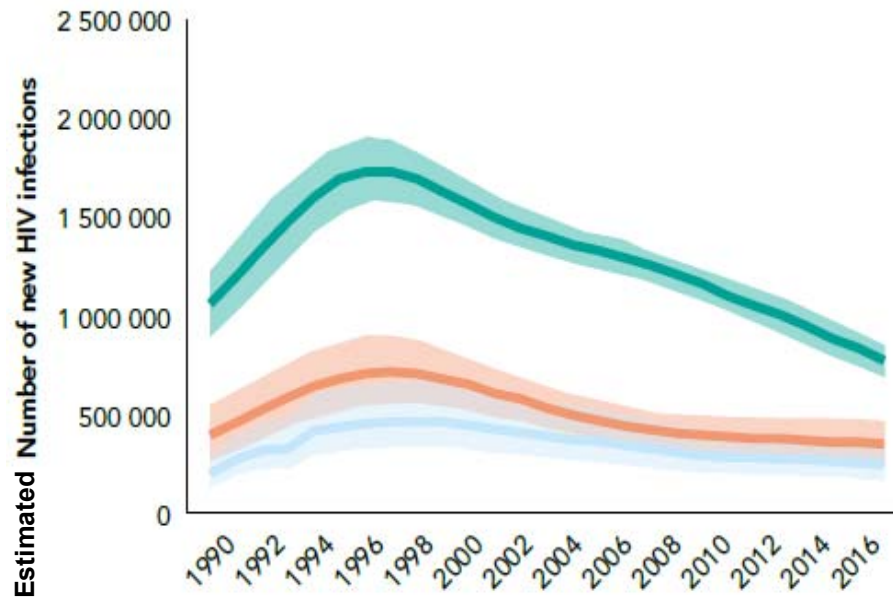


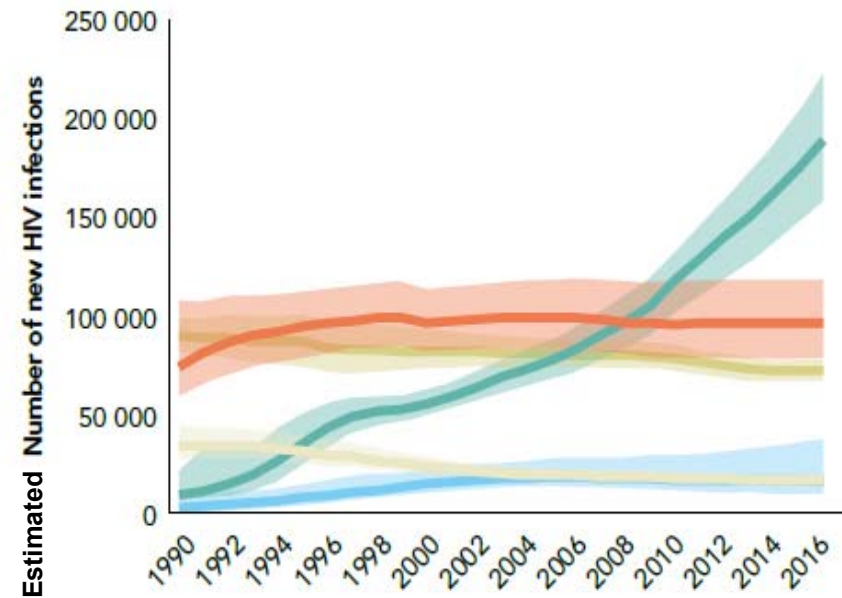
Integration of services: challenges ahead in Eastern Europe and Central Asia

Michel Kazatchkine

EECA: where new HIV infections continue to increase

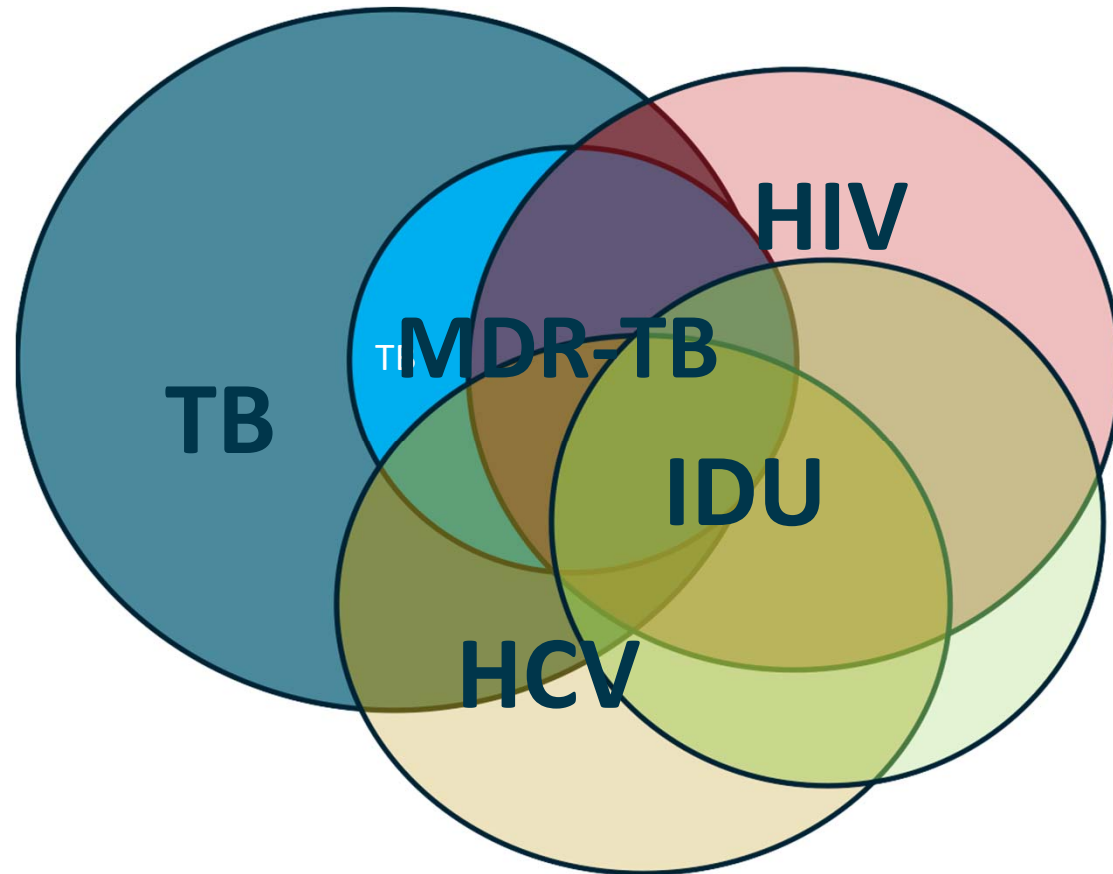


- Eastern and southern Africa
- Western and central Africa
- Asia and the Pacific



- Eastern Europe and central Asia
- Latin America
- Western and central Europe and North America
- Middle East and North Africa
- Caribbean

The perfect storm



Progress in EECA, 2016-2018

- Slower rate of increase in new HIV diagnoses
- Increased uptake of antiretroviral therapy and improved standardization of regimens
- Introduction of new therapeutic regimens for MDR-TB
- First steps in access to treatment of hepatitis C with Direct Acting Antiviral medicines
- Significant reductions in the price of medicines and improved access to new medicines
- Improved consensus on data/ estimates
- Updated/ modernized national strategies

Continuing challenges in EECA

- Low investment in prevention, including in harm reduction for people who inject drugs
- Inadequate strategic focus on vulnerable populations and late HIV diagnosis
- **Increasing burden of co-morbidities**
- Vertical health systems; slow pace of health reforms
- Legal, cultural and socio-economic barriers to prevention and treatment
- Slow progress in establishing effective collaboration with civil society organizations
- Insufficient national investments; challenges in transition from Global Fund

TB/HIV co-infection

Частота ко-инфекций ВИЧ продолжает расти среди больных туберкулезом в Европе

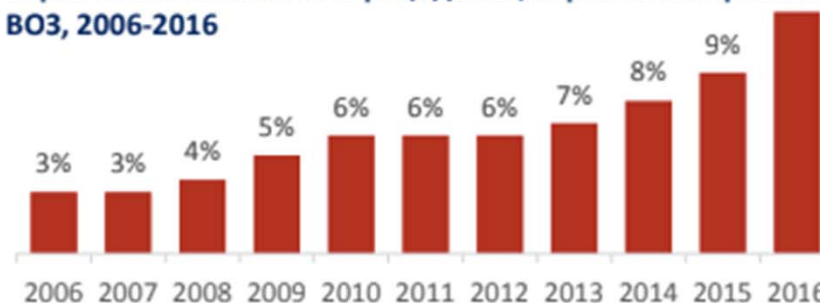
1 из 8

первичных больных ТБ, выявленных в
Европейском регионе ВОЗ в 2016 г., был

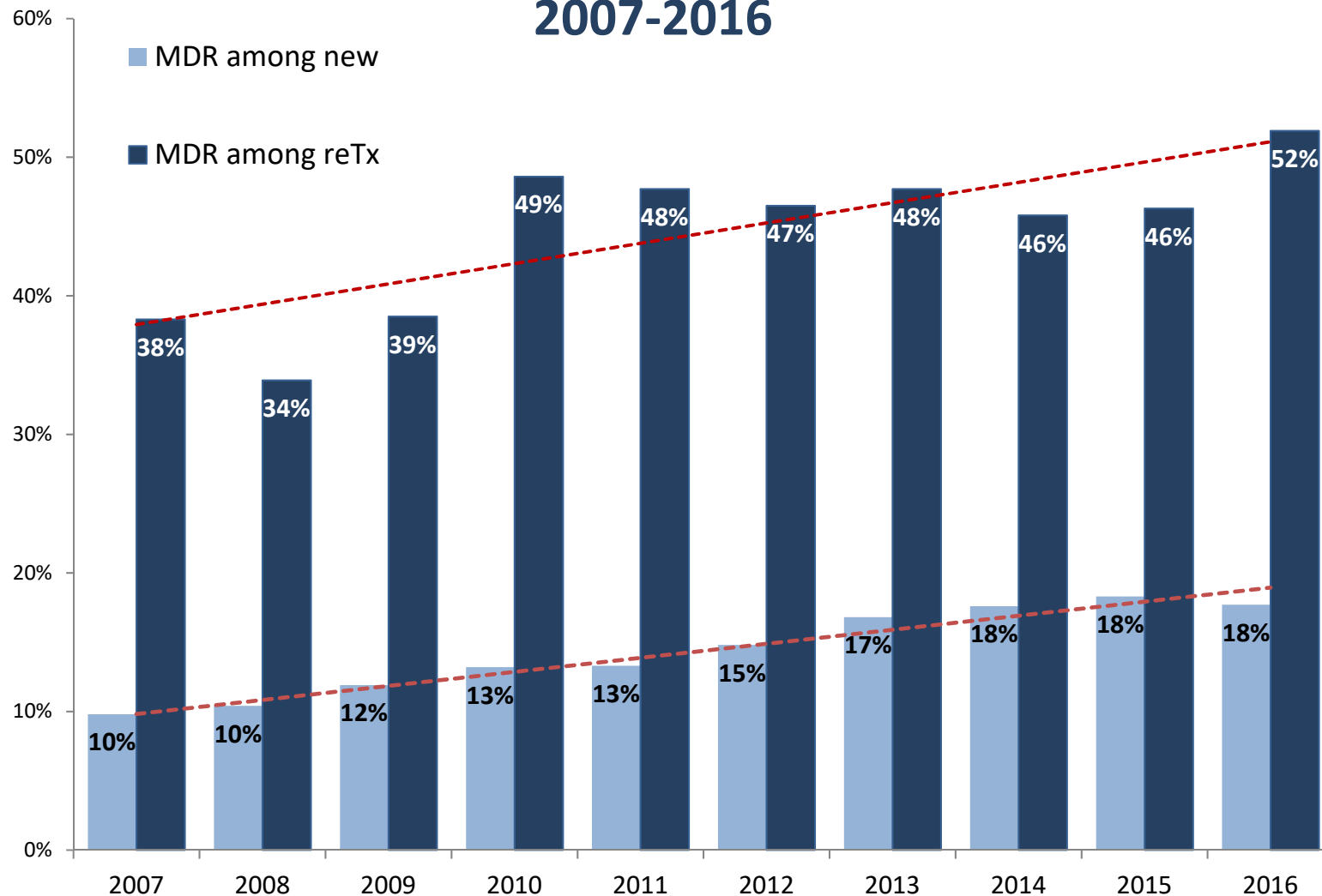
ВИЧ-положительным



Процент ВИЧ-инфекции (расчетные значения) среди
первичных больных ТБ и рецидивов, Европейский регион
ВОЗ, 2006-2016 [WUPE] *



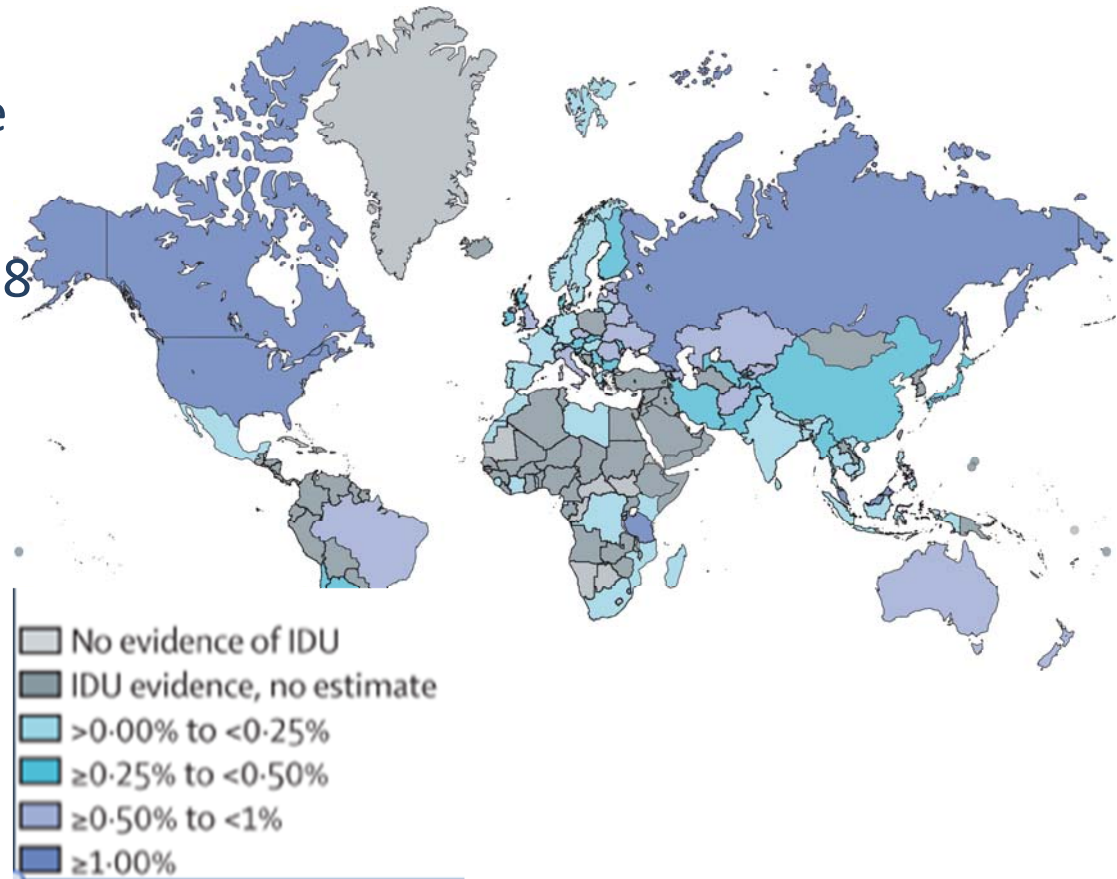
Trend of MDR percentage among notified new and re-treated TB cases with DST results, WHO European Region, 2007-2016



Among HIV/TB co-infected individuals in Eastern Europe, **MDR-TB significantly associated with injecting drug use**

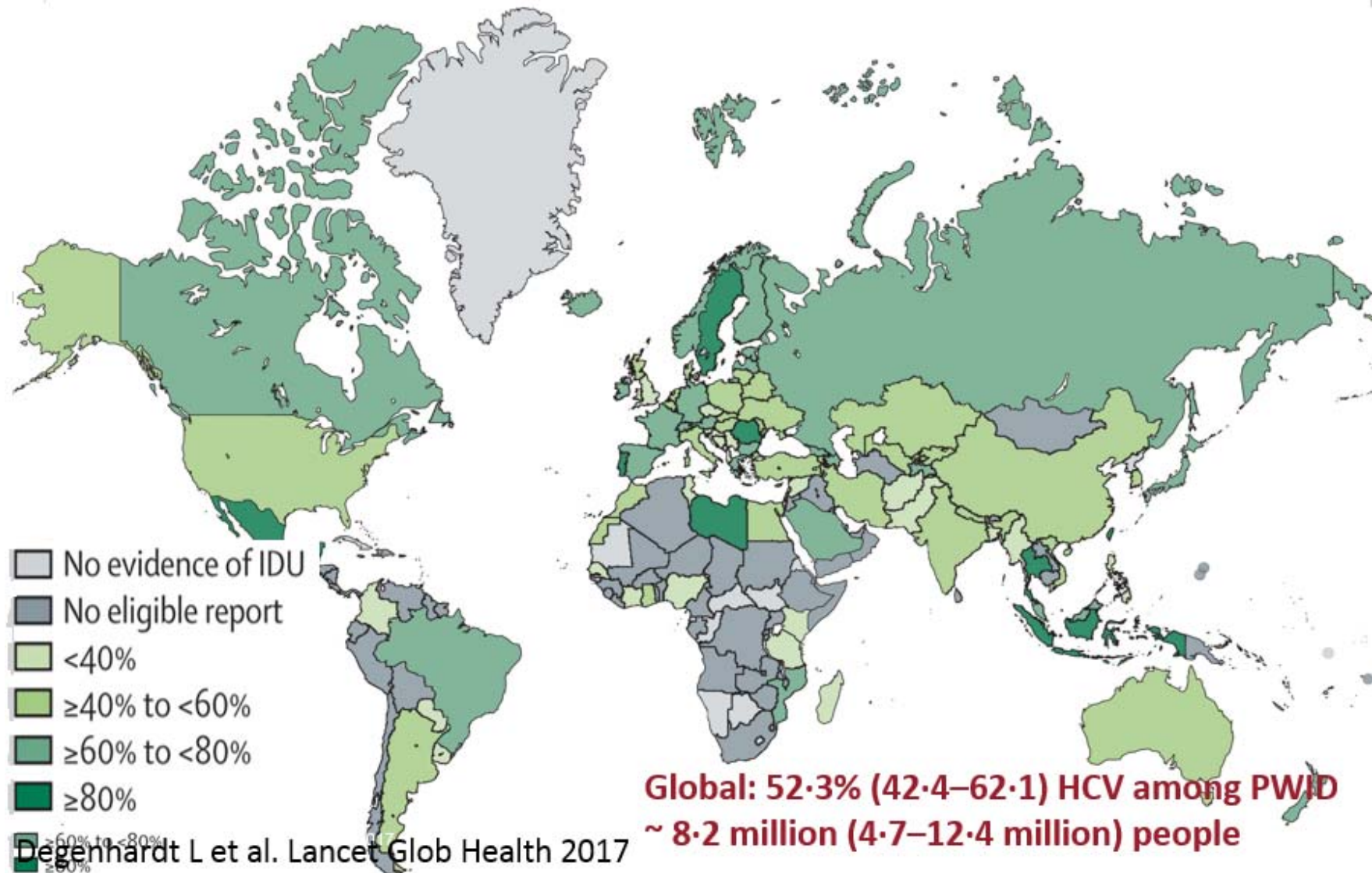
Injecting drug use prevalence

- 3 million estimated injecting drug users in Eastern Europe (1.7 – 5)
- In EECA, IDU prevalence is 3.8 times the global average



UNOCD World Drug Report 2018 / Lancet - Global prevalence of injecting drug use and sociodemographic characteristics and prevalence of HIV, HBV, and HCV in people who inject drugs: a multistage systematic review

Anti-HCV prevalence among PWID



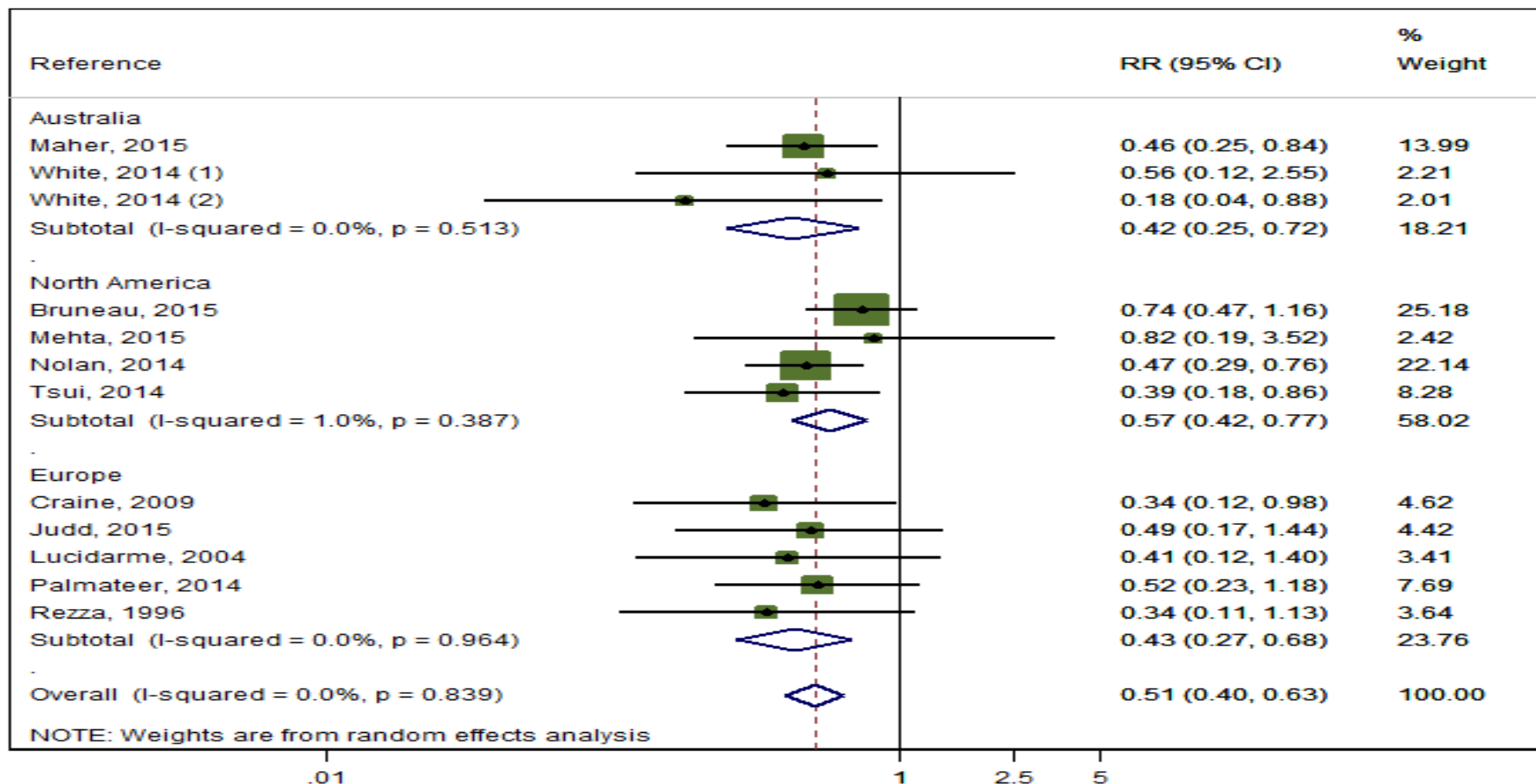
Eastern Europe and central Asia estimates

- 1,4 M people living with HIV; 130 000 new infections (2017)
- 10 M people living with Hepatitis C
- 3, 1 M people injecting drugs
- 24.7 % (15.6-33.9 %) HIV prevalence among PWID
- 64.7 % (56.6-72.9%) HCV prevalence in PWID
- 750 000 PWID living with HIV
- 1,955 M PWID HCV antibody +
- 300 000 PWID living with HIV-HCV co-infection

DAA treatment for hepatitis C among PWID

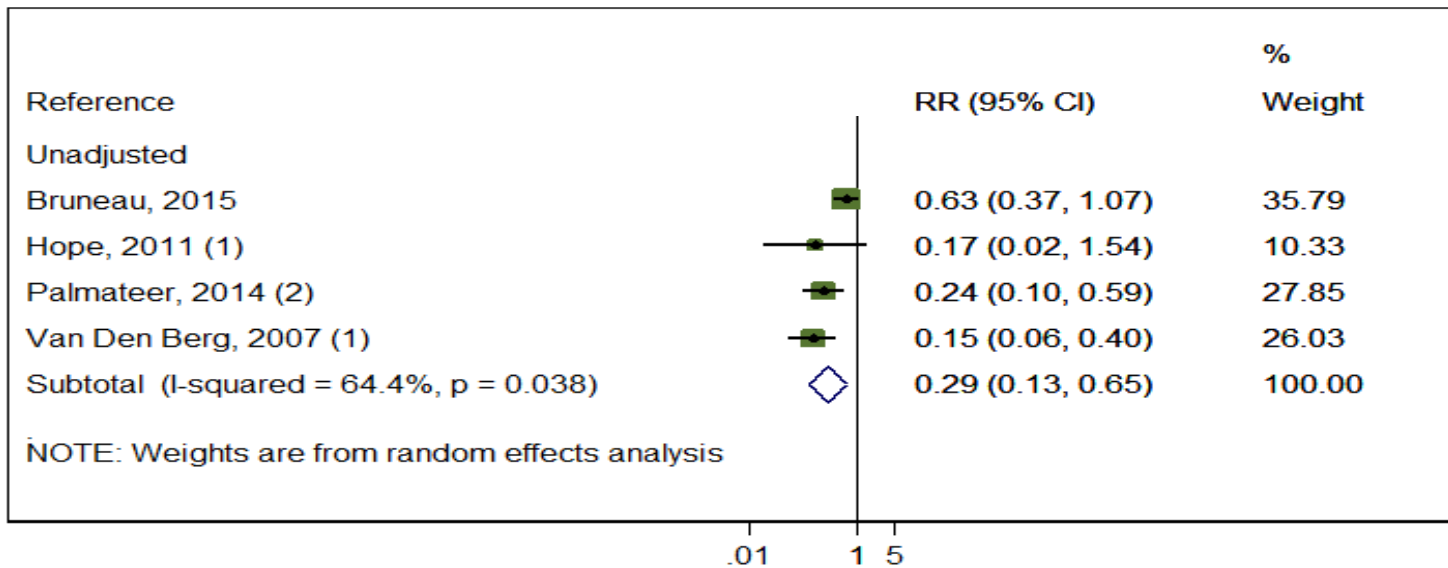
- Treatment completion 97 % and SVR 87.4 % among individuals with recent injecting drug use
- Treatment completion 97.4 % and SVR 90.7% among individuals receiving OST
- *Hajarizadeh et al., Lancet Gastroenterol/ Hepatol 2018*

IMPACT OF OPIATE SUBSTITUTION THERAPY (OST) ON HCV INCIDENCE: COCHRANE REVIEW



OVERALL: 50% reduction in risk of HCV

IMPACT OF HIGH COVERAGE NEEDLE/SYRINGE PROGRAMS (NSP) & OST ON HCV INCIDENCE: COCHRANE REVIEW



OVERALL: Reduced HCV incidence by 71%

POOR ACCESS TO HARM REDUCTION

<1%

PWID in Eastern Europe and
Central Asia access OST

15

Needle-syringes available
/PWID/ year in Eastern Europe

Incarceration, drug use, HIV, TB and hepatitis syndemic

- Proscriptive legislation and policies result in high rates of incarceration of PWID
- Recent incarceration significantly increases risk of acquiring HIV (by 81%) and HCV (by 62%) among PWID compared to non-recent incarceration
- The risk persists after release (RR 1.25 ever incarcerated compared to never incarcerated for both HIV and HCV)
- In Ukraine, 28-55 % of all new HIV infections in the next 15 years are predicted to be attributable to the increased risk of transmission among currently or previously incarcerated PWID
- In Ukraine, 6% of all incident TB cases and 75 % of incident cases among PWID are due to incarceration

J. Stone et al. Lancet, 2018; F. Altice, Lancet 2016

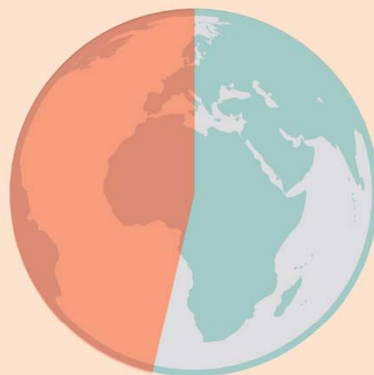
HCV AND TB AMONG HIV-INFECTED PWID: WHAT IS NEEDED

- **Substantial global scale-up of harm reduction** (NSP and OST) that is high-quality, evidence based, and affordable
- **Integrated services for PWID** providing harm reduction combined with HIV/HCV/TB testing and treatment without restrictions or stigma
- **Drug policy reform** : decriminalization of drug use, diversion programs, and access to health services for incarcerated PWID and continuity of care on release
- *N. Martin, AIDS 2018*

Advancing global health and strengthening the HIV response in the era of the Sustainable Development Goals: the International AIDS Society—Lancet Commission

Linda-Gail Bekker, George Alleyne, Stefan Baral, Javier Cepeda, Demetre Daskalakis, David Dowdy, Mark Dybul, Serge Eholie, Kene Esom, Geoff Garnett, Anna Grimsrud, James Hakim, Diane Havlir, Michael T Isbell, Leigh Johnson, Adeeba Kamarulzaman, Parastu Kasaie, Michel Kazatchkine, Nduku Kilonzo, Michael Klag, Marina Klein, Sharon R Lewin, Chewe Luo, Kelesto Makofane, Natasha K Martin, Kenneth Mayer, Gregorio Millett, Ntobeko Ntusi, Loyce Pace, Carey Pike, Peter Piot, Anton Pozniak, Thomas C Quinn, Jurgen Rockstroh, Jirair Ratevosian, Owen Ryan, Serra Sippel, Bruno Spire, Agnes Soucat, Ann Starrs, Steffanie A Strathdee, Nicholas Thomson, Stefano Vella, Mauro Schechter, Peter Vickerman, Brian Weir, Chris Beyrer

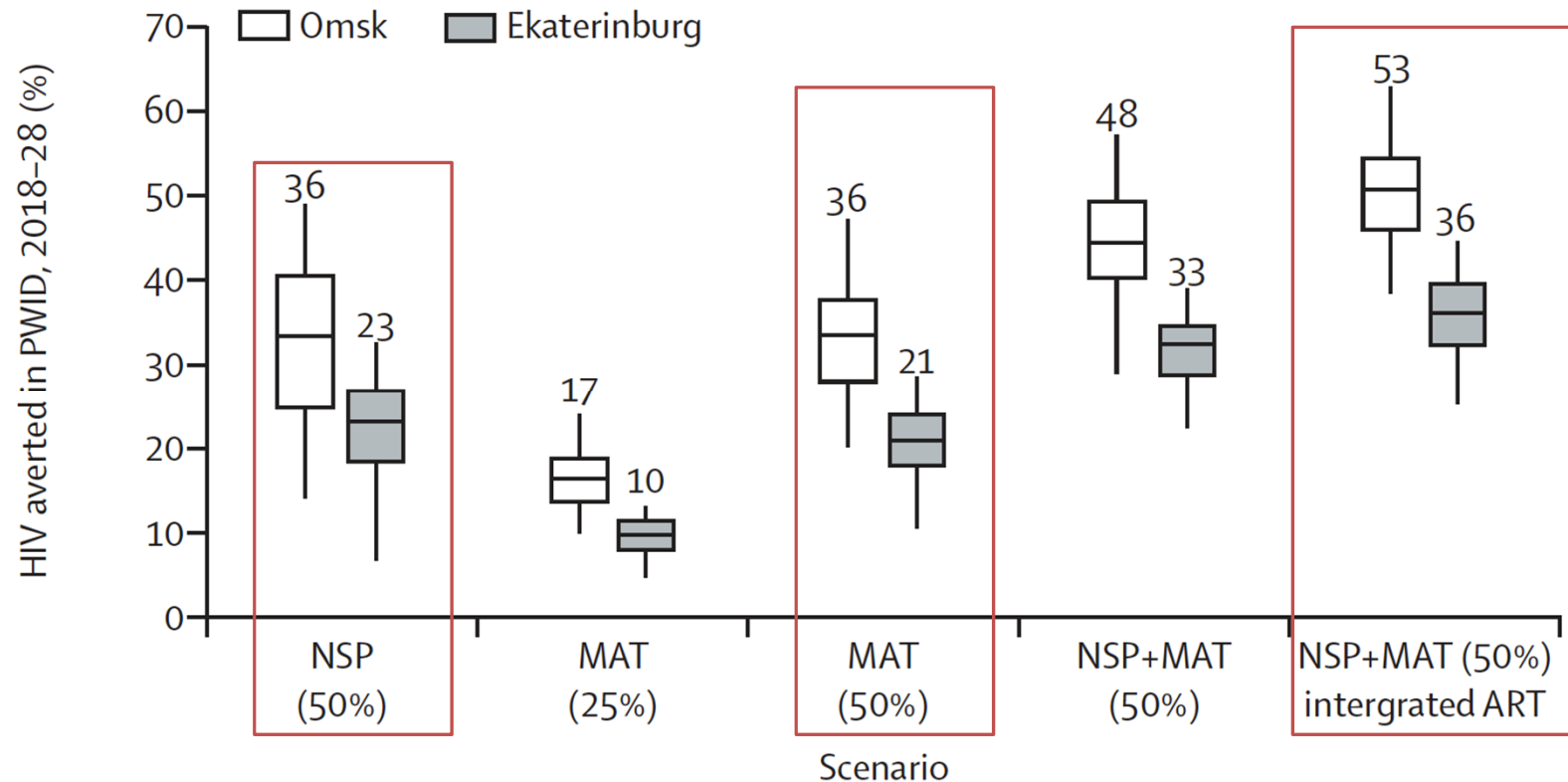
INTEGRATE SERVICES FOR CHRONICALLY UNDERSERVED POPULATIONS



**Marginalized populations at
elevated risk of HIV infection
account for 44% of new HIV
infections worldwide**

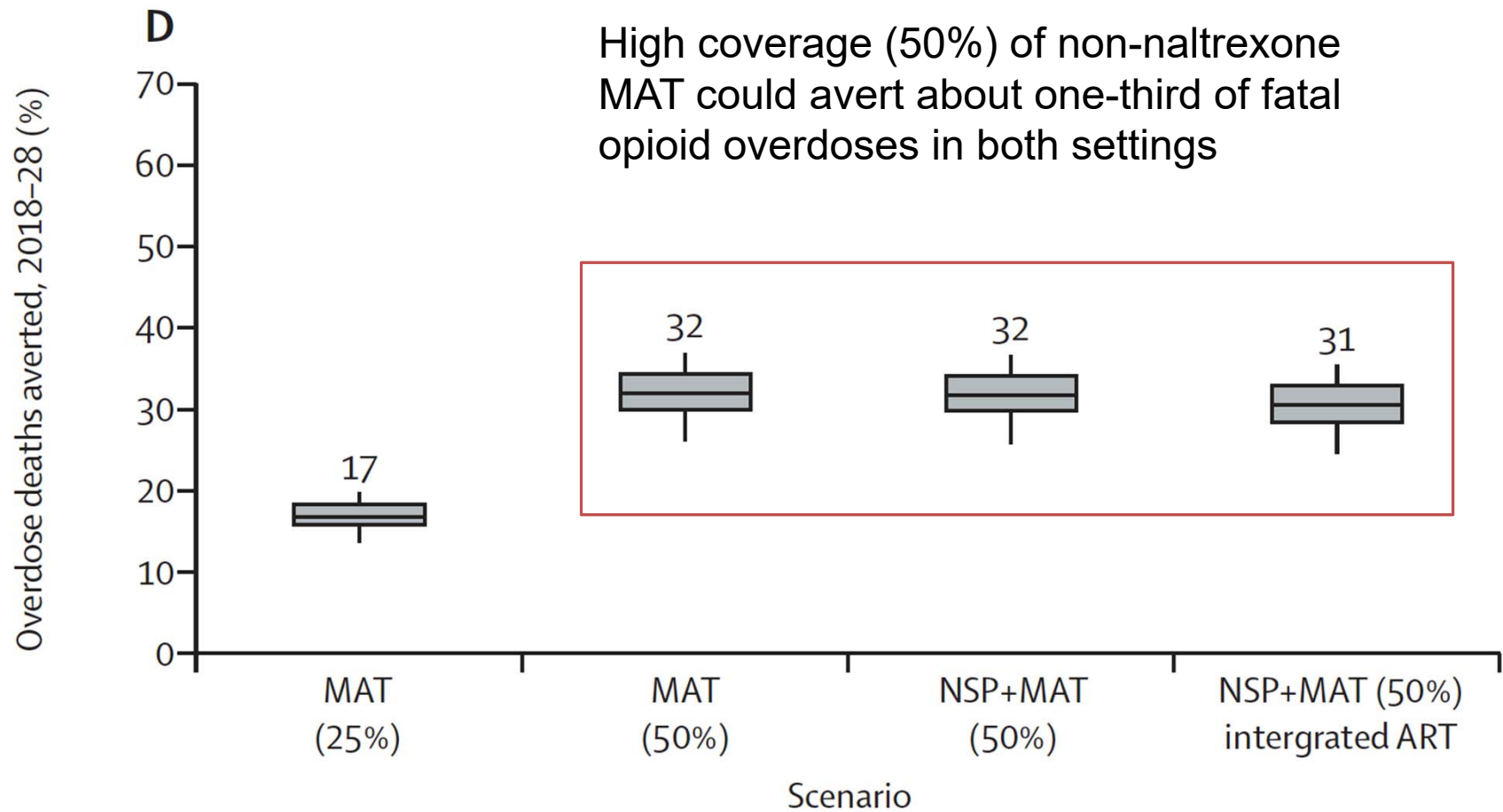
**For marginalized and/or underserved populations, a
promising approach to integration is to cluster a range of
services tailored to each population's needs in the same
service site**

Russia: Proportion of HIV cases averted in two Russian cities in 10 years



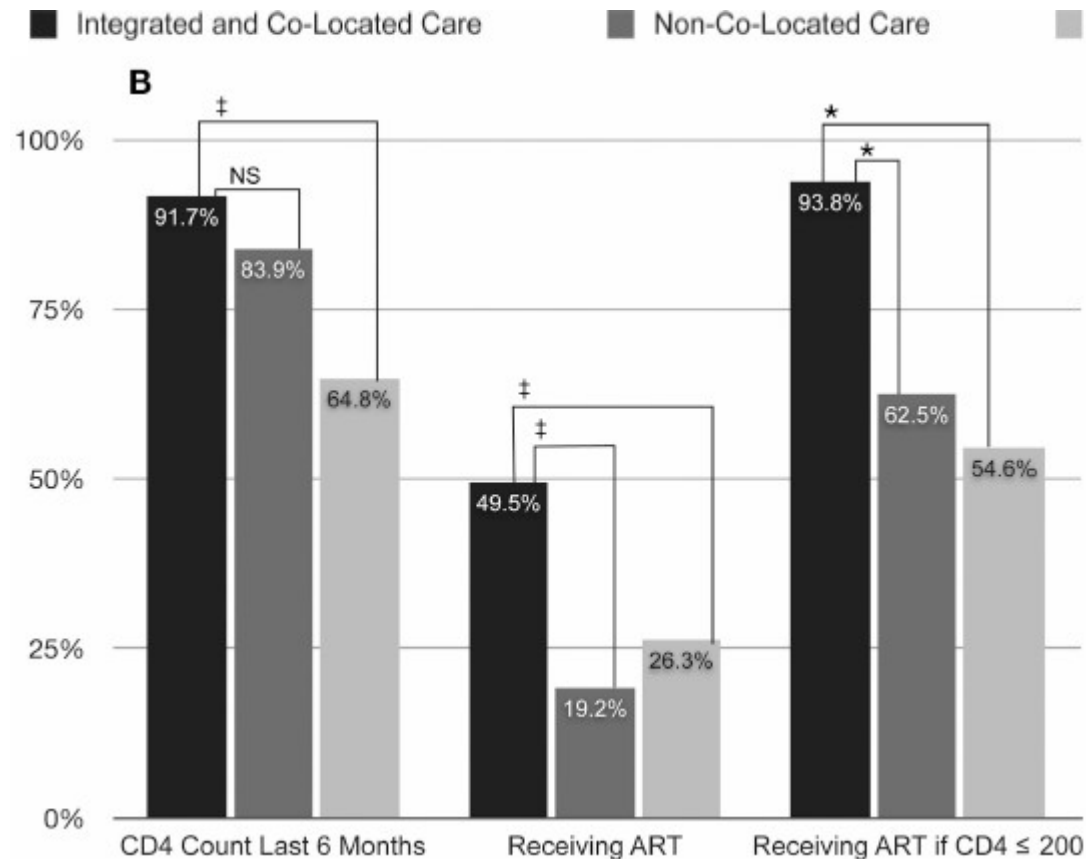
- Scale-up of either NSP or MAT to 50% coverage could avert a median of ~35% new HIV infections in Omsk and ~20% in Ekaterinburg by 2028.
- Scale-up of NSP+MAT to 50% combined with ART scale-up (to 65% coverage by 2028) could avert 53% HIV infections in Omsk and 36% in Ekaterinburg over a decade.

Russia: Proportion of opioid overdose deaths averted in 10 years



Integrated health care, Ukraine

Quality Healthcare Indicators (QHI) based on service delivery setting: HIV-Related Quality Healthcare Indicators



296 HIV+ IDUs

- Integrated co-located care
 - On site care for HIV, TB, OST
- Non-co-located care
 - OST only
- Harm reduction and outreach
 - but no OST

Alliance Ukraine

- A case study of community-based TB/ HIV integration
- Reduce TB burden among HIV-positive people (intensified case finding; isoniazide preventative therapy; infection control for TB)
- Reduce the burden of HIV among TB patients (testing and counseling; harm reduction in TB services; access to comprehensive services for HIV/TB co-infected patients)
- Focus on case management and inter-sectoral coordination

Estonia : “the challenge of fragmentation”

- Successful transition of Estonia from Global Fund support is based on an “integrated health system approach”.
- Estonia promotes « people-centered approaches, in which multiple health services are offered together to achieve integrated treatment delivery in a location convenient to those affected ». It promotes TB and HIV services that are integrated in the primary health care system including social, psychological and medical care.

Integration of services

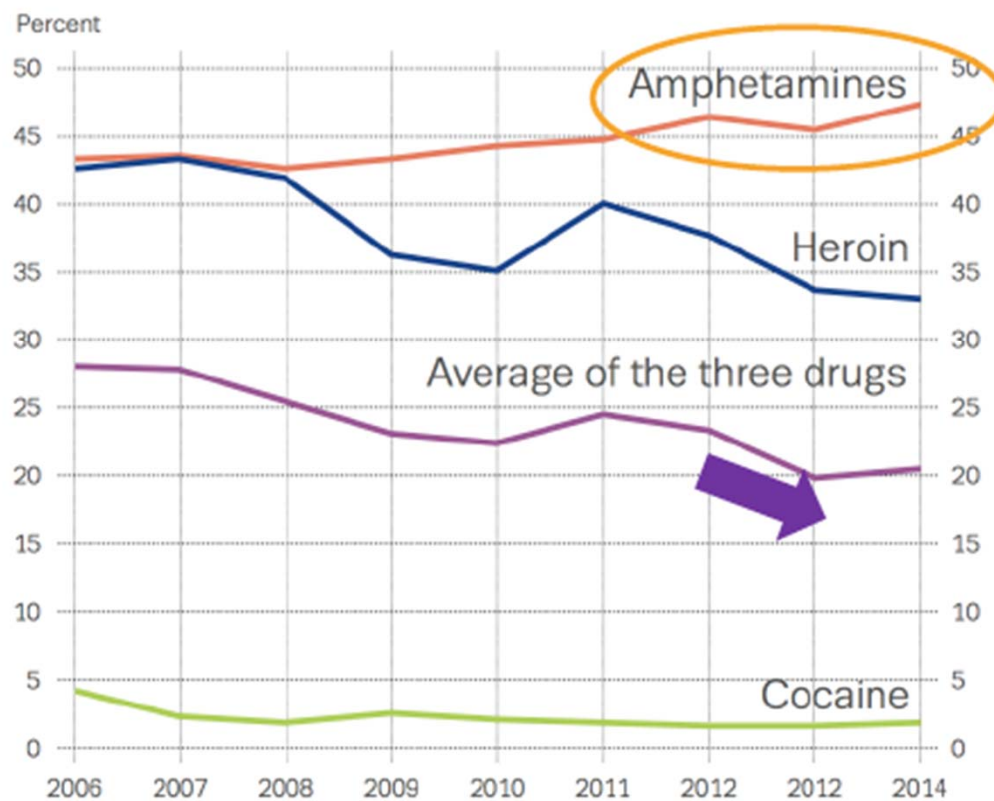
- Integrated care may offer important benefits in both patients and services outcomes. It requires:
- Placing the patient at the center of service delivery to respond holistically to their diverse needs
- Effective collaboration and coordination of providers, teams, staff and patients
- Appropriately skilled and incentivized health personnel
- Supportive institutional structures
- Political will; managerial oversight and organizational culture
- Integration processes in service delivery **depend substantially for their success on characteristics of the health systems in which they are embedded**

Harm reduction NGO in Donetsk



Overall injecting drug use in decline

First-time treatment entrants reporting injecting as the main route of administration of their primary drug



..but small rise in injecting among new amphetamines clients

Russia: HIV prevention among people who inject drugs (PWID)

- Policies fueling HIV transmission among PWID in Russia
 - Non-naltrexone medication assisted therapy (MAT) illegal
 - Needle syringe programs (NSP) legal but coverage minimal
 - 1-3 syringes exchanged/PWID/year
 - Substantial decline after Global Fund withdrawal in 2010
 - Low ART coverage among PWID
- Limited epidemic modeling of HIV among PWID in Russia
 - One study indicates scale-up of harm reduction could have large impact on HIV epidemic among PWID in St. Petersburg²

Russia: Modelled Settings

- Omsk, Russia (Siberia)
 - Increasing HIV prevalence among PWID
 - 9% in 2009, 17% in 2011, 19% in 2015
- Ekaterinburg, Russia (Ural)
 - Stable, high HIV prevalence among PWID
 - 34% in 2001, 63% in 2007, 59% in 201¹, 65% in 2014

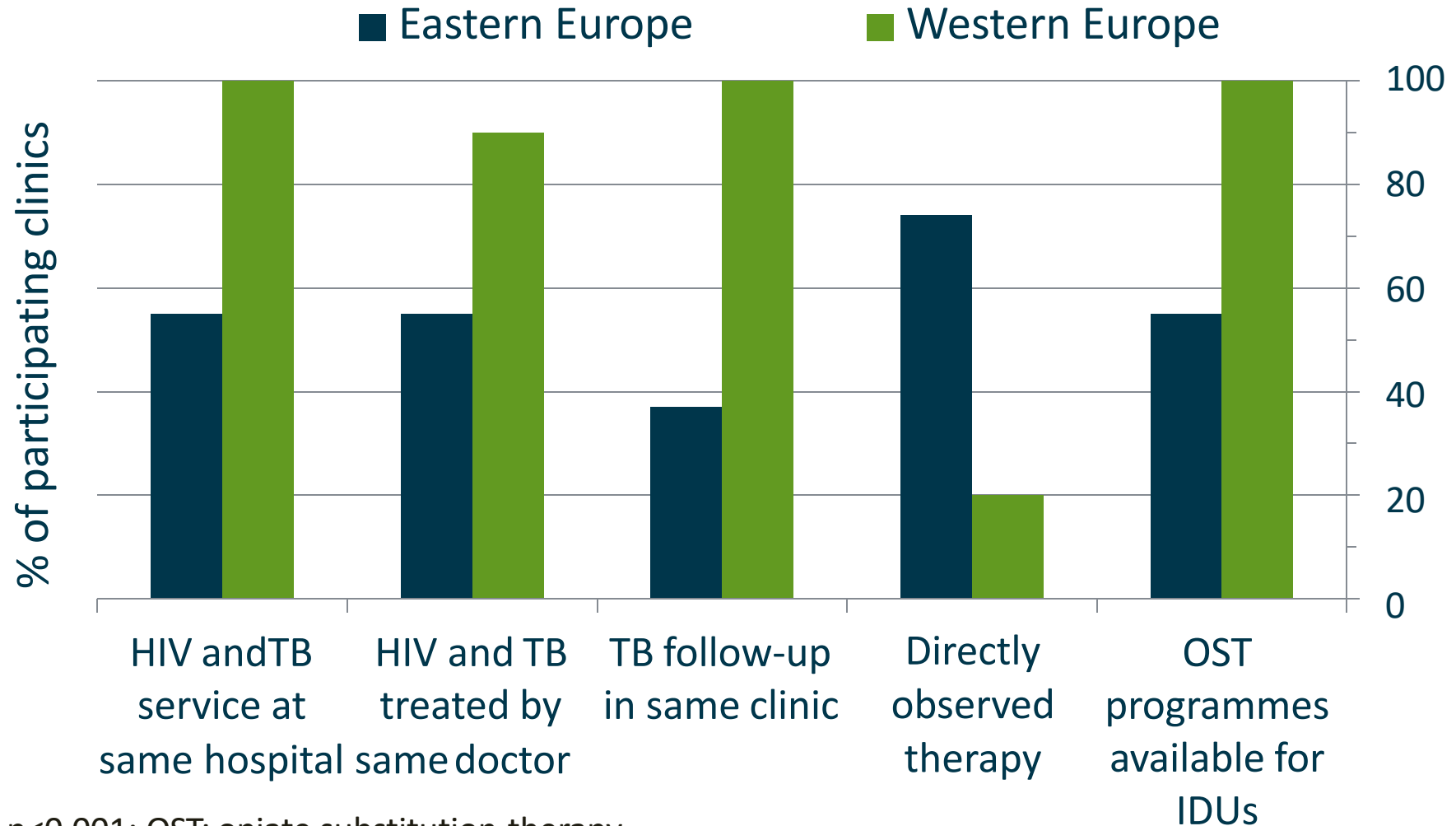
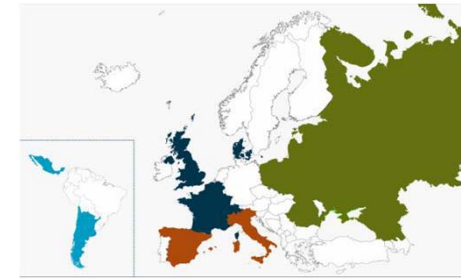
Russia: Modelled scenarios

1. **Base case:** no harm reduction, 26% ART coverage in 2014
2. **NSP only:** scaled-up in 2018 to reach 50% coverage
3. **MAT only:** scaled-up in 2018 to reach 25% coverage
4. **MAT only:** scaled-up in 2018 to reach 50% coverage
5. **NSP+MAT (integrated HR):** NSP+MAT intervention scaled-up in 2018 to reach 50% coverage
6. **Integrated HR plus ART expansion:** NSP+MAT scaled-up in 2018 to reach 50% coverage, triple ART recruitment rate among all HIV-infected PWID

Russia: Intervention effects and assumptions

- NSP
 - Reduces injecting HIV transmission risk by 34% and by 58% in high-income settings
- MAT
 - Reduces injecting HIV transmission risk by 44%
 - Reduces ART loss to follow-up rate by 23%
 - Reduces overdose mortality by about 80%
- ART
 - Increased life expectancy
 - Decreases sexual transmission risk by 90%
 - Decreases injecting transmission risk by 50%

Organisational set-up of TB services - results from a survey



All $p < 0.001$; OST: opiate substitution therapy

Key Populations and HIV

- Key populations are those individuals and communities who have disproportionate burdens of HIV risk and disease ***and*** lack of access to essential HIV services
- Gay and Bisexual men who have sex with men (MSM) (x 28)
- Sex Workers of all genders (x 13)
- People who inject drugs (PWID) of all genders (x 22)
- Transgender Women who have sex with men
- Prisoners and detainees
- HIV uninfected partners in discordant relationships
- Adolescents from all of these communities

Key Populations and HIV

Пораженность ВИЧ-инфекцией ключевых групп, по данным исследования (95% доверительные интервалы в группах ПИН/МСМ оценки по RDS-I).

Город	ПИН	МСМ	КСР
Екатеринбург	57,2% (50,7-63,7)	16,5% (11,5-21,4)	14,2% (6,2-22,2)
Кемерово	75,2% (69,9-80,6)		
Красноярск	48,1% (42,2-54,1)		5,4% (2,3-8,5)
Москва		7,1% (4,1-10,1)	
Пермь	64,6% (58,5-70,7)		15,0% (11,5-18,6)
Санкт-Петербург	48,3% (42,3-54,3)	22,8% (17,9-27,7)	2,3% (0,5-4,2)
Томск	63,2% (57,4-69,0)		

Legislative and policy barriers to the provision and uptake of HIV prevention

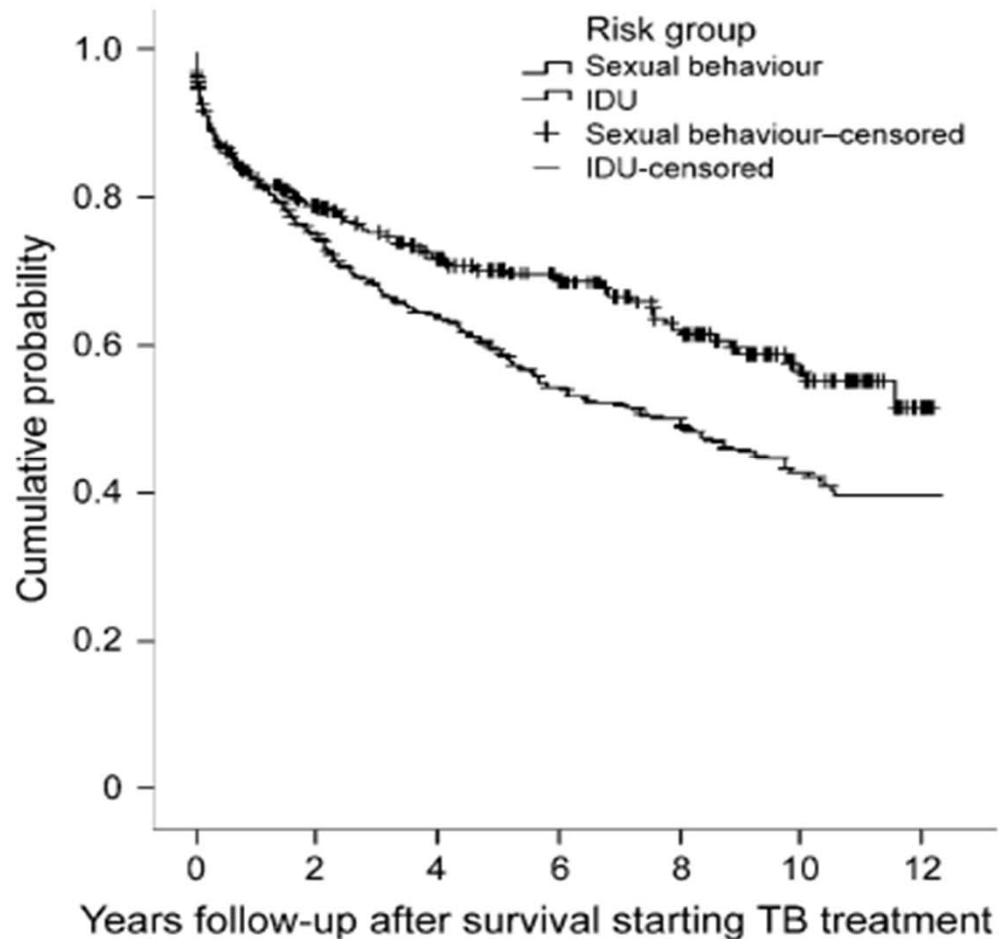
- **Criminalization of sex work** (Albania, Armenia, BiH, Georgia, Montenegro, Russia, Tajikistan, Macedonia, Ukraine and Uzbekistan)
- **Sex orientation laws and propaganda** (Russia, Tajikistan)
- **Criminalization of same-sex relationship** (Uzbekistan, Tajikistan)
- **Criminalization of drug possession for personal use** (Belarus, Georgia, Kazakhstan, Uzbekistan in legislation; most countries of the region have very low legal thresholds to define use vs trading/trafficking)
- **Criminalization of transmission** (all countries) **and restriction of entry, stay and residence of PLHIV** (Azerbaijan, Russia and Turkmenistan)
- **Policies limiting the provision of harm reduction services**
- **Policies limiting the provision of HIV services for migrants, particularly undocumented migrants**

HIV AND TB AMONG PWID

- Among HIV-infected individuals in Spain, **PWID at higher risk of TB** compared to other risk groups¹
- Among HIV/TB coinfecting individuals in Eastern Europe, **MDR-TB significantly associated with injecting drug use**²

1. Martin V J Epidemiol 2011
2. Post FA J Infect 2014

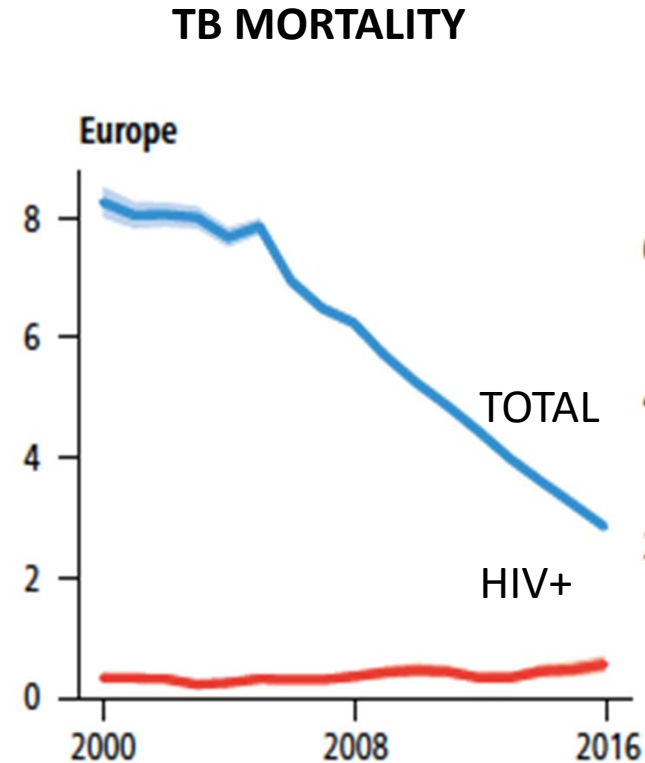
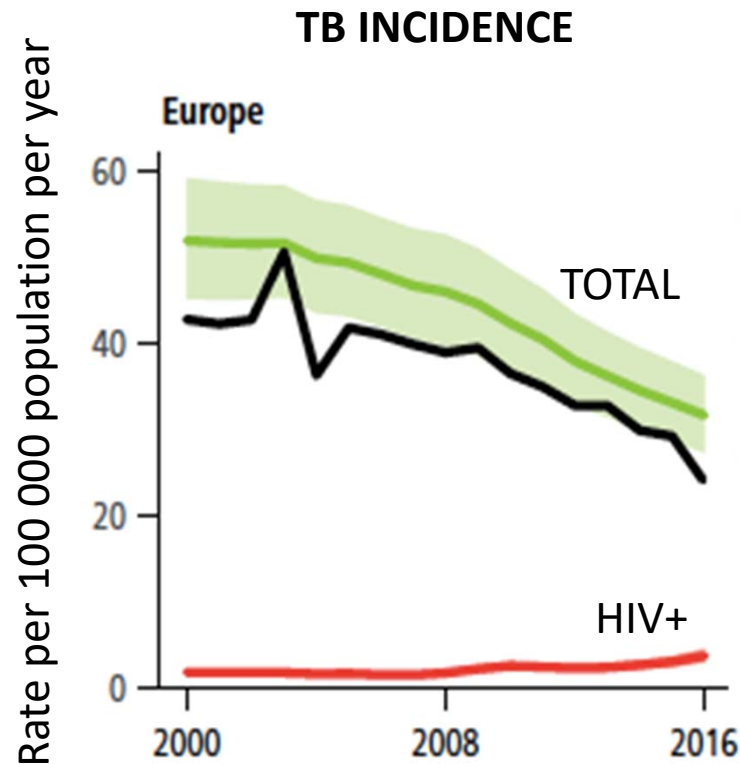
HIV/TB COINFECTED PWID HAVE LOWER SURVIVAL COMPARED TO OTHER RISK GROUPS



- In part due to marginalization, delayed diagnosis of TB and HIV, poorer adherence to TB and HIV treatment²⁻⁵

1. Catala L. et al. Int J Tuberc Lung Dis 2011 2. Garcia de Ollala JAIDS 2002 3. Cayla Respir Res 2009 4. Diez M Eru J Publi Health 2004 5. Sobrino-Vegas P Curr HIV Res 2009

WHO-EUROPE: CONCERNING SETTING WHERE TB INCIDENCE AND MORTALITY AMONG HIV+ RISING

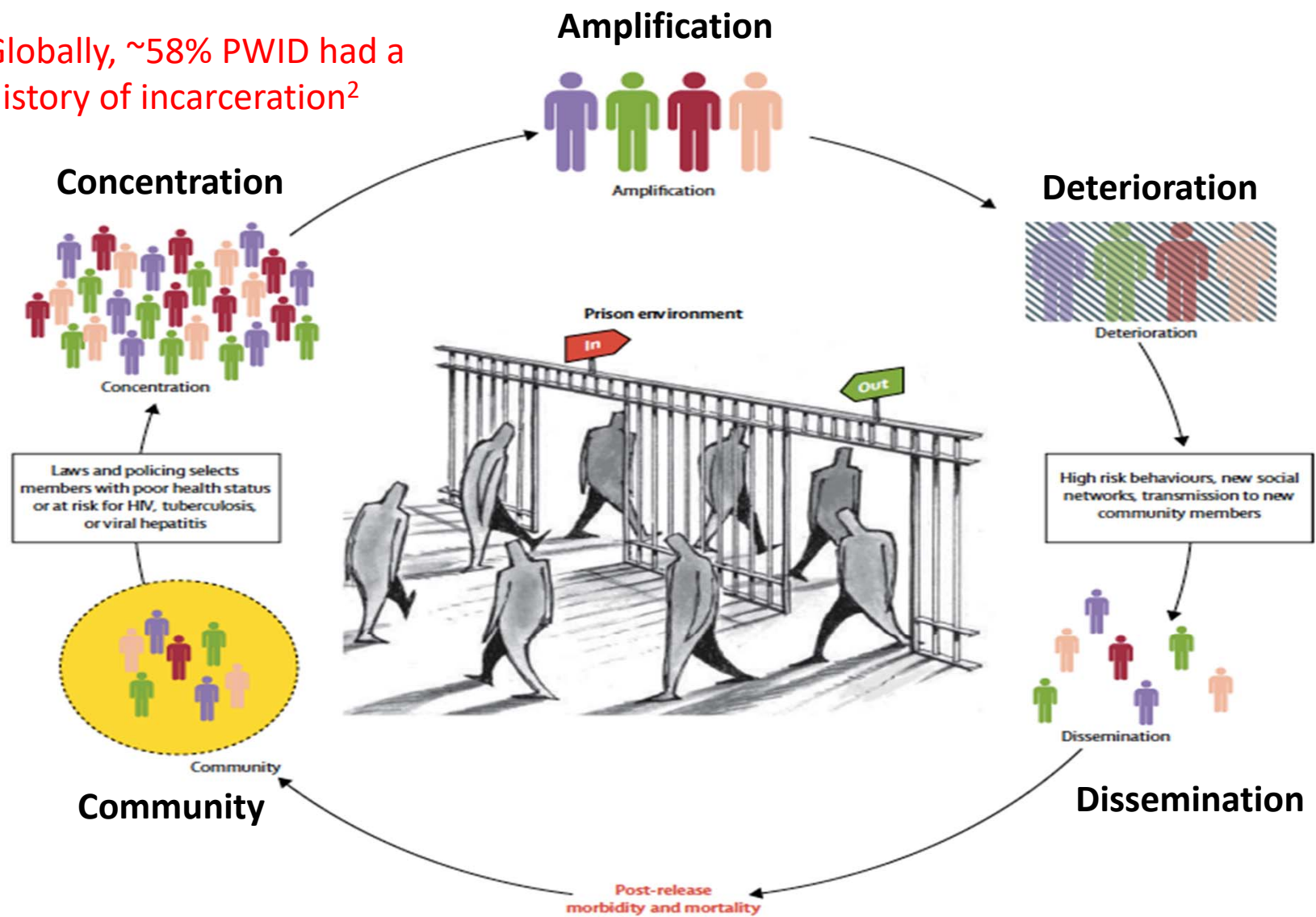


19% of new cases and 55% of previously treated cases with MDR-TB/RR-TB – integrated HIV&TB services urgently needed

DRUG USE, INCARCERATION, AND HIV/HCV/TB SYNDEMICS

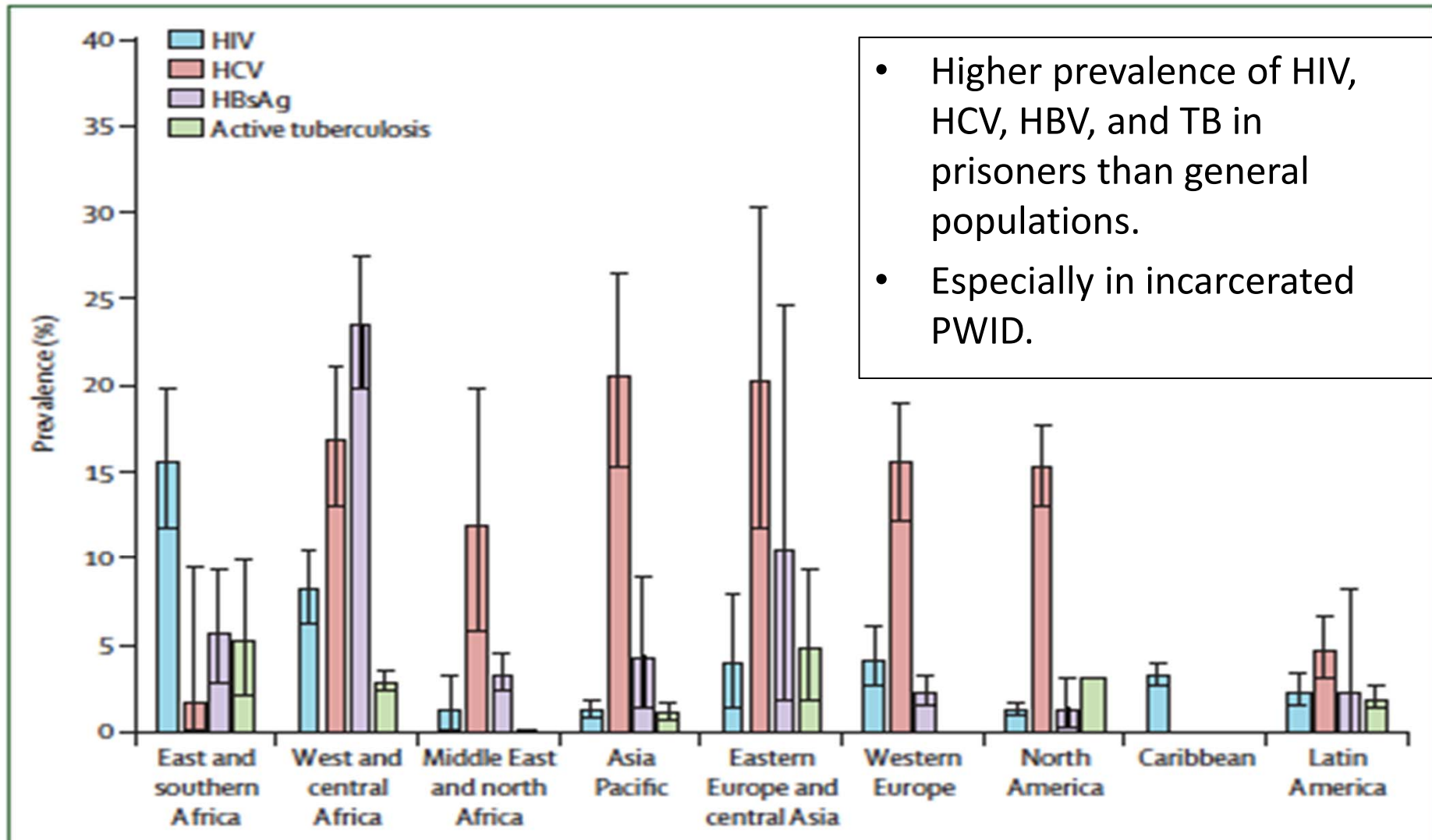
INCARCERATION AS A DRIVER OF HIV/HCV/TB

Globally, ~58% PWID had a history of incarceration²

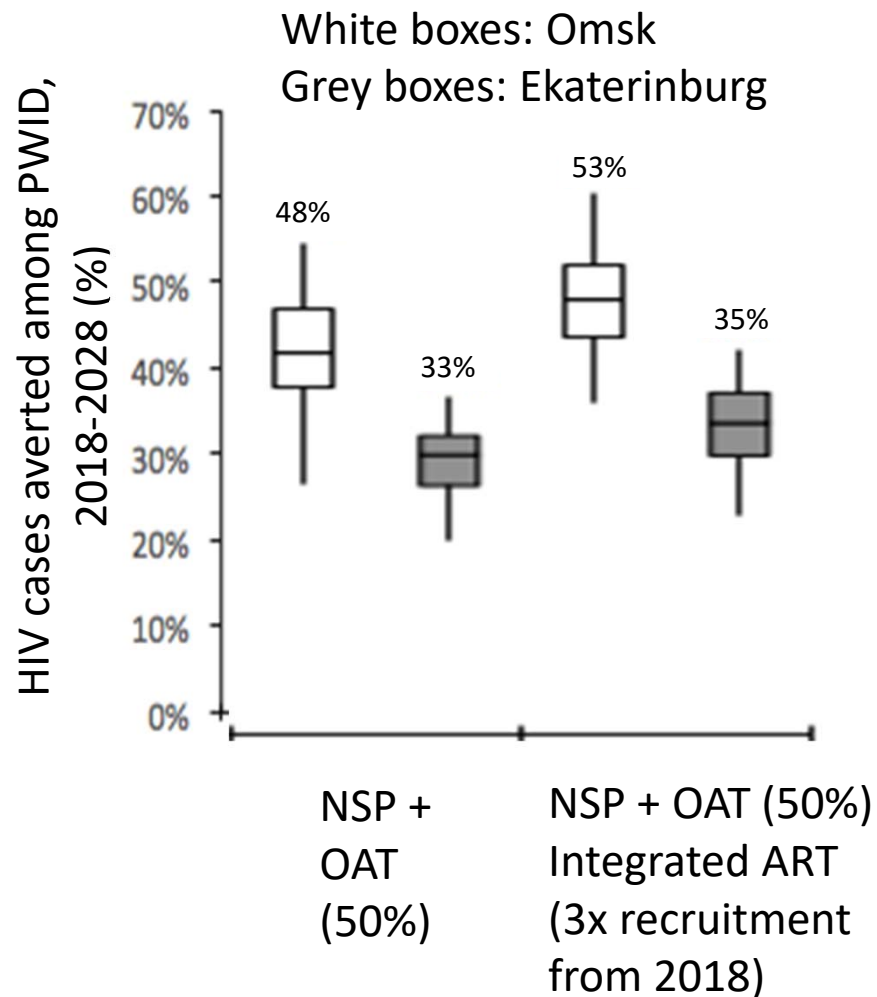


1. Kamarulzaman A et al. Lancet 2016 2. Degenhardt L et al. Lancet Glob Health 2017

HIGH BURDEN OF HIV, HCV, HBV AND TB AMONG PRISONERS



RUSSIAN POLICY PROHIBITING OPIATE AGONIST THERAPY (OAT) AND LIMITED PROVISION OF NSP AND ART FUELS HIV AND OVERDOSE

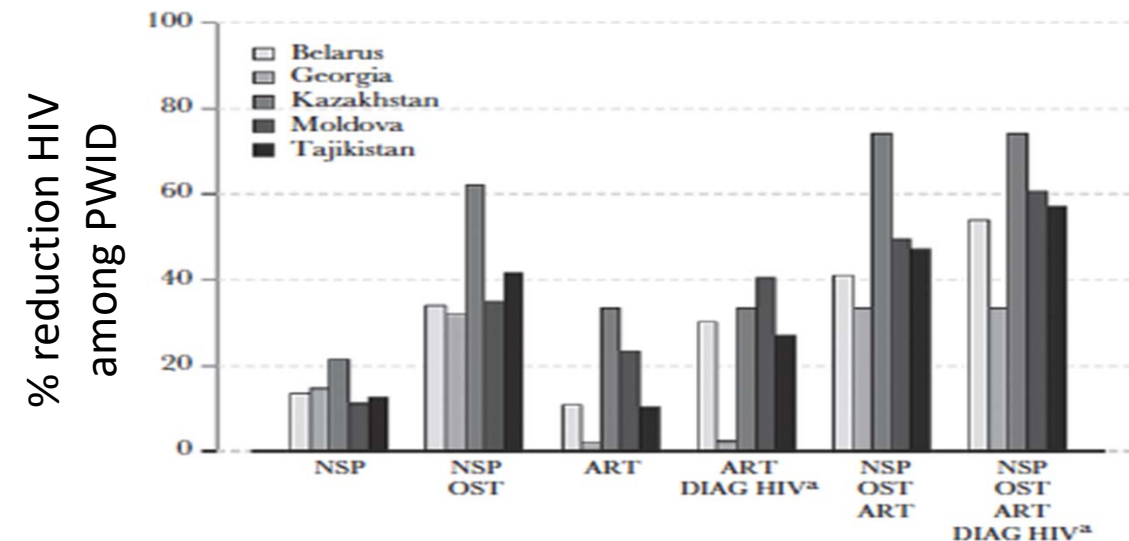
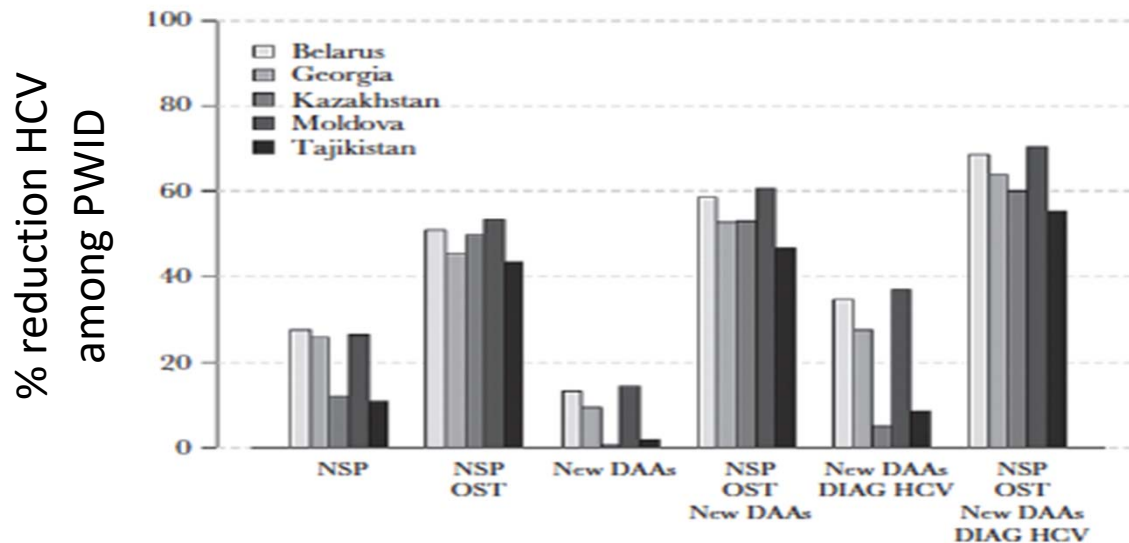


Scale-up of NSP+OAT to 50% combined with ART scale-up (to 65% coverage by 2028) could avert:

- **53% and 36% of HIV infections among PWID in Omsk and Ekaterinburg, respectively, by 2028**
- **~30% of fatal overdoses by 2028**

1. Cepeda JA & Martin NK et al. *Lancet HIV* 2018
2. Bekker LG, Baral SD, Cepeda J, Martin NK et al. *The Lancet* 2018

POTENTIAL DUAL BENEFITS OF HARM REDUCTION AND HIV/HCV TREATMENT ON HIV & HCV TRANSMISSION IN E.EUROPE AND C. ASIA



- NSP (60%) & OST (20%) could prevent >35% of HCV and HIV infections over 20 years among PWID across a variety of settings
- Particularly effective if combined with HIV and HCV treatment

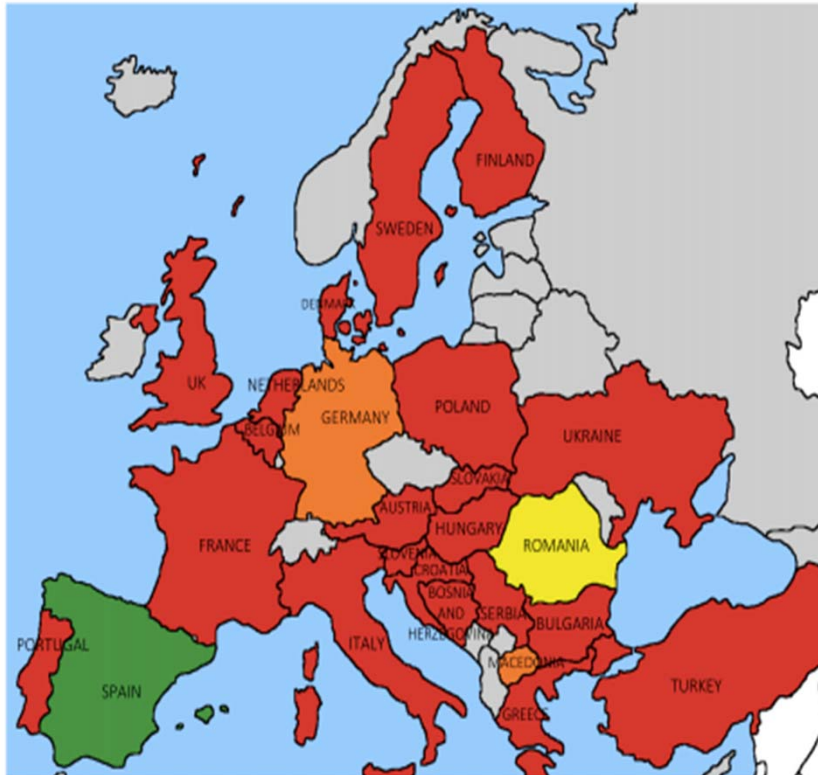
HIV/TB AMONG PWID

INCARCERATION INCREASES RISK OF HIV AND HCV INCIDENCE AMONG PWID

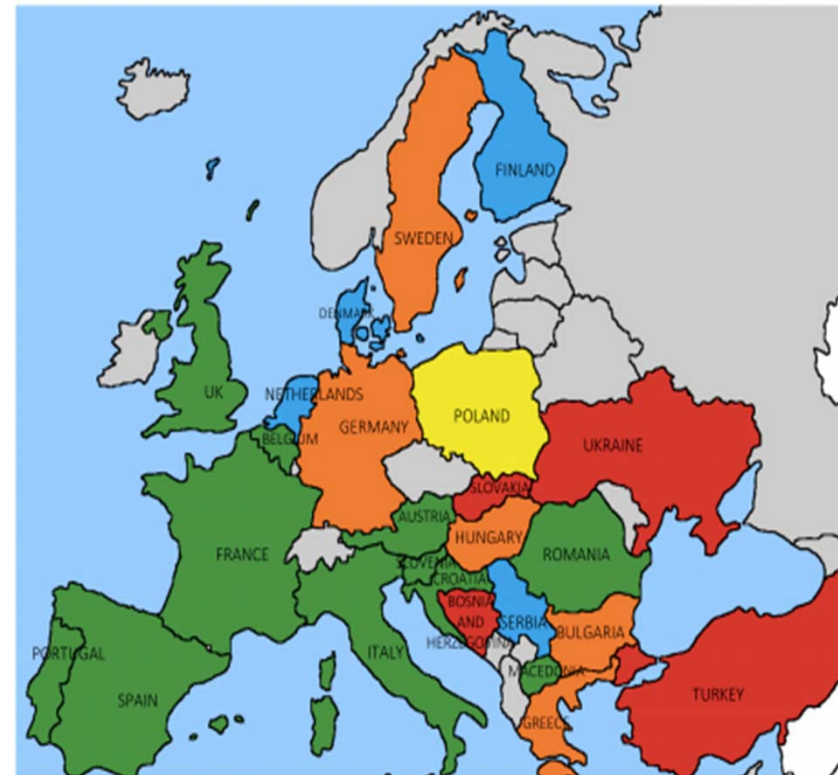
- Systematic review and meta-analysis found that recent incarceration significantly **increases risk of acquiring HIV (by 81%) and HCV (by 62%)** among PWID compared to non-recent incarceration
- This risk **persists post release** (RR 1.25 ever incarcerated compared to never incarcerated for both HIV and HCV)

LIMITED HARM REDUCTION IN PRISON

NSP



OST



Green: available

Yellow: officially available but low coverage or not in use

Blue: available only if started prior to incarceration

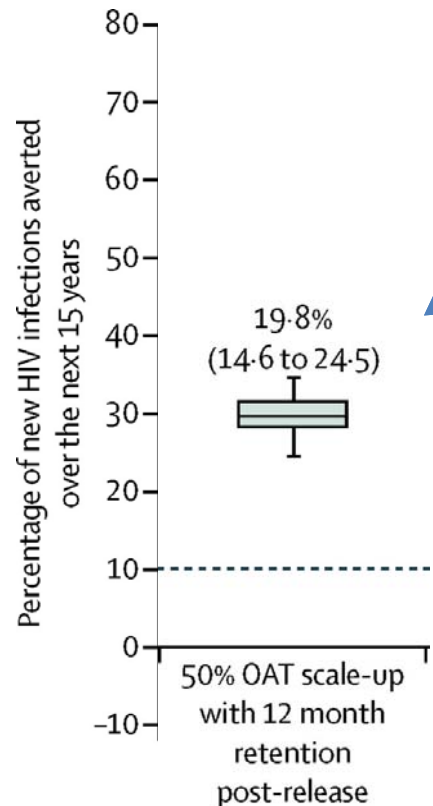
Orange: some prisons

Red: not available

1. Bielen *Harm Reduction Journal* 2018

2. Kamarulzaman et al. *The Lancet* 2016

ESTIMATING CONTRIBUTION OF INCARCERATION AND PRISON INTERVENTIONS TO HIV, HCV, AND TB AMONG PWID IN UKRAINE



- **HIV:**

- Incarceration could contribute 28-55% of new HIV infections among PWID in 15 years¹
- Prison OAT at 50% with retention on release could avert 20% new HIV infections in 15 yrs¹

- **HCV:**

- OAT in prison and removal of post-prison risk could reduce HCV incidence by >25% among PWID in a setting like Ukraine²

- **TB:**

- Incarceration results in 75% and 86% of all incident TB cases among HIV-infected and HIV-negative PWID, respectively, in Ukraine¹

1. Altice F et al. *The Lancet* 2016
2. Csete J et al. *The Lancet* 2016

HCV AND TB: WHY ARE WE FAILING PWID?

<1%

PWID live in countries with high coverage of both NSP and OST

Criminalization and mass **incarceration**



Image credit: MSF

Low coverage of HIV and HCV treatment

FUNDING ACKNOWLEDGEMENTS

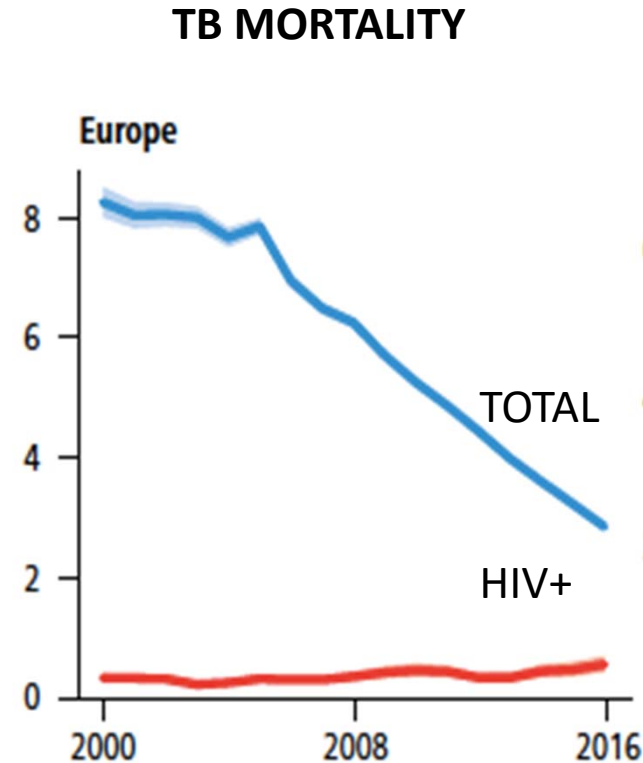
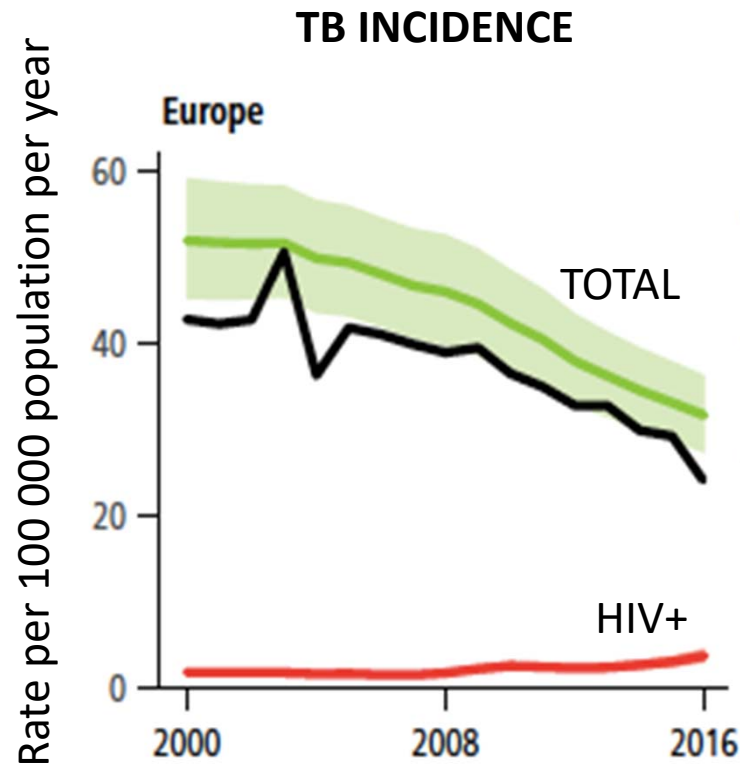
- National Institute for Drug Abuse R01 DA037773
- UCSD Center for AIDS Research (P30 AI036214)
- Elton John AIDS Foundation
- UK EPSRC
- UK National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Evaluation of Interventions at University of Bristol.
- The views expressed are those of the authors and not necessarily those of the UK NHS, UK NIHR, UK Department of Health.

Integration of services

- Integrated care offers important benefits in both patients and services outcomes
- Patient oriented multidisciplinary care team
 - Identification of needs of a patient and delivering them
 - Simultaneous treatment of several conditions (somatic and psychiatric)
 - Social support
- Appropriate information, education, early case detection and thus treatment will result in infection control and stop spread of TB/MDR-TB and HIV infections
- Dedicated staff on all levels, willing to collaborate with each other
- Political will and commitment

WHO-EUROPE: CONCERNING SETTING WHERE TB INCIDENCE AND MORTALITY AMONG HIV+ RISING

Integrated HIV&TB services urgently needed

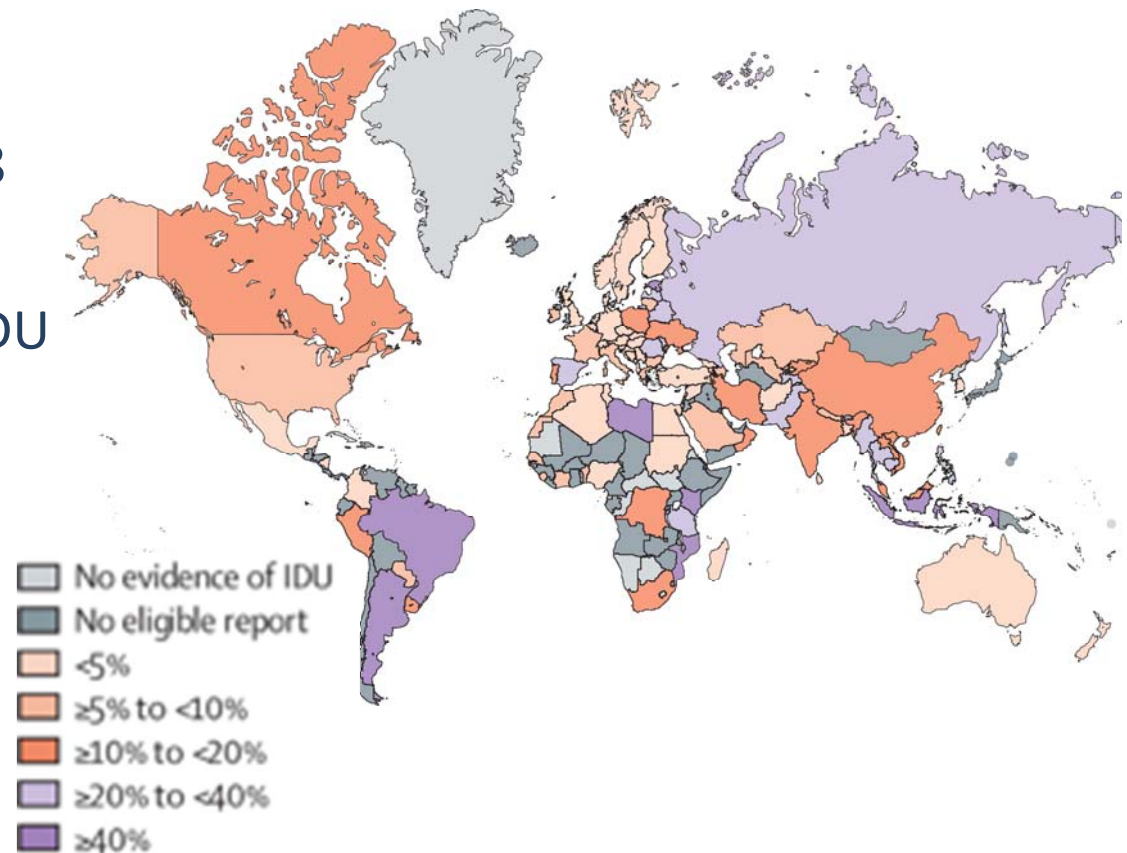


19% of new cases and 55% of previously treated cases with MDR-TB/RR-TB

Among HIV/TB co-infected individuals in Eastern Europe, **MDR-TB significantly associated with injecting drug use**

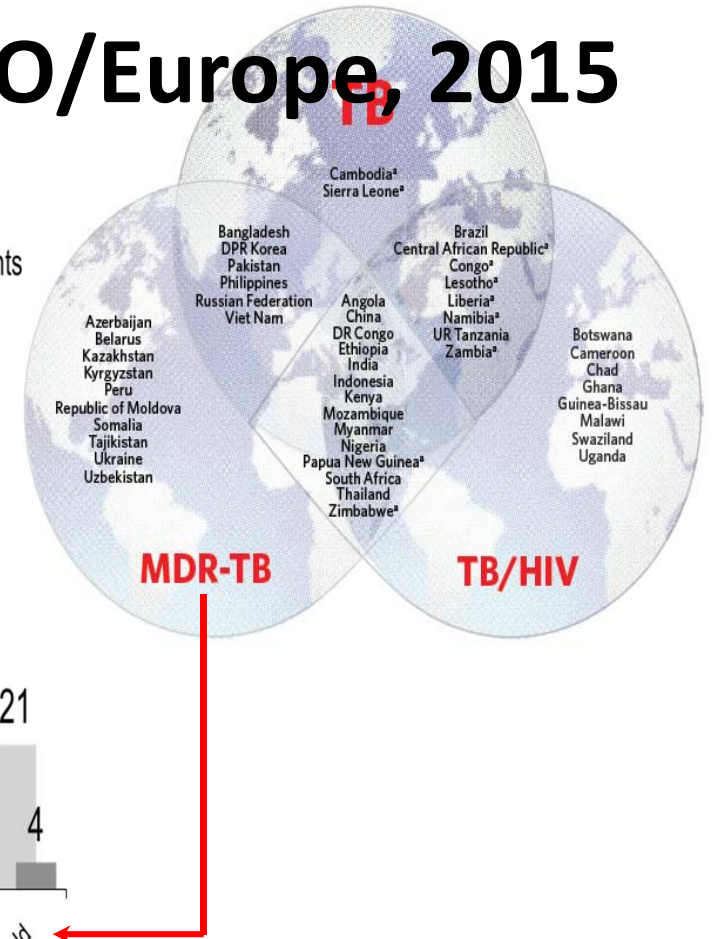
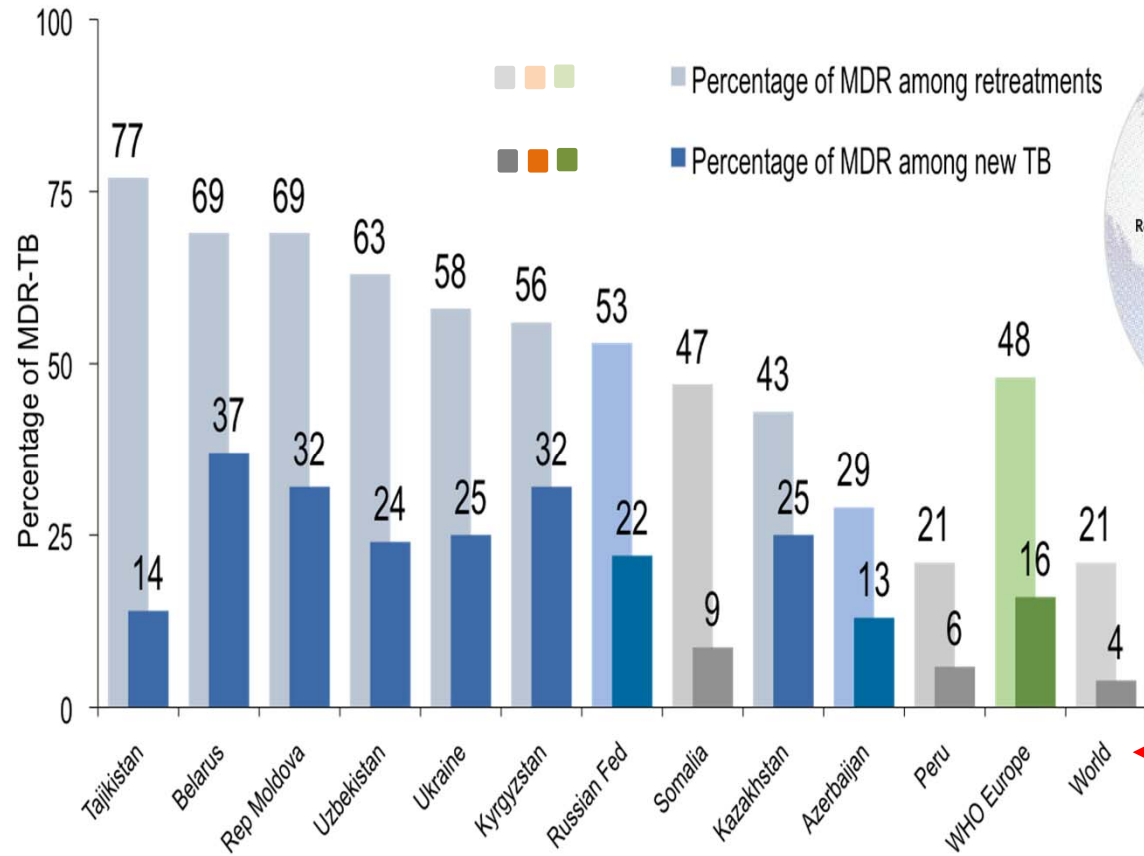
Estimated HIV prevalence among IDUs

- 3 million estimated IDUs in Eastern Europe (1.7 – 5)
- In EECA, IDU prevalence is 3.8 times the global average
- 17% HIV prevalence among IDU
- OST is limited or prohibited
- High incarceration rates



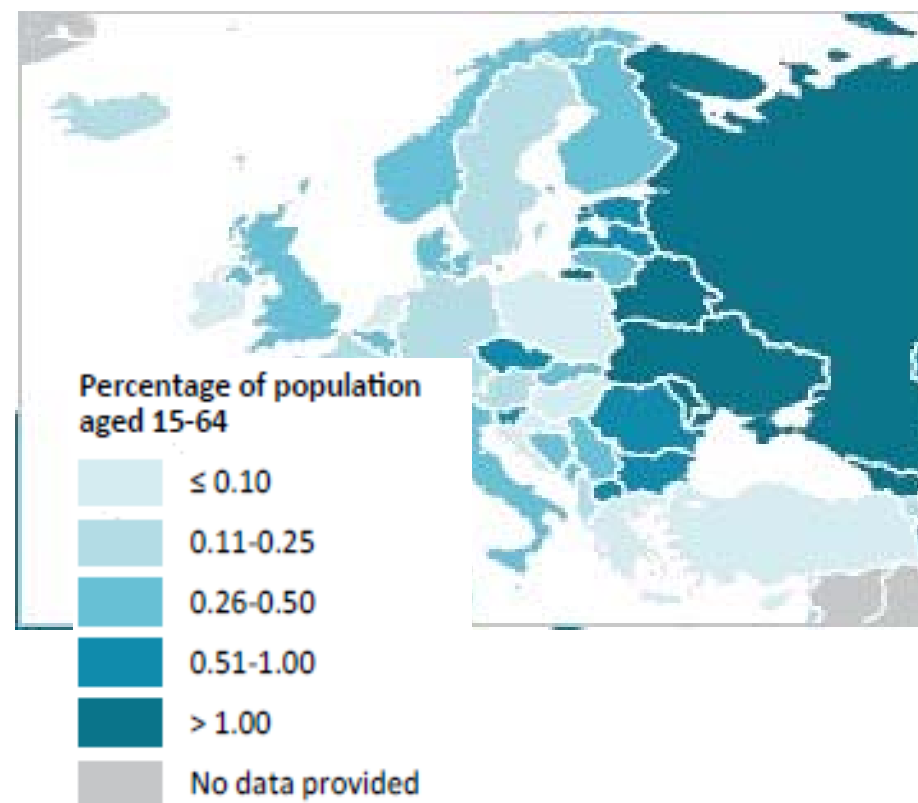
UNOCD World Drug Report 2018 / Lancet - Global prevalence of injecting drug use and sociodemographic characteristics and prevalence of HIV, HBV, and HCV in people who inject drugs: a multistage systematic review

Multidrug resistant TB, WHO/Europe, 2015



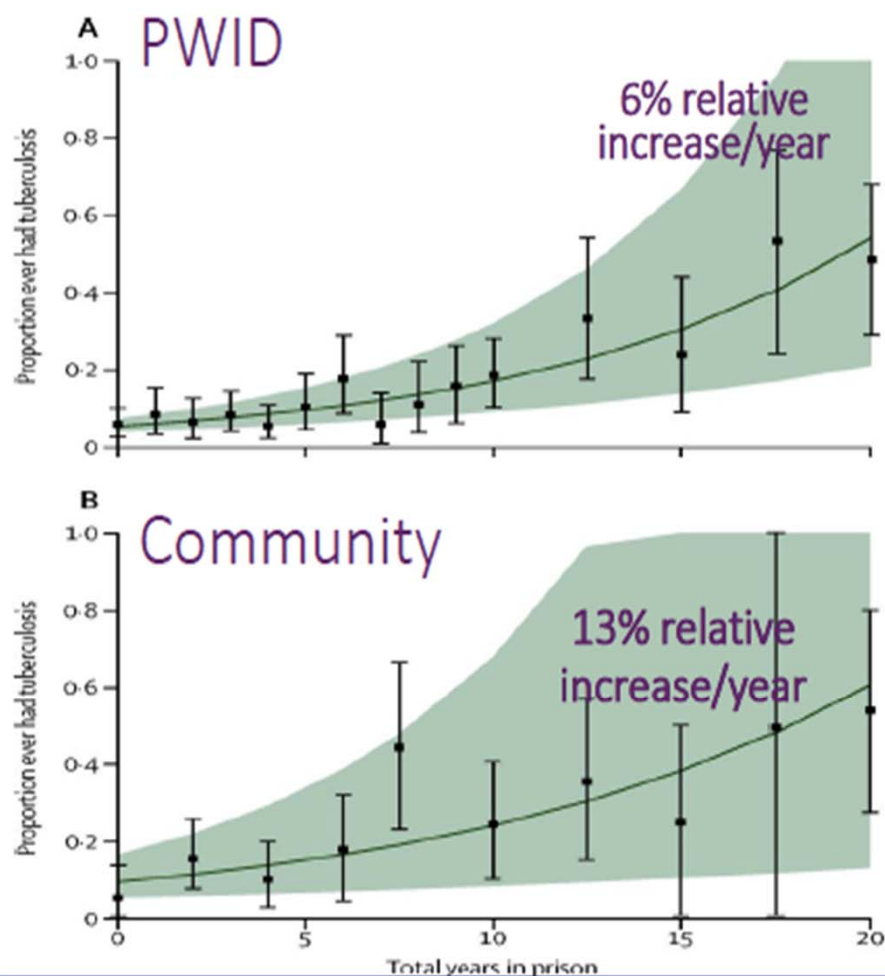
Prevalence of injecting drug use in Europe, 2014

- 2.9 million estimated IDUs in Eastern Europe and central Asia
- Proportion of IDUs among adult population:
 - 1% – 2.3%
- Opiate substitution therapy is limited or prohibited
- High incarceration rates
- IDUs is a driving force of the HIV epidemic in Eastern Europe



UNOCD World Drug Report 2016
UNAIDS Gap Report 2015

Incarceration and Contribution to TB in Ukraine



- Data derived from nationally-representative prison^{1,2} and PWID community surveys³
- Incarceration accounts for 6.2% of all incident TB cases (population-attributable fraction)
- Among PWID, however, incarceration contributes to 75% of new TB cases in PWID with HIV