



Trends of Prescription Drug Misuse in the UK and Singapore

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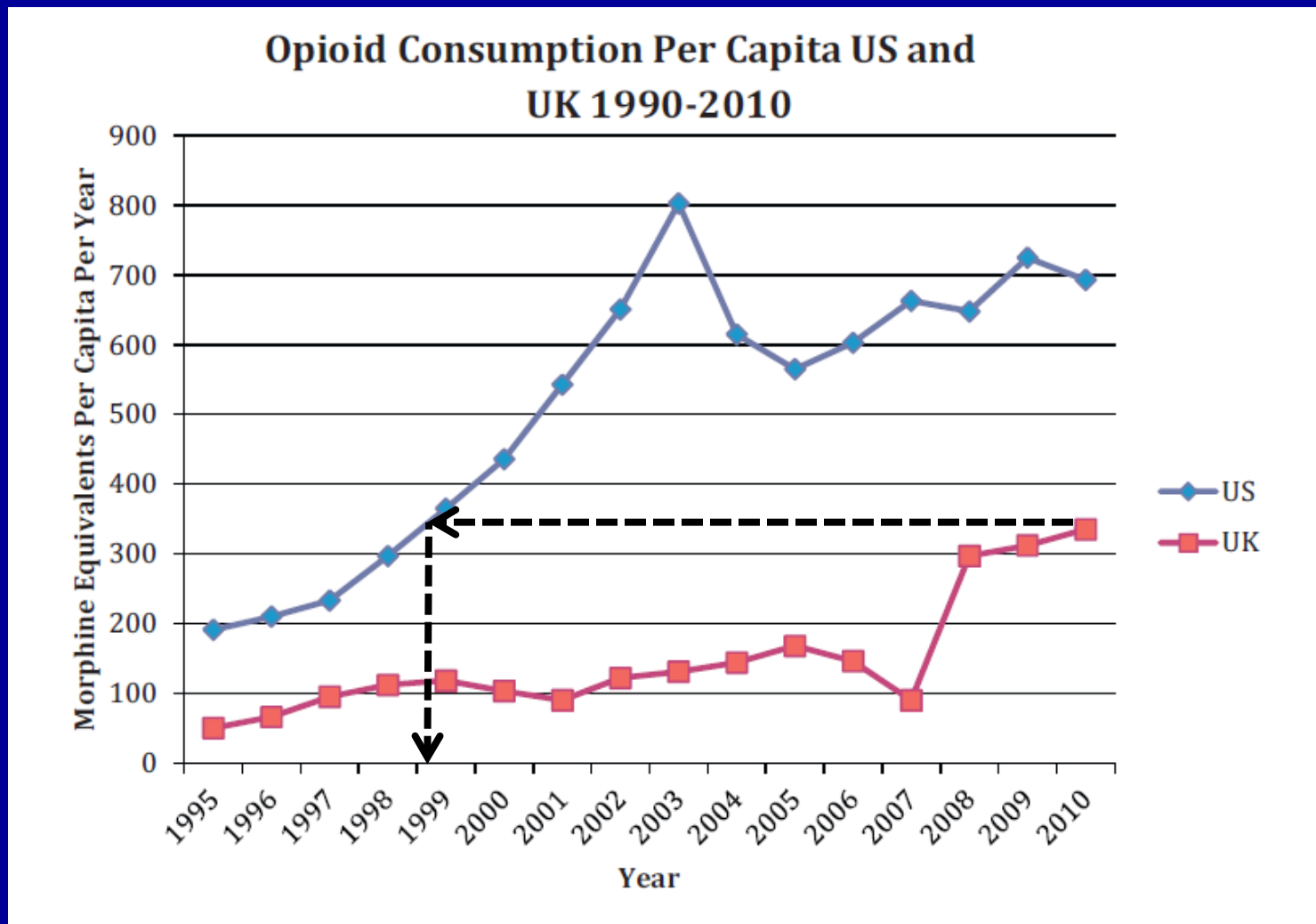
Conflicts of Interest

- Expenses covered and honorarium to attend and present at this meeting from RADARS
- Rocky Mountain Poison and Drug Control Center
 - Statistical assistance with analysis of data from UK and Singapore based Internet surveys
 - Grants in relation to prescription drug misuse and web monitoring surveys in the UK
- Member of the UK Advisory Council on the Misuse of Drugs (ACMD) prescription medication misuse working group

Prescription opioid misuse in the United States and the United Kingdom: Cautionary lessons

Daniel F. Weisberg^{a,1}, William C. Becker^{b,a}, David A. Fiellin^a, Cathy Stannard^{c,*}

International Journal of Drug Policy 25 (2014) 1124–1130



So what is the evidence of prescription drug misuse in the UK?

- Prevalence of prescription drug misuse
 - Population level data
 - Sub-population level data
- Harms associated with misuse
 - European Drug Emergencies Network
 - Drug related deaths
- Problematic misuse
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UK population level data

- Crime Survey England and Wales (CSEW)
 - Previous British Crime Survey
 - Survey of 16 to 59 year olds
- Longitudinal data only available on 'tranquilisers'



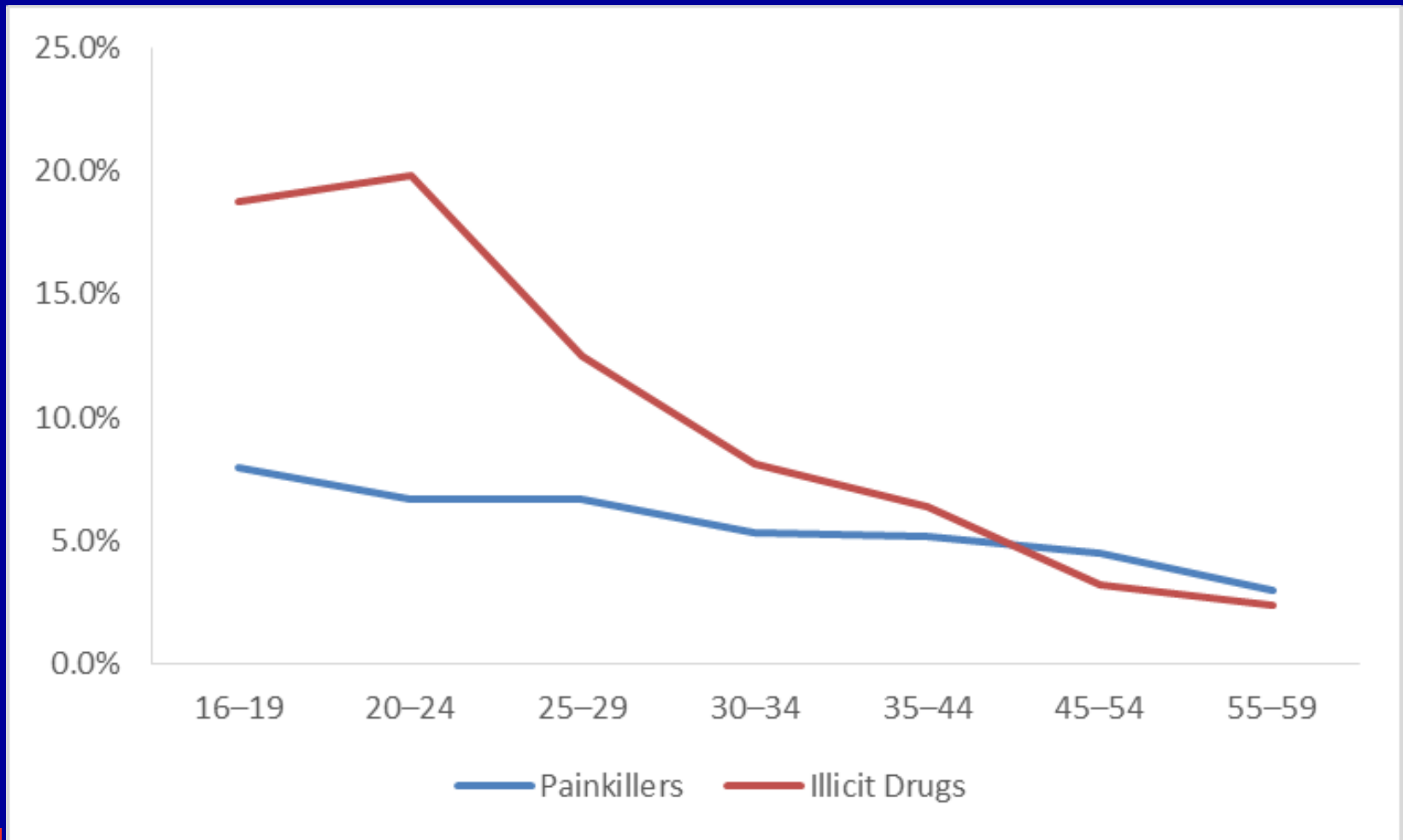
Drug	Life-time use	Pattern of life-time use over last decade	Last year use
16 to 59 years old	3.2%	Stable (2.6-3.7%)	0.7%
16 to 24 years old	2.5%	Stable (1.8-2.6%)	0.5%

UK population level data: prescription painkiller misuse

- 2014/15 CSEW included the following question
 - *“Have you taken prescription-only painkillers not prescribed to you, which you took only for the feeling or experience it gave you”*
- Frequency of prescription painkiller misuse

Misuse	Misuse
16 to 59 years old	5.4%
16 to 24 years old	7.2%
25 to 59 years old	4.9%
Males	6.4%
Females	4.4%

UK population level data: prescription painkiller misuse



UK population level data: prescription painkiller misuse

- Use is associated with long-term illness / disability

Drug	Yes	No
Prescription painkillers	8.5%	4.8%
Any illicit drug	11.9%	8.1%
Cannabis	9.4%	6.3%

- No association of use with higher alcohol consumption
 - Frequent 4.6% -vs- Infrequent 5.5%
- Not associated with living in cities
 - Rural 5.3% -vs- Urban 5.4%

[Illicit drug use: 6.5% rural vs 9.1% urban]

UK Internet Surveys Undertaken by Our Group

Market research consumer panel



- First survey 2012 1,500 individuals
- Second survey 2014 2,499 individuals
- Third survey 2015 10,003 individuals

UK population Internet survey content

- Demographics
 - Age, gender, income, geographical location
- Definition of non-medical use
 - *“used without a doctor’s prescription or for any reason other than what was recommended by your doctor”*
- Non-medical use of a range of prescription medicines
 - Opioids, benzodiazepines, Z drugs, stimulants, GABAergics
 - Formulation, frequency, route
 - Perceived safety of prescription medicines
 - Association with chronic pain

Misuse of benzodiazepines and Z-drugs in the UK

V. Kapil, J. L. Green, C. Le Lait, D. M. Wood and P. I. Dargan

The British Journal of Psychiatry (2014)
205, 407–408. doi: 10.1192/bjp.bp.114.149252

- Life-time misuse: 2012: 7.7%; 2014: 2.3%; 2015: 1.8%

Drug Class	Drug	2012 Survey	2014 Survey	2015 Survey*
Benzodiazepines	Alprazolam	20 (1.3%)	5 (0.2%)	12 (0.1%)
	Diazepam	62 (4.3%)	36 (1.4%)	144 (1.4%)
	Etizolam	N/A	1 (<0.1%)	N/A
	Flunitrazepam	N/A	3 (0.1%)	15 (0.2%)
	Lorazepam	26 (1.8%)	11 (0.4%)	10 (0.1%)
	Nitrazepam	12 (0.8%)	9 (0.4%)	11 (0.1%)
	Phenazepam	9 (0.5%)	0 (0%)	N/A
	Temazepam	N/A	15 (0.6%)	65 (0.6%)
'Z Drugs'	Zopiclone	28 (1.9%)	9 (0.4%)	53 (0.5%)
	Zaleplon	13 (0.8%)	1 (<0.1%)	10 (0.1%)
	Zolpidem	6 (0.4%)	1 (<0.1%)	18 (0.2%)

*tablet only preparations reported for 2015

Letter to the Editors

Misuse of the γ -aminobutyric acid analogues baclofen, gabapentin and pregabalin in the UK

Vikas Kapil,^{1,2,3} Jody L. Green,⁴ Marie-Claire Le Lait,⁴ David M. Wood^{1,5} & Paul I. Dargan^{1,5}

Drug	Number (%) reporting non-medical use: 2012	Number (%) reporting non-medical use: 2014
Baclofen	19 (1.3%)	6 (0.2%)
Gabapentin	17 (1.1%)	10 (0.4%)
Pregabalin	8 (0.5%)	8 (0.3%)

- Sources of misused GABA-ergic drugs
 - Predominately prescribed by medical practitioner
 - Less sourcing from Internet suppliers

199. Misuse of opioid containing prescription and over the counter medications in the United Kingdom

Paul I Dargan^{1,2}, Jody L Green³, Marie-Claire Le Lait³,
David M Wood^{1,2} *Clinical Toxicology* (2013), **51**, 252–378

Table 1. The life-time prevalence of misuse of each group of opioid containing medications and the reasons for misuse.

	Opioid containing medication group					
	Codeine, codeine - paracetamol	Dihydrocodeine - paracetamol	Dihydrocodeine	Oxycodone	Morphine	Tramadol
Lifetime prevalence of misuse (% of total survey population)	157 (10.5%)	38 (2.5%)	28 (1.9%)	21 (1.4%)	14 (0.9%)	39 (2.6%)
Reasons for misuse (% of those who reported misuse)						
For enjoyment / to get high	7 (4.5%)	5 (13.2%)	7 (25.0%)	4 (19.0%)	4 (28.5%)	7 (17.9%)
For social reasons / to fit in	3 (1.9%)	3 (7.9%)	8 (28.6%)	4 (19.0%)	4 (28.5%)	4 (10.3%)
Out of curiosity	8 (5.1%)	2 (5.3%)	4 (14.3%)	2 (9.5%)	0 (0%)	4 (10.3%)
Safer than street/illegal drugs	5 (3.2%)	2 (5.3%)	1 (3.6%)	2 (9.5%)	3 (21.4%)	5 (12.8%)
Help with come-down of other drugs	2 (1.3%)	1 (2.6%)	0 (0%)	1 (4.8%)	2 (9.5%)	3 (7.7%)
Help me cope with stress	17 (10.8%)	6 (15.8%)	4 (14.3%)	3 (14.3%)	4 (28.6%)	13 (33.3%)

2015 survey: non-medical use of opioids

Drug Class	Drug	Reported non-medical use
Opioids	Buprenorphine	183 (1.8%)
	Codeine POM	2,721 (27.2%)
	Codeine OTC	4,389 (43.9%)
	Dihydrocodeine POM	462 (4.6%)
	Fentanyl	346 (3.5%)
	Morphine	138 (1.4%)
	Oxycodone	86 (0.9%)
	Tramadol	273 (2.7%)

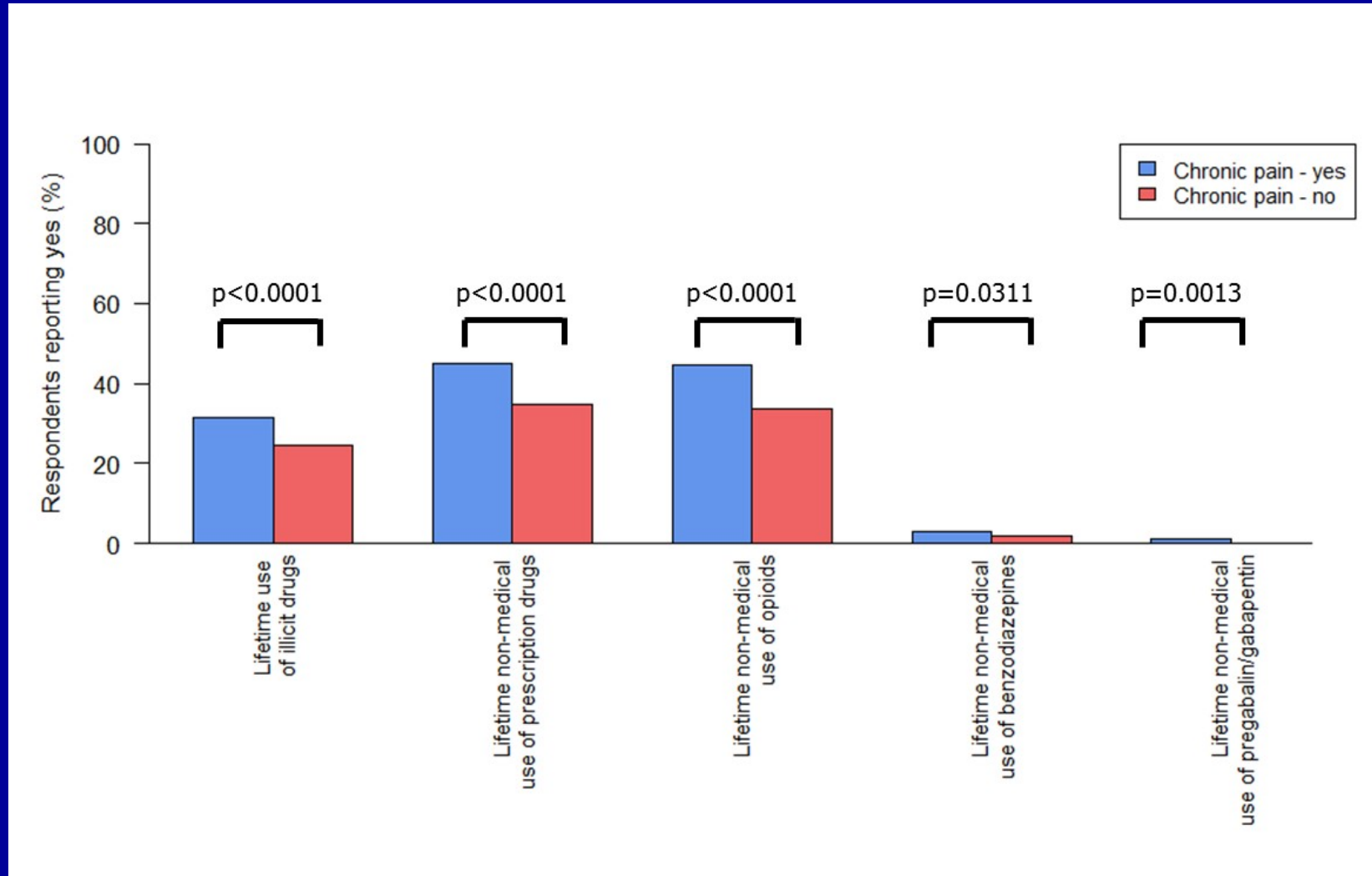
Drug	2012 survey	2015 survey
Morphine	0.9%	1.4%
Oxycodone	1.4%	0.9%
Tramadol	2.6%	2.7%

2015 survey: non-medical use of opioids

Drug Class	Drug	Reported non-medical use
Sustained release	Oxycontin [®]	51 (0.5%)
	Longtec [®]	29 (0.3%)
	Targnect [®]	30 (0.3%)
Immediate release	Oxynorm [®] IR tablets	34 (0.3%)
	Oxynorm [®] liquid	30 (0.3%)

Fentanyl Preparation	% of those who had misused fentanyl who had used this preparation
Tablet/Capsule	278 (80.5%)
Patch	189 (54.8%)
Lollipop	165 (47.8%)
Lozenge	195 (56.5%)

Prescription drug misuse and chronic pain



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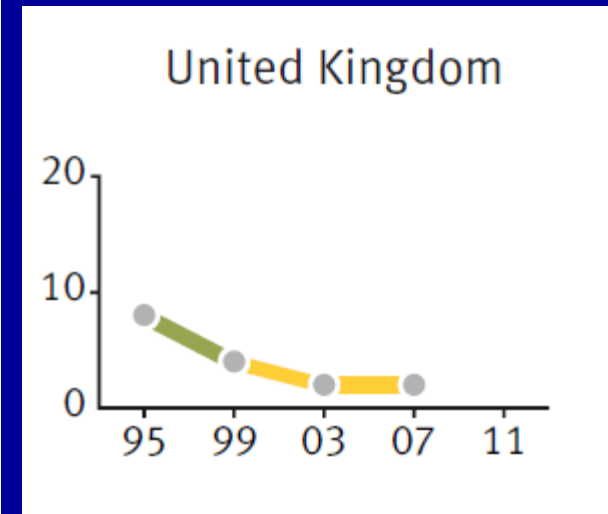
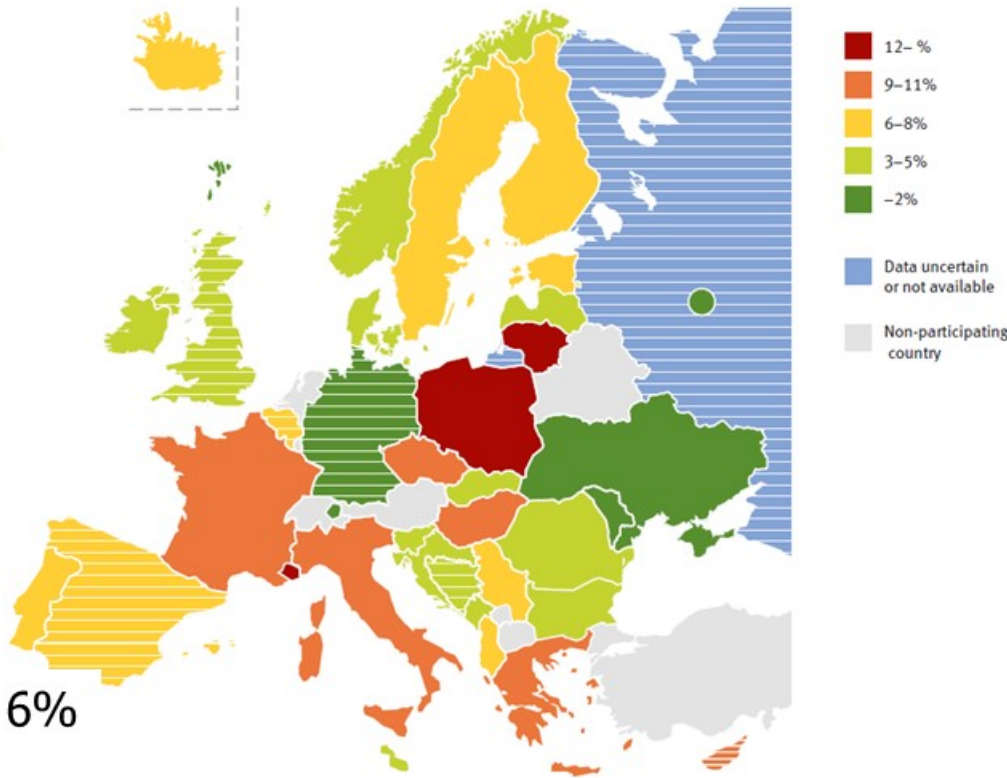
European Survey Project on Drugs and Alcohol (ESPAD)

- European survey of 15-16 year olds
 - Started in 1995, done every 4 years
- ESPAD 2011 (5th survey)
 - Total sample size: 103,076
 - UK sample size: 1,712
- Asked the following question:
“on how many occasions in your lifetime have you used tranquilisers or sedatives (without a doctor’s prescription)”



Life-time use of "tranquilisers / sedatives" without a prescription in 2011 survey

Figure 16a
Lifetime use of tranquilisers or sedatives without prescription. All students. 2011. Percentages. (Table 36)

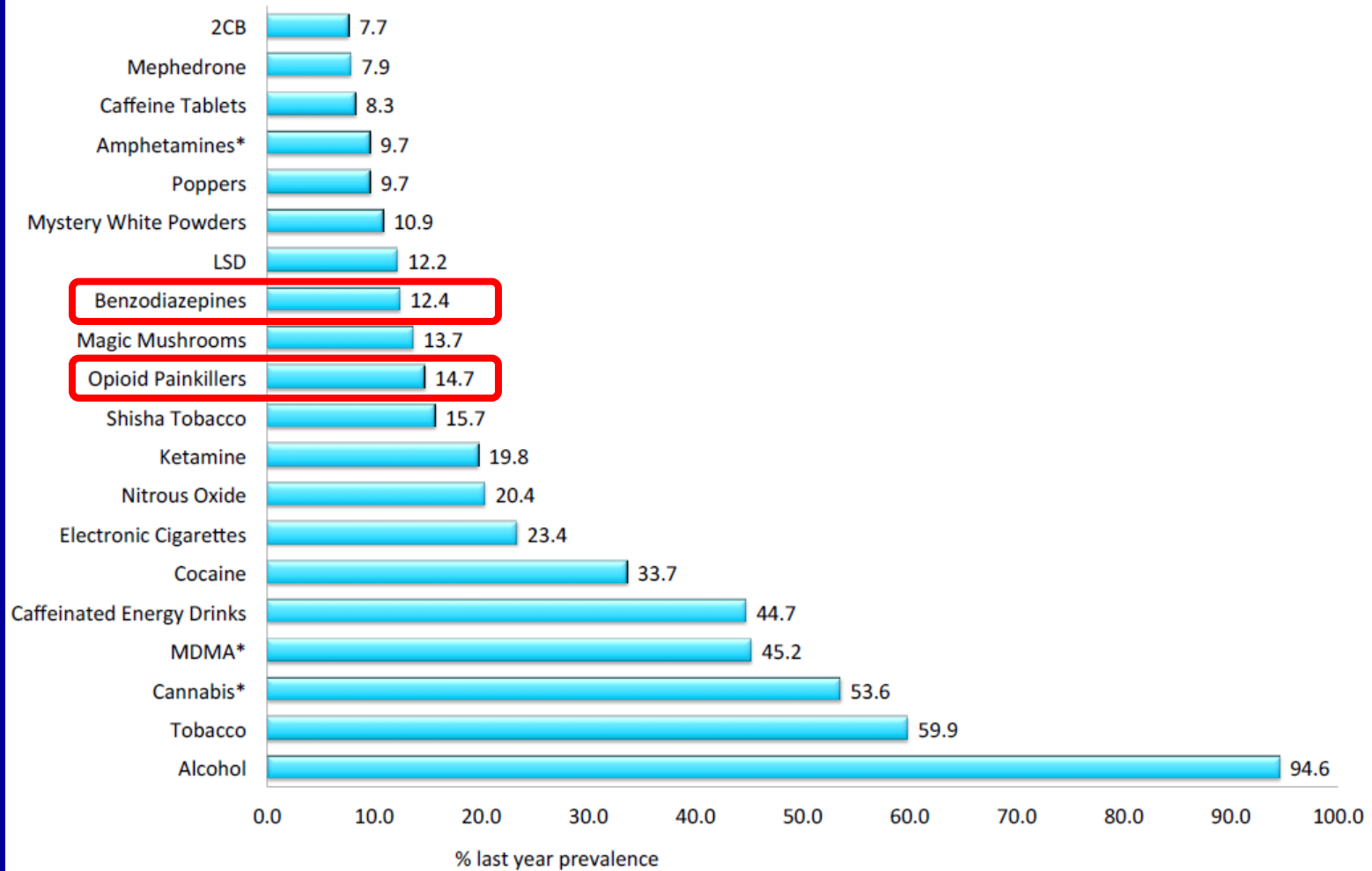


The Global Drug Survey 2014 findings



GLOBAL DRUG SURVEY

Top 20 Drugs – Last 12 Months – United Kingdom (N=7,326)



*Denotes all types and preparations

Prescription drug use in an MSM night-club population

- Survey of 313 clubbers in South London in June 2013
 - Predominately male (90%) and MSM (79%)
- Life-time misuse of prescription medicines

Drug Group	Nightclub Survey	Comparison to population survey
Codeine products	5.8%	↓↓↓↓
Other opioids	2.6%	↔
Benzodiazepines	30.4%	↑↑↑↑
Z Drugs	18.1%	↑↑↑↑
GABAergics	4.4%	↑↑↑↑

- Higher rates of misuse in MSM compared to non-MSM

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The European Drug Emergencies Network (Euro-DEN)

D. M. WOOD,^{1,2} F. HEYERDAHL,³ C. B. YATES,⁴ A. M. DINES,¹ I. GIRAUDON,⁵ K. E. HOVDA,³ and P. I. DARGAN^{1,2}

Definition of case included in data collection

“An individual who presents to participating acute care facilities with symptoms and/or signs consistent with acute recreational drug toxicity and/or directly related to recreational drug use”

Recreational drug definition

“a psychoactive compound that was taken for the purpose of recreational activities rather than for medical or work purposes or as part of (deliberate) self-harm”

“Use of prescription and over the counter (OTC) medicines for recreational purposes” [hereafter called *prescription medicine*]

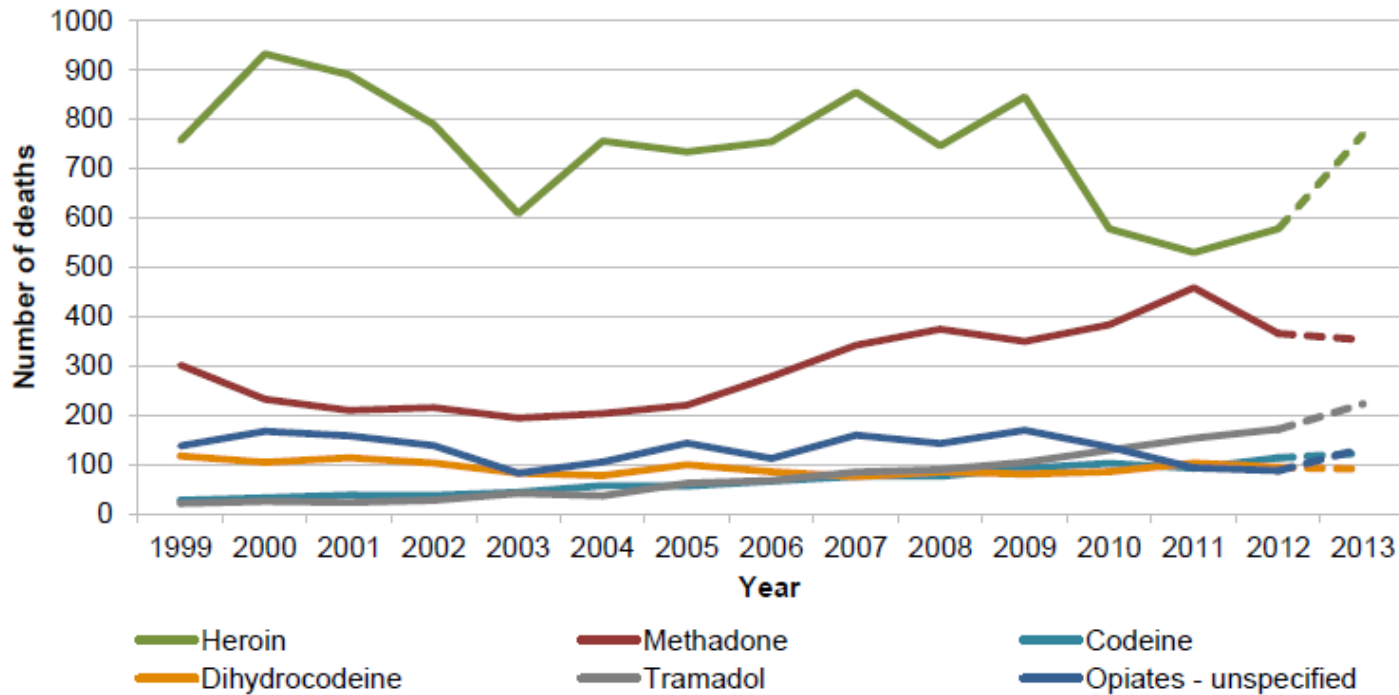
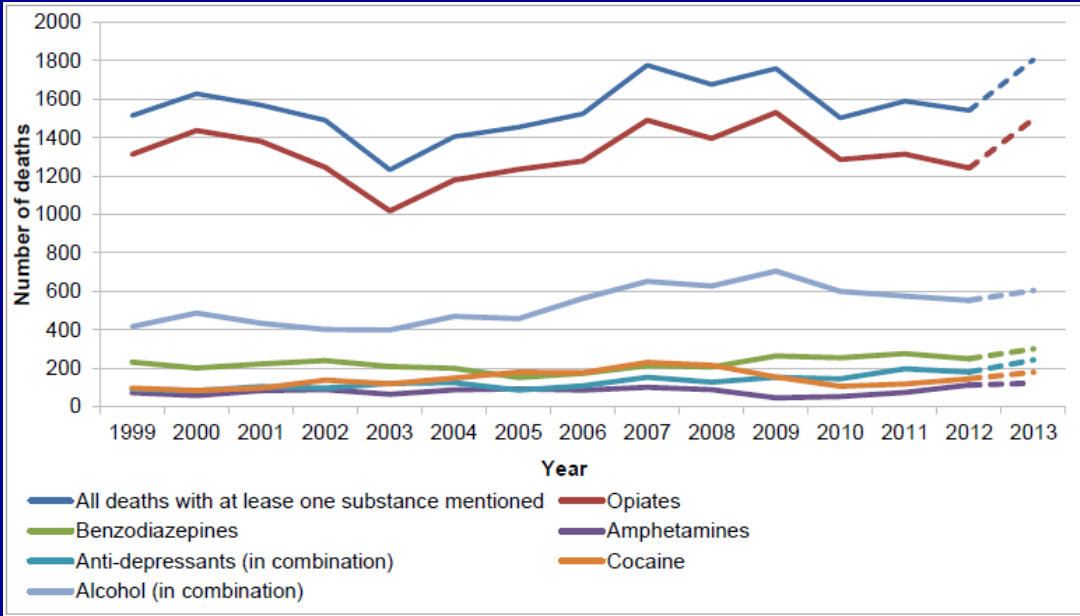
Euro-DEN Plus: Prescription medicine cases

- ~30% of cases between Oct 13-Sept 15 involved a prescription medicines
- ~25% of drugs in all cases were prescription medicines
 - Lower rate in UK (~5% to ~10%)
 - 8 of top 20 drugs were prescription medicines
- Common prescription medicines involved
 - Benzodiazepines
 - Opioids
 - GABAergics
 - Stimulants

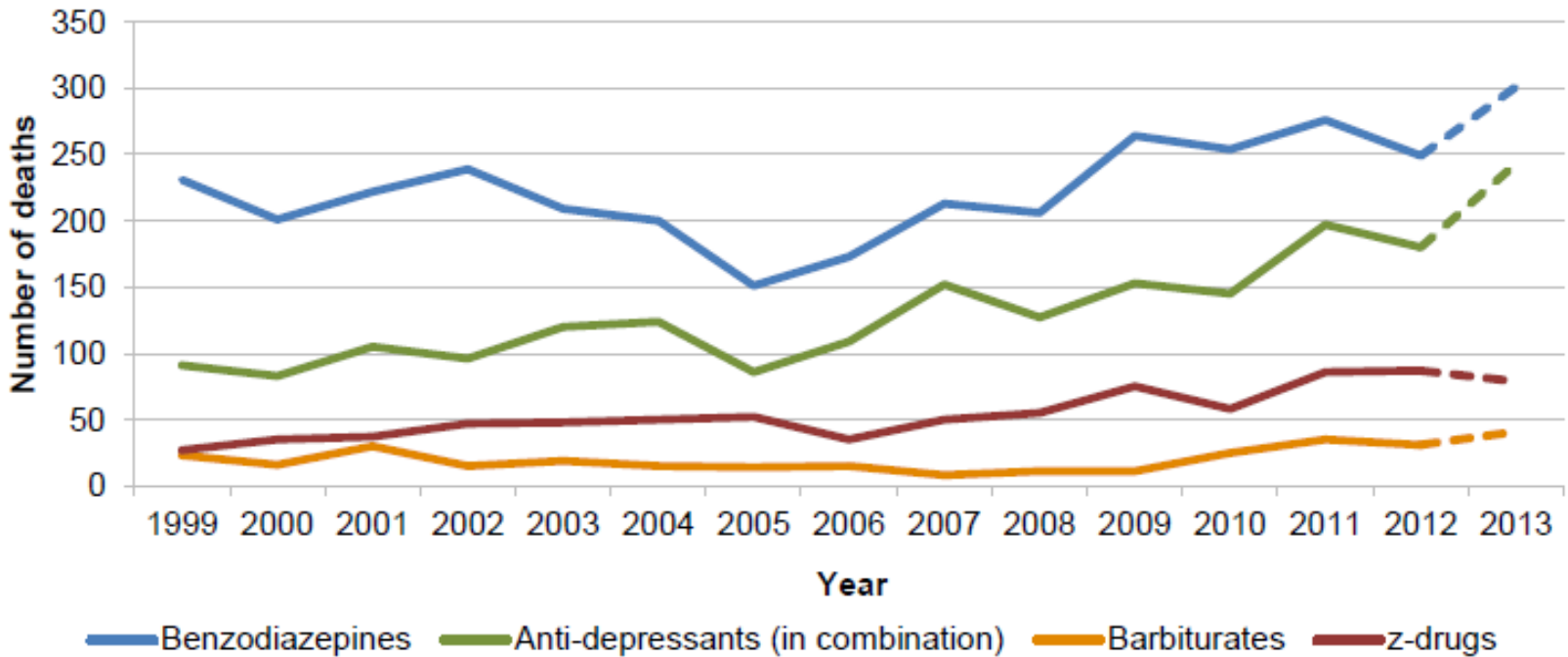
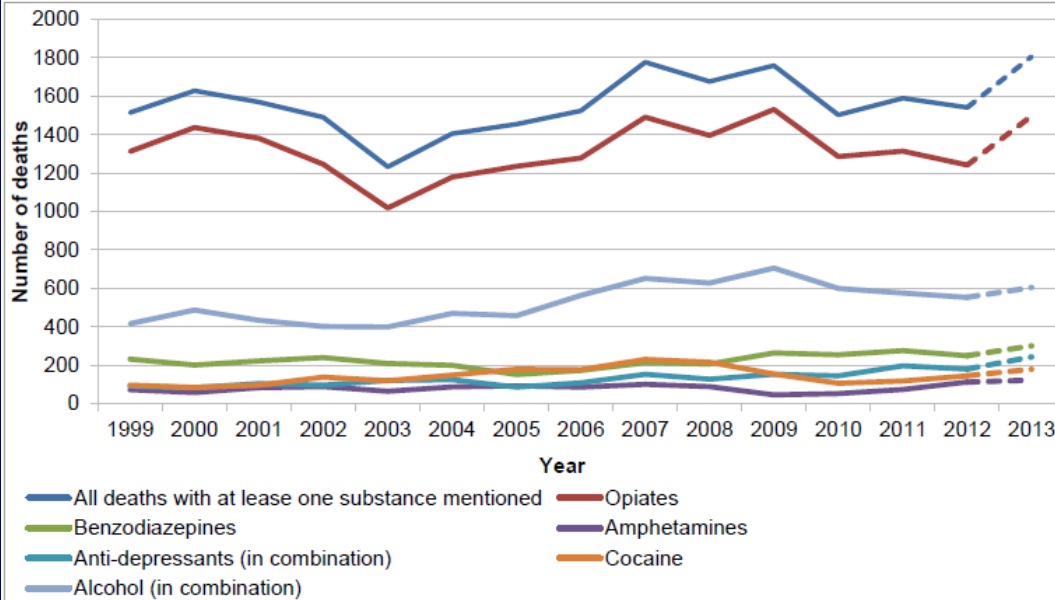
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Trends in drug misuse deaths in England, 1999 to 2014



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Drug Treatment Data: England

Substance	Opiate		Non-opiate		Non-opiate and alcohol		Alcohol only		Total	
	n	%	n	%	n	%	n	%	n	%
Opiate and/or crack cocaine use										
Opiate (not crack cocaine)	91,530	60%	-	-	-	-	-	-	91,530	31%
Both opiate and crack cocaine	61,434	40%	-	-	-	-	-	-	61,434	21%
Crack cocaine (not opiate)	-	-	2,178	9%	2,449	9%	-	-	4,627	2%
Other drug use										
Cannabis	29,568	19%	15,425	62%	16,809	60%	-	-	61,802	21%
Cocaine	8,896	6%	7,822	31%	11,039	39%	-	-	27,757	9%
Benzodiazepine	19,017	12%	1,515	6%	1,314	5%	-	-	21,846	7%
Amphetamine (other than ecstasy)	7,666	5%	4,160	17%	3,110	11%	-	-	14,936	5%
Other drug	1,917	1%	1,370	5%	764	3%	-	-	4,051	1%
Hallucinogen	403	0%	618	2%	347	1%	-	-	1,368	0%
Other prescription drug	488	0%	121	0%	148	1%	-	-	757	0%
Anti-depressant	437	0%	37	0%	143	1%	-	-	617	0%
Solvent	137	0%	104	0%	133	0%	-	-	374	0%
Major tranquilliser	112	0%	25	0%	25	0%	-	-	162	0%
Barbiturate	78	0%	10	0%	19	0%	-	-	107	0%
Alcohol										
Alcohol	33,405	22%	-	-	28,128	100%	89,107	100%	150,640	51%
Total number of individuals *	152,964	100%	25,025	100%	28,128	100%	89,107	100%	295,224	100%



Figure 7.2.1 Number of new treatment presentations for opiates and / or crack cocaine

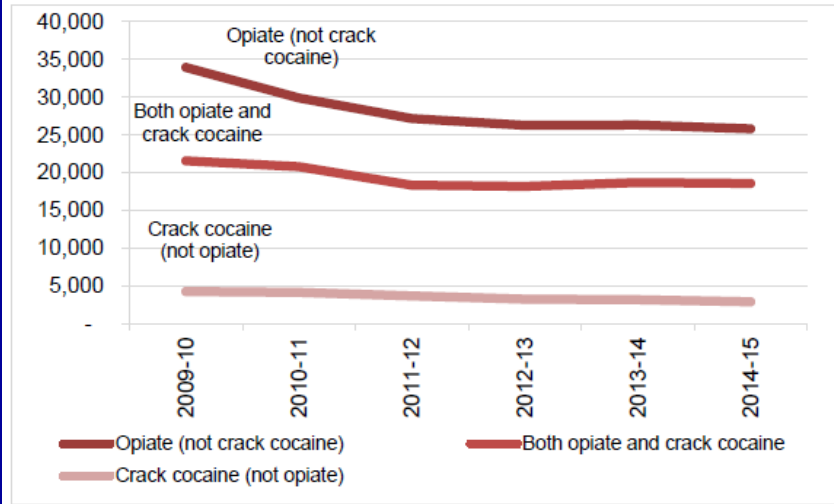


Figure 7.2.2 Number of new treatment presentations for other substances

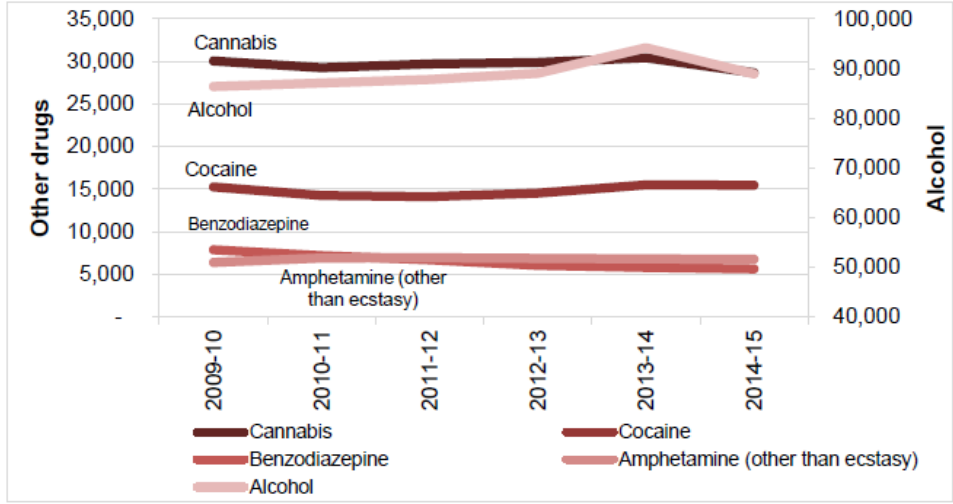


Figure 7.2.3 Presenting substances of under 25s for opiate and/or crack

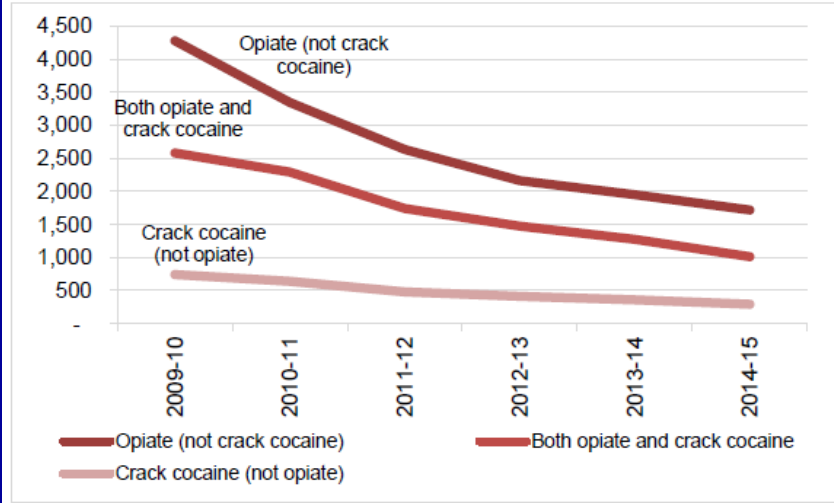
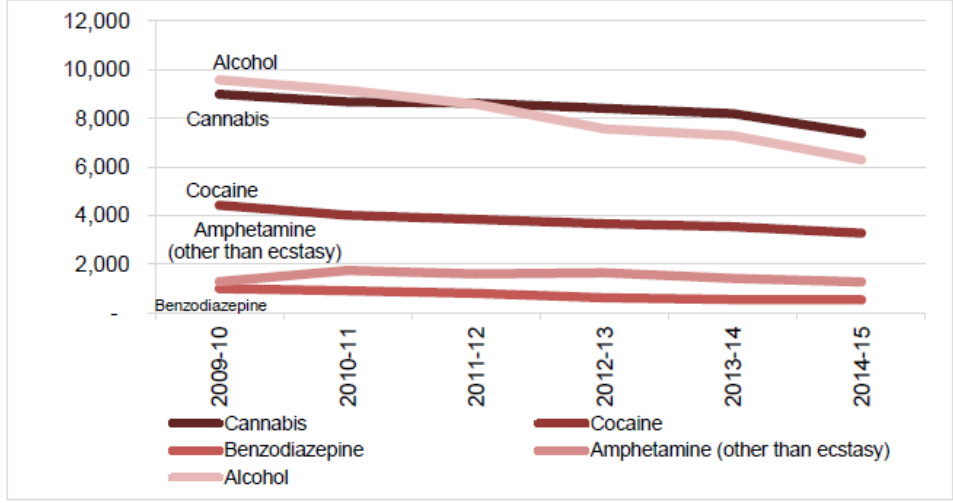
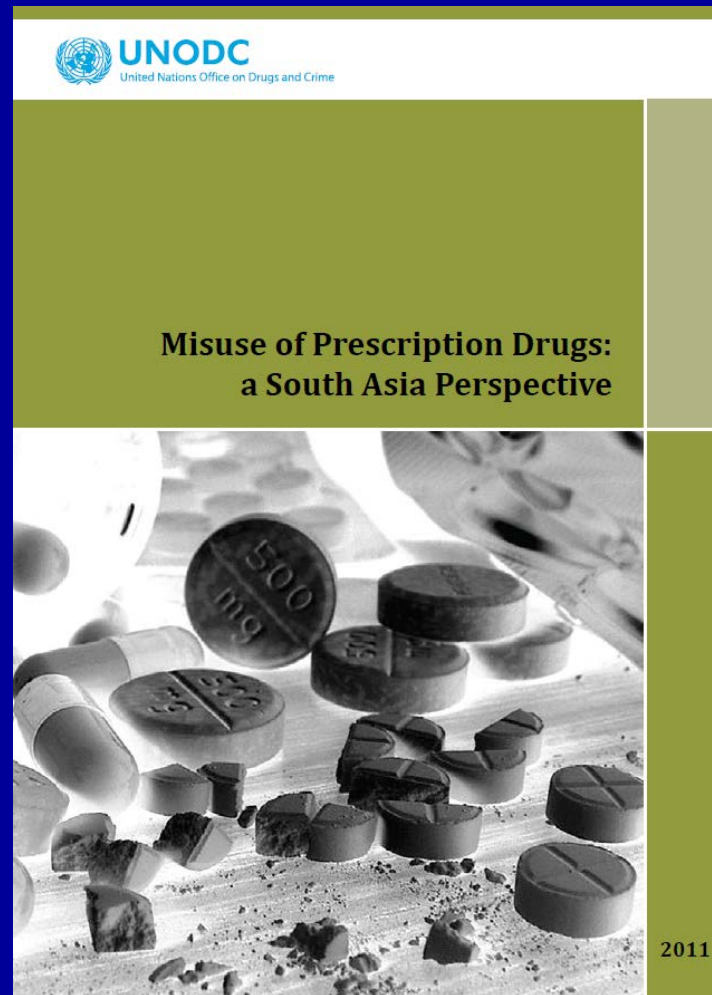


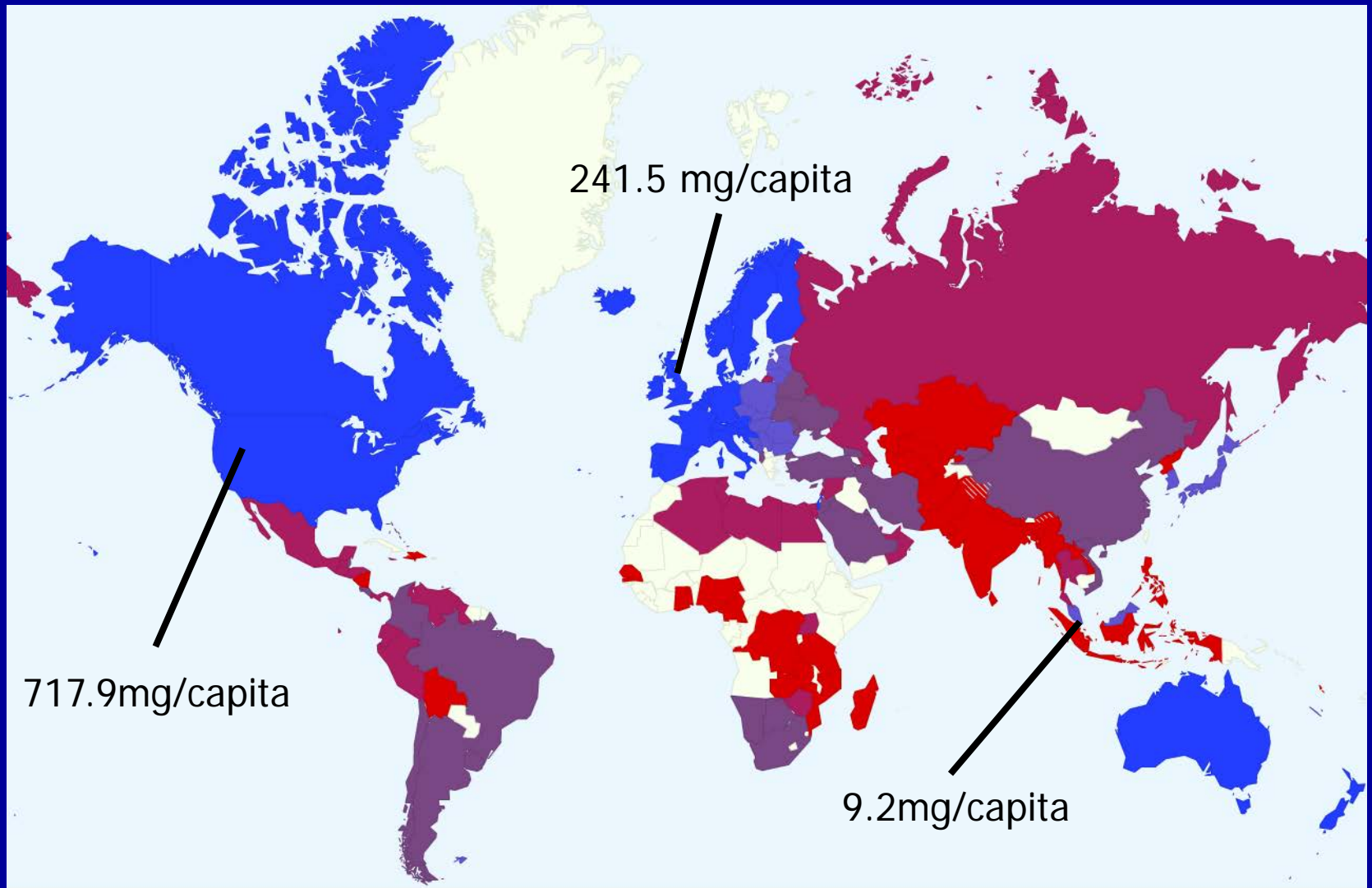
Figure 7.2.4 Presenting substances of under 25s for other substances



So what is the evidence of prescription drug misuse in Singapore?

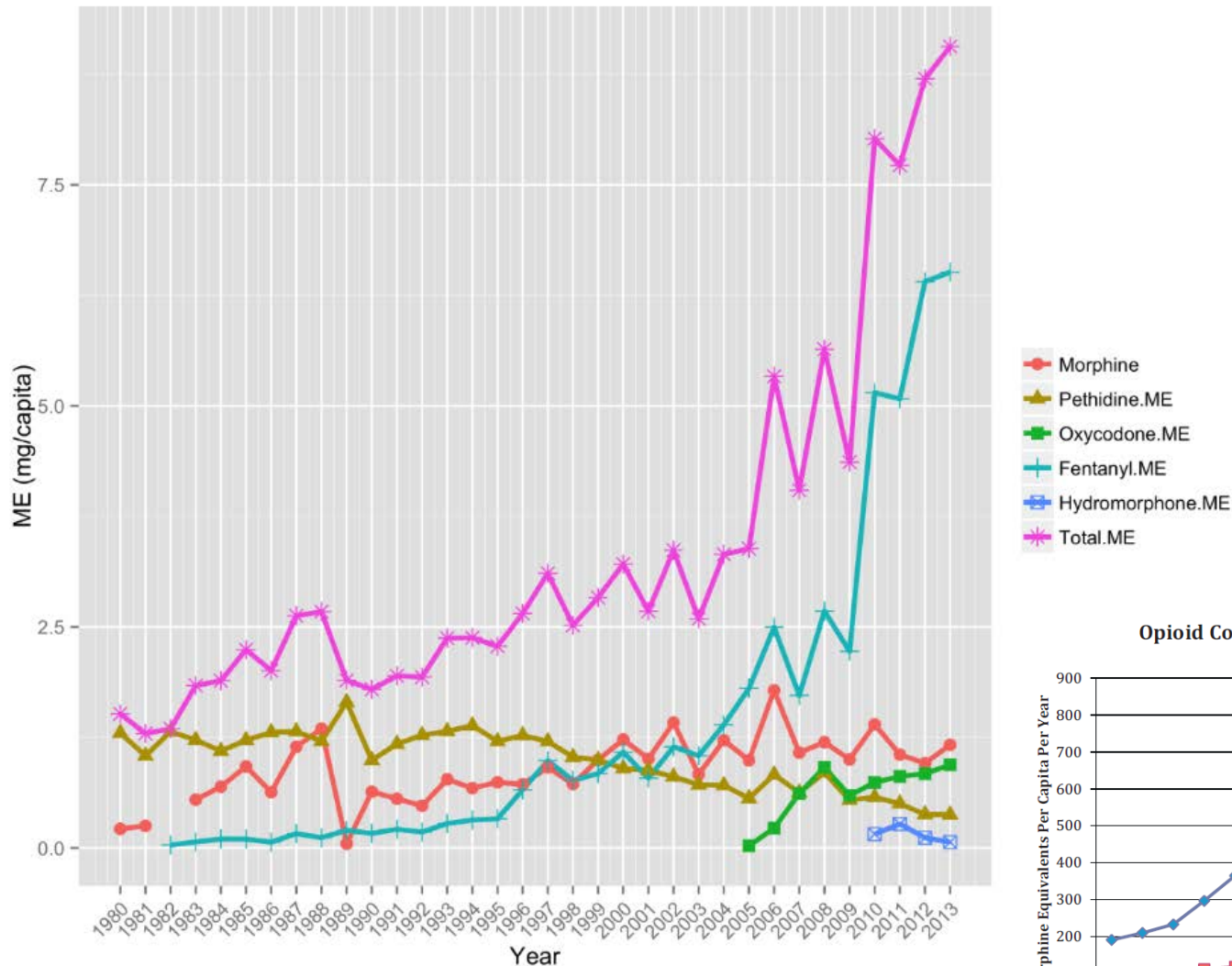


Morphine Equivalents Prescribed in 2013

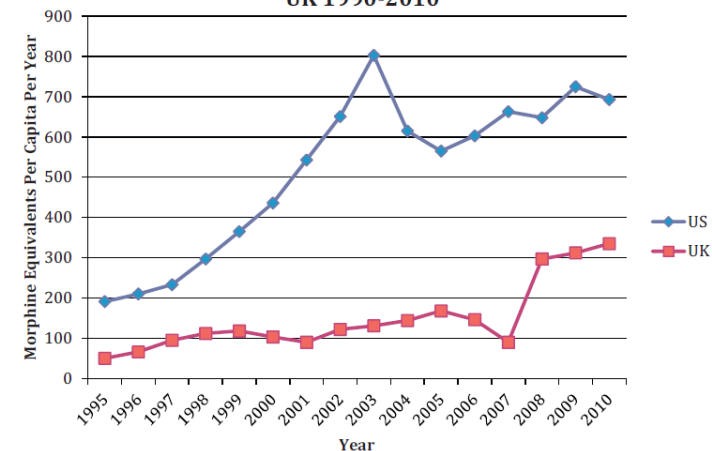


Singapore

Opioid Consumption in Morphine Equivalence (ME) minus Methadone, mg per person

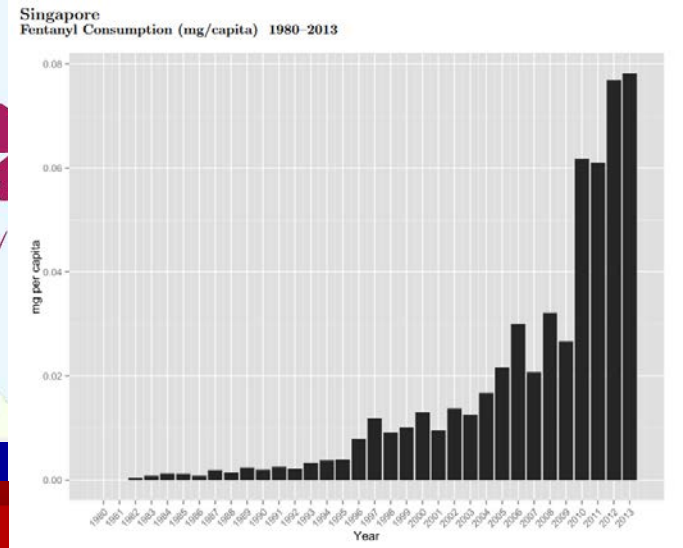
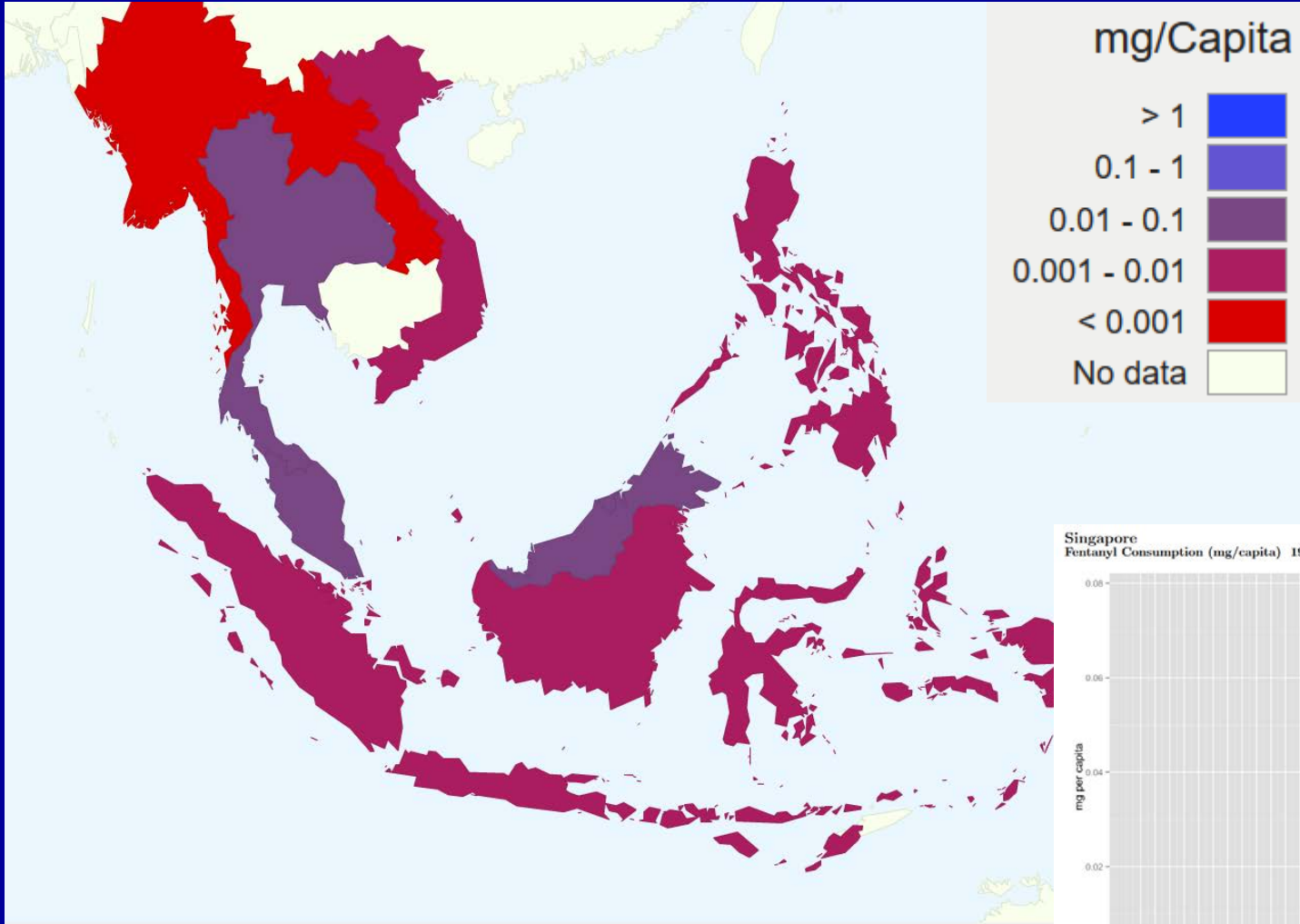


Opioid Consumption Per Capita US and UK 1990-2010

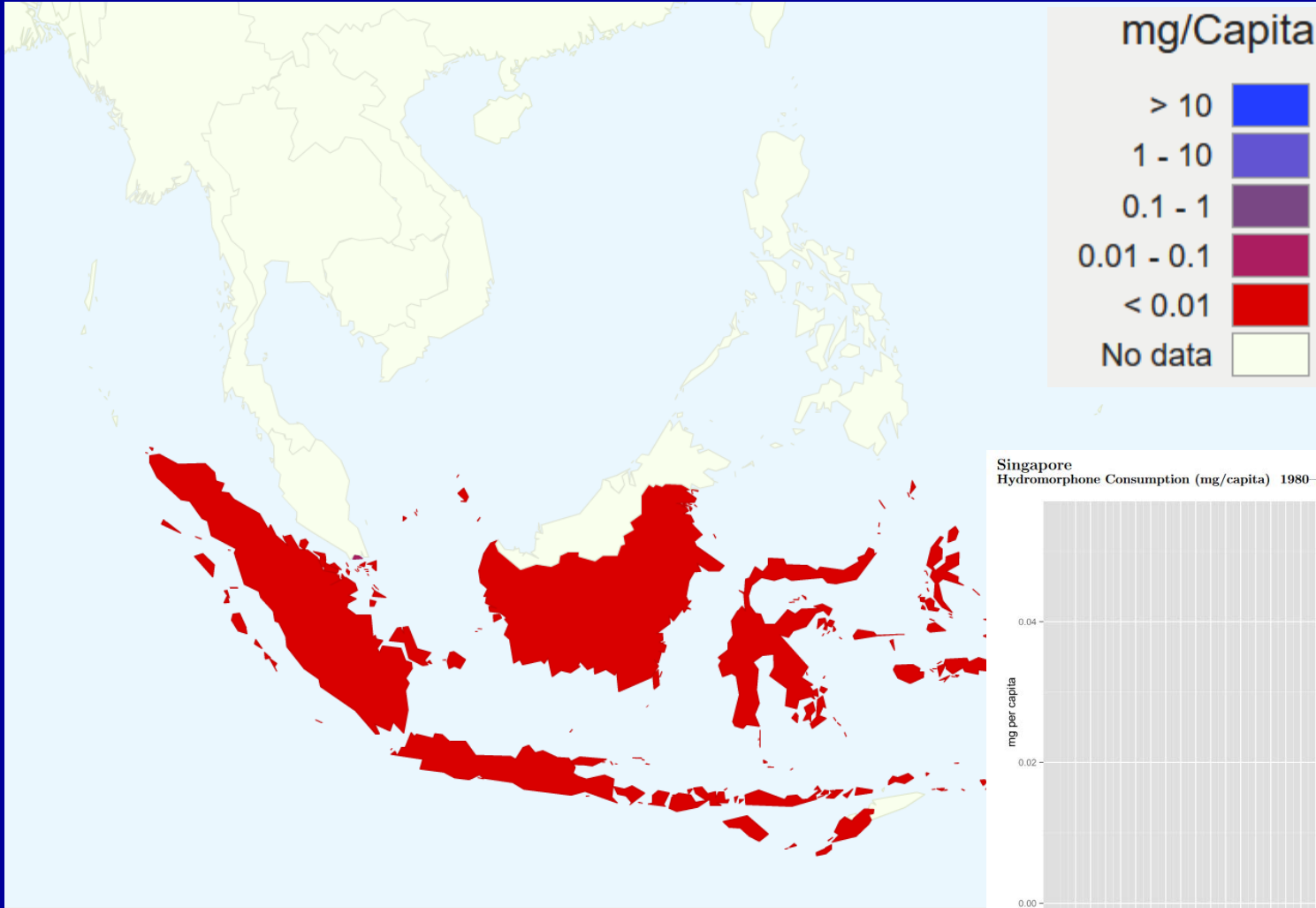


Fentanyl: 0.08 mg/capita

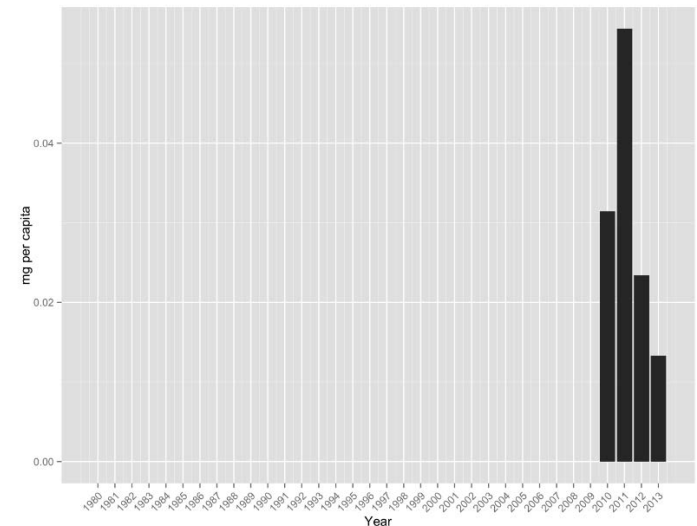
[US: 1.7 mg/capita; UK: 0.7 mg/capita]



Hydromorphone: 0.01 mg/capita [US: 6.8 mg/capita; UK: 0.6 mg/capita]

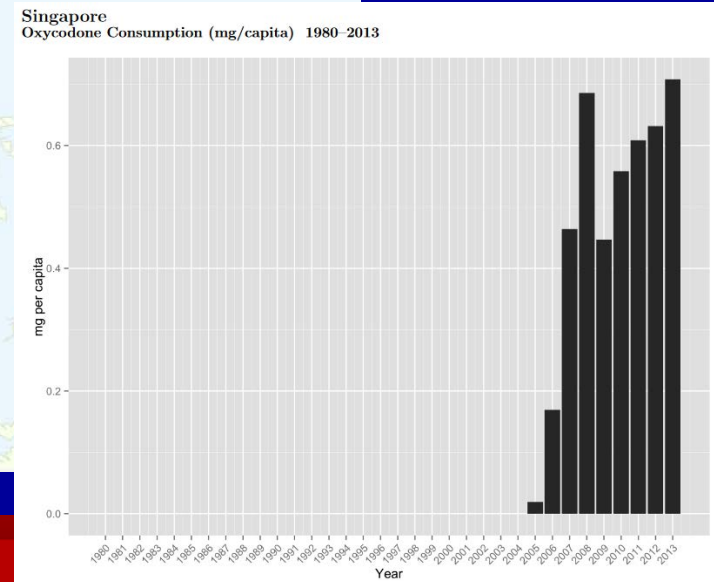
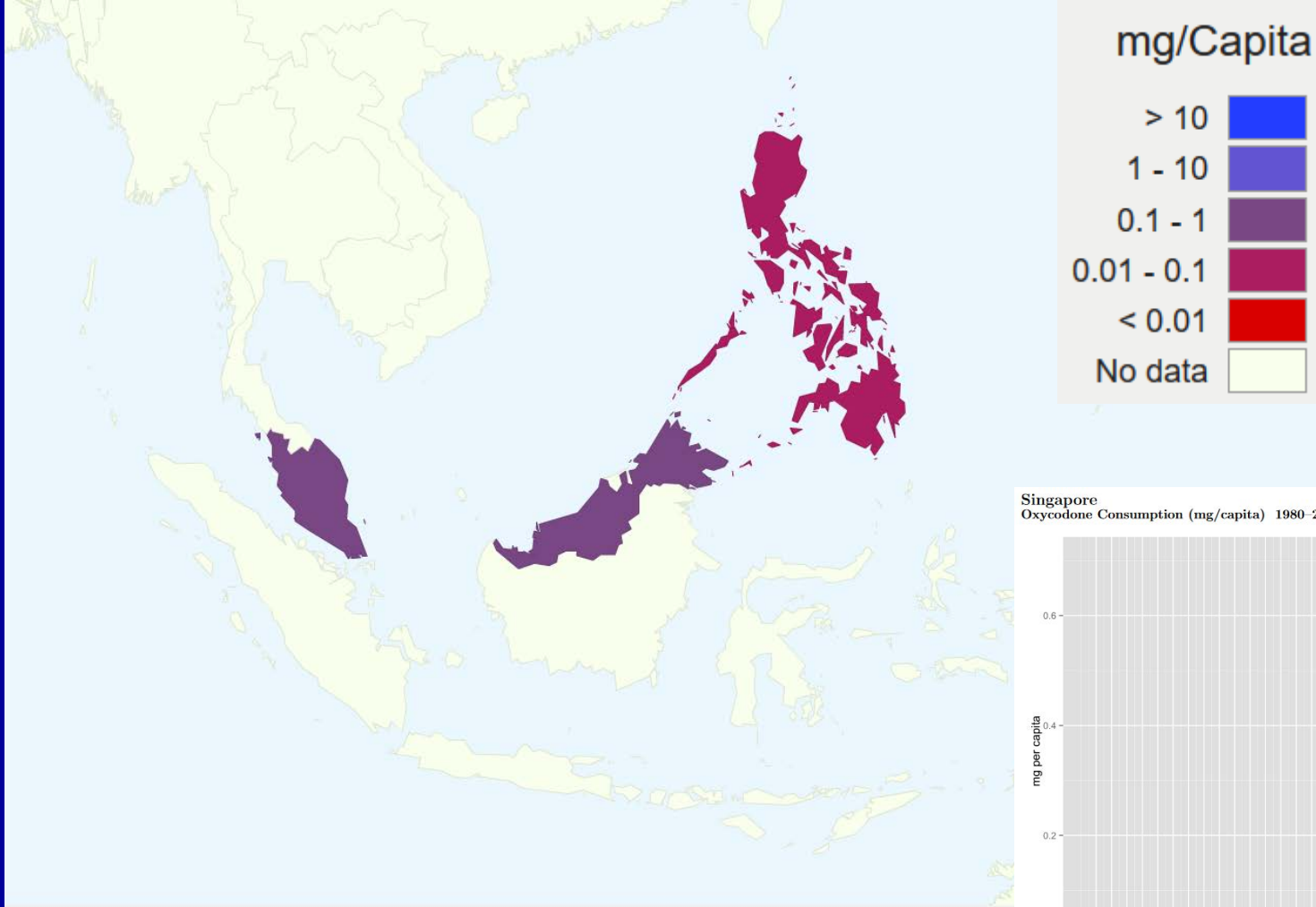


Singapore
Hydromorphone Consumption (mg/capita) 1980-2013



Oxycodone: 0.7mg/capita

[US: 199.4 mg/capita; UK: 13.8 mg/capita]





GMI GLOBAL ONLINE PANELS



- Potential for surveys using UK methodology
 - Adapt to local medication availability
 - Translated into local language
- Poor internet penetrance may need face-to-face surveys
- Potential issues about confidentiality and risks

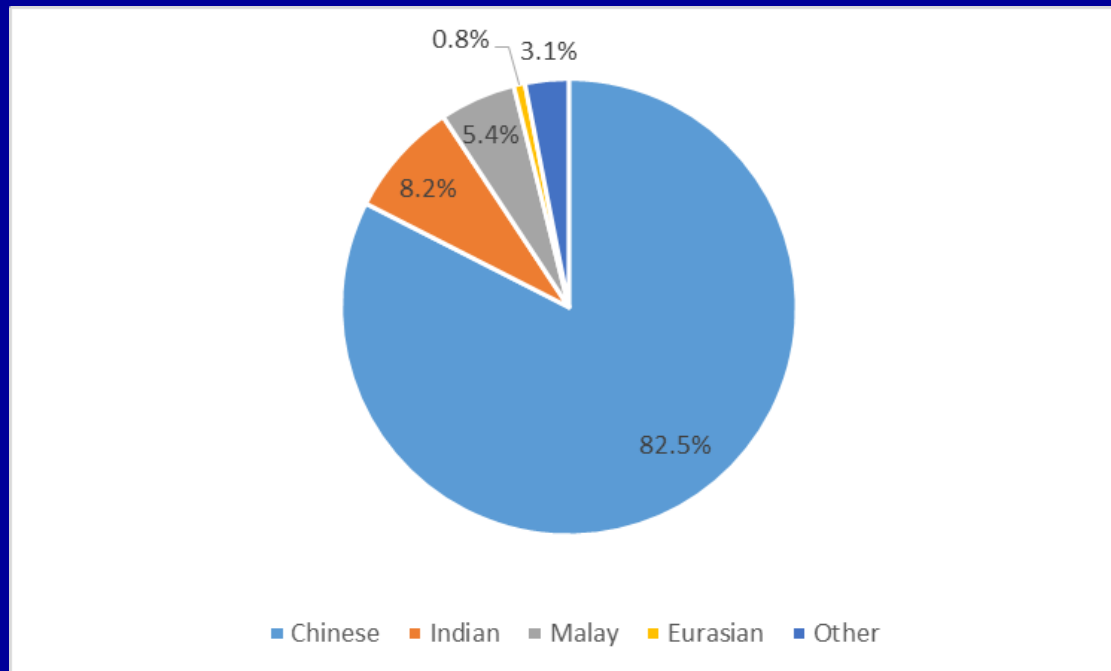


Asia Pacific

	Australia	214K
	China	327K
	Hong Kong	30K
	India	111K
	Indonesia	74K
	Japan	27K
	Malaysia	66K
	New Zealand	21K
	Philippines	42K
	Singapore	37K
	South Korea	43K
	Taiwan	18K
	Thailand	73K
	Vietnam	3K

Singapore – Pilot Population Internet Survey

- Definition of non-medical use
 - *“used without a doctor’s prescription or for any reasons other than what was recommended by your doctor”*
- Survey of 1,000 respondents in survey undertaken in 2015
 - 500 (50%) male; median age: 35 (29-45) years



Opioid misuse in Singapore

- Codeine containing products
 - 43.7% had heard of and 4.0% had misused
- Prescription opioids
 - 45.9% had heard of and 4.7% had misused

Drug Class	Drug	Heard of	Lifetime misuse
Codeine containing product	Codeine	302 (30.2%)	23 (2.3%)
	Dhasedyl	175 (17.5%)	16 (1.6%)
	Panadeine	175 (17.5%)	15 (1.5%)
	Procodin	125 (12.5%)	4 (0.4%)
Opioid	Tramadol	136 (13.6%)	11 (1.1%)

QUESTION 2

- Do you think that the most misused benzodiazepine in the Singapore population Internet survey was the same as in the UK?
 - A. No one misuses them there
 - B. Yes
 - C. No
 - D. Not sure

ANSWER 2

- Do you think that the most misused benzodiazepine in the Singapore population Internet survey was the same as in the UK?
 - A. No one misuses them there
 - B. Yes
 - C. No
 - D. Not sure

Benzodiazepine and 'Z drug' misuse

- 434 (43.4%) had heard of and 38 (3.8%) had misused ≥ 1 benzodiazepine
- 113 (11.3%) had heard of and 11 (1.1%) had misused ≥ 1 'Z drug'

Drug Class	Drug	Heard of	Lifetime misuse
Benzodiazepines	Alprazolam	183 (18.3%)	27 (2.7%)
	Bromazepam	75 (7.5%)	5 (0.5%)
	Clonazepam	88 (8.8%)	4 (0.4%)
	Diazepam	349 (34.9%)	9 (0.9%)
	Lorazepam	151 (15.1%)	10 (1.0%)
	Midazolam	146 (14.6%)	8 (0.8%)
	Nitrazepam	78 (7.8%)	7 (0.7%)
'Z Drugs'	Zolpidem	86 (8.6%)	4 (0.4%)
	Zolpiclone	67 (6.7%)	7 (0.7%)

Discussion and Conclusions

- Increasing evidence and concern about non-medical use of prescription medicines
 - ↑opioid prescribing, particularly tramadol
 - Predominately opioids and benzodiazepines
 - Less commonly with GABAergics
- In UK appears associated with certain 'sub-populations'
 - Clubbers, MSM community, those with chronic pain
- Less information on prescription medicine use in Asia
 - Prescribing of opioids much lower than US and UK
 - Internet surveys suggest however there is an issue

Discussion and Conclusions

- These internet surveys suggest prescription medicine misuse is a potential concern in the UK and Singapore
- Further work is required in both regions to explore
 - Geographical and demographic patterns
 - Sources of drugs
 - Motivations for use
 - Potential association with chronic pain and/or chronic illness
- This will help inform appropriately targeted primary and secondary interventions

Thank You

