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## **APPENDICES: Effect of initiating drug treatment on the risk of drug-related poisoning death and acquisitive crime among a cohort of offending heroin users**

### **Appendix A Description of variables used in the analysis**

#### **Group 1: demographic variables**

<b>Variable</b>	<b>Derived?</b>	<b>Description</b>
gender	No	Gender
age	No	Age at assessment
White	Yes	White ethnicity
region	Yes	Region in the UK: Eastern; East Midlands; London; North East; North West; South East; South West; West Midlands; Yorkshire and Humber.

#### **Group 2: relating to the assessment**

<b>Variable</b>	<b>Derived?</b>	<b>Description</b>
purposegroups	Yes	Purpose of the assessment: Pre-sentence report; Start community sentence; sentence plan review; pre-release; start licence; End sentence
sentencegroup	Yes	sentence type tied to the assessment: Community sentence (CJA 03); Suspended sentence; Other; Community punishment/rehabilitation/punishment and rehabilitation order.
ass_year	Yes	Financial year in which the assessment took place
ass_no	Yes	Assessment number included in analysis dataset

#### **Group 3: Offending which led to assessment**

<b>Variable</b>	<b>Derived?</b>	<b>Description</b>
offence	Yes	offence which resulted in assessment: Violent or sexual; serious acquisitive crime; non-serious acquisitive crime; drugs offences; other
s2q13_escalation_seriousness	No	Are current offence(s) an escalation in seriousness from previous offending
s2q14_established_pattern	No	Are current offence(s) an established pattern of similar offending?

#### **Group 4: Drug use/problems**

<b>Variable</b>	<b>Derived?</b>	<b>Description</b>
s2q9_addiction	No	Was there evidence of motivation due to addictions/perceived needs
s2q10_drugs	No	Did drugs act as a disinhibitor?
s8q1a_frequency	No	Weekly or daily heroin use
s8q1a_drug_injected	No	heroin injected
s8q1a_previous_drug_injected	No	Previously injected heroin
other_opiates	Yes	Other opiates or (non-prescribed) methadone
crack	Yes	Crack use, grouped: not used; occasionally (or monthly); weekly or daily
s8q1d_previous_use	No	previous (but not current) crack use
benzos	Yes	Use of benzodiazepines, grouped: not used; occasionally (or monthly); weekly or daily
co_amph	Yes	Use of cocaine or amphetamines, weekly or more frequent
other	Yes	Use weekly or more frequent of prescribed, hallucinogens, ecstasy, steroids, or other
injected	Yes	a current injector of a drug which isn't heroin
s8q7_violent_behaviour	No	violent behaviour related to drug use
s8q8_motivation_tackle_misuse	No	Motivated to tackle drug misuse? (Evidence of problems recognised? Consider whether s/he recognises or is motivated to reduce drug dependency and whether s/he is capable of change and wants to/has attended treatments/ programmes)
s8q9_drug_use_main_activity	No	drug use and obtaining drugs a major activity/occupation
s8_linked_to_risks	No	Drug s misuse issues linked to risk of serious harm, risks to the individual and other risks
s8_linked_to_behavior	No	Drugs misuse issues linked to offending behaviour

### **Group 5: Alcohol use**

<b>Variable</b>	<b>Derived?</b>	<b>Description</b>
s2q10_alcohol	No	Did alcohol act as a disinhibitor?
s9q1_current_use	No	Is current alcohol use a problem
s9q2_binge_drinking	No	Binge drinking or excessive use of alcohol in the last 6 months
s9q3_past_misuse	No	Frequency and level of alcohol misuse in the past
s9q5_motivation_tackle_misuse	No	Motivated to tackle alcohol misuse?
s9_linked_to_behavior	No	Alcohol misuse linked to offending behaviour

### Group 6: Employment/housing

Variable	Derived?	Description
unstable_accom	Yes	Is he/she in unstable accommodation
unemployed	Yes	Is he/she unemployed
benefits	Yes	Is he/she in receipt of benefits
s5_linked_to_behavior	No	Are the financial issues linked to offending behaviour

### Group 7: Mental/physical wellbeing

Variable	Derived?	Description
s10q6_psychiatric_problems	No	current psychiatric problems
s10q7_psychiatric_treatment	No	History of psychiatric treatment
s10_linked_to_behavior	No	Emotional well being linked to offending behaviour
s13q1_general_health	No	Does the offender have any physical or mental health conditions which need to be taken into account?

### Group 8: Offending history from PNC records

Variable	Derived?	Description
last_offence	Y	Time since last recorded offence in PNC
_4wks_acq	Y	Acquisitive offences in the past 4 weeks
_6mnth_acq	Y	Acquisitive offences: 4wks up to 6 months
_1yr_acq	Y	Acquisitive offences: 6 months up to 1 year
older_acq	Y	Acquisitive offence over 1 year
_4wks_nonacq	Y	Non-acquisitive offences, excluding breach offences in the past 4 weeks
_6mnth_nonacq	Y	Non-acquisitive offences, excluding breach offences: 4wks up to 6 months
_1yr_nonacq	Y	Non-acquisitive offences, excluding breach offences: 6 months up to 1 year
older_nonacq	Y	Non-acquisitive offence over 1 year
_4wks_breach	Y	Breach offences in the past 4 weeks
older_breach	Y	Breach offences over 4 weeks



## **Appendix B: Algorithm used in propensity score matching**

1. For each initiators, identify all non-initiators within the pre-defined calliper distance, set as 20% of the standard deviation of the logit of the propensity scores[1]
2. Sort the list of all (one to many) initiator to non-initiator matches, ordered by propensity score distance from smallest to greatest, sorting ties randomly
3. For each non-initiator in the list, move the match with the smallest propensity score distance to an analysis dataset.
4. For each initiator, keep up to 5 non-initiator matches.

[1] Austin PC: **Optimal caliper widths for propensity-score matching when estimating differences in means and differences in proportions in observational studies.** *Pharm Stat* , **10**:150–61.

### Appendix C Sensitivity analyses

Analysis	Group	No assessments	N	Rate, per 1,000 person year [95% CI]	Hazard ratio [95% CI]	p
Sensitivity 1: cut-off 1 week (DRP)	Initiators	839	3	4.1 [1.3, 12.8]	0.58 [0.18, 1.84]	0.358
	Non-initiators	13,970	87	7.1 [5.7, 8.7]	Ref	
Sensitivity 2: cut-off 4 weeks (DRP)	Initiators	1,944	8	4.8 [2.4, 9.6]	0.74 [0.36, 1.54]	0.425
	Non-initiators	12,852	72	6.5 [5.1, 8.1]	Ref	
Sensitivity 1: cut-off 1 week (acquisitive offence)	Initiators	839	372	0.83 [0.75, 0.92]	1.19 [1.07, 1.32]	0.001
	Non-initiators	13,970	5,750	0.69 [0.67, 0.71]	Ref	
Sensitivity 2: cut-off 4 weeks (acquisitive offence)	Initiators	1,944	741	0.76 [0.70, 0.81]	1.22 [1.13, 1.32]	<0.001
	Non-initiators	12,852	4,469	0.61 [0.59, 0.63]	Ref	