Tracking in Arnhem Land – On the Hunt for Hepatitis B Virus

Kelly Hosking
Top End Health Service – Primary Health Care

NORTHERN TERRITORY GOVERNMENT

Disclosure of interest

Nothing to disclose

www.nt.gov.au

NORTHERN TERRITORY GOVERNMENT

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

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.

NORTHERN TERRITORY GOVERNMENT

Background

- 2014 the NT Hepatitis B action plan was developed
- Reframe CHB care from a sexual health to Primary Health Care-based chronic condition management model
- Emphasis on building Primary Health Care capacity

NORTHERN TERRITORY GOVERNMENT

Aim

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

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.

NORTHERN TERRITORY GOVERNMENT

Aim

- Determine whether a data merging process, using available electronic sources, can be used to accurately assign Hepatitis B sero-status to all NT indigenous people
- Add these sero-codes to individual records on electronic health record

www.nt.gov.au

NORTHERN TERRITORY GOVERNMENT

Method: Part 1 – Data Merge

- Primary Care Information System (PCIS) data
  - Demographics
  - Hepatitis B markers (Westerns diagnostic pathology data)
  - Immunisations since 2008
- Royal Darwin Hospital (RDH) data
  - Hepatitis B markers since 1998 (Territory pathology data)
- NT Immunisation Register data hepatitis B vaccinations since 1990

NORTHERN TERRITORY GOVERNMENT

Method: Part 1 - Data Merge

- The merge was based on Hospital Record Number as the unique identifier
- The latest record for each parameter was used
- A coding program was then run to give a “hep B status” code based on the combination of vaccination record and serology.

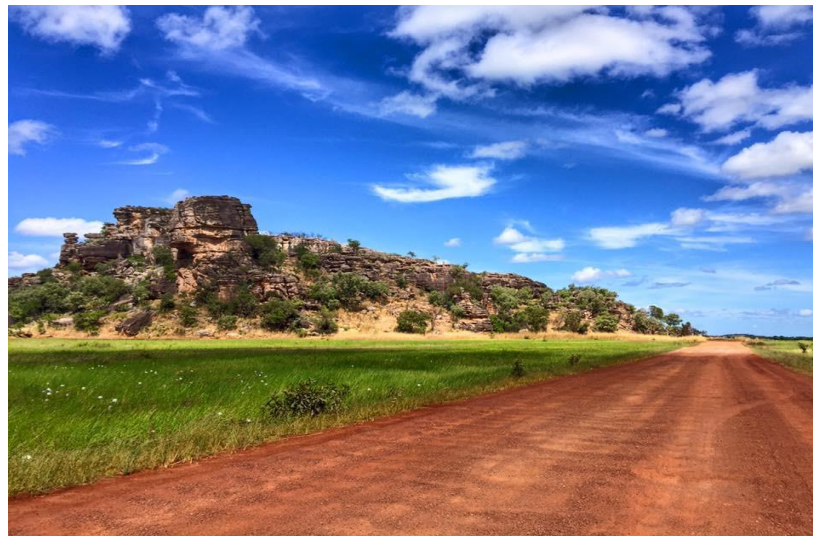
www.nt.gov.au

NORTHERN TERRITORY GOVERNMENT

Results: Part 1 – Data Merge

Table 1: Summary of data merge sero-codes for all Top End PCIS communities (26 communities)

	Code	No	% of populations	
Hep B; Non-immune	1	1200	6.2%	6.2%
Hep B; Fully vaccinated	2	7567	39.4%	
Hep B; partially vaccinated, needs 1 or 2 doses	3 & 4	574	3%	3%
Hep B; Immune by Exposure	5	1869	9.7%	
Hep B; Infected	6	292	1.5%	
Undetermined: insufficient data- needs serology	8 & 77	6014	31%	31%
Presumed fully immunised	88	1650	8.6%	
TOTAL		**19,283**		
				40.2%



www.nt.gov.au

NORTHERN TERRITORY GOVERNMENT

Method: Part 2 – Arnhem land sero-coding

- 5 communities in Arnhem land, total population 6,728
- Project nurse recruited and trained
- Standardised messages with specific instructions and recall developed

NORTHERN TERRITORY GOVERNMENT

Method: Part 2 – Arnhem land serocoding

- Initial quality assurance exercise on 200 clients;
  - 16.2% inaccuracy on the merged data codes
- Revised data extraction process – further 200 clients;
  - 16.7% inaccuracy detected
- Data merge abandoned: manual chart review initiated

www.nt.gov.au

NORTHERN TERRITORY GOVERNMENT

Results

Table 2: Disagreement rate, per data merge code/sero-code for ATSI population of 5 Arnhem Land communities, after individually reviewing each client against all data sources

Hepatitis B Status		% disagreement
ATSI population	5947	
Code 1: Non Immune	143/219	65%
Code 2: Fully Vaccinated	4/2736	0.1%
Code 3 & 4 Needs 1 or 2 doses	226/274	82%
Code 5: Immune by Exposure	3/765	0.3%
Code 6: Chronic Infection	0/127	0%
Code 8 & 77: Insufficient data	672/1047	64%
Code 88: Presumed Immunised	203/660	31%
TOTAL ERROR RATE	**1237/5974**	**21%**

NORTHERN TERRITORY GOVERNMENT

Results

Table 3: Hepatitis B sero-code, per data merge code/sero-status ATSI population of 5 Arnhem Lan communities, using PCIS query group search

Hepatitis B Status	Total	Total %
ATSI population	**5353**	
Hep B Fully Vaccinated	3565	67%
Hep B Immune by Exposure	888	17%
Hep B Infected ON Treatment	11	0.2%
Hep B Infected NOT on Treatment	112	2%
Hep B Non-immune	214	4%
No data	562	10%
TOTAL (with serocode):	4791	90%
TOTAL population who require follow up	776	14%

www.nt.gov.au

NORTHERN TERRITORY GOVERNMENT

Discussion

- Education opportunities were identified
  - S100 Prescriber training, includes nurses and Aboriginal Health Practitioners as part of Primary Health Care education
  - About giving vaccines
- Resource implication to action recalls and provide better CHB care is a challenge in remote context
- Partner with communities to ensure culturally appropriate approaches to care and increasing awareness

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**:1233

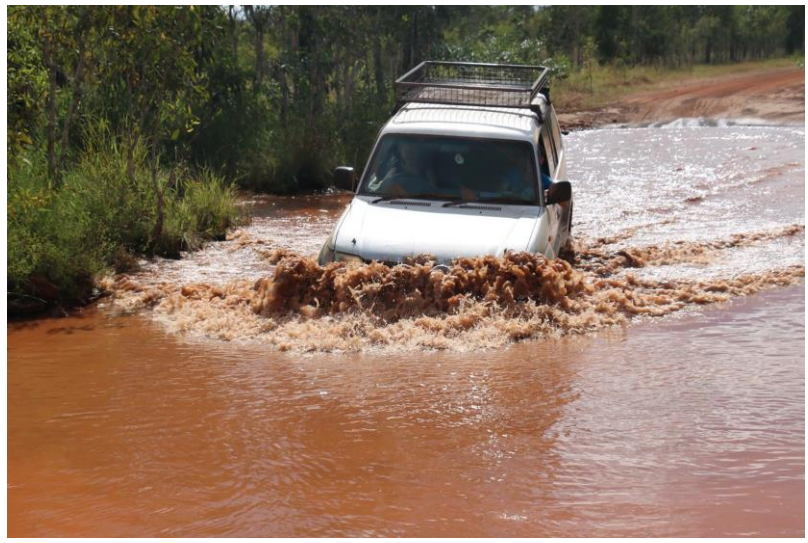
NORTHERN TERRITORY GOVERNMENT

Award Winning: Service excellence and innovation awards






NORTHERN TERRITORY GOVERNMENT



NORTHERN TERRITORY GOVERNMENT

Conclusions

- The data merge inaccuracy raises issues for data linkage
- Highlights problems with the quality of data in each system
- NT remain committed to the hunt;
  - finding all CHB client and engaging in care
  - increasing awareness and reducing stigma

www.nt.gov.au

NORTHERN TERRITORY GOVERNMENT

Acknowledgments

Mikaela Mobsby - Top End Health Service
Geoff Stewart – Centre for Disease Control
Jane Davies – Menzies School of Health Research
Keith Forrest – Top End Health Service
Jiunn-Yih Su - Centre for Disease Control
Steven Skov - Centre for Disease Control
Matthew Thalanany - Centre for Disease Control
Christine Connors - Top End Health Service

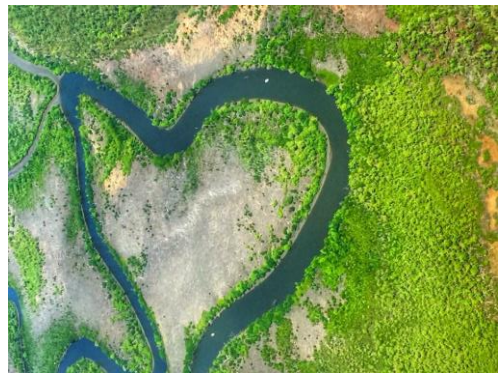
All the Remote Medical Practitioners, Nurses and Aboriginal Health Practitioners actioning the recalls

References

1. Schultz R, Romanes F, Krause V. Hepatitis B prevalence and prevention: antenatal screening and protection of infants at risk in the Northern Territory. *Aust N Z J Public Health* 2008; 32(6): 575-6.
2. Carroll E, Page W, Davis JS. Screening for hepatitis B in East Arnhem Land: a high prevalence of chronic infection despite incomplete screening. *Intern Med J* 2010; **40**(11): 784-7.
3. Dent E, Selvey CE, Bell a, Davis J, McDonald MI. Incomplete protection against hepatitis B among remote Aboriginal adolescents despite full vaccination in infancy. *Commun Dis Intell* 2010; **34**(4): 435-9.
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.
5. Department of Health. Second National Hepatitis B Strategy 2014-2017. In: Health, editor. 1 ed. Commonwealth of Australia; 2014.
6. Aratchige P, Markey P, Webby R, Krause V. Hepatitis B in the Northern Territory – An analysis of hepatitis B notifications. *The Northern Territory Disease Control Bulletin* 2012; **19**(2): 1-12.
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**:1233

www.nt.gov.au

Thank you



Contact details: kelly.hosking@nt.gov.au

www.nt.gov.au

NORTHERN TERRITORY GOVERNMENT