Data source choice matters for ascertaining mental illness, substance use disorder, and dual diagnosis prevalence among people in custody.

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Acknowledgement of Country

- *I acknowledge the Jagera and the Turrbal people as the Traditional Custodians of the lands on which we are located today. I pay my respects to Jagera and Turrbal Elders past, present. I want to extend that respect to all Aboriginal and Torres Strait Islander people here today, and to those who participated in the current study*

Aims/Overview

- In a sample of both non-Indigenous and Aboriginal and Torres Strait Islander people in prison, we aimed to:
    1. assess the concordance between three sources of data on mental illness, substance use disorder, and dual diagnoses
    2. examine the potential for multiple data sources to improve estimates of mental illness, substance use disorder, and dual diagnosis prevalences in prisons

- Data sources:
    - Survey responses
    - Prison medical records
    - Inpatient and emergency department hospital data

Why?

- Why people in custody?
  - Disproportionate rates of mental illness and substance use
  - Higher rates of health service use after release
  - Frequently underdiagnosed and undertreated

- Why dual diagnosis?
  - Different criminal and health backgrounds and trajectories
  - Growing cohort
  - Unique health needs

- Why do we want accurate prevalence estimates?
  - Identify health needs
  - Allocate resources
  - Release planning
  - Inform health services in prison and post-release

What's currently being done?

- What's currently being done?
  - AIHW – "The Health of Australia's Prisoners" reports
  - ABS – "National Study of Mental Health and Wellbeing"
  - Academic papers/reports

Australian Government
Australian Institute of Health and Welfare

The health of people in Australia's prisons
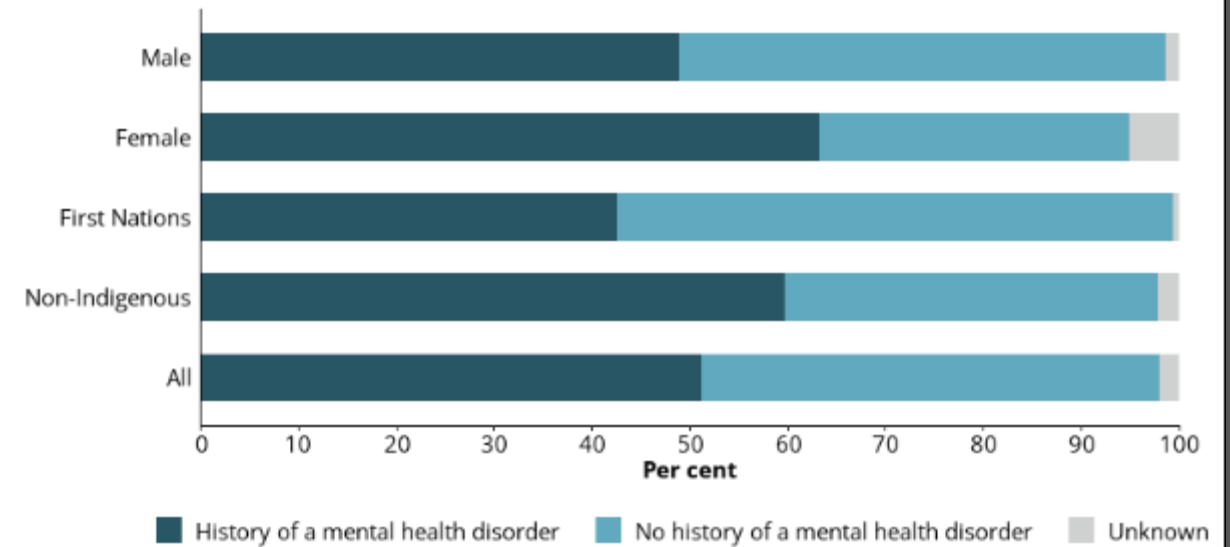
2022

Mental health condition

Prison entrants reporting a mental health or behavioural condition

During the data collection period, prison entrants were asked if they:

- had ever been told they had a mental health or behavioural condition (including drug and alcohol abuse) by a doctor, psychiatrist, psychologist or nurse
- were currently taking medication for a mental health condition, including those relating to alcohol and other drug use.

Figure 5.1: Prison entrants who had ever been told they had a mental health condition, by sex and Indigenous identity, 2022

Legend: History of a mental health disorder · No history of a mental health disorder · Unknown

Notes

1. Proportions are representative of this data collection only, and not the entire prison population.
2. Excludes Victoria, which did not provide data for this item.

Source: Entrants form, 2022 NPHDC.

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National Study of Mental Health and Wellbeing

Summary statistics on key mental health issues including national and state and territory estimates of prevalence of mental disorders

Reference period 2020-2022

Released 5/10/2023

Key statistics

- 42.9% of people aged 16–85
- 21.5% of people had a 12-mo people aged 16–85 years)
- 38.8% of people aged 16–24

Australian Bureau of Statistics

Table 4 Persons 16–85 years, 12-month mental disorder(a) groups by selected household and population characteristics: Proportion

National Study of Mental Health and Wellbeing: Summary Results, 2020–2022

	Anxiety disorders	Affective disorders	Substance Use disorders	Any 12-month mental disorder(b)	No 12-month mental disorder	Total
			Proportion (%)			
Married/De facto	13.0	5.0	2.0	16.2	83.8	100.0
Separated/Divorced/Widowed	17.6	9.5	2.1	21.9	77.8	100.0
Never married	26.6	12.1	6.6	33.2	66.8	100.0
Total	**17.2**	**7.5**	**3.3**	**21.5**	**78.5**	**100.0**
Without a permanent place to live						
Has ever been without a permanent place to live(w)	31.6	16.9	7.0	39.1	60.8	100.0
Has not ever been without a permanent place to live	15.6	6.5	2.8	19.5	80.5	100.0
Total(j)	**17.2**	**7.5**	**3.3**	**21.5**	**78.5**	**100.0**
Incarceration						
Has ever been incarcerated	20.1	11.6	7.6	27.5	70.8	100.0
Has not ever been incarcerated	17.1	7.5	3.2	21.3	78.7	100.0
Total(j)	**17.2**	**7.5**	**3.3**	**21.5**	**78.5**	**100.0**
Australian Defence Force service						
Has ever served(x)	13.6	7.7	2.4	17.4	82.0	100.0
Has never served	17.3	7.5	3.3	21.6	78.4	100.0
Total	**17.2**	**7.5**	**3.3**	**21.5**	**78.5**	**100.0**

What's currently being done?

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  - AIHW – "The Health of Australia's Prisoners" reports
  - ABS – "National Study of Mental Health and Wellbeing"
  - Academic papers/reports
    - Butler et al. (2006; 2011) (diagnostic interviews)
    - Browne et al. (2023) (self-reports)
    - Stewart et al. (2020) (administrative data)

Data source issues

| Data source	Limitations	Advantages

Surveys (self-report/diagnostic interviews)	• Cost
	• Population coverage infeasible
	• Lay interviewers may over-estimate true prevalence
	• Possible inaccuracies due to:
	   • Desirability bias
	   • Cultural factors
	   • Deliberate concealment/minimisation
	   • Memory
		• Questions can cover lifetime diagnoses
		• No restrictions on geographic location, timing, and source of diagnosis

In-prison medical records	• Limited to periods of incarceration • Not often amenable to efficient data extraction	• Diagnosed by health/medical professionals
Administrative data	• Limited to departments/organisations that collect and share information • Restricted to what data organisations routinely collect • Restricted to the timeframe of collection	• Routinely collected • Data extraction relatively quick • Whole populations

Current study

- Health After Release from Prison (HARP)
  - Face-to-face interviews with people within 6 weeks of release from Qld and WA prisons
  - >2,700 participants
  - Survey data linked with prison medical records and corrections and health administrative datasets

- Sample period
  - Queensland: August 2008 – July 2010
  - Western Australia: May 2013 – August 2016

Diagnoses

- Constructed exclusive measures of mental illness only, substance use disorder only, or dual diagnosis using:
  - Baseline survey:
    - "Have you ever been told by a doctor, psychologist or psychiatrist that you have a mental illness?"
    - "If yes, what type/s of mental illness have you ever been diagnosed with?"
  - Prison medical records:
    - ICPC-2 codes
  - Inpatient/emergency department:
    - ICD-10-AM codes

Data source coverage
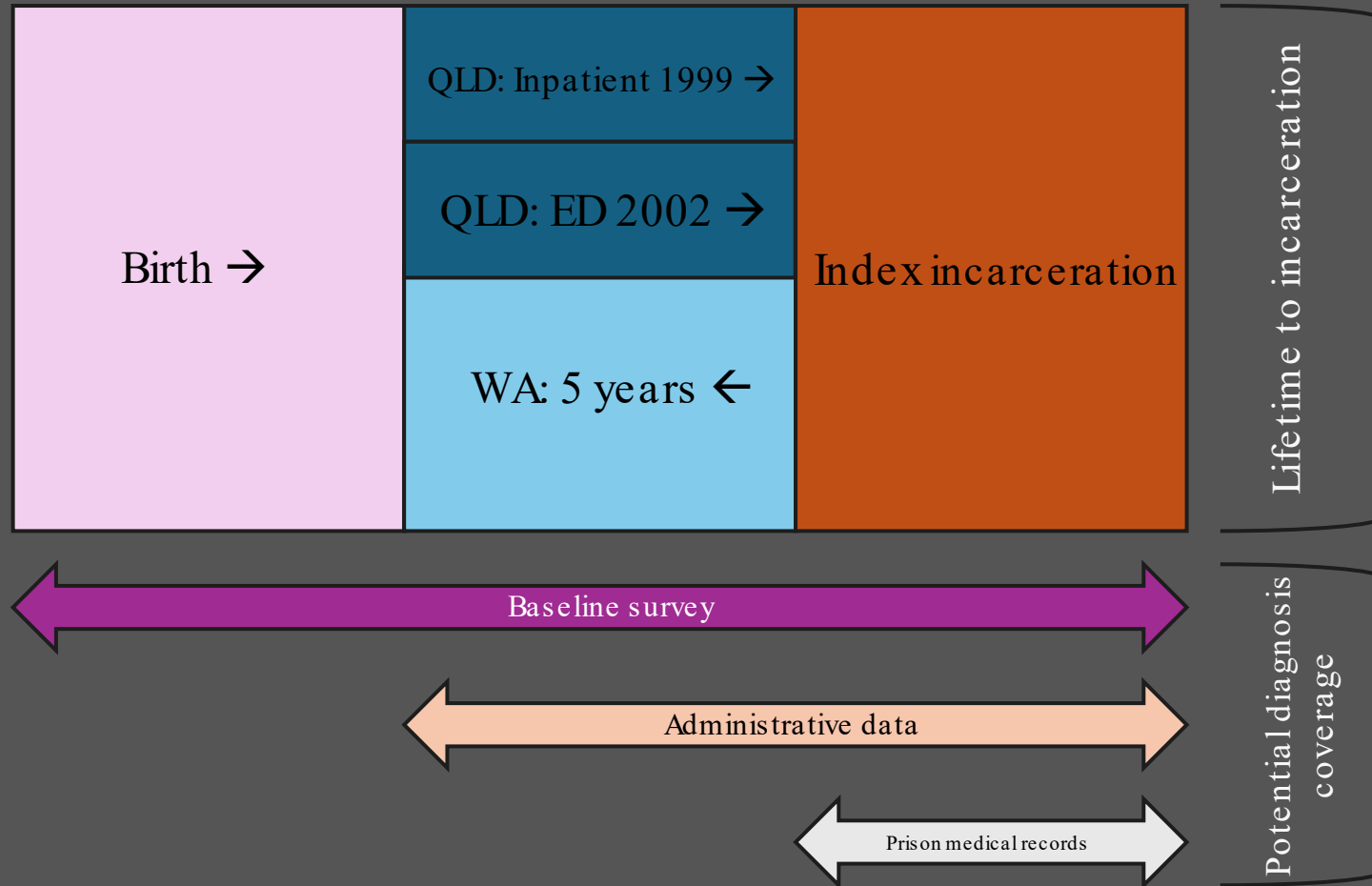
Sample

Baseline characteristics of the cohort.		
	n	%
Non-Indigenous (n=1667)		
Male	1392	83.50
State		
QLD	979	58.73
WA	688	41.27
	Mean	SD
Age	32.19	10.94
	n	%
Aboriginal and Torres Strait Islander (n=978)		
Male	732	74.85
State		
QLD	336	34.36
WA	642	65.64
	Mean	SD
Age	29.12	7.93

Analyses

- Prevalence estimates
  - Proportion of sample with diagnosis
    - Complex survey data – stratified by state, clustered by prison
    - Sample weighted based national prisoner population statistics
    - Bias-corrected bootstrapped estimates

- Data source concordance/agreement
  - Overlap of data sources
  - Inter-rater reliability coefficients

- All analyses run separately for Aboriginal and Torres Strait Islander participants and non-Indigenous participants

Results

Prevalence estimates – Mental illness only
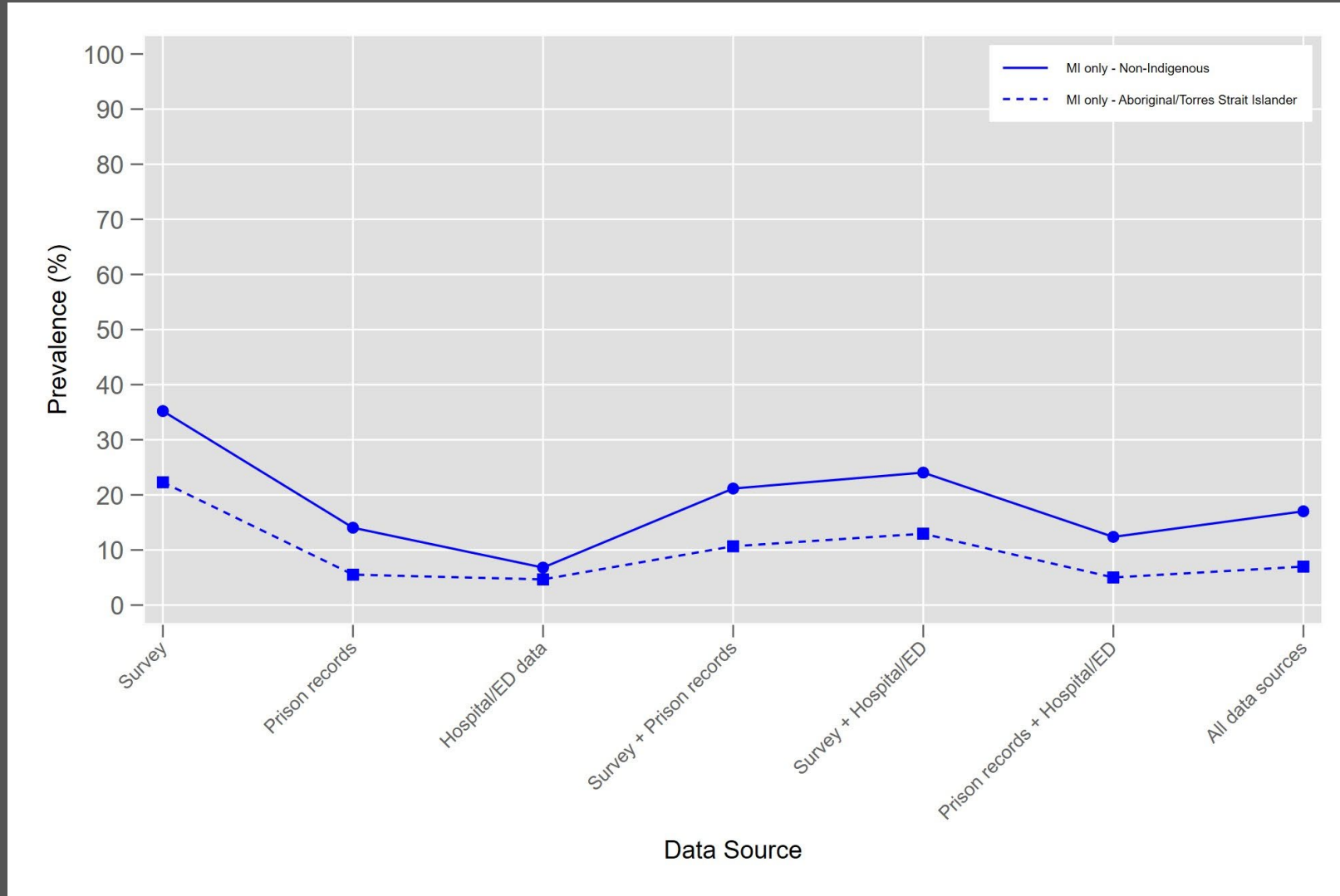
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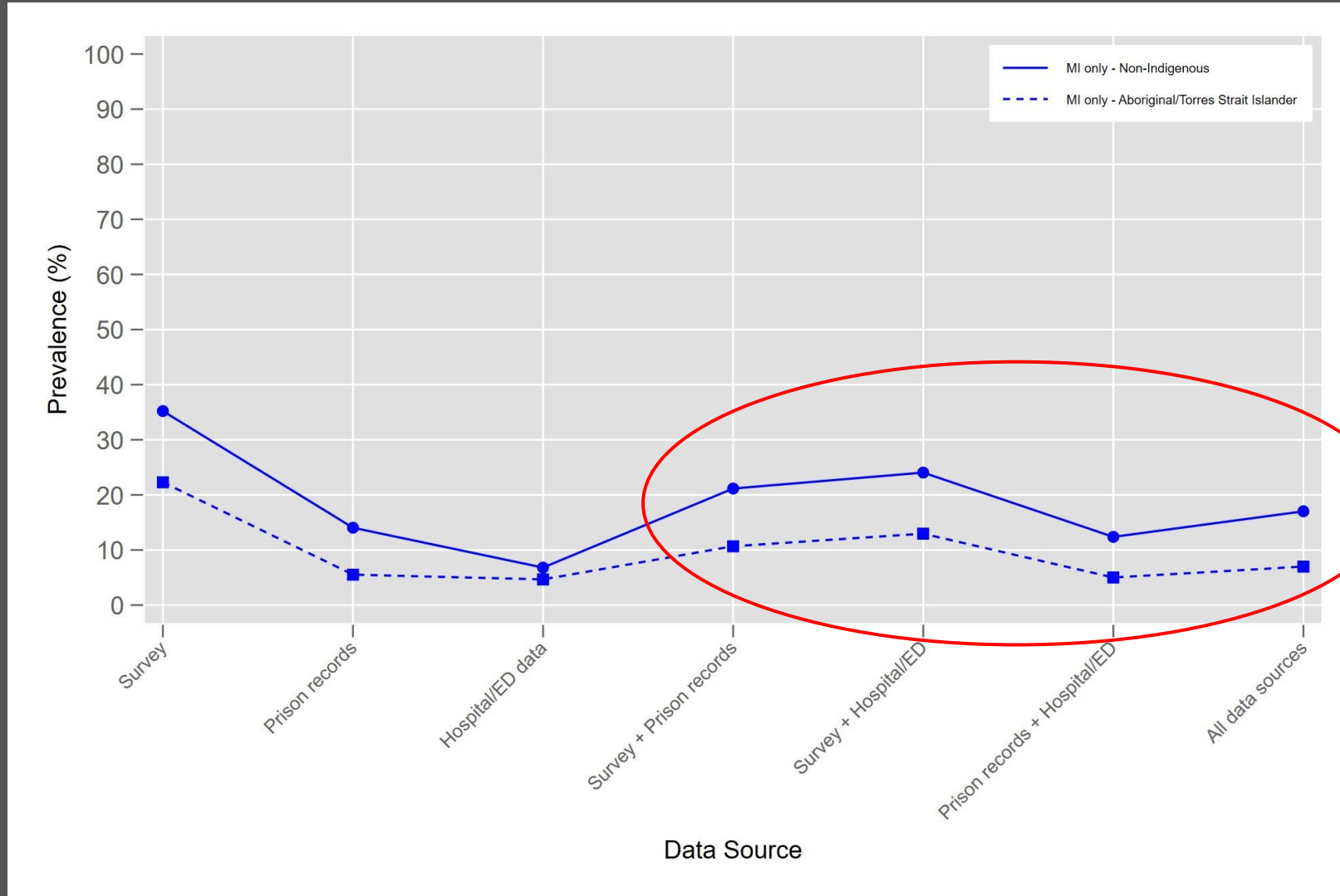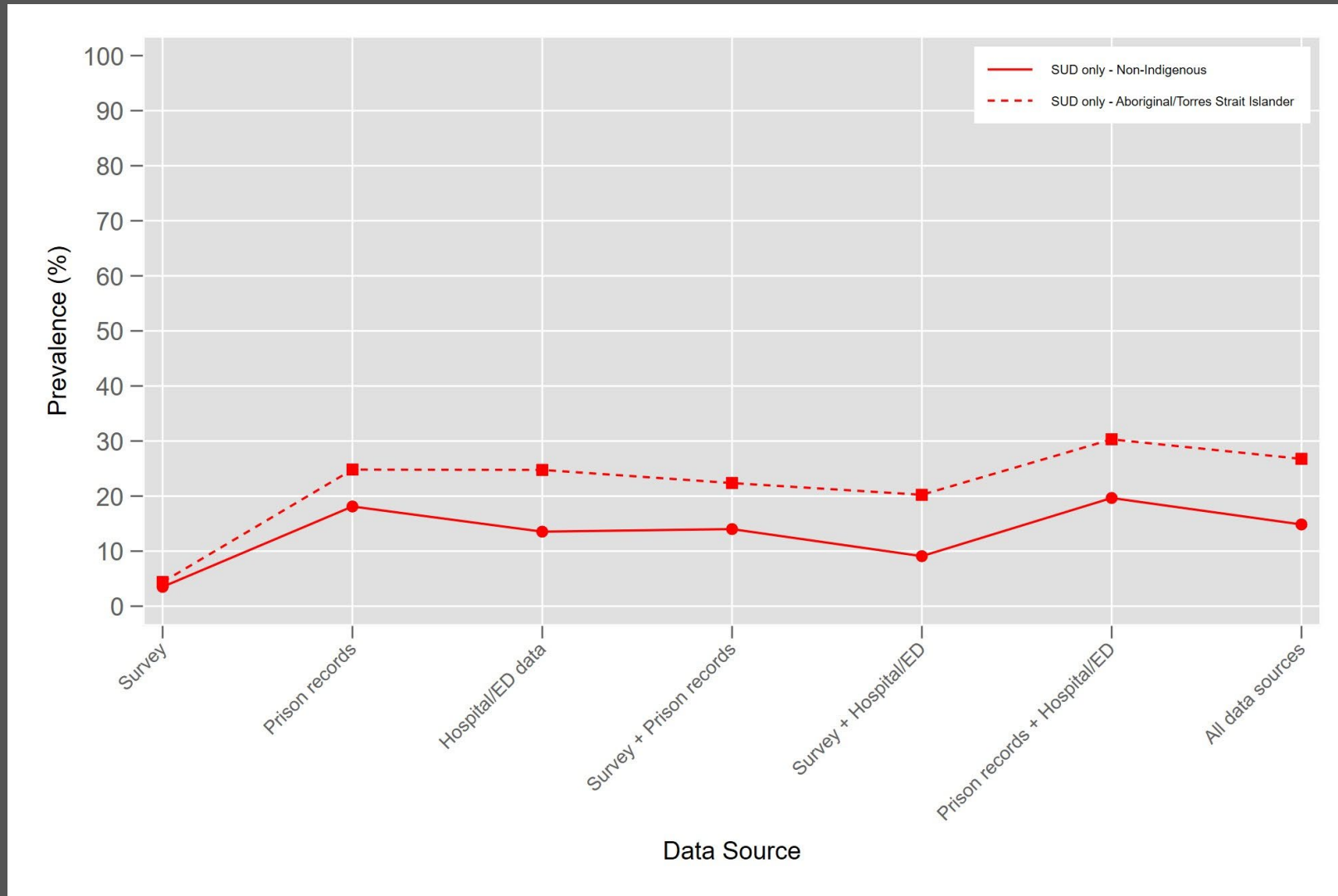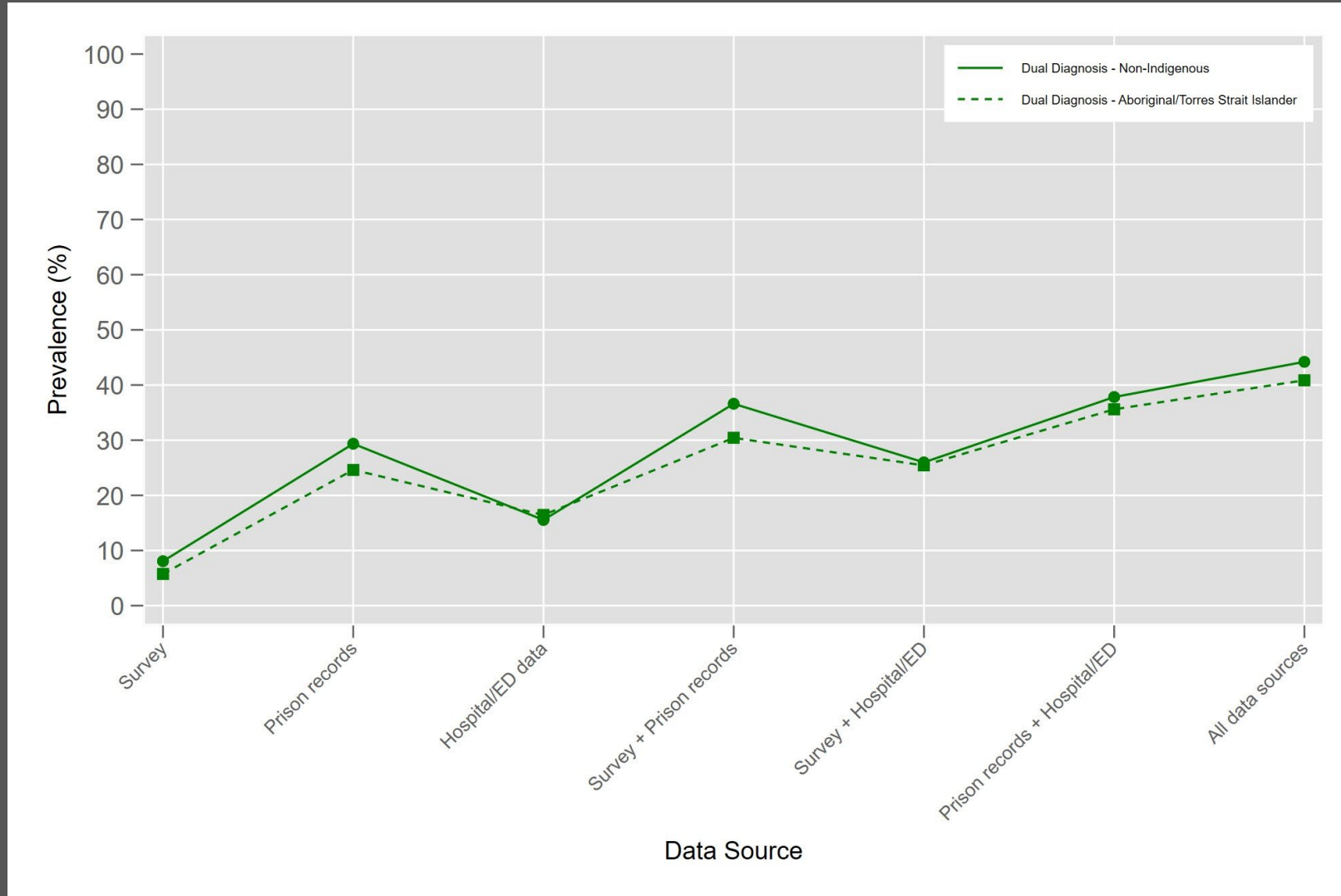
Prevalence estimates – Substance use disorder only

Prevalence estimates – Dual diagnosis

Results – Prevalence estimates

Table 2. Prevalence of mental illness, substance use disorder, and dual diagnosis using multiple data sources for Aboriginal and Torres Strait Islander and Non-Indigenous samples											
		Survey			Prison medical records			Hospital/ED			All data sources	
	n	% [95% CI]	z-value (p)	n	% [95% CI]	z-value (p)	n	% [95% CI]	z-value (p)	n	% [95% CI]
Non-Indigenous											
No diagnosis	894	53.2 [46.2, 57.0]	6.1 (<.0001)	655	38.5 [22.8, 53.7]	3.1 (.002)	1054	64.1 [59.9, 71.0]	11.3 (<.0001)	399	23.9 [15.7, 32.4]
Mental illness only	580	35.2 [31.5, 43.3]	5.9 (<.0001)	231	14.0 [11.3, 20.3]	-1.4 (.158)	119	6.8 [5.6, 8.5]	-2.8 (.005)	287	17.0 [12.0, 24.5]
Substance use disorder only	63	3.5 [1.5, 4.6]	-6.2 (<.0001)	292	18.1 [12.1, 22.9]	2.4 (.018)	233	13.5 [9.2, 15.4]	-1.0 (.336)	259	14.8 [9.6, 18.1]
Dual diagnosis	130	8.1 [5.4, 9.8]	-6.8 (<.0001)	489	29.4 [17.8, 41.6]	-6.9 (<.0001)	261	15.5 [12.4, 18.0]	-6.0 (<.0001)	722	44.2 [33.2, 54.7
Aboriginal and Torres Strait Islander											
No diagnosis	638	67.6 [60.1, 74.7]	6.8 (<.0001)	307	45.0 [27.6, 66.2]	3.4 (.001)	480	54.1 [45.2, 63.2]	6.4 (<.0001)	166	25.4 [15.9, 36.8]
Mental illness only	244	22.3 [16.7, 31.5]	6.1 (<.0001)	83	5.5 [2.8, 9.9]	-0.8 (.444)	55	4.7 [2.4, 7.9]	-1.4 (.164)	66	7.0 [4.3, 11.5]
Substance use disorder only	39	4.4 [2.00, 6.81]	-5.2 (<.0001)	295	24.8 [14.8, 34.2]	-0.3 (.733)	234	24.8 [20.4, 31.1]	-0.7 (.461)	281	26.8 [18.9, 33.5]
Dual diagnosis	57	5.8 [3.0, 8.2]	-8.0 (<.0001)	293	24.6 [14.6, 31.9]	-6.9 (<.0001)	209	16.5 [10.4, 21.9]	-9.60 (<.0001)	465	40.9 [30.2, 48.2]
Note. Survey = Self-report of ever being diagnosed by a medical professional. Hospital/ED = Statewide hospital and emergency department linked administrative data. % = Bootstrapped prevalence estimates (10,000 repetitions) of subsample diagnosed using each data source and sample weighted by Australian prisoner population statistics, represented by percentage. CI = Bootstrapped bias-corrected confidence intervals. z-value = Z test comparing prevalence estimate from individual data source to prevalence estimate obtained using all data sources combined. Non-Indigenous n = 1,667. Aboriginal and Torres Strait Islander n = 978.											

Results – Prevalence estimates

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Results – Prevalence estimates

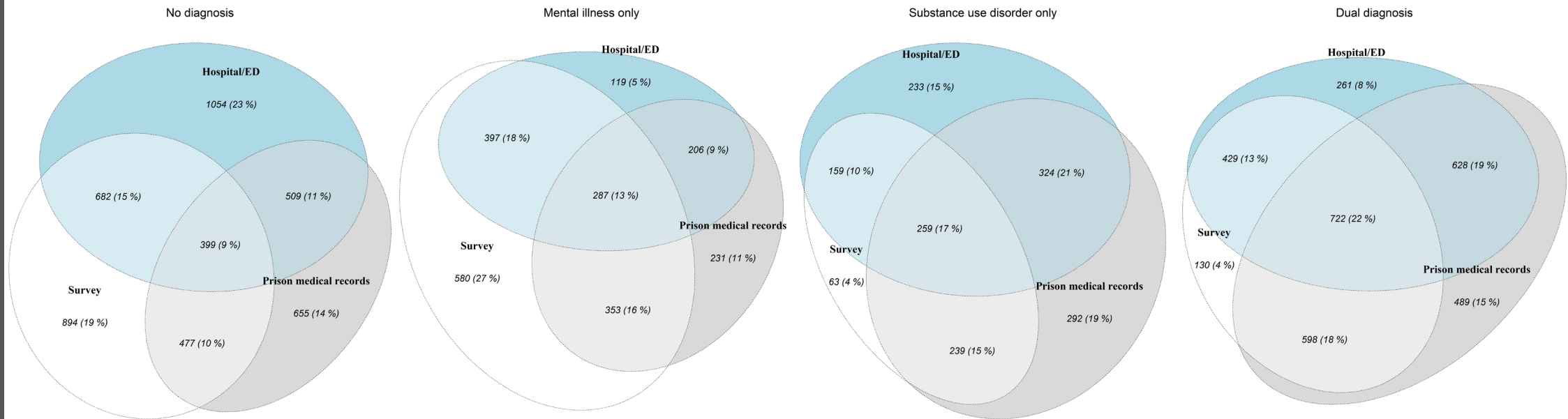| Table 2. Prevalence of mental illness, substance use disorder, and dual diagnosis using multiple data sources for Aboriginal and Torres Strait Islander and Non-Indigenous samples											
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Non-Indigenous n = 1,667. Aboriginal and Torres Strait Islander n = 978.

Results - Overlap/agreement

Figure 1. Overlap between data sources for diagnoses of mental illness, substance use disorder, and dual diagnosis: Non-Indigenous sample.

Note. Hospital/ED = Statewide hospital and emergency department linked administrative data. Survey = Self-report of ever being diagnosed by a medical professional.

Results - Overlap/agreement

Figure 2. Overlap between data sources for diagnoses of mental illness, substance use disorder, and dual diagnosis: Aboriginal and Torres Strait Islander sample.

No diagnosis

Hospital/ED
480 (20 %)
373 (16 %)
187 (8 %)
166 (7 %)
Prison medical records
Survey
638 (27 %)
250 (10 %)
307 (13 %)

Mental illness only

Hospital/ED
55 (7 %)
124 (17 %)
58 (8 %)
66 (9 %)
Prison medical records
Survey
244 (33 %)
114 (15 %)
83 (11 %)

Substance use disorder only

Hospital/ED
234 (15 %)
183 (11 %)
313 (19 %)
281 (17 %)
Survey
39 (2 %)
Prison medical records
295 (18 %)
265 (16 %)

Dual diagnosis

Hospital/ED
209 (10 %)
298 (14 %)
420 (20 %)
465 (22 %)
Survey
57 (3 %)
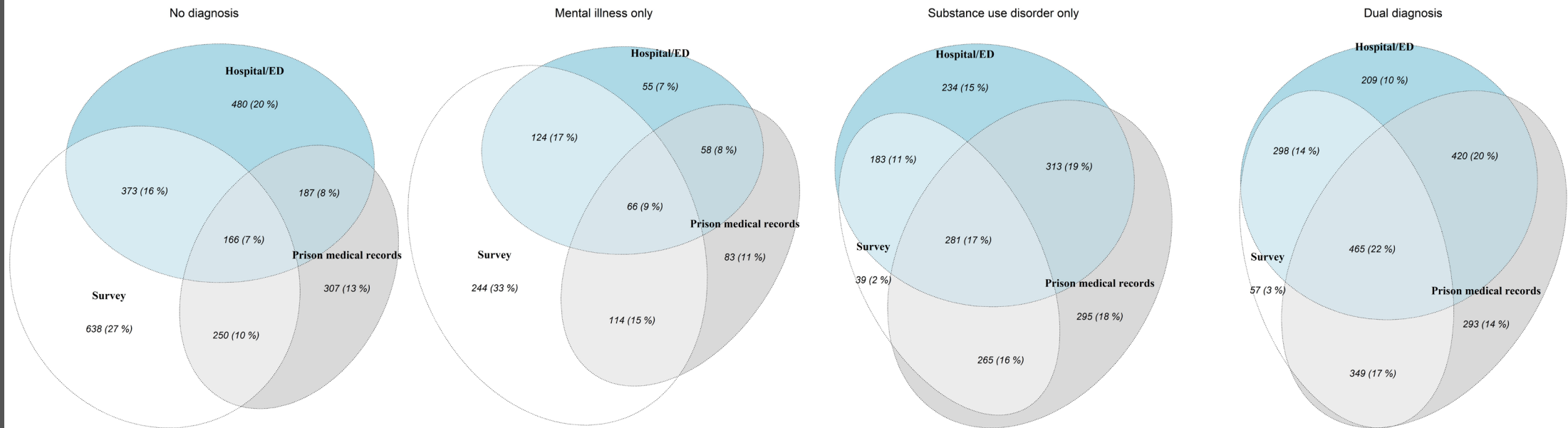Prison medical records
293 (14 %)
349 (17 %)

Note. Hospital/ED = Statewide hospital and emergency department linked administrative data. Survey = Self-report of ever being diagnosed by a medical professional.

Results - Overlap/agreement

Table 3. Agreement between survey, prison medical records, and combined hospital and emergency department sources for mental illness, substance use disorder, and dual diagnoses with Aboriginal and Torres Strait Islander and Non-Indigenous samples									
	Percent agreement			Cohen's kappa			PABAK		
	Coefficient	SE	p	Coefficient	SE	p	Coefficient	SE	p
Non-Indigenous									
No diagnosis	.63	0.01	<.0001	.27	0.02	<.0001	.25	0.02	<.0001
Mental illness only	.72	0.01	<.0001	.13	0.01	<.0001	.45	0.02	<.0001
Substance use disorder only	.80	0.01	<.0001	.06	0.01	<.0001	.60	0.01	<.0001
Dual diagnosis	.76	0.01	<.0001	.19	0.02	<.0001	.52	0.02	<.0001
Aboriginal and Torres Strait Islander									
No diagnosis	.58	0.01	<.0001	.19	0.02	<.0001	.16	0.02	<.0001
Mental illness only	.80	0.01	<.0001	.14	0.02	<.0001	.60	0.02	<.0001
Substance use disorder only	.69	0.01	<.0001	.03	0.02	.0538	.37	0.02	<.0001
Dual diagnosis	.73	0.01	<.0001	.16	0.02	<.0001	.46	0.02	<.0001
Note. PABAK = Prevalence and bias-adjusted kappa. Non-Indigenous n = 1,667. Aboriginal and Torres Strait Islander n = 978									

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Coefficient	Agreement interpretation
<0.00	Poor
0.00 - .20	Slight
.21 - .40	Fair
.41 - .60	Moderate
.61 - .80	Substantial
.81 - 1.00	Almost perfect

Summary of results

- Prevalence estimates vary greatly depending on data source
- When compared to self-reports, using all data sources:
  - Substantially increases substance use disorder diagnosis-only, and dual diagnosis prevalences
  - Substantially decreases no diagnoses and mental illness-only diagnosis prevalences
- Moderate agreement between data sources for most diagnoses
- Patterns of results are generally consistent across non-Indigenous and Aboriginal and Torres Strait Islander samples

Implications

- Relying on any one source of data may lead to inaccurate prevalence estimates
- Current estimates using self-reports may be significantly underestimating true lifetime prevalence of SUD-only and dual diagnoses
- Implications for in-prison, transitional, and community health service resources

Limitations

- Those with severe mental illnesses excluded
- Limited to two states
- Inpatient and emergency department data represents acute/severe presentations
- No data from other community health services
- Western conceptualisations of MI, SUD and DD may not be as relevant/meaningful for Aboriginal and Torres Strait Islander cohorts
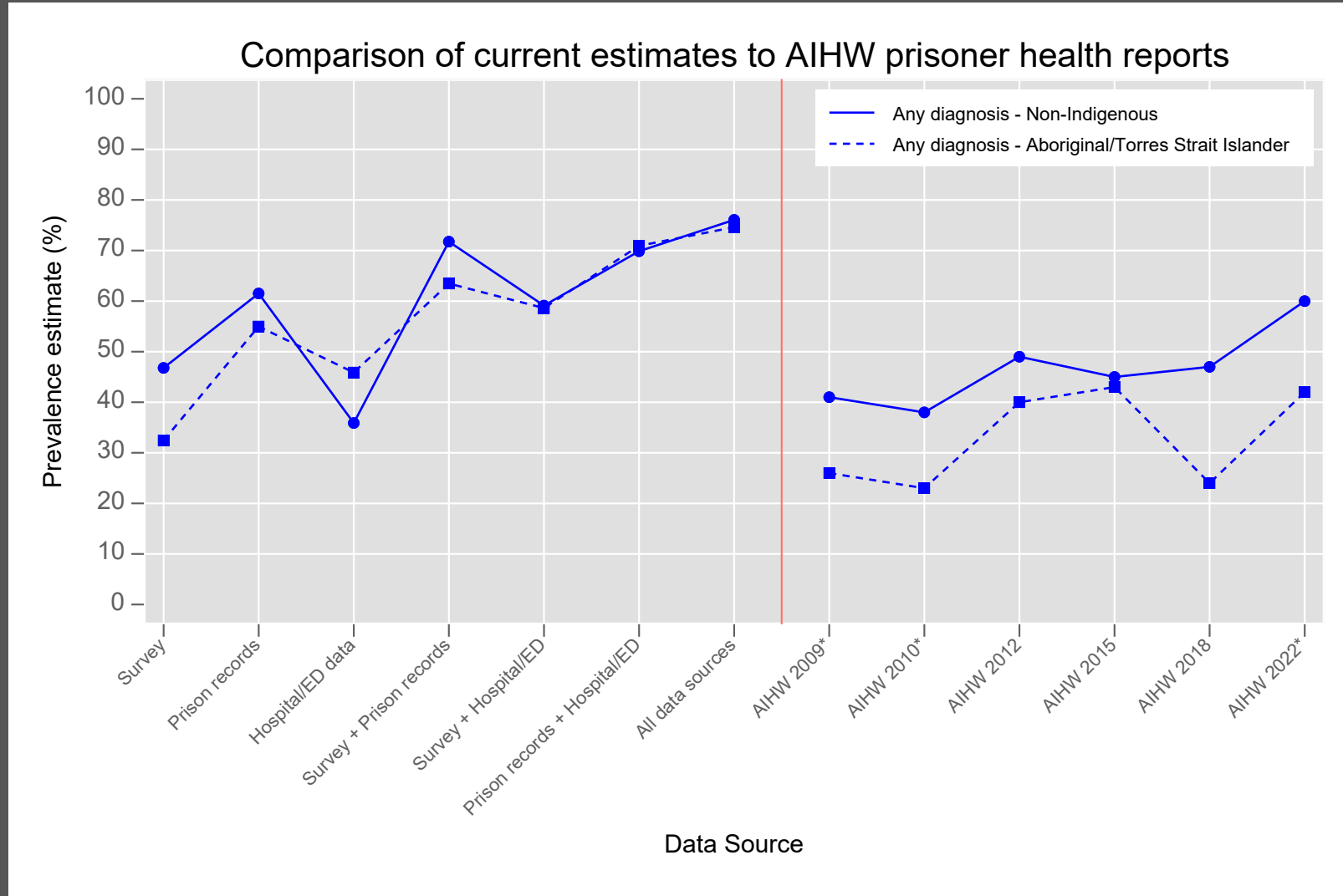
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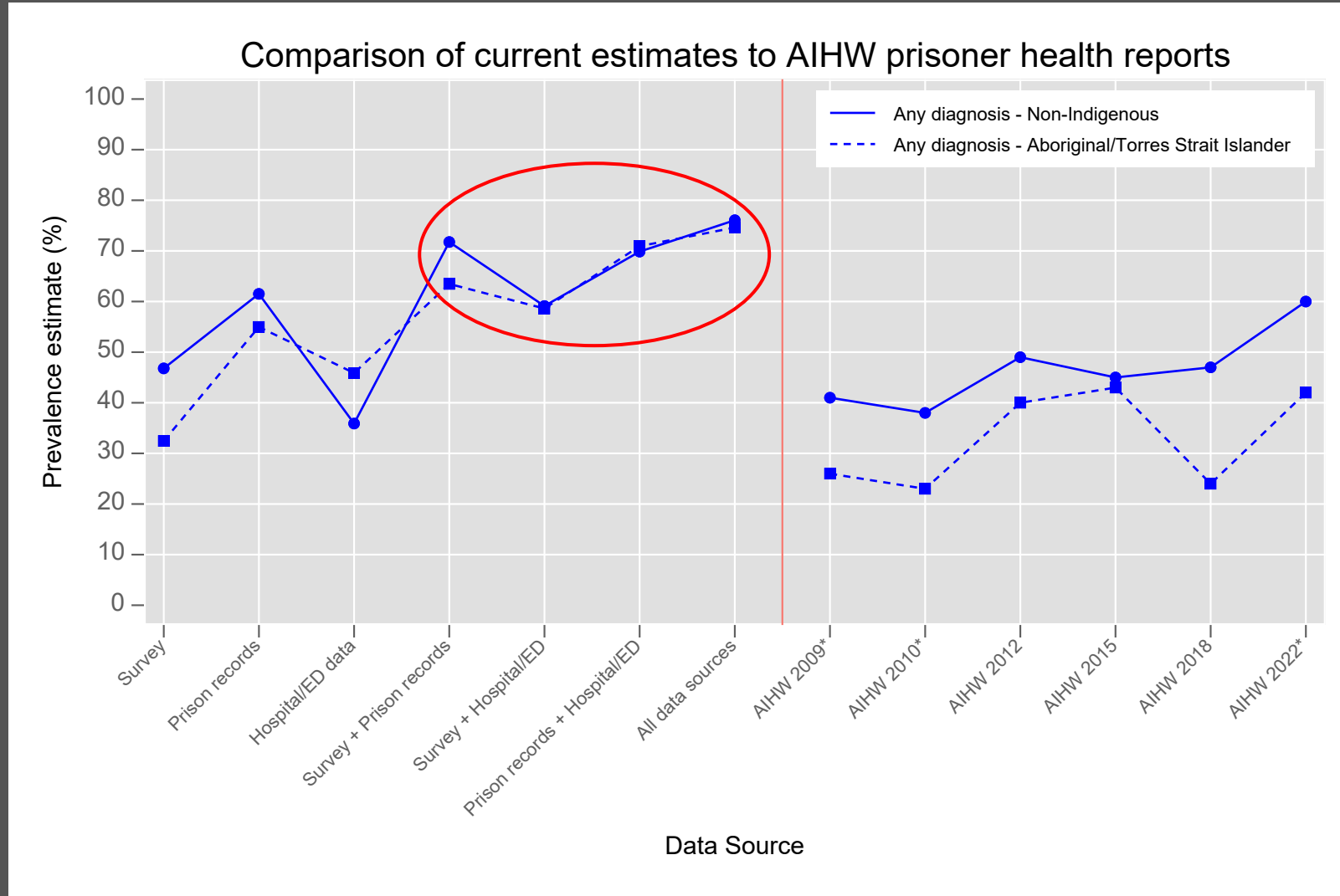
Contact

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Implications

Comparison of current estimates to AIHW prisoner health reports

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Im p lic a t io n s

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