

Big Mob Big Job: Hepatitis B Sero-coding the Top End



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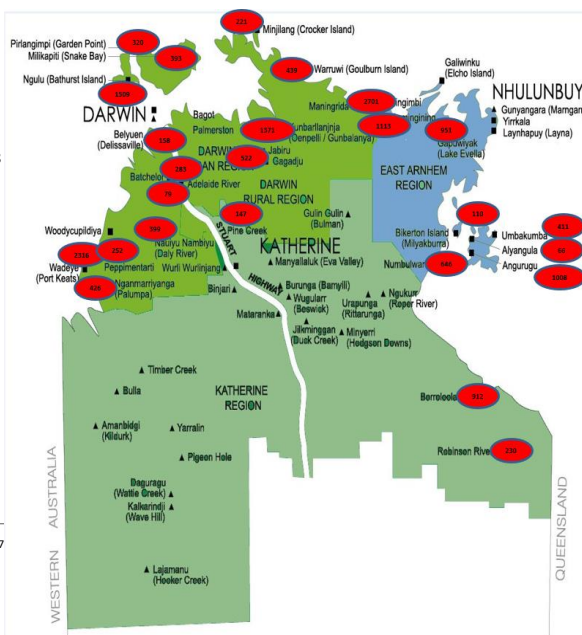
All the Aboriginal Health Practitioners, Nurses and Remote Medical Practitioners actioning the recalls



Map of the Top End Health Service (TEHS) clinics

NT Context

- 1.3 million km²
- N=246,105*
- Aboriginal pop = 58,248



*Australia Bureau of Statistics, 2017

www.nt.gov.au



Background

- Chronic hepatitis B infection (CHB) is endemic in Indigenous communities of the NT
- Estimated prevalence of 3-12%
- Significant numbers of people who have never undergone testing and whose sero-status remains unknown
- Liver disease 3rd most important contributor to the gap in life expectancy between Indigenous and non-Indigenous Australians

1. Schultz R et al. Hepatitis B prevalence and prevention: antenatal screening and protection of infants at risk in the NT
 2. Carroll E et al. Screening for hepatitis B in East Arnhem Land: a high prevalence of chronic infection despite incomplete screening.
 3. Dent E, et al. Incomplete protection against hepatitis B among remote Aboriginal adolescents despite full vaccination in infancy.
 4. MacLachlan J, Cowie B. Hepatitis B Mapping Project: Estimates of chronic hepatitis B prevalence, diagnosis, monitoring and treatment by Primary Health Network, 2014/15 – National report. Australia: Australian Society for HIV and Viral Hepatitis and Sexual Health Medicine (ASHM), 2016.
www.nt.gov.au



Background

- 2014 the NT Hepatitis B action plan was developed including representatives from key stakeholders
- Agreement to reframe CHB care from a communicable disease to chronic condition management model
- Emphasis on building Primary Health Care (PHC) capacity



Aims

Improve the outcomes of people living with CHB in the NT, by

1. Increasing the number of people living with CHB engaged in care, monitoring and treatment
2. Identifying and following up all non-immune people and offering vaccination
3. Increasing awareness and reducing stigma

Determine and record the hepatitis B sero-status of all Indigenous people who attend Top End Health Service (TEHS) Primary Health Care Centres

5. Department of Health. Second National Hepatitis B Strategy 2014-2017.
6. Aratchige P et al. Hepatitis B in the Northern Territory – An analysis of hepatitis B notifications.

www.nt.gov.au



Method: Part 1 – Data linkage

Electronic Health Records linked from 3 data systems, for 21 TEHS Primary Health Care Centres (n=14,561)

Data systems used:

1. Primary Care Information System (PCIS) data
 - Demographics, Hepatitis B markers, vaccinations since 2008
2. Northern Territory Pathology Service, hospital data
 - Hepatitis B markers since 1998
3. NT Immunisation register
 - Hepatitis B vaccinations since 1990

A coding program was then run to give a "hep B status" code based on the combination of serology and vaccination records



Method: TEHS sero-coding project

- Piloted in 5 Arnhem land communities, n=5294
 - Project nurse recruited and trained
 - Standardised messages with specific instructions and recall developed
 - Initial quality assurance exercise on 400 clients;
 - 16.7% inaccuracy on the merged data codes
 - Data merge abandoned: manual chart review initiated.
-



Method: TEHS sero-coding project

- Pilot successful, rolled out to rest of TEHS communities (n=23) with a total Aboriginal population 14,919
- Guidelines, flowcharts developed and education delivered
- Regular engagement with, Aboriginal Health Boards, managers and clinicians throughout the project



Hepatitis B sero-code, per sero-status code for Aboriginal population for TEHS

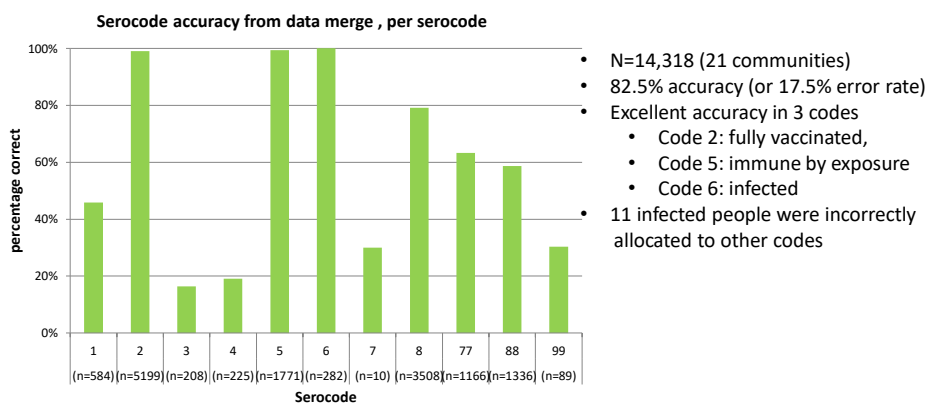
	TOTAL	%	
Aboriginal population July 2018	14919		
Hep B: Fully Vaccinated	9810	66%	83% immune, protected No further action
Hep B: Immune by Exposure	2552	17%	
Hep B: Infected ON Treatment	46	0.3%	2.5%* have Hep B. Need regular Health checks
Hep B: Infected NOT on Treatment	284	1.9%	
Hep B: Non-immune	706	5%	15% need blood test and/or vaccination
No data	1524	10%	
TOTAL (with serocode):	13395	90%	
TOTAL population who require follow up	2230	15%	



* Prevalence calculated by subtracting the "no data" cohort



Data merge allocated codes, % accurate, by code



Aware of infection and engaged in care

- 29 new cases found through project – all have new care plan added and clinician informed.
- All 330 CHB infected clients have sero-status added to EHR problem list and have a care plan
- 82% of those diagnosed are engaged in care



Treatment

Baseline Hep B Mapping Project, NT 2.4% - lowest in country

Total infected in TEHS = 330

Total on treatment = 46

= **14%** of CHB infected people on treatment

In our Arnhem Land pilot sites **20%** (26/127) of CHB infected people are on treatment



Things to consider

- Education opportunities were identified
- Resource implication to action recalls and provide better CHB care is a challenge in remote context
- High turn over of staff need strong systems in place AND “back up” systems
- Fully vaccinated code did not require serology (and in high prevalence setting maybe need to consider)
- Immunosuppressed cohort

7. Department of Health. The Australian Immunisation Handbook 10th Edition 2013 (updated January 2014). Commonwealth of Australia; 2013.

8. Northern Territory Government. Northern Territory hepatitis B vaccination and public health guidelines. Centre for Disease Control 2013.

9. Davies J et al. "Only your blood can tell the story" – a qualitative research study using semi-structured interviews to explore the hepatitis B related knowledge, perceptions and experience of remote dwelling Indigenous Australians and their health care providers in northern Australia. *BMC Public Health* 2014; 14:1023.

11. Gardner KL, Dowden M, Togni S, Bailie R. Understanding uptake of continuous quality improvement in Aboriginal primary health care: lessons from a multi-site study. *www.kigoval.com.au*. Best Practice for Chronic Disease project. *Implement Sci* 2010;5:21.

12. Zhao Y et al. Long term trends in supply and sustainability of the health workforce in the remote Aboriginal communities of the Northern Territory of Australia. *BMC Health Service Research*. 2017, 17:836



Conclusion

- The data merge inaccuracy too high to be useful clinically
- Project found 29 new infections and improved the cascade of care
- Overall prevalence 2.5% (95% CI 1.8% – 3.4%)
 - Pre 1990 = 5.1%
 - Post 1990 = 0.2%
- Estimate 38 cases undiagnosed

Hep B: PAST

Partnership Approach to Sustainably eliminating CHB in the NT

NHMRC-funded partnership project 2018-2023

Goal: Elimination of CHB from Indigenous Australians in the NT

Aim 1: Improve health literacy

Aim 2: Improve the cascade of care



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Thank you



No new code/ insufficient data to determine sero-status: demographics

Age group	No Code	Population	% of age group with no code
0-6 months	106	111	95%
6m-4yo	146	1138	13%
5-14yo	270	3147	9%
15-28yo	306	4421	7%
29-39yo	240	2275	11%
40-54yo	294	2550	12%
55+	161	1276	13%
Sum:	1524	14919	10%

<29yo = 828

- <6months = 106
- Vaccination minimum interval not met n=495
- No serology post birth to HBsAg positive mother n=62

