

Estimating the burden of Hepatitis B in Aboriginal and Torres Strait Islander peoples

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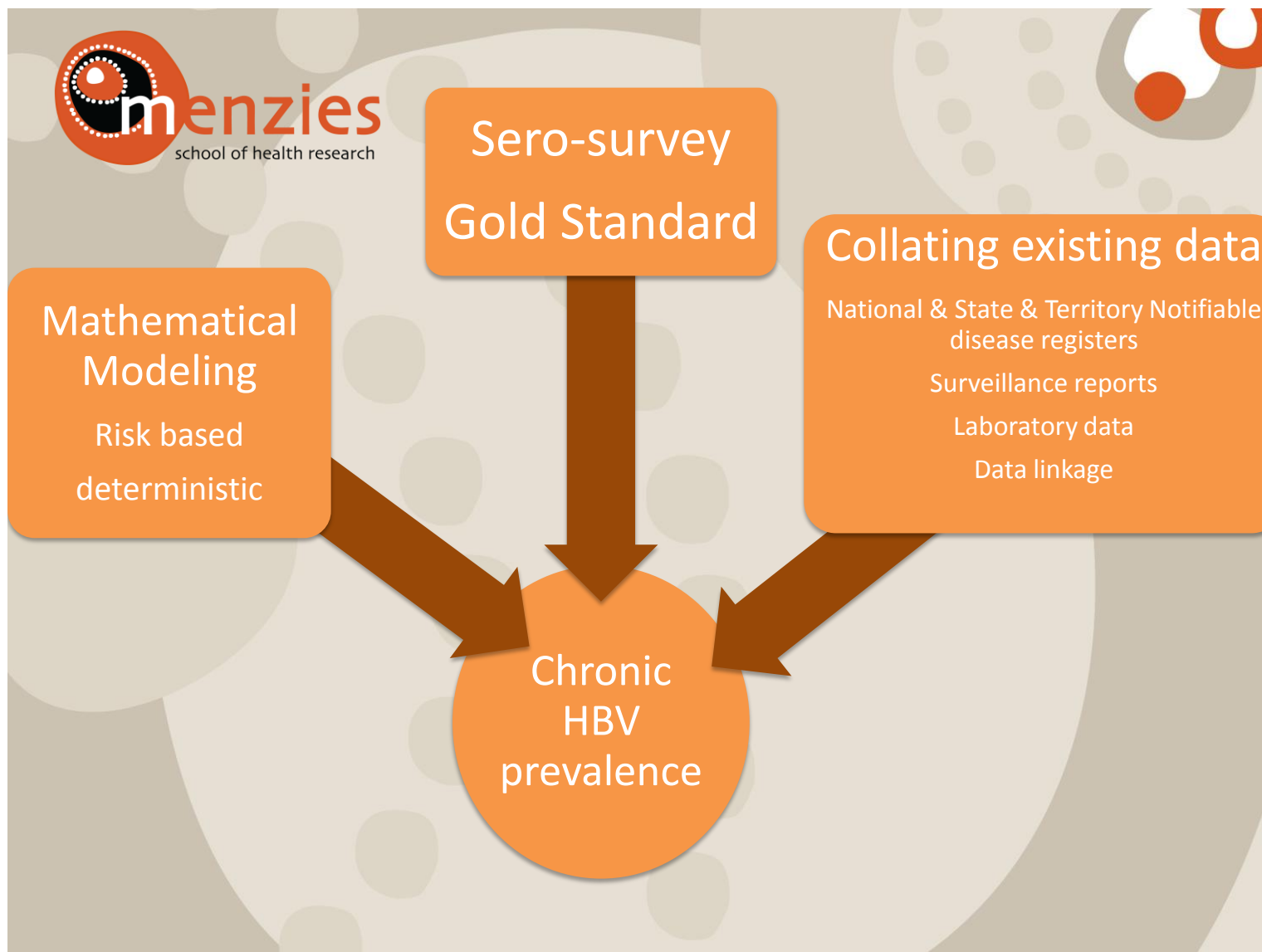




- ☐ Disclosures
- ☐ Unrestricted educational grant from Gilead Sciences

What do we mean by burden.....

- ☐ Prevalence of Hepatitis B infection
 - ☐ Chronic, acute
 - ☐ Pre and post universal vaccination
- ☐ Burden
 - ☐ Morbidity – genotype likely to be important
 - ☐ Mortality – cirrhosis, hepatocellular carcinoma
 - ☐ Social impact on individuals
 - ☐ Impact on communities
 - ☐ Stigma & psychological burden





Indigenous reference group



What do Aboriginal and Torres Strait Islander people think?

- ❑ *“Only your blood can tell the true story”*
- ❑ *“we have so much blood taken all the time – we want you to use the results you have before asking us for more blood”*
- ❑ *“we want to know the full story about this Hep B before we agree to give more blood – tell us the true story”*

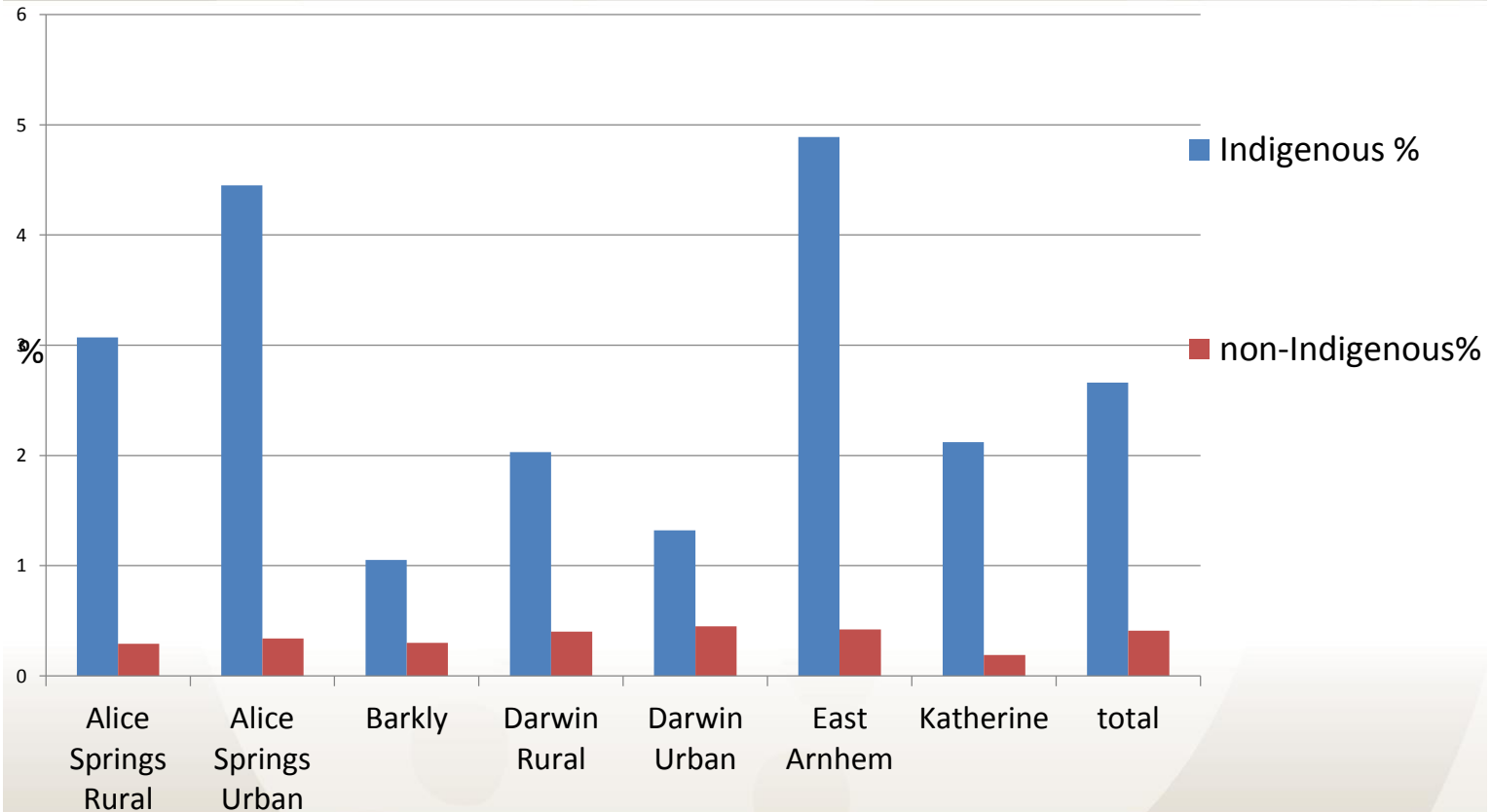
- ❑ ASHM mapping data Indigenous Australians make up 9.3% of those living with chronic hepatitis B in Australia
- ❑ Graham et al

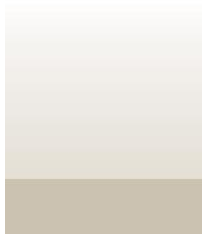
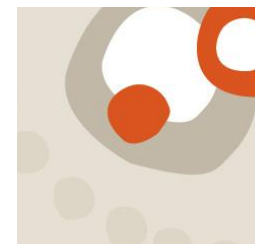
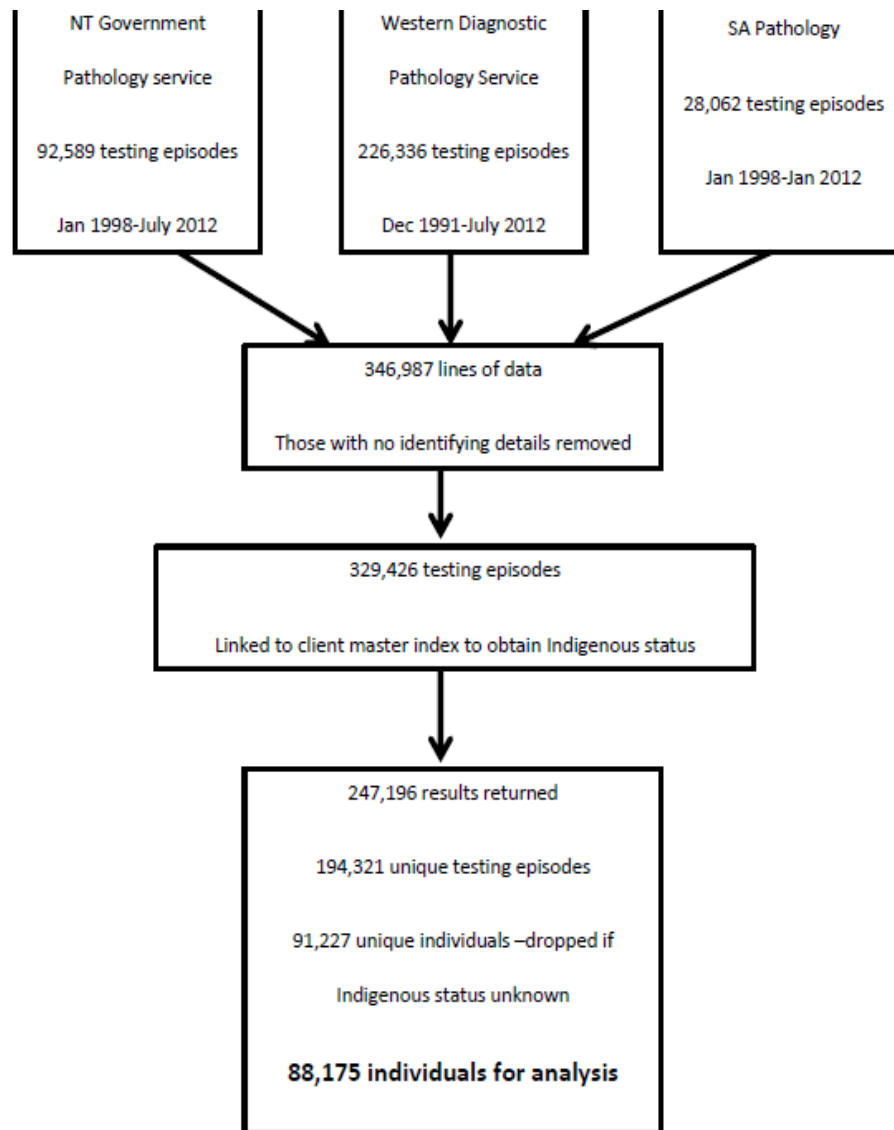
Table 2.6: Meta-analysis data to estimate the prevalence of CHB in Indigenous adults/pregnant women in Australia before and after universal vaccination. Data from Graham et al. [53]

	Pooled HBsAg prevalence in adults/pregnant women		
	Overall (95% CI)	Indigenous (95% CI)	Non-Indigenous (95% CI)
Pre-2000	6.47% (4.56-8.39)	16.72% (7.38-26.02)	0.36% (0.14-0.86)
Post-2000	2.25% (1.26-3.23)	3.96% (3.15-4.77)	0.9% (0.53-1.28)

Author and year published	Study population	Study period	Study design	Indigenous status	Sample size	HBsAg prevalence
Barrett 1972	Children	1968	Sero-survey	Indigenous	114	13.3
	Adults				60	5.0
Gardner 1992	School children Teachers	1989	Cross sectional school survey	Low risk	556	0.36
				Indigenous	439	8.2
				Other	109	1.8
				teachers	209	1.4
Wood 2005	General age 1-84 years	1996-1999	Sero-survey	unknown	161	0.8
Schultz 2008	Pregnant women	2003 & 2005	Combination of above 2 audits	All	2194	2.18
				Indigenous	973	3.7
				Non-Indigenous	1221	0.9
Wood 2008	Pregnant women	2002-2004	Retrospective data linkage	All	1061	3.1
				Indigenous	534	4.1
				Non-Indigenous	527	1.2
Carroll 2010	Adults	2008	Retrospective clinical audit	Indigenous	76	12
Dent 2010	Adolescents	2005	Prospective cross sectional survey	Indigenous	37	11
Liu 2012	Pregnant women	2005-2010	Data linkage	All	10797	1.3
				Indigenous	5678	2.4

Prevalence of Hep B by region and Indigenous status 2012 (CDC data)





- ☐ 2007-2011 inclusive
- ☐ 35,633 individuals
- ☐ De-identified – unique study number
- ☐ Latest result for HBsAg, anti-HBs, anti-HBc with date of test
- ☐ DOB, sex, Indigenous status, community of residence

Age group	Indigenous						Non-Indigenous					
	Male			Female			Male			Female		
	tested	ERP	Proportion of ERP tested (%)	tested	ERP	Proportion of ERP tested (%)	tested	ERP	Proportion of ERP tested (%)	tested	ERP	Proportion of ERP tested (%)
Under 10 years	78	7924	1.0	71	7326	1.0	82	10678	0.8	75	10139	0.7
10-19 years	996	7290	13.7	1542	6829	22.6	493	9973	4.9	863	8571	10.1
20-29 years	1880	6452	29.1	2233	6423	34.8	1994	15562	12.8	4867	12871	37.8
30-39 years	1451	4869	29.8	1400	5015	28.1	2195	14422	15.2	4146	13108	31.6
40-49 years	1110	3873	28.7	1105	4135	26.7	1723	13581	12.7	1513	12104	12.5
50-59 years	605	2498	24.2	715	2602	27.5	1209	11989	10.1	1077	10500	10.3
60-69 years	270	1079	25.0	312	1279	24.4	592	7596	7.8	385	5515	7.0
Over 70 years	104	494	21.1	146	762	19.2	210	3203	6.6	150	2630	5.7
Overall	6494	34479	18.8	7524	34371	21.2	8498	87004	9.8	13076	75438	17.3

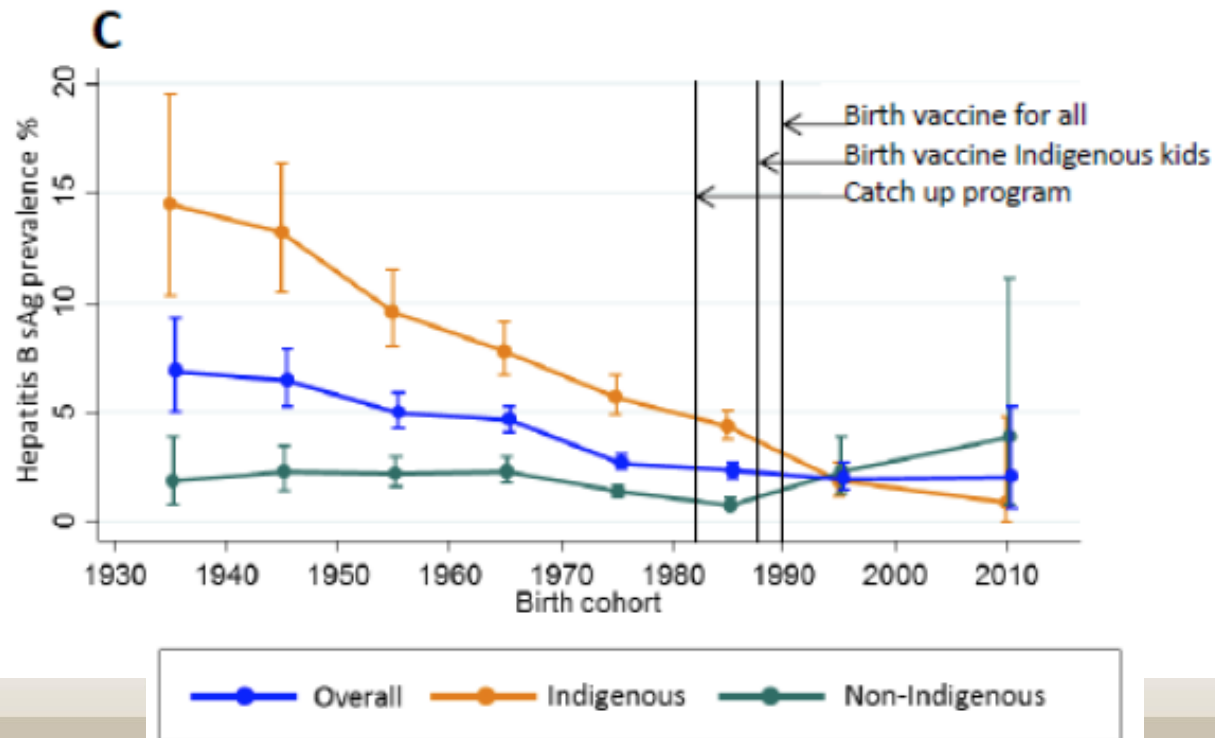
Headline results

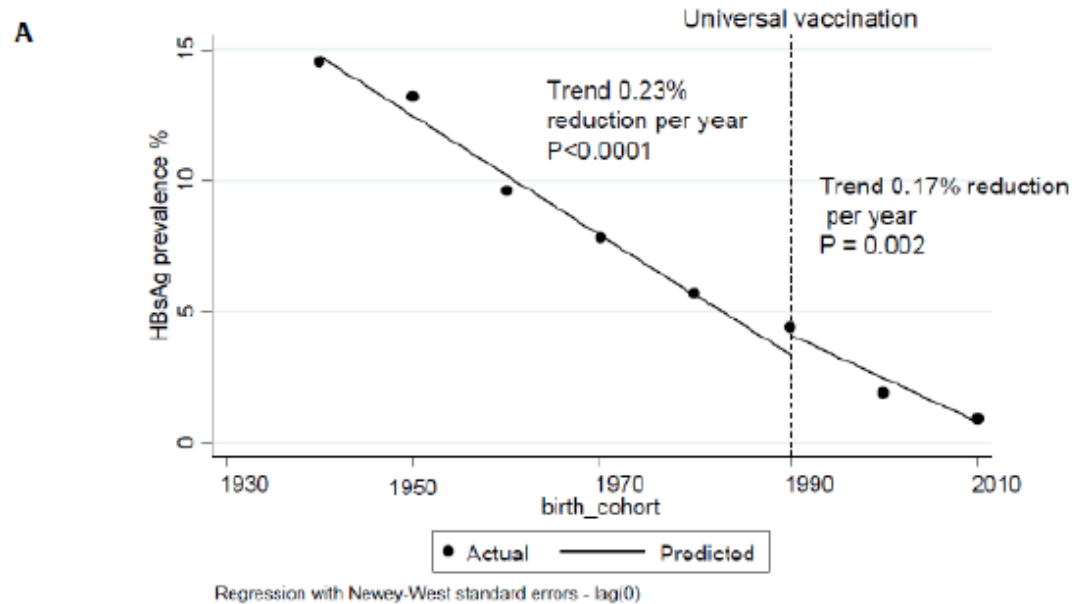
Table 5.1 Summary of demographics and HBsAg, anti-HBs and anti-HBc positive results broken down by Indigenous status and sex.

2007-2011 inclusive	Overall N=35,633	Indigenous n=14,025 (39%)	Non-Indigenous n=21,608 (61%)
Median age in years at sample date (IQR)	32.4 (24.5-43.7)	30.8 (21.5-43.3)	33.2 (26.3-44.0)
Sex	57.8	53.7	60.5
Female % (95% CI)	(57.3-58.3)	(52.8-54.5)	(59.9-61.2)
HBsAg positive % (95% CI)	3.40 (3.19-3.61)	6.08 (5.65-6.53)	1.56 (1.38-1.76)
HBsAg positive men % (95% CI)	4.99 (4.59-5.40)	8.27 (7.53-9.05)	2.22 (1.86-2.62)
HBsAg positive women % (95% CI)	2.35 (2.13-2.59)	4.31 (3.83-4.84)	1.18 (0.99-1.40)
Anti-HBs >10IU/ml % (95% CI)	58.0 (57.3-58.7)	60.7 (59.7-61.6)	55.4 (54.4-56.3)
Anti-HBc positive % (95% CI)	25.2 (24.7-25.8)	38.3 (37.4-39.1)	11.7 (11.1-12.3)

Independent variables	OR of being HBsAg positive	OR adjusted for other tabulated variables	P value for the adjusted model
Indigenous Australia	4.08 (3.54-4.71)	3.81 (3.29-4.44)	P<0.0001
Male sex	1.53 (1.42-1.66)	1.56 (1.44-1.70)	P<0.0001
Living remotely	1.93 (1.78-2.10)	1.21 (1.05-1.39)	P<0.0001

Birth cohort analysis HBsAg positivity





Birth cohort analysis HBsAg positivity

- ❑ HBsAg positivity in the NT:
 - ❑ 3.4% overall
 - ❑ 6.08% Indigenous Australians
 - ❑ 1.56 non-Indigenous Australians
- ❑ Hepatitis B test positivity rates were falling before the introduction of universal vaccination
- ❑ Big gaps in testing in the young (especially those born after universal vaccine introduction) and over 60's

☐ **Know your Hep B status**

- ☐ To determine prevalence of HBsAG and occult infection in Galiwinku
- ☐ To determine the field sensitivity , specificity and acceptability of novel diagnostics for Hepatitis B serology
- ☐ To assess vaccine efficacy in the context of sub-genotype C4 Hepatitis B

☐ **Study duration**

- ☐ March 2015 to December 2017

☐ **Number of Participants**

- ☐ 2000 (estimated) – overall data collection
- ☐ 800 (estimated) – serological testing

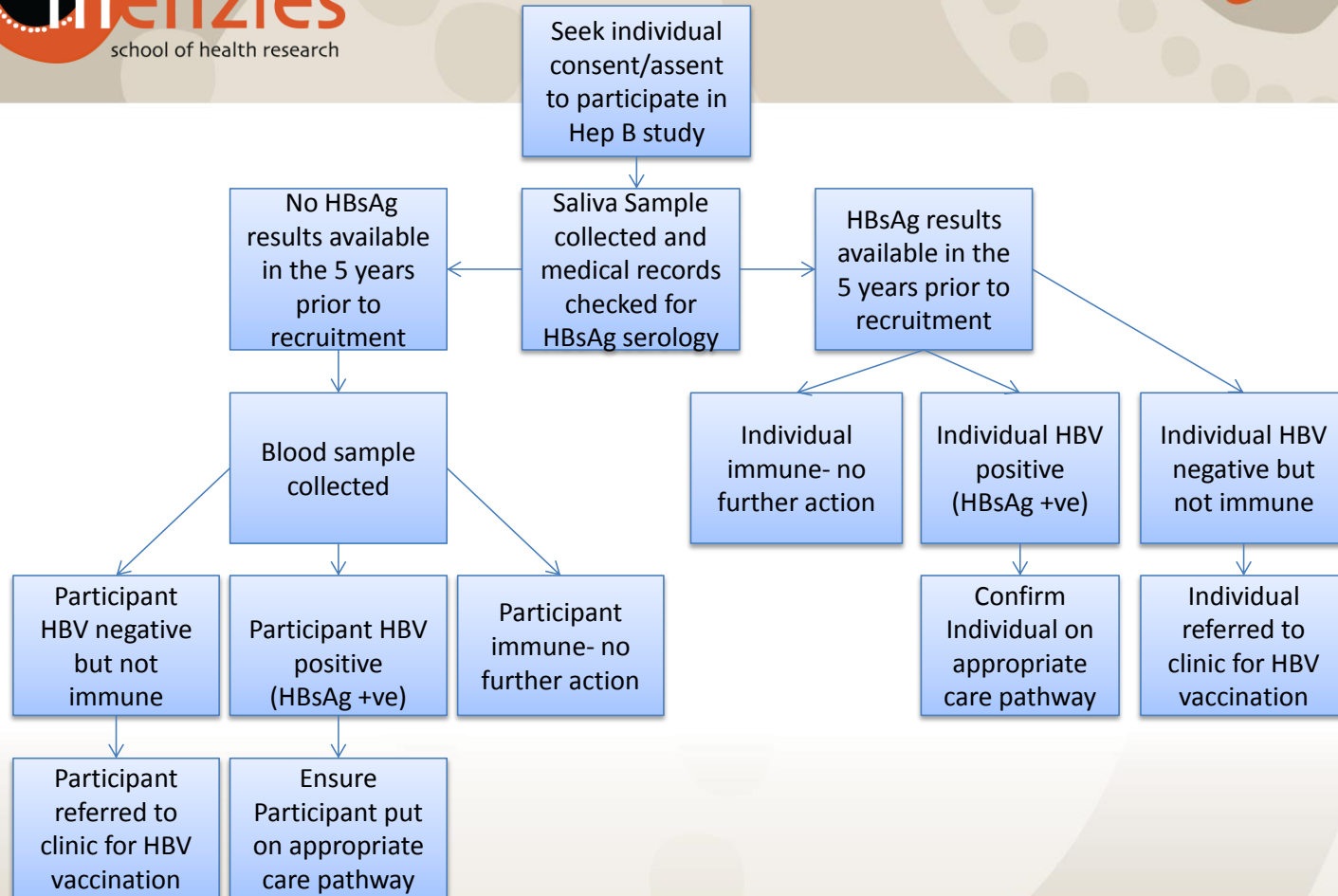
☐ **Inclusion Criteria**

- ☐ All individual residents in Galiwin'ku and surrounding homelands/outstations (for checking and recording of existing serology)
- ☐ All individuals who have no available HBsAG results within the 5 years preceding the recruitment date (for collection of blood and saliva)

☐ **Exclusion Criteria**

- ☐ Unable to give consent/assent
- ☐ Children <1 year of age

KNOW YOUR HEP B STATUS






Hep B Story

▶ English

▶ Yolŋu

Select Chapter

Women's Business



☐ 60-70 people recruited so far

☐ Learning points:

☐ True informed consent regarding hepatitis B in this setting takes a long time and multiple visits to achieve.

☐ Stigma and shame still very widespread

☐ Blame – important to be aware of and try to minimize

20

Acknowledgements

- ☐ The people of Galiwin'ku
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Questions?

