Predictors of hepatitis B immunity in Aboriginal children: the Aboriginal Birth Cohort study

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Background

- High hepatitis B (HBV) carriage rates in Aboriginal population pre vaccination
  - NT schools (1992) = 8.2%[1]
  - Brewarrina (1985) = 22%[2]
- HBV vaccination
  - 1987 – Indigenous infants and “at risk” infants
  - 1990 – all infants in the Northern Territory
  - 2000 – all infants in Australia

1. Burrell et al MJA 1992
2. Campbell et al MJA 1989

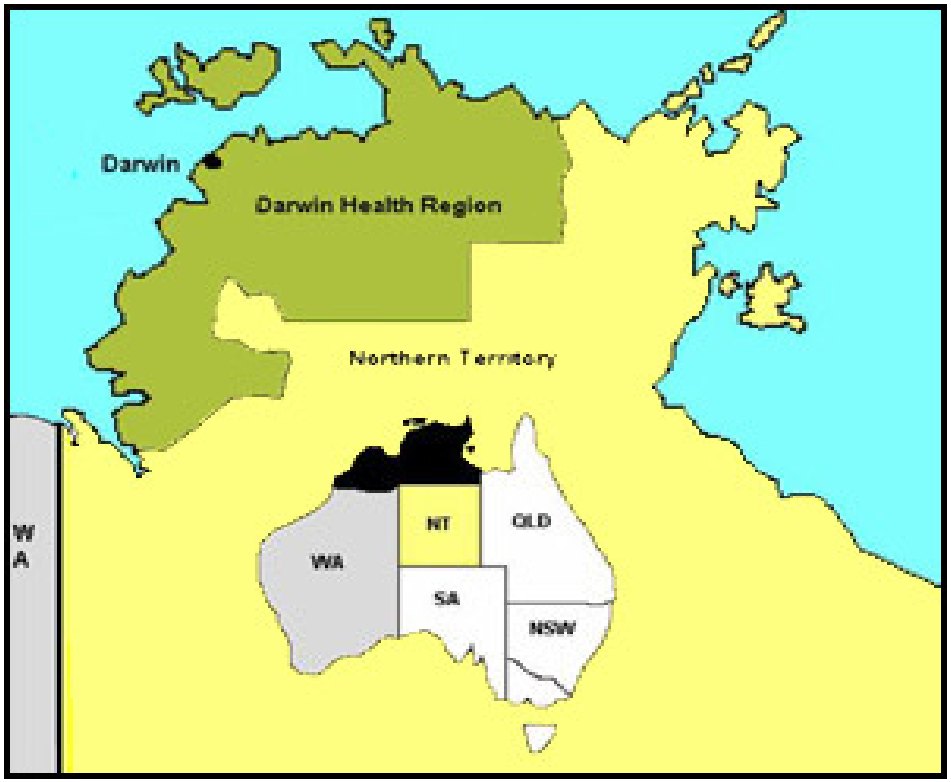
Here are the questions?

- Indigenous kids in the Northern Territory
- HBV vax since 1987

- Are these adolescents still immune?
  - Do they need booster doses?
- What are the predictors of immunity?

- CHALLENGE – HOW TO FIND?

Clan Cohort



Commenced January 1987 to March 1990

N=686 babies born at Royal Darwin Hospital

Detailed maternal and child data collected

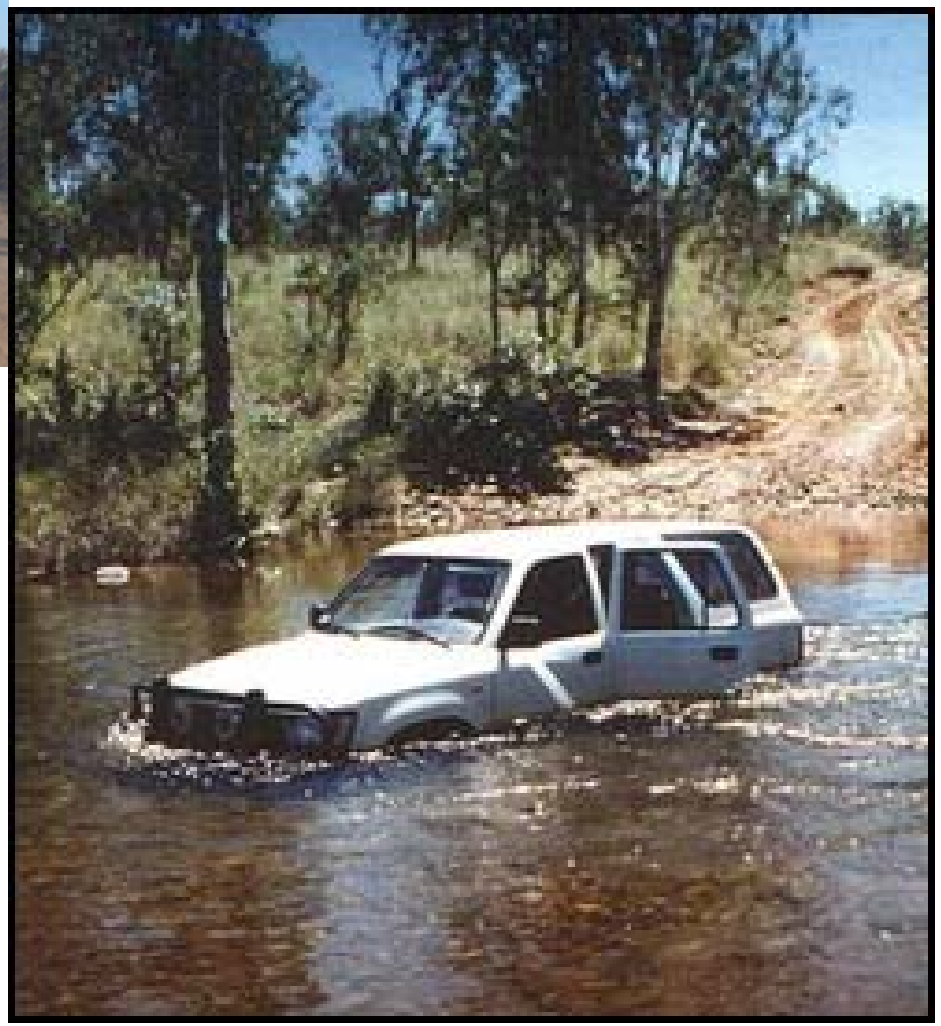
70 different locations

www.clancohort.com.au

- Now aged 17-20 years old
- Wave 3 follow up – 2006 to 2007
  - “piggy back”
- Hepatitis B serology and vaccine history
  - Recent carrier estimate
  - Immune persistence
  - Response to a booster dose
  - Predictors of immunity

We have the cohort

Access to remote locations

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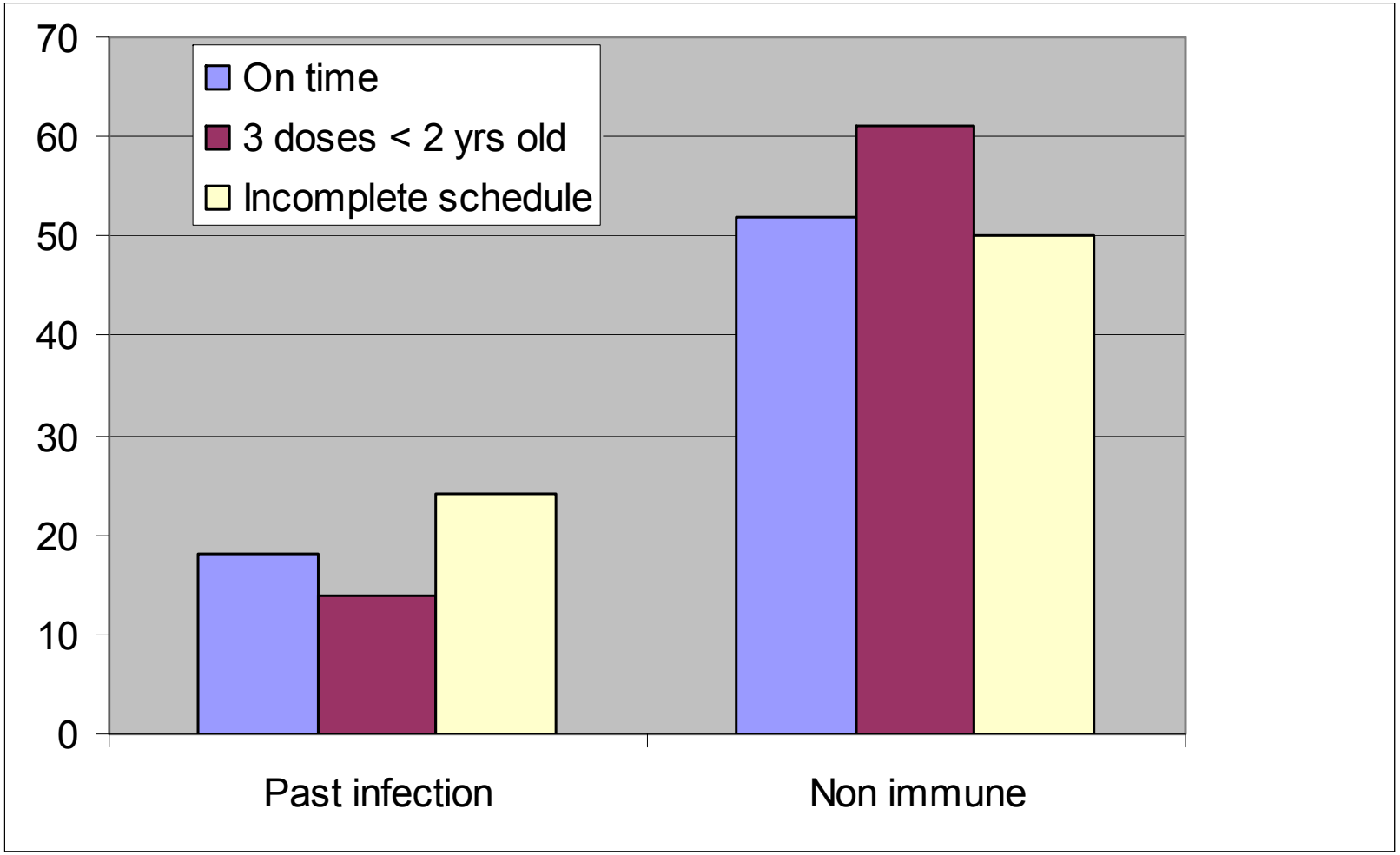
RIGHTS act. 1976 ABORIGINAL LAND act. 1978
PENALTY $1000
FURTHER INFORMATION OR APPLICATION TO
NORTHERN LAND COUNCIL
DARWIN PH. 89 817011
1080

Results - demographics

	Total (n=401)	%
Mean age (years)	18.2	
Past infection	85	21
Hepatitis B carrier	6	1.5
Non immune	215	54
gestational age >36 weeks	343	86
Appropriate weight for gestational age	244	61
Small for gestational age	88	22
Received infant hepatitis B vaccines on time	125	31

HBV infection and vaccination



Birth weight and HBV infection

On time vaccination only (n=123)

	Small for gestational age (n=28)	Appropriate for gestational age (n=95)
	%	%
Past infection	25	14
Immune	29	31
Non immune	46	56

Response to HBV booster vaccine

On time vaccination and non immune only (n=40)

	<10	10-100	>100
N	9	22	9
%	**22.5**	55	22.5

Compares to 98% response in Sydney cohort

Summary

- Low carriage rate -1.5%
- 1 in 5 have evidence of past infection
  - More likely - no HBV vaccination
  - More likely – Small gestational age
- Reduced response rate to a booster
  - ?waning immune memory
  - Implication = ?booster dose needed

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Indigenous adolescents who we have seen

HBV infection and vaccination