

Supplementary Table S1: Covariate definitions.

Co-variate	Source	Definition (exposed vs. unexposed)
<i>Socio-demographic</i>		
Sex	Survey	Male vs. female
Indigenous status	Survey	Indigenous vs. non-Indigenous
Education	Survey	<10 years schooling vs. ≥10 years schooling
Relationship status	Survey	Single/divorced/widowed vs. married/de facto
<i>Socio-economic</i>		
Housing stability	Survey	Unstable housing (homeless, residing in boarding house or with friends) vs. stable housing (renting, owner or residing with parents)
Employment	Survey	No employment in 6 months prior to incarceration vs. any employment
Living in poverty	Survey & MIAESR(1)	Income in 4 weeks before incarceration below poverty line(1) according to Australian standard, (accounting for dependents and marital status) vs. above the poverty line
Outstanding debts (to be settled post-release)	Survey	Yes vs. no
<i>Criminal justice</i>		
Prior adult incarceration	Survey	Yes vs. no
Juvenile detention	Survey	Yes vs. no
Illegal income	Survey	Income from illegal activities in the 4 weeks prior to imprisonment vs. no illegal income
Incarceration length	QCS records	Time spent in prison (index incarceration) ≥6 months vs. < 6 months
Drug-related incarceration	QCS records	Index incarceration for a drug-related offence vs. no drug related offence
Parole status on release	QCS records	Released to parole supervision vs freedom
<i>Substance use</i>		
Alcohol drinking	Survey	Score ≥16 on the AUDIT(2) indicating high risk and possible dependent alcohol drinking prior to index incarceration vs. score <16
Tobacco use	Survey	Score ≥4 on the ASSIST(3) indicating moderate to high tobacco use in 3 months prior to index incarceration vs. score <4

Cannabis use	Survey	Score ≥ 4 on the ASSIST(3) indicating moderate to high cannabis use in 3 months prior to index incarceration vs. score < 4
Amphetamine use	Survey	Score ≥ 4 on the ASSIST(3) indicating moderate to high amphetamine use in 3 months prior to index incarceration vs. score < 4
Opioid use	Survey	Score ≥ 4 on the ASSIST(3) indicating moderate to high opioid use in 3 months prior to index incarceration vs. score < 4
History of sharing needles/drug-injecting equipment ever	Survey	Yes vs. no
History of sharing needles/drug-injecting equipment during index incarceration	Survey	Yes vs. no
<i>Mental health</i>		
Self-harm or suicide attempts	Survey	Lifetime history - yes vs. no
Psychological distress	Survey	Score of ≥ 22 was measured using the K10(4) indicating high/very high psychological distress vs score < 22
CNS medication use	QCS health records	A proxy for current mental health disorder - yes vs. no
Intellectual disability	Survey	Score < 84.5 on the Hayes Ability Screening Index,(5) attended a special school, and/or had previously been diagnosed with an intellectual disability – yes vs. no
<i>Physical health</i>		
Hepatitis C	QCS health records or survey	Ever tested positive for Hepatitis C – yes vs. no
Sexually transmitted infection	Survey	Prior diagnosis of sexually transmitted infection – yes vs. no
Tattooed in prison	Survey	Yes vs. no
Chronic disease	Survey	Ever been diagnosed with one or more of the following: asthma, high blood pressure, high cholesterol, heart disease, diabetes, epilepsy or cancer - yes vs. no
Patient activation measure (PAM)	Survey	Score ≤ 55.1 on the on the Patient Activation Measure 2(6) identifying poor self-reported physical health as 1 standard deviation below the mean vs > 55.1
Physical health (sf36)	Survey	Score ≤ 44.8 on the Short Form 36 Health Survey version 2(6) identifying poor self-reported physical health as 1 standard deviation below the mean vs > 44.8
<i>Social/reintegration support</i>		

Visits in prison	Survey	Visits in prison from community contacts in the past 4 weeks - no vs. yes
Perceived social support	Survey	Score ≤ 18 on the Enriched Social Support Inventory (ESSI)(7) indication low perceived social support vs >18
Separation from family as a child	Survey	Self-reported removal from family as child – yes vs. no
Transitional support	Survey	Transitional support from QCS - none or only pre-release vs. pre-and post-release
<i>Passports intervention</i>	Researcher records	Control group (no intervention) vs. intervention (assistance with health services utilisation post-release)

Supplementary Table S2. Baseline characteristics according to age (N=1181).

Baseline covariate	Adolescents (n=298) Number (%)	Adults (n=883) Number (%)	p-value
<i>Socio-demographic</i>			
Sex (female)	58 (19.5)	182 (20.6)	0.670
Indigenous	94 (31.5)	193 (21.9)	0.001
<10 years schooling	143 (48.0)	364 (41.4)	0.048
Not married/defacto	212 (71.1)	551 (62.4)	0.006
<i>Socio-economic</i>			
Unstable housing	59 (19.8)	178 (20.2)	0.893
Unemployed	163 (54.7)	461 (52.2)	0.457
Living below poverty line	133 (44.8)	423 (48.0)	0.335
Debts to be settled post-release	204 (68.7)	569 (64.5)	0.190
<i>Criminal justice</i>			
Prior adult incarceration	178 (59.7)	596 (67.7)	0.013
Prior juvenile detention	95 (32.8)	219 (24.9)	0.009
Illegal income prior to index incarceration	79 (26.5)	167 (19.0)	0.006
Incarceration ≥6 months	130 (43.6)	387 (43.8)	0.951
Drug-related sentence	88 (29.7)	267 (30.2)	0.869
Parole status on release	127 (42.6)	319 (36.1)	0.046
<i>Substance use</i>			
High risk drinking	147 (50.3)	271 (31.4)	<0.001
Risky tobacco use	268 (90.2)	677 (67.7)	<0.001
Risky cannabis use	173 (58.3)	370 (41.9)	<0.001
Risky amphetamine use	127 (42.8)	324 (36.7)	0.065
Risky opioid use	53 (17.8)	198 (22.4)	0.091
Shared needles/injecting equipment ever	53 (17.9)	226 (25.6)	0.006
Shared needles/inject equip current	33 (11.1)	94 (10.7)	0.832
<i>Mental health</i>			
Self-harm/attempted suicide history	77 (25.8)	243 (27.5)	0.572
CNS medications	60 (22.6)	272 (32.6)	0.002
High/Very high K10 score	77 (25.8)	224 (25.4)	0.888
Intellectual disability	114 (38.4)	251 (29.0)	0.003
<i>Physical health</i>			
Hepatitis C positive	64 (39.3)	285 (57.2)	<0.001
STI history	79 (26.5)	242 (27.4)	0.764
Prison tattoo ever	45 (15.1)	195 (22.1)	0.010
≥1 chronic disease(s)	133 (44.6)	521 (59.0)	<0.001
Poor physical health (SF36)	14 (4.8)	142 (16.2)	<0.001
Low activation (PAM)	75 (25.4)	164 (18.7)	0.013
<i>Social/transitional support</i>			
No visits in previous 4 weeks	156 (52.4)	471 (53.3)	0.767
Low perceived social support	57 (19.2)	206 (23.4)	0.136
Separated from family as a child	66 (22.2)	164 (18.6)	0.294
No pre and post-release transitional support	272 (91.6)	754 (85.4)	0.006
<i>No Passports intervention</i>	149 (50.0)	443 (50.2)	0.960

Supplementary Table S3. Baseline covariates in reduced adjusted regression models.

Baseline covariates	Outcomes											
	Unstable housing	Unemployed	Poverty	Low perceived social support	Low activation	High psychological distress	High risk/dependent drinking	Daily tobacco smoking	Cannabis use	ATS drug use	Unsafe sex	No GP visit
Sex (female)	✓	-	-	-	-	✓	-	-	-	✓	-	✓
Indigenous	✓	-	-	-	-	✓	-	✓	-	✓	✓	-
<10 years schooling	-	✓	✓	-	-	-	-	-	✓	✓	-	-
Not married/defacto	-	✓	-	-	✓	✓	-	-	-	✓	✓	-
Unstable housing	✓	✓	-	✓	-	-	-	-	✓	✓	✓	-
Unemployed	✓	✓	✓	✓	-	✓	-	✓	✓	✓	-	✓
Living below poverty line	-	✓	✓	-	✓	✓	-	-	-	-	✓	✓
Debts to be settled post-release	-	✓	-	✓	-	✓	-	-	-	-	✓	-
Prior adult incarceration	-	-	✓	-	✓	-	-	✓	✓	✓	-	-
Prior juvenile detention	✓	-	-	✓	✓	-	-	-	-	✓	✓	✓
Illegal income prior to index incarceration	✓	-	✓	✓	-	✓	-	✓	-	-	-	-
Incarceration ≥6 months	✓	-	-	-	-	-	-	-	-	✓	-	✓
Drug-related sentence	-	✓	✓	-	-	-	✓	✓	✓	-	-	✓
Parole status on release	✓	-	✓	-	-	-	-	-	✓	✓	-	-
High risk drinking	✓	✓	✓	-	✓	-	✓	-	✓	-	-	✓
Risky tobacco use	✓	-	✓	✓	-	✓	-	✓	✓	✓	✓	-
Risky cannabis use	-	-	-	-	✓	-	-	-	✓	✓	✓	✓
Risky amphetamine use	-	✓	-	✓	-	-	✓	-	-	✓	-	✓
Risky opioid use	-	-	✓	✓	-	✓	-	✓	-	-	✓	✓
Shared needles/injecting equipment ever	-	-	✓	✓	-	✓	-	-	✓	-	✓	-
Shared needles/inject equip current incarceration	✓	✓	-	-	-	✓	-	-	✓	✓	✓	✓
Self-harm/attempted suicide history	-	-	-	✓	✓	✓	✓	-	✓	-	-	-
CNS medications	-	✓	✓	-	✓	-	-	✓	-	✓	✓	✓
High/Very high psychological distress (K10)	-	✓	✓	-	-	✓	-	✓	✓	-	-	✓
Intellectual disability	✓	✓	-	-	✓	-	-	✓	✓	✓	✓	-
Hepatitis C positive	-	✓	✓	-	✓	✓	✓	-	✓	✓	✓	✓
STI history	✓	✓	✓	-	✓	✓	-	-	✓	✓	-	-
Prison tattoo ever	✓	✓	-	✓	-	-	✓	-	-	✓	✓	✓
≥1 chronic disease(s)	✓	✓	✓	✓	-	✓	-	-	✓	-	✓	✓
Poor physical health (SF36)	-	✓	-	-	✓	✓	-	✓	-	✓	✓	✓
Low activation (PAM)	-	✓	✓	✓	✓	-	✓	-	-	-	✓	✓
No visits in previous 4 weeks	✓	-	-	✓	-	-	✓	-	-	✓	✓	-
Low perceived social support	-	✓	✓	✓	✓	✓	✓	-	-	-	✓	✓
Taken from family as a child	-	-	-	-	-	-	✓	-	-	-	-	-
No pre and post-release reintegration support	✓	-	-	-	✓	✓	✓	-	✓	✓	-	-
No Passports intervention	-	-	-	-	✓	✓	-	✓	-	✓	✓	✓

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