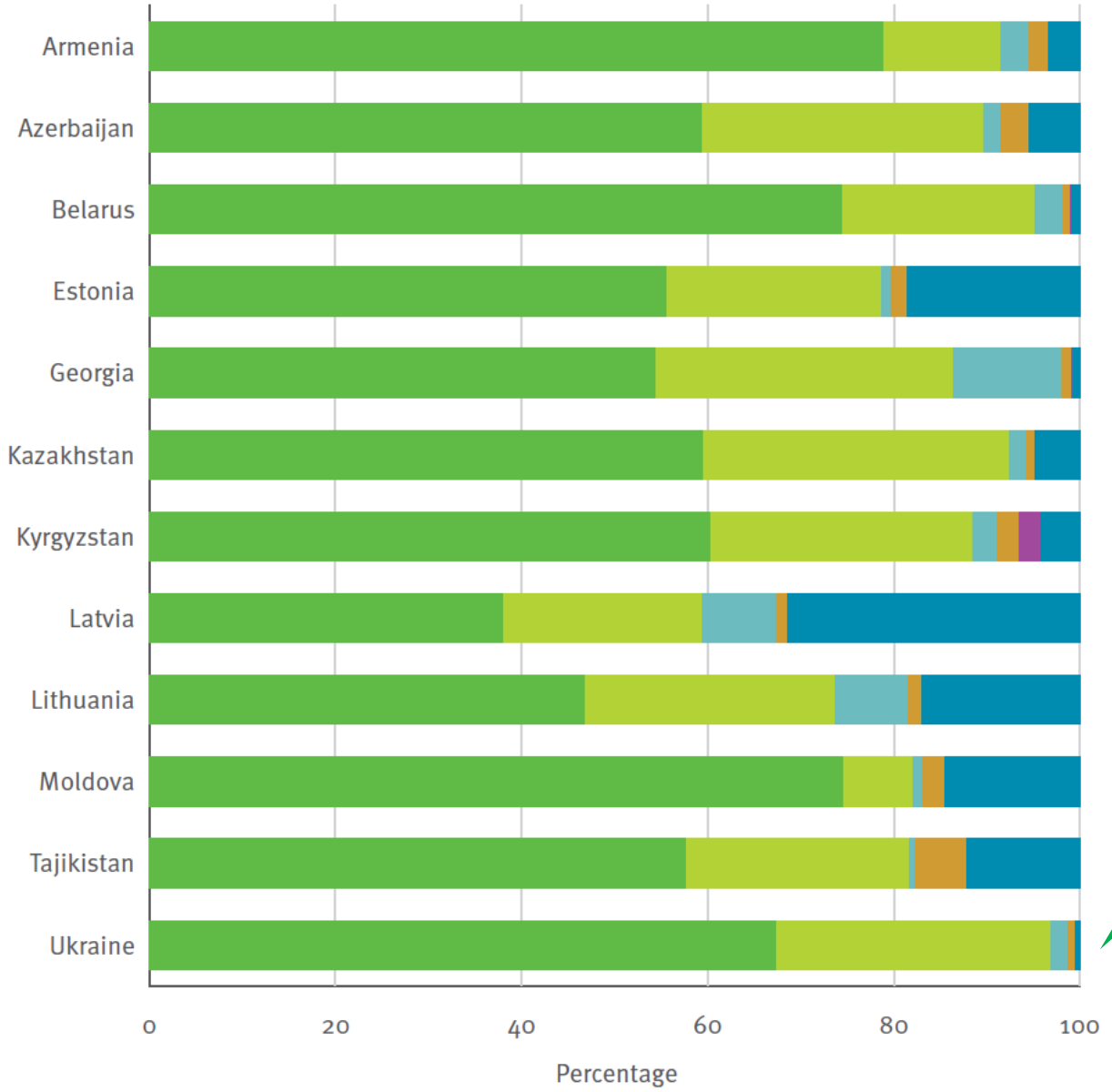
Cumulative total of major exposure groups among all HIV cases in Europe

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

Platt et al 2013, HIV in the European Region Synthesis Report, World Bank

Transmission route of new HIV infections, 2014

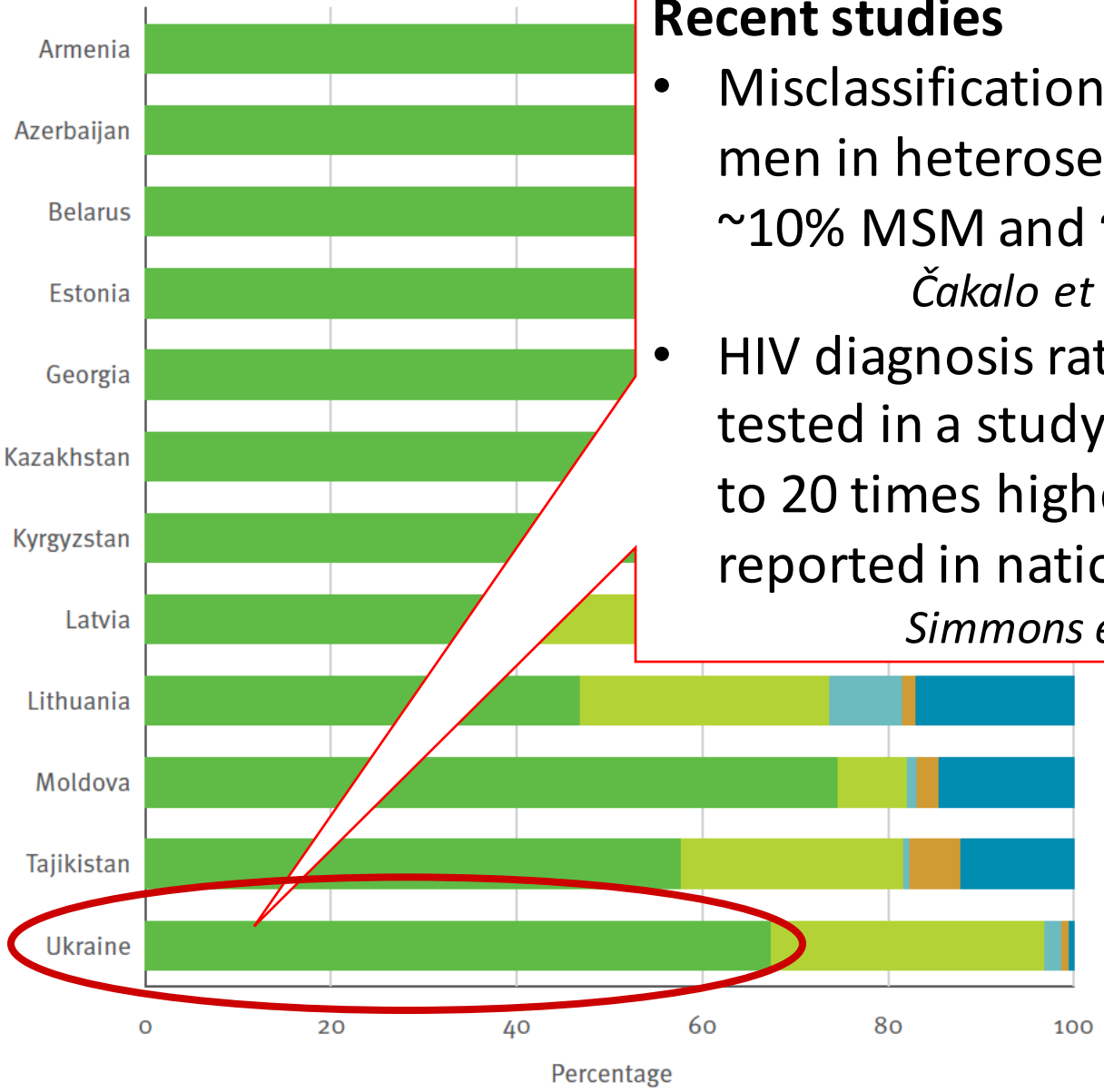


2008: main route shifted from IDU to heterosexual transmission

ecdc EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

World Health Organization REGIONAL OFFICE FOR Europe

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

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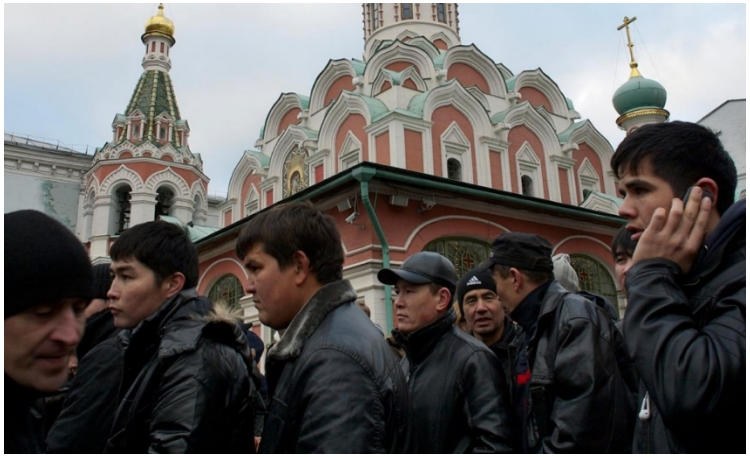
World Health Organization REGIONAL OFFICE FOR Europe

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

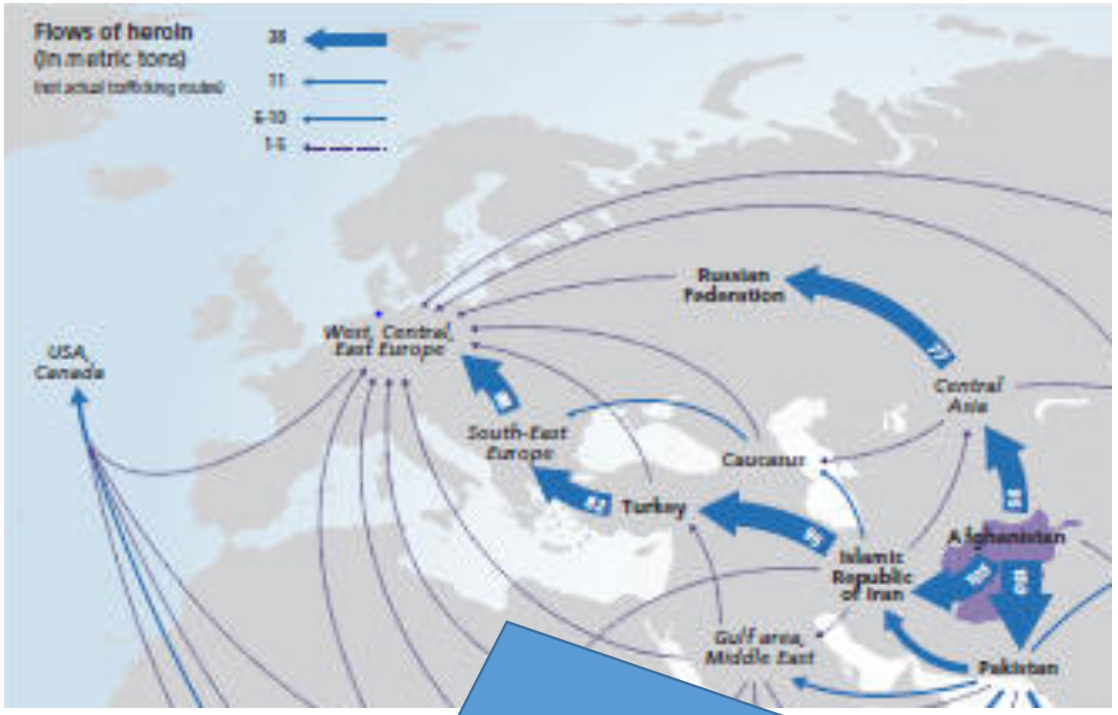
Dzuravev 2010, Turmanov 2010, El Bassell et al 2011, Weine et al 2012

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

Dvoriak IAS 2013, Kruglov et al 2008, EMCDDA 2010, Kazatchkine 2015 Vancouver

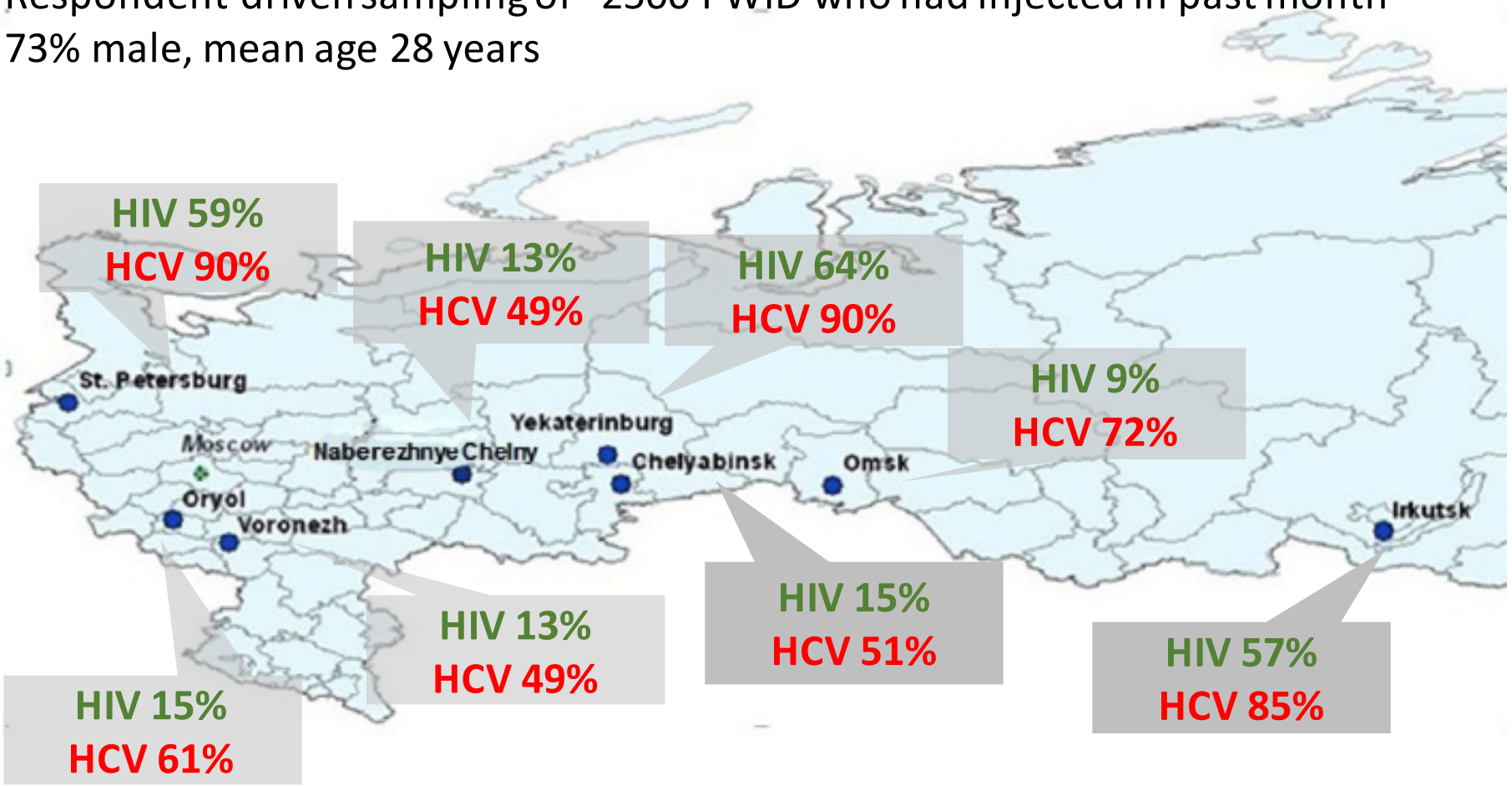
EECA: drug trafficking routes



- 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

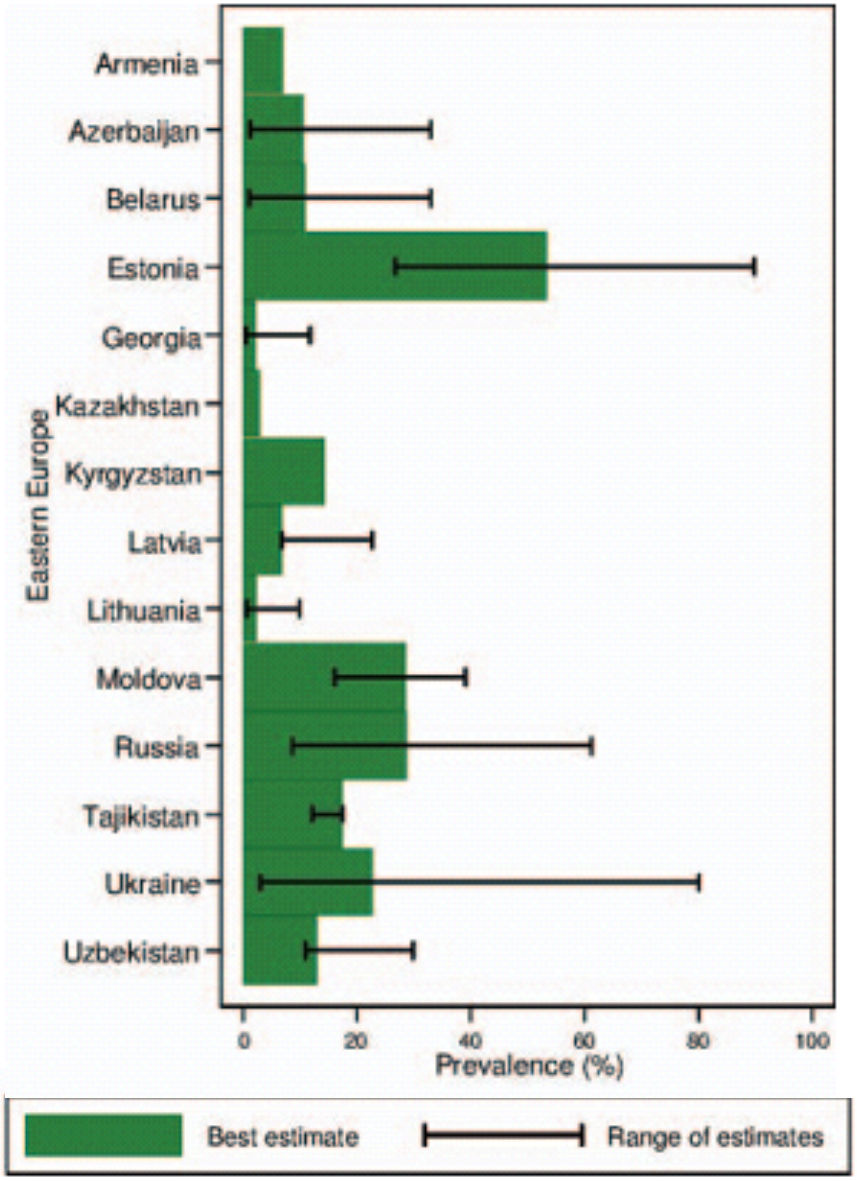
PWID: HIV and HCV seroprevalence

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



Heimer *et al. BMC Infectious Diseases* 2014, **14**(Suppl 6):S12
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

Booth et al 2004, 2006, 2008; Dehne et al 1999
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"

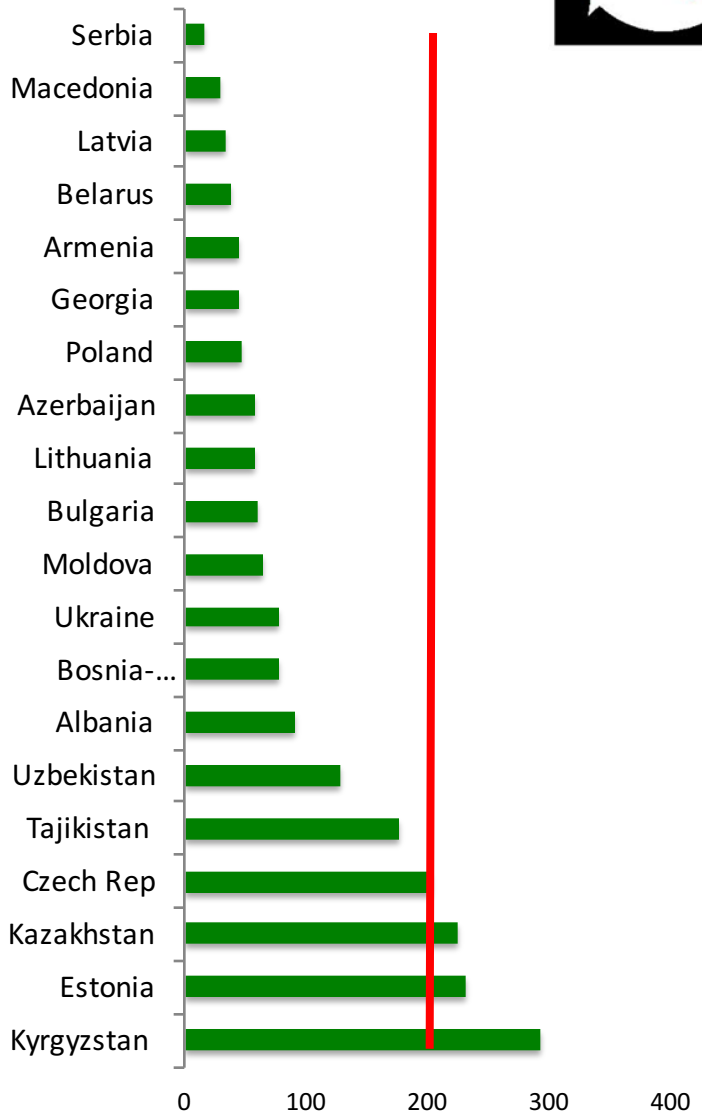
- Criminalization of minor, non-violent drug offences
- Harsh, often violent, anti-drug policing
- Harm reduction services are implemented at insufficient scale
  - 14% of PWID in Russia had accessed harm reduction in previous month and 40% of PWID in Kazakhstan in previous year
- Legal prohibitions 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

Heimer et al 2014 BMC Inf Dis, Kazatchkine 2015 Vancouver, Csete et al 2016 Lancet

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

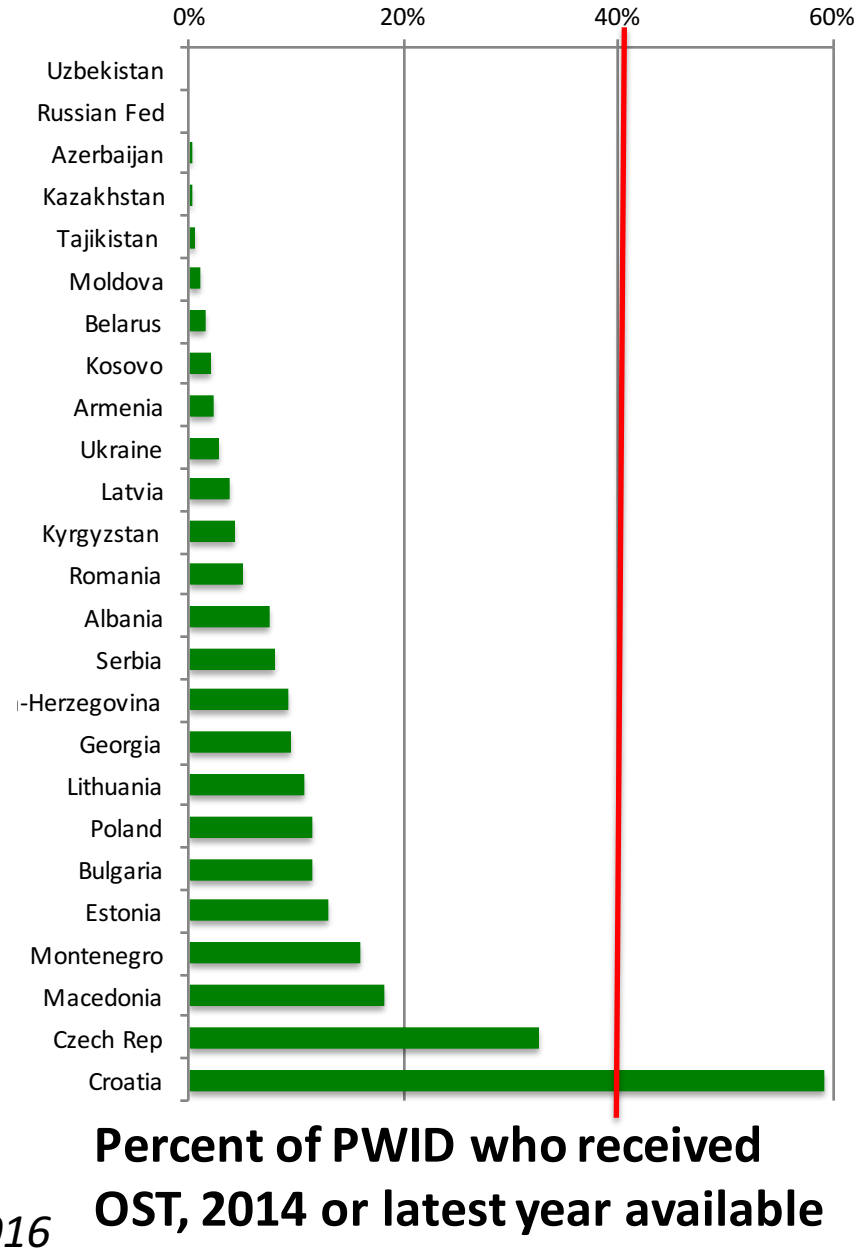
- **Figure: number of syringes distributed per PWID annually (2013 or latest year available)**



Kazatchkine 2015 Vancouver

Opioid substitution therapy

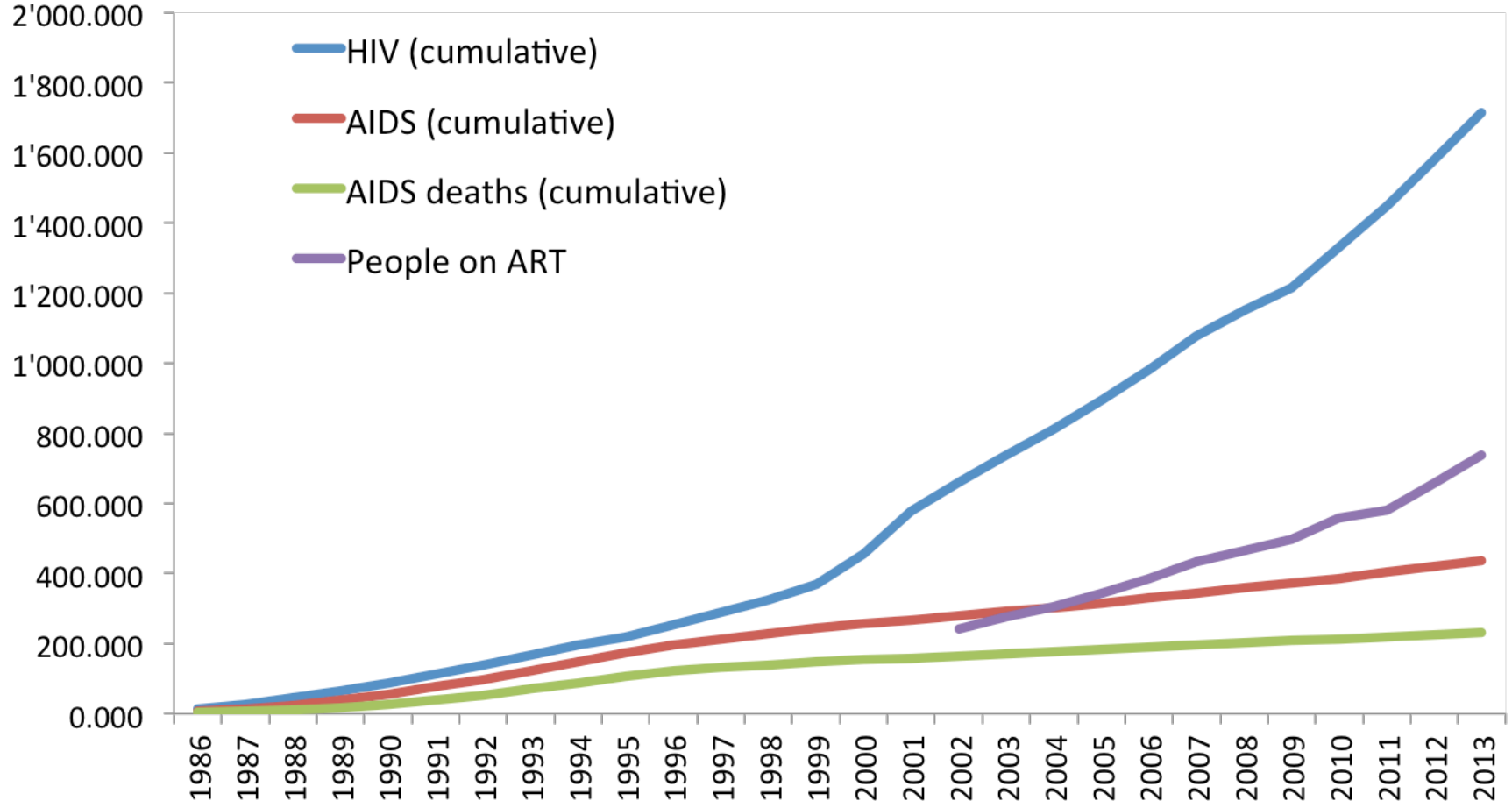
- OST reduces risk of HIV transmission among opioid injectors by ~50%
- OST illegal in Russia, Uzbekistan and Turkmenistan
- Many pilots have not been scaled up, e.g. Ukraine – methadone was approved in 2008
- OST generally not available in the community or prisons
- Modelling suggests that if NSP+OST+ART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



MacArthur et al BMJ 2012, Csete et al, Lancet 2016

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

Source: ECDC/WHO (2014). HIV/AIDS Surveillance in Europe, 2013

World Health Organization
REGIONAL OFFICE FOR Europe

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EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

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]

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

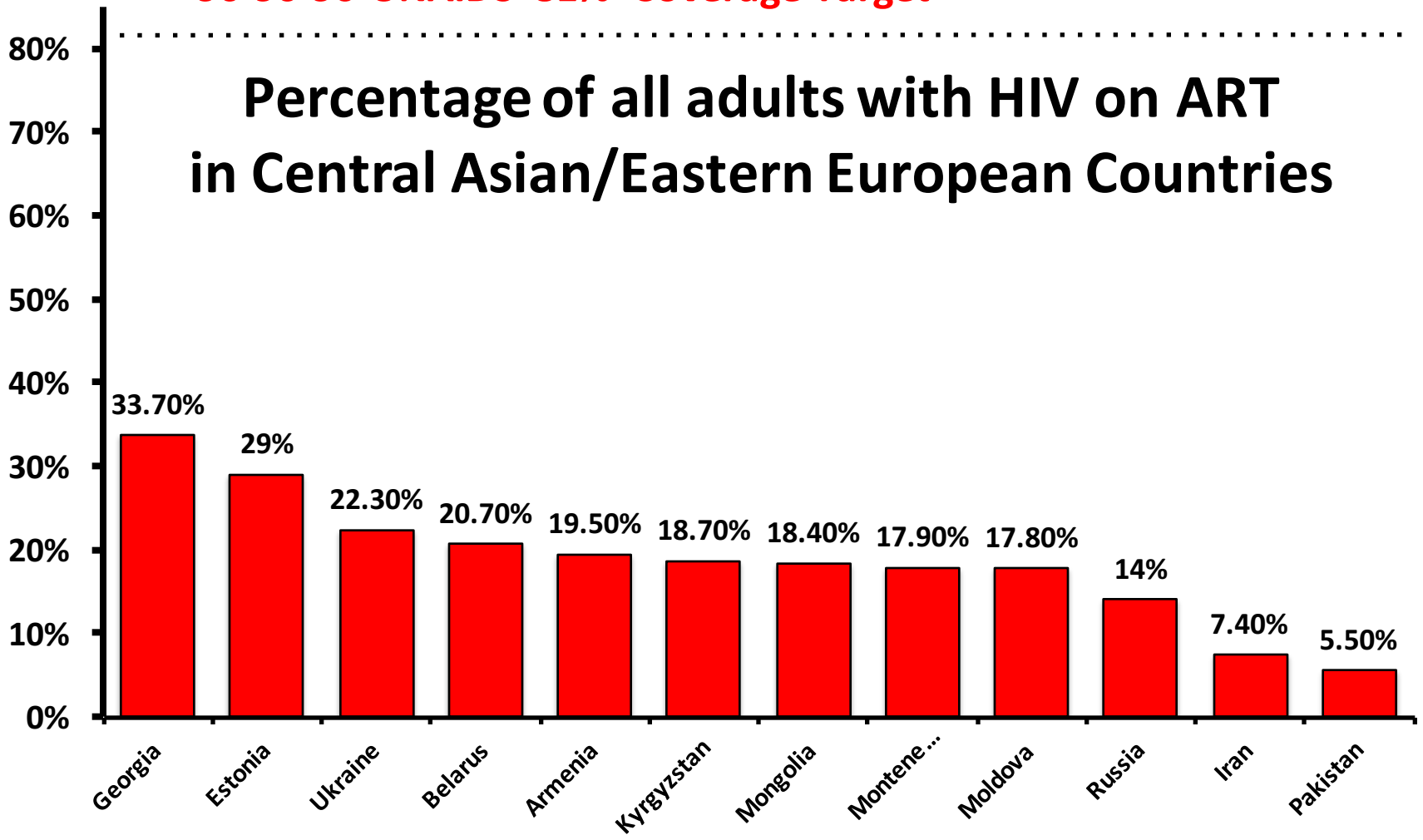
Eastern Europe and central Asia

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]

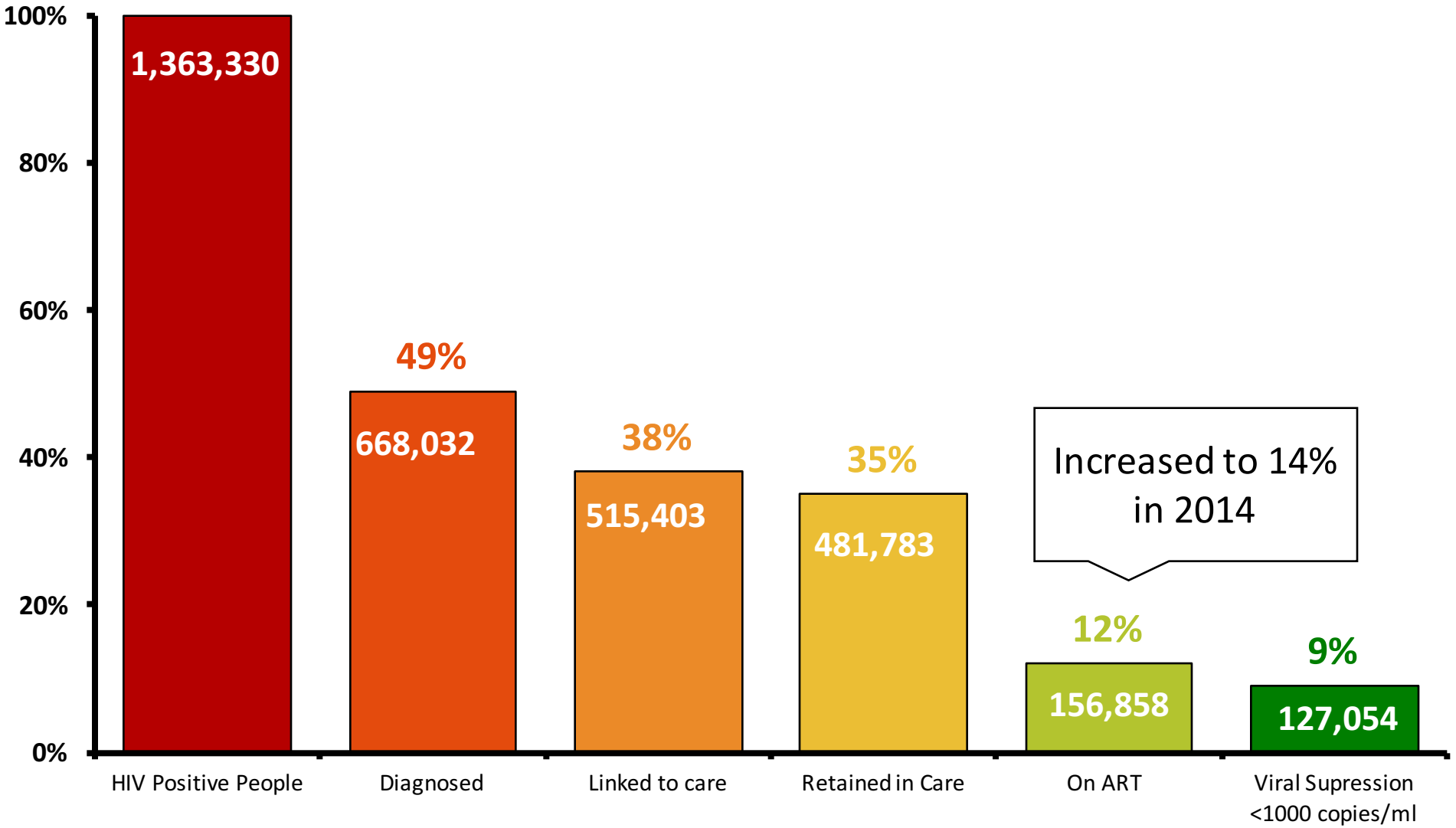
UNAIDS: AIDS by the numbers, 2015

ART Coverage, adults



Slide courtesy of Andrew Hill

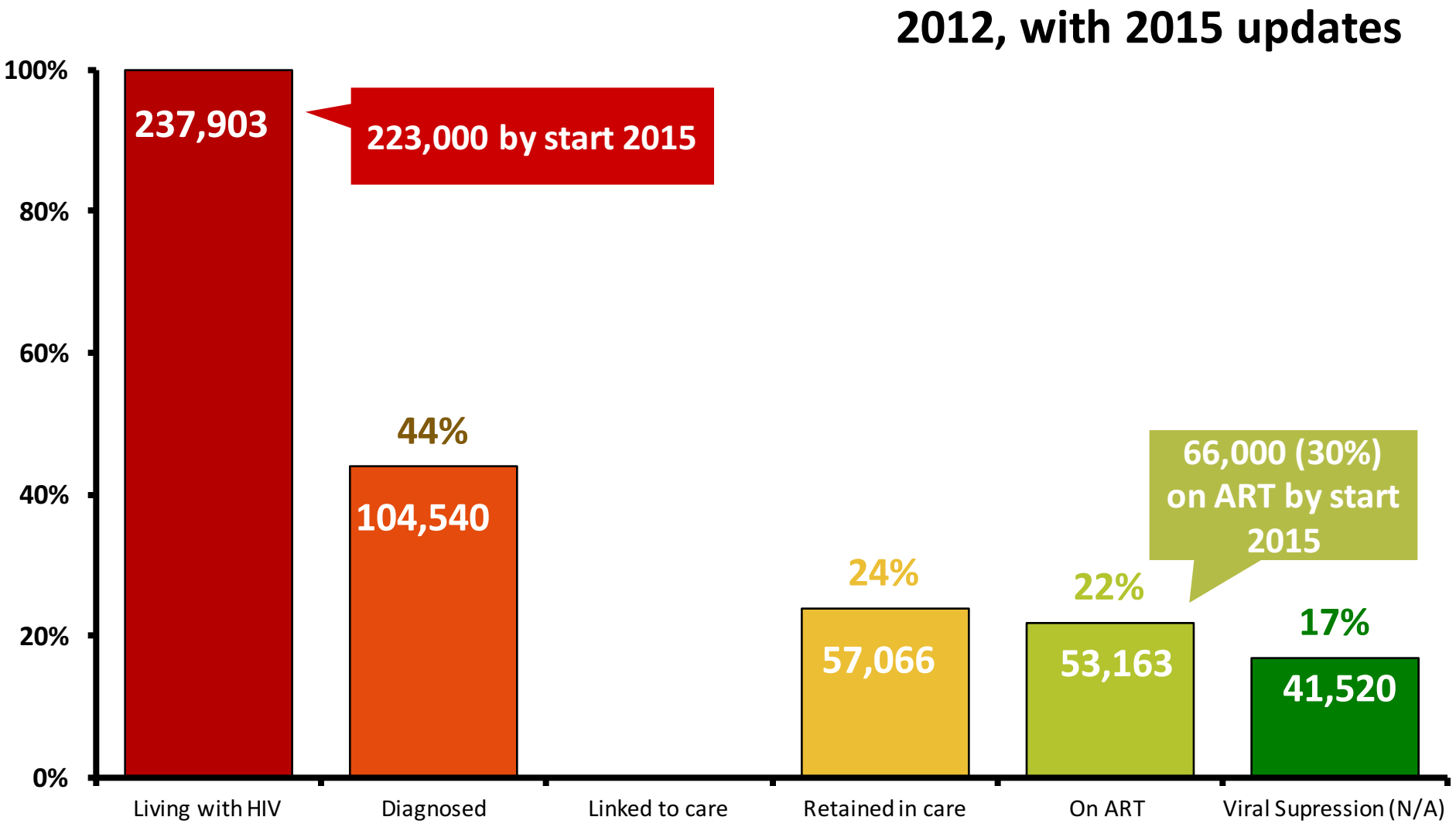
Cascade of HIV care – Russia 2013



Ref: Pokrovskaya, A., et al The cascade of HIV care in Russia, 2011–2013. *Journal of the International AIDS Society* 2014;17(4). http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4224814/pdf/JIAS-17-19506.pdf

Slide courtesy of Andrew Hill

Cascade of HIV care – Ukraine



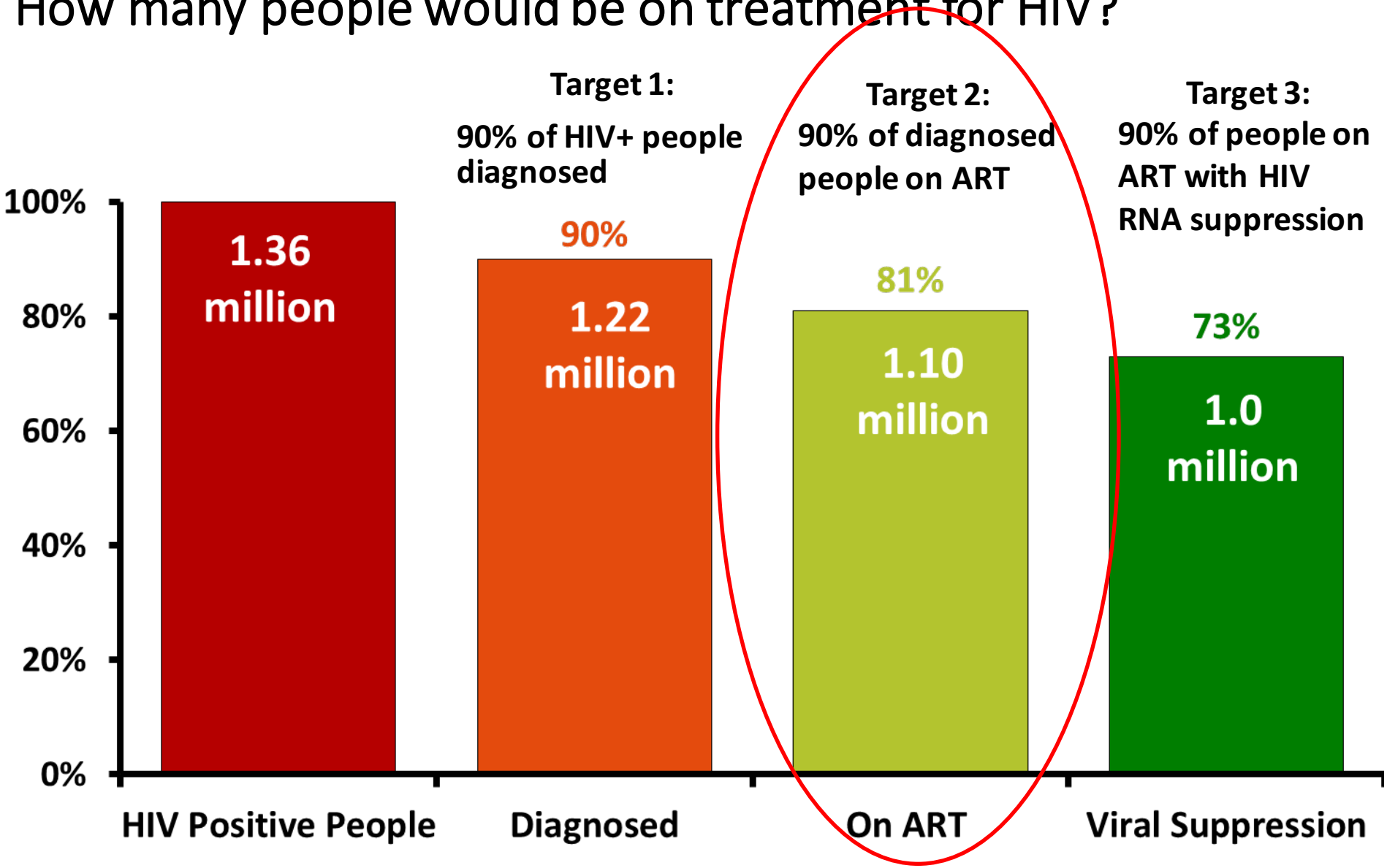
Slide courtesy of Andrew Hill, updates from UNAIDS Country Progress Report

ART costs: top 10 HIV epidemics worldwide

Country	HIV Epidemic	Cost of TDF/FTC/EFV	TDF/FTC/DTG
South Africa	6.3 million	$110	$110
Nigeria	3.4 million	$110	$110
India	2.1 million	$300	$300
Zimbabwe	1.6 million	$110	$110
Mozambique	1.5 million	$110	$110
Uganda	1.5 million	$110	$110
Tanzania	1.5 million	$110	$110
Kenya	1.4 million	$110	$110
Russia	1.4 million	$2448	$7253
Zambia	1.2 million	$110	$110

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 (Numbers as of March 2015) How Aids Changed Everything. Fact Sheet. UNAIDS 2015. MDG 6: 15 YEARS, 15 LESSONS OF HOPE FROM THE AIDS RESPONSE July 2015.

Slide courtesy of Andrew Hill

How much would it cost to acheive 90-90-90 in Russia?

1.1 million people	Current prices	Access prices
TDF/FTC/EFV	$2.7 billion	$121 million
	184 billion roubles	816 million roubles
TDF/FTC/DTG	$8.0 billion	$121 million
	544 billion roubles	816 million roubles

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

Slide, Andrew Hill

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

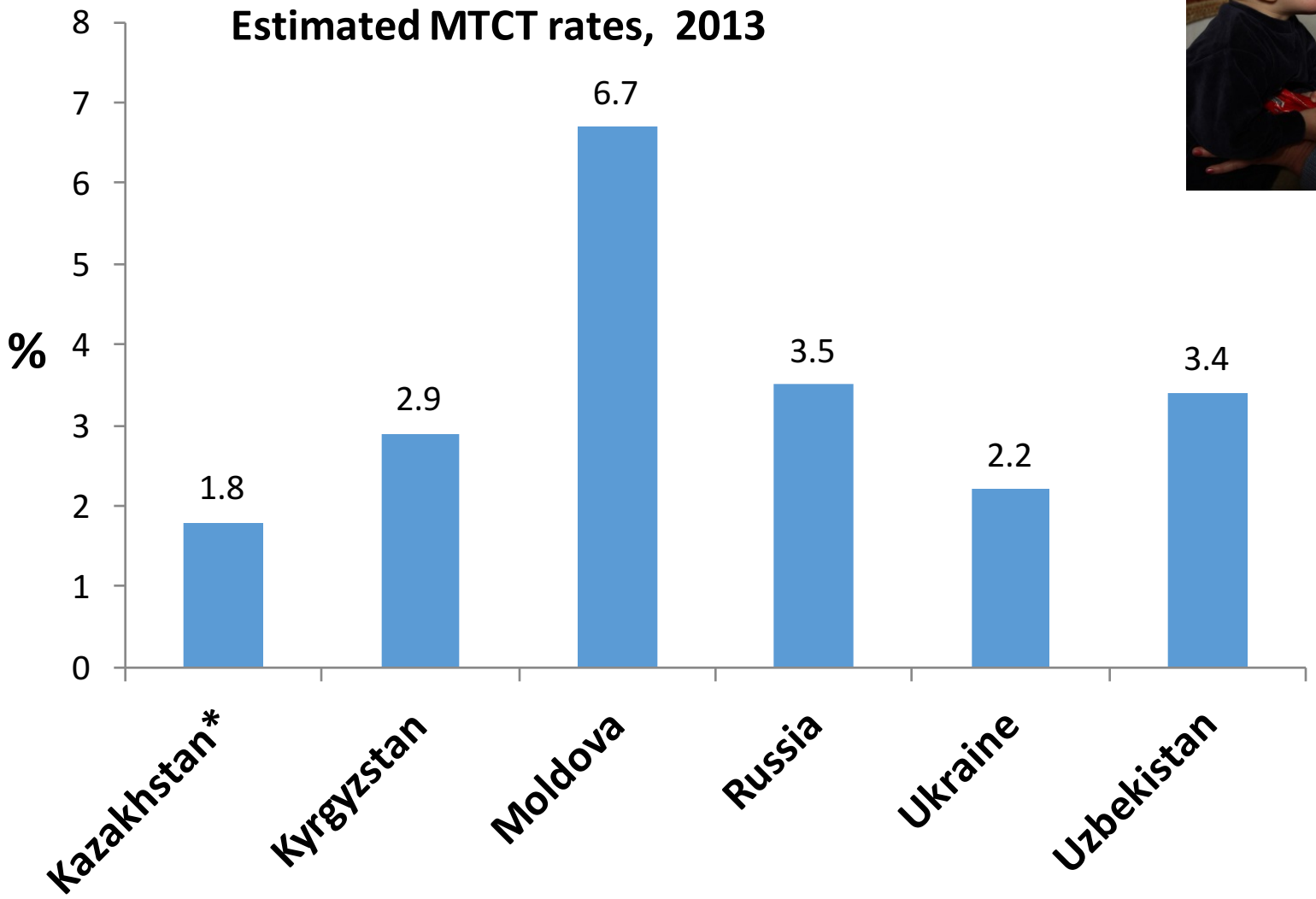
TB/HIV

- 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

PMTCT

>18,000 women with HIV deliver annually in EECA



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

Yana: homeless, HIV positive. 1994 - 2007

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.