Scoping review of literature on Hepatitis B in Far North Queensland with reference to Aboriginal and Torres Strait Islander people

Cairns Sexual Health Service (CSHS)
Queensland Health
June 2017
Literature and other documents were sourced through online searches using search terms such as “hepatitis b”; “queensland” “far north queensland”; “fnq”; “torres strait”; “cape york”; combined with “aboriginal”; “indigenous”. The compilation also includes documents that were already available within CSHS and from the Cairns Public Health Unit. Please also refer to the accompanying table comprising related literature in alphabetical order. Pdf files of all documents are available in the same folder as this document and the table.

Far North Queensland (FNQ)

Aboriginal and Torres Strait Islander people

Gray (1986). Aboriginal child care in hospital – Cairns
Early account of care and information given to Aboriginal mothers travelling from Cape York to Cairns Base Hospital to give birth. Mentions that hepatitis B vaccination, and the importance of getting the full course of three needles, was explained to mothers (Gray, 1986).

Sheridan et al. (1989). The Queensland hepatitis B program
Early prevalence and vaccination coverage study that found an average prevalence of 3.2% and a high vaccination compliance rate. Mentions that Qld was first to introduce statewide screening and infant vaccination for Aboriginal and Torres Strait Islander mothers and babies in 1985 (Sheridan, Donald, & Jamieson, 1989).

Hanna et al. (1995). Immunity to hepatitis, poliomyelitis and measles B in fully vaccinated Aboriginal and Torres Strait Island children
Study of immunization coverage in 101 fully vaccinated children who were immunized at birth. Only 54% were protected and one had chronic hep B (Hanna et al., 1995).

Hanna et al. (1997). Further observations on the immune response to recombinant hepatitis B vaccine after administration to Aboriginal and Torres Strait Islander children
Study of immunization coverage in 239 5 and 6 year old children who were immunized at birth. 15 children (6%) were infected with HBV (4 chronic). Only 41% of the remaining children were immune. 120 susceptible children were given a booster dose and 18% of these still failed to develop immunity (Hanna, Faoagali, Buda, & Sheridan, 1997).

Malcolm et al. (2000). The investigation of a ‘cluster’ of hepatitis B in teenagers from an Indigenous community in North Queensland (name not disclosed)
A study of Aboriginal and Torres Strait Islander teenagers born between 1985 and 1989 after a ‘cluster’ of vaccinated teenagers tested positive for HBV. Found that catch-up vaccination program had not been effectively delivered, i.e. more than half did not get the full course of vaccination (Malcolm, Ludwick, Brookes, & Hanna, 2000).
Hanna (personal communication, year unknown). *Hepatitis B: Responding to some issues raised in Far North Queensland*
A summary of issues related to immunization and follow-up. Includes an example (20yo male) for clinical staff of how to interpret results and what to do in what situation.

Boyd et al. (2009). *High incidence of hepatocellular carcinoma in FNQ*
An abstract about an audit of cancer data based on Crystal reports and the Queensland Cancer Registry. Findings of HCC incidence 2000-2005: FNQ: 20.6/100,000, 22.2% of whom HBV positive (Qld: 14.0/100,000)
ATSI in FNQ: 105.1/100,000 (37.7% of these were HBV positive)
The audit also found that Aboriginal and Torres Strait Islander people were diagnosed at a younger age and had worse survival time (Boyd, Ombiga, & Wintraaken, 2009).

Carroll & Davis (2010). *Incomplete hepatitis B screening prevents an adequate public health response in Aboriginal communities*
A retrospective audit of serology results of 220 Aboriginal patients who had an Adult Health Check in a remote Aboriginal community in North Queensland in 2008 (name of community not disclosed). Only half had serological testing for HBV and only three were completely screened. Prevalence in this sample was lower than expected (only one of 107 tested, may be due to sampling error) (Carroll & Davis, 2010).

Fagan & McDonell (2010). *Knowledge, attitudes and behaviours in relation to safe sex, sexually transmitted infections (STI) and HIV/AIDS among remote living north Queensland youth*
Note: hepatitis B and C were not separated in this survey. Knowledge of hepatitis in the remote Indigenous sample was comparable to the national sample, unlike HIV and other STI where it is lower. However, hepatitis knowledge is generally much lower than HIV knowledge (Fagan & McDonell, 2010).

Cross & Larkins (2011). *Management of chronic Hepatitis B infection in the remote primary health care setting: The search for a suitable guideline*
Review to inform appropriate guideline for hep B treatment in the Torres Strait. States a lack of literature and stresses the necessity to consider issues specific to remote areas when developing guidelines (Cross & Larkins, 2011).

Wallace et al. (2011). *A situational analysis of chronic hepatitis B in the Torres Strait*
Monograph with beautiful artwork on cover. Semi-structured interviews with health service providers (56 in the TS, 5 in Cairns), leading to recommendations for an agreed model of care in order to overcome barriers and challenges (Wallace et al., 2011).

ASHM (2013). *Hepatitis B and other infections in pregnancy symposium (Cairns): Evaluation report*
This report evaluating a symposium held for Far North Queensland health workers lists attendees’ comments about support needed as well as suggestions for initiatives to improve their ability to manage hep B. The report also contains valuable local information and references, for example that, at the time, 40 people were on
treatment in FNQ while modelling by VIDRL suggests that between 347 and 486 patients should be on treatment (ASHM [Australasian Society for HIV Medicine], 2013a).

**Preston-Thomas et al.** (2013). *Chronic hepatitis B care delivery and patient knowledge in the Torres Strait region of Australia*

The study comprised an audit of 83 patients (pathology database search 1997–2009; and file audit of care delivery) and a survey of 42 patients with CHB (for survey results see Anderson, Ellard, & Wallace, 2016). A total of 365 HBV positive people were identified in the region. Results show gaps in patient review, monitoring, follow up and specialist referral, as well as limited patient knowledge (Preston-Thomas, Fagan, Nakata, & Anderson, 2013).

**Lewis & Mossman** (2014, conference presentation). *Strengths Based Collaboration: Managing Hepatitis B at Yarrabah Aboriginal Community, Far North Queensland*

A presentation about ongoing hepatitis B health promotion work done at community level by Rhondda Lewis, the hepatitis health practitioner at Cairns Sexual Health Service. 89 reported cases (some acute, most chronic). Contact tracing is a challenge, step by step progress is made.

**Wallace et al.** (2014). *Management of chronic hepatitis B in the Torres Strait Islands: an identified need for a comprehensive public health approach to chronic hepatitis B in remote Australian Indigenous communities*

Journal article based on above situational analysis. Two critical issues were identified: 1) the absence of a systems-based approach to clinically managing the chronic hepatitis B infection; 2) variable knowledge about the infection in the health workforce (Wallace, Pitts, Ward, & McNally, 2014).

**Anderson et al.** (2016). *Torres Strait Islanders’ understandings of chronic hepatitis B and attitudes to treatment*

The survey (structured interviews on CHB knowledge and attitudes) with HBsAg positive Aboriginal and Torres Strait Islander people identified gaps in knowledge but found that people were receptive to clinical management and treatment. The article contains recommendations for improving follow-up services in the TSI (Anderson et al., 2016).

**Hansen** (July 2016, Grand Round lecture at Cairns Hospital). *Hepatitis B in Far North Queensland* (slides available in the CSHS common folder)

Comprehensive presentation of the natural history of HBV infection, epidemiology and statistics, including FNQ (from slide 68) and treatment and HCC surveillance data from audit (slides 85-93). 731 cases in the Torres Strait and 325 cases in Cape York. Of the Cape York cases, prevalence is highest in Bamaga, 45 are ≥ 80 years of age, and 7 are currently on treatment (only 2.2% of the 325).

**ASHM** (2013, 2015, 2016). *Hepatitis B mapping project* (3 reports so far)

The first two reports contain data broken down by the now dismantled Medicare Locals, offering more detailed information than the third report which is broken down by the larger Primary Health Networks (PHNs) introduced in 2015. Relevant information:
First report (2011, pp. 12-13): Prevalence FNQ was 1.2% with highest rates in coastal areas in the TS region; almost half of affected people FNQ are ATSI compared to only 15% Qld-wide. (ASHM [Australasian Society for HIV Medicine], 2013b).

Second report (2012/13, rank tables on pp. 6-8): FNQ had the highest notification rate, nearly twice the state average; FNQ prevalence still 1.2% (see tables in each section for FNQ-related data) (ASHM [Australasian Society for HIV Medicine], 2015).

Third report (2014/15, rank table on p.5): Prevalence in Northern Queensland PHN (includes Townsville) was .95%. This was similar to the national average but based on previous estimates, the prevalence in Far North Queensland is likely higher. Treatment uptake was 1.6% which is much lower than the national average of 6.1% (ASHM [Australasian Society for HIV Medicine], 2016).

**People from culturally and linguistically diverse (CALD) background**

No published literature related to hepatitis B in CALD communities in Far North Queensland could be located. Some information is included in the Hepatitis B in Queensland Situation Analysis (see under Queensland wide heading).

**Drazic** (2014, conference presentation). *Chronic Hepatitis B Education in the NQ Hmong Community: Positive Change through Process and Perseverance* (slides available in the CSHS common folder)

Conference presentation about an awareness and education project conducted in the FNQ Hmong community. The project included a survey with 89 participants. Describes challenges of connecting with the community and the importance of meeting the right people.

**Queensland wide**

**Panaretto** (2006). *Prevalence of sexually transmitted infections in pregnant urban Aboriginal and Torres Strait Islander women in northern Australia*

Prevalence study with 456 pregnant Indigenous women in Townsville, North Queensland. 419 (91.9%) had been screened for hep B, only two had hep B carrier status (0.5%), and one had an acute hep B infection (Panaretto, 2006)

**Vlack et al.** (2007). *Immunisation coverage of Queensland Indigenous two-year-old children by cluster sampling and by register*

Immunization coverage study that examined the records of Indigenous 2 year-old children (n=137, 4% of birth cohort). Found that 95.7% were fully vaccinated by 12 months and 97.5% were fully vaccinated by 24 months (Vlack et al., 2007)

**Mooney-Somers et al.** (2009). *Sexual health through the eyes of Indigenous youth: Community-based participatory research with young Indigenous people in Townsville*

Useful example of the community-based participatory research method. The qualitative interviews for this survey of 51 people (aged 17-34) were conducted by
young Indigenous people after they were trained in the survey method. Found higher rates of screening in this sample than other studies with young people. Hepatitis B was part of the survey but there are not specific results (Mooney-Somers et al., 2009)

**Rumbold et al.** (2010). *Assessing the quality of maternal health care in Indigenous primary care services*
Assessment of health records of pregnant Aboriginal women, including 58 women from 4 health centres in North Queensland. They found that only 79% of the women were screened for HBV (Rumbold et al., 2010).

**State of Queensland (Queensland Health)** (2011). *Hepatitis B in Queensland: A situation analysis*
Large report (93 pages). Comprehensive overview of the current situation (up to 2011). Contains information on access to care, management and follow-up, education etc., identifying gaps and challenges, e.g. in reporting ATSI status (66% of notifications fail to do so). Aboriginal and Torres Strait Islander people are covered in chapter 4, pp. 26-30, authored by Preston & Fagan, Cairns Public Health Unit (Queensland Health, 2011)

**Castles et al.** (2016). *Risk factors for cancer in the Australian Aboriginal and Torres Strait Islander population: A systematic review*
Found that remote geographical location is associated with increased risk of liver cancer in Aboriginal and Torres Strait Islander population (see figure 4) (Castles, Wainer, & Jayasekara, 2016)

**Walton** (2016, conference presentation). *Deadly Grandmothers*
Report on two health education forums (hepatitis B and C, mental health and drug use) held with and for 50 Indigenous grandmothers in the Scenic Rim region of South-East Queensland. Highlights the importance of relationship building and respect for elders.

**Australia wide**

Incidence Rate Ratio for liver cancer in Indigenous people (compared to non-indigenous) is highest (3.2) for males (Table 5) and second highest (2.7 after cancer of the larynx) for females (Table 6). This suggests that Indigenous people are about 3x more likely to develop liver cancer compared to non-indigenous Australians. In addition, the rate of liver cancer is higher in remote areas compared to urban in indigenous people but not in the non-indigenous population. (Zhang, Condon, Rumbold, Cunningham, & Roder, 2011, top of page 483).

**Carville & Cowie** (2012). *Recognising the role of infection: Preventing liver cancer in special populations*
Making a case for HCC prevention through increasing antiviral therapy and more community involvement in education and care (Carville & Cowie, 2012).
Graham et al. (2013). *Chronic hepatitis B prevalence among Aboriginal and Torres Strait Islander Australians since universal vaccination: A systematic review and meta-analysis*

A meta-analysis that found that while the disparity has decreased over time, HBsAg prevalence is still four times higher in the Indigenous population compared to non-Indigenous. The authors highlight the need for more opportunistic HBV screening of Indigenous people (Graham et al., 2013).

Harrod et al. (2014). *Markers of hepatitis B infection and immunity in patients attending Aboriginal community controlled health services*

A retrospective, cross-sectional analysis of clinical encounter records from four Aboriginal Community Controlled Health Services (ACCHS, locations not specified). 17180 people were seen; 2959 tested, 865 had all three markers tested. Half were immune (13.3% due to past infection, rest through immunization), 40.7% susceptible, 3.9% infected (Harrod et al., 2014).


Scoping study to map the main sources and types of evidence on epidemiology and the natural history of HBV among Indigenous Australians, incl. public health responses. Found that uptake of HBV immunisation in Indigenous infants is high but there is room for improvement in completion of the full course. Found no evidence of contact-tracing or large-scale screening/immunisation of susceptible people (table of reviewed articles on p.136) (Olsen, Wallace, & Maher, 2014).

Allard et al. (2015). *The cascade of care for Australians living with chronic hepatitis B: Measuring access to diagnosis, management and treatment*

The study establishes the proportion of people living with CHB who are not diagnosed, in care, or on treatment (as per 2012). An estimated 43% remain undiagnosed, only 8% have regular HBV DNA tests, and only a third of people needing treatment are receiving it (Allard, MacLachlan, & Cowie, 2015).

Ward et al. (2016). *Methods of a national survey of young Aboriginal and Torres Strait Islander people regarding sexually transmissible infections and bloodborne viruses.*

While not Qld-specific, this study provides a useful example of an effective, culturally appropriate sampling method. The study proves “the feasibility, acceptability and repeatability for surveying a difficult-to-reach population in a sensitive area of health” (Ward et al., 2016)

Wattiaux et al. (2016). *Hepatitis B immunization for indigenous adults, Australia*

A comparison of indigenous and non-indigenous notification rates across Australia. Notifications of acute HBV infections are significantly higher in indigenous compared to non-indigenous Australians. The authors predict that a program to vaccinate half of all non-immune indigenous adults over 10 years would prevent 527–549 new cases (Wattiaux et al., 2016)
Discovery of HBV / History

Blumberg & Alter (1965). *A new antigen in leukemia sera*
This was the first journal article that mentioned the “Australia antigen”, about two years before the connection to hepatitis B was made. The new antigen was tentatively named the Australia antigen because it was first discovered in the serum of an Australian Aborigine. This study examined the link between the Australia antigen and leukemia. Of 208 Australian Aborigines, 6% tested positive for the Australia antigen (Blumberg & Alter, 1965).

Blumberg et al. (1967). *A serum antigen (Australia antigen) in Down's syndrome, leukemia, and hepatitis* (commentary, full-text not available)
The first article that links the Australia antigen to hepatitis B (Blumberg, Gerstley, Hungerford, London, & Sutnick, 1967).

Cooksley et al. (1972). *Australia antigen in active chronic hepatitis in Australia: Results from 130 patients from three centres*
Early prevalence study testing 130 Australian blood samples from three centers (Brisbane, Sydney, Melbourne). Reports a HBV prevalence of 3% (no indication of indigenous status (Cooksley et al., 1972).

Barrett (1976). *Hepatitis B in Australian Aborigines and Torres Strait Islanders: Geographical, age and familial distribution of antigen subtypes and antibody*
Early prevalence study reports a prevalence of 2.7% in Queensland Aboriginal communities compared to 8.5% in the Northern Territory. The highest prevalence in Queensland was in the 30-50 years age group whereas in the Northern Territory, prevalence was highest in younger people (Barrett, 1976).

Davies et al. (1990). *HLA-DR RFLP distributions in two groups of Aboriginal Australians*
WA and Qld samples are similar, both differ from Central Australian samples. Mentions a 1988 blood sample collection in Coen for “a study of the role of major histocompatibility complex genes in hepatitis B virus infections” (note: details of that study could not be located) (Davies, Pace, Jazwinska, & Serjeantson, 1990).

Sugauchi et al. (2001). *A novel variant genotype C of hepatitis B virus identified in isolates from Australian Aborigines: Complete genome sequence and phylogenetic relatedness*
Genotype study with Aboriginal people in Queensland, the first of its kind. Reports a separate variant of the C genotype in Aboriginal people which could be part of the vaccine failure explanation (Sugauchi et al., 2001)

Blumberg (2006). *The curiosities of hepatitis B virus: prevention, sex ratio, and demography*
Contains some interesting hepatitis B timelines in tables 8 and 9 (Blumberg, 2006).
Hepatitis D Virus


A book released by the Queensland government containing history and statistics. One table contains data on hepatitis according to which, there were 8 notified cases of hepatitis D infection in Qld in 1996 (Queensland Treasury, 2009).
References


Scoping literature on hepatitis B in Aboriginal and Torres Strait Islander people in Far North Queensland 2017 11


