

Hepatocellular carcinoma in Indigenous Australians: a call to action

Liver disease and liver cancer incidence and mortality are unacceptably high among Indigenous Australians

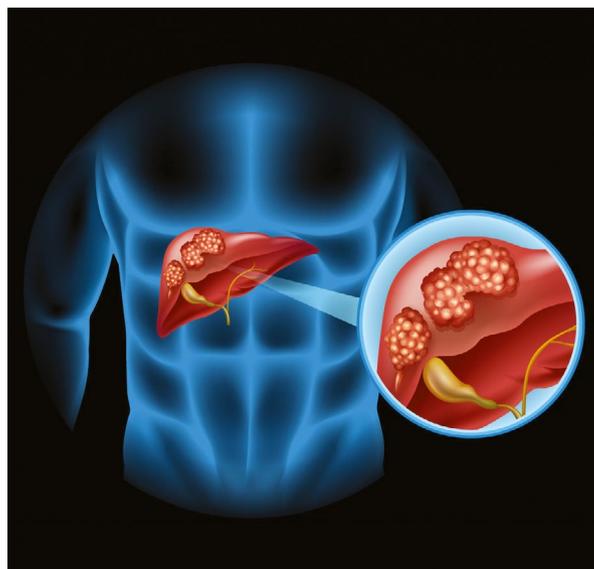
Hepatocellular carcinoma (HCC) is an urgent public health issue in Australia.¹ Indigenous Australians are disproportionately affected by liver disease and HCC,² and suffer substantially greater HCC-related mortality than non-Indigenous Australians.^{2,3} With the release of the Australian national consensus statement on hepatocellular carcinoma in December 2020⁴ and international focus on equity and the rights of Indigenous peoples, it is timely to reflect upon the key actions that must be taken to reduce HCC incidence and mortality for Indigenous Australians.

There are limited high quality national level data on HCC incidence among Indigenous Australians; however, sentinel studies from the Northern Territory and South Australia have shown Indigenous Australians have 4–6 times higher HCC incidence and poor survival compared with non-Indigenous Australians, exacerbated by low engagement with HCC surveillance programs.^{2–5} Hepatitis B is more common in Indigenous Australians⁶ and is the main cause of HCC.^{2–5} Other HCC risks are also higher among Indigenous Australians,^{1,2} including hepatitis C (estimated 3% prevalence among Indigenous Australians compared with 1% among non-Indigenous Australians),⁷ smoking,⁸ obesity (30–40% prevalence),⁹ alcohol¹⁰ and type 2 diabetes (15–25% prevalence).⁸

Multiple health system, resource and socio-economic barriers exist for Indigenous Australians that impede timely diagnosis and management of liver disease, including geographic isolation and reduced access to specialist care,¹¹ socio-economic inequality, homelessness, disproportionate rates of incarceration, racism and stigma, non-English language communication and cultural barriers, and a distrust in hospital-based services.^{11,12} A lack of Indigenous community engagement in health system development results in health services that inadequately address Indigenous health needs.¹³

Striking gains have been achieved in Indigenous health outcomes and mortality through increased investment in Indigenous health workers and Indigenous-led health programs, including reductions in hepatitis B prevalence due to high coverage of infant vaccination and reduced risks for transmission,¹⁴ reductions in smoking, obesity and alcohol-related harms, and improved metabolic syndrome-related health outcomes.¹⁵

These successes should be capitalised on to improve liver disease management for Indigenous peoples. At a public health level, recognising high rates of HCC incidence and mortality in Indigenous populations is critical to change the narrative into a positive plan, designed and led by Indigenous people. There



is an urgent need for standardised data collection on liver disease and liver cancer among Indigenous Australians, building on existing surveillance networks, such as the NT Hep B Hub¹⁶ (a care facilitation tool to ensure all Indigenous Australians living in the NT are tested for hepatitis B and people with hepatitis B linked to and maintained in care) and the ATLAS network¹⁷ (a sentinel surveillance network for sexually transmissible diseases and blood-borne viruses in Aboriginal primary care services). Liver disease should be prioritised on revised Close the Gap agendas and Indigenous health strategies.

Care for Indigenous people needs to occur in the communities where Indigenous people live, ideally provided by Aboriginal and Torres Strait Islander-controlled health centres. Where this is not feasible, evidence-based models of outreach specialist care should be implemented in collaboration with Indigenous communities. Indigenous nurse practitioners embedded within multidisciplinary liver disease teams, integration of hospital and remote health services through telehealth initiatives (eg, the Project ECHO model of care [<https://hsc.unm.edu/echo/>], where primary care workers can discuss cases with specialists via virtual case conferences in regional and remote areas), and Indigenous peer-led navigation of health service programs have successfully improved liver disease screening, management and cancer surveillance uptake here and overseas.^{18–23}

Medicare rebate reforms to sustain telehealth initiatives developed during the coronavirus disease 2019 pandemic would be beneficial. Incorporating viral hepatitis diagnostic point-of-care tests into nurse-led models of care could overcome barriers to diagnostics

Jessica Howell¹

James S Ward^{2,3}

Jane Davies⁴

Paul J Clark²

Joshua S Davis^{4,5} 

¹St Vincent's Hospital, Melbourne, VIC.

²University of Queensland, Brisbane, QLD.

³Poche Centre for Indigenous Health, University of Queensland, Brisbane, QLD.

⁴Menzies School of Health Research, Darwin, NT.

⁵John Hunter Hospital, Newcastle, NSW.

jessica.howell@svha.org.au

access in remote communities.¹⁸ Public–private initiatives to financially support Indigenous health worker training are imperative to increase and retain the Indigenous health workforce.

Harm minimisation interventions for liver disease, such as alcohol supply and demand reduction policies, opioid substitution for people who inject drugs, and optimised management of the metabolic syndrome must be tailored to the specific needs of Indigenous communities to enhance uptake.¹² Indigenous peer-led harm minimisation education and engagement programs are successful and should be expanded.²⁰ Enhanced access to high quality ultrasound HCC surveillance is vital for early HCC diagnosis but is limited in remote areas. With rapidly improving imaging technologies, outreach portable ultrasonography to triage need for further liver imaging, or real-time ultrasound integrated with centralised specialist imaging review is increasingly feasible.²⁴ Novel point-of-care HCC tests such as urinary metabolites²⁵ are in development but require further validation. Greater research funding is needed to validate care models that deliver culturally acceptable, high quality surveillance and improve HCC survival among Indigenous Australians.

Finally, a national health promotion campaign to improve awareness and screening for liver disease is needed to engage Indigenous Australian communities, using effective culturally appropriate Indigenous language resources.¹³

Conclusion

Liver disease and liver cancer incidence and mortality are unacceptably high among Indigenous Australians compared with non-Indigenous Australians. Expansion and investment in culturally informed and Indigenous-led innovative programs is urgently needed.

Acknowledgements: Jessica Howell is supported by a University of Melbourne CR Roper Faculty Fellowship and a National Health and Medical Research Council Program Grant.

Competing interests: Jessica Howell has received an Australia Fellowship from Gilead Sciences in 2017 and 2019, and investigator-initiated grant funds and speaker fees from Gilead Sciences.

Provenance: Not commissioned; externally peer reviewed. ■

© 2021 AMPCo Pty Ltd

References are available online.

- 1 Wallace MC, Preen DB, Short MW, et al. Hepatocellular carcinoma in Australia 1982–2014: increasing incidence and improving survival. *Liver Int* 2019; 39: 522–530.
- 2 Parker C, Tong SY, Dempsey K, et al. Hepatocellular carcinoma in Australia's Northern Territory: high incidence and poor outcome. *Med J Aust* 2014; 201: 470–474. <https://www.mja.com.au/journal/2014/201/8/hepatocellular-carcinoma-australias-northern-territory-high-incidence-and-poor>
- 3 Banham D, Roder D, Keefe D, et al. Disparities in cancer stage at diagnosis and survival of Aboriginal and non-Aboriginal South Australians. *Cancer Epidemiol* 2017; 48: 131–139.
- 4 Lubel JS, Roberts SK, Strasser SI, et al. Australian recommendations for the management of hepatocellular carcinoma: a consensus statement. *Med J Aust* 2020; <https://www.mja.com.au/journal/2020/214/10/australian-recommendations-management-hepatocellular-carcinoma-consensus> [online ahead of print].
- 5 Condon JR, Zhang X, Dempsey K, et al. Trends in cancer incidence and survival for Indigenous and non-Indigenous people in the Northern Territory. *Med J Aust* 2016; 205: 454–458. <https://www.mja.com.au/journal/2017/207/1/trend-s-cancer-incidence-and-survival-indigenous-and-non-indigenous-people>
- 6 Graham S, Guy RJ, Cowie B, et al. Chronic hepatitis B prevalence among Aboriginal and Torres Strait Islander Australians since universal vaccination: a systematic review and meta-analysis. *BMC Infect Dis* 2013; 13: 403.
- 7 Graham S, Harrod ME, Iversen J, Hocking JS. Prevalence of hepatitis C among Australian Aboriginal and Torres Strait Islander people: a systematic review and meta-analysis. *Hepat Mon* 2016; 16: e38640.
- 8 Li M, Roder D, McDermott R. Diabetes and smoking as predictors of cancer in Indigenous adults from rural and remote communities of North Queensland – a 15-year follow up study. *Int J Cancer* 2018; 143: 1054–1061.
- 9 Dyer SM, Gomersall JS, Smithers LG, et al. Prevalence and characteristics of overweight and obesity in indigenous Australian children: a systematic review. *Crit Rev Food Sci Nutr* 2017; 57: 1365–1376.
- 10 Valery PC, McPhail S, Stuart KA, et al. Changing prevalence of aetiological factors and comorbidities among Australians hospitalised for cirrhosis. *Intern Med J* 2020; <https://doi.org/10.1111/imj.14809> [online ahead of print].
- 11 Clark PJ, Stuart KA, Leggett BA, et al. Remoteness, race and social disadvantage: disparities in hepatocellular carcinoma incidence and survival in Queensland, Australia. *Liver Int* 2015; 35: 2584–2594.
- 12 Howell J, Pedrana A, Cowie BC, et al. Aiming for the elimination of viral hepatitis in Australia, New Zealand, and the Pacific Islands and Territories: where are we now and barriers to meeting World Health Organization targets by 2030. *J Gastroenterol Hepatol* 2019; 34: 40–48.
- 13 Davies J, Bukulatjpi S, Sharma S, et al. Development of a culturally appropriate bilingual electronic app about hepatitis B for Indigenous Australians: towards shared understandings. *JMIR Res Protoc* 2015; 4: e70.
- 14 Davies J, Li SQ, Tong SY, et al. Establishing contemporary trends in hepatitis B sero-epidemiology in an Indigenous population. *PLoS One* 2017; 12: e0184082.
- 15 Australian Institute of Health and Welfare. Aboriginal and Torres Strait Islander Health Performance Framework 2020 summary report (Cat. No. IHPF 2). Canberra: AIHW, 2020. <https://www.aihw.gov.au/reports/indigenous-health-welfare/health-performance-framework/contents/overview> (viewed Feb 2021).
- 16 Hosking K, Stewart G, Mobsby M, et al. Data linkage and computerised algorithmic coding to enhance individual clinical care for Aboriginal people living with chronic hepatitis B in the Northern Territory of Australia – is it feasible? *PLOS One* 2020; 15: e0232207.
- 17 Bradley C, Hengel B, Crawford K, et al. Establishment of a sentinel surveillance network for sexually transmissible infections and blood borne viruses in Aboriginal primary care services across Australia: the ATLAS project. *BMC Health Serv Res* 2020; 20: 769.
- 18 Sullivan RP, Davies J, Binks P, et al. Point of care and oral fluid hepatitis B testing in remote Indigenous communities of northern Australia. *J Viral Hepat* 2019; 27: 407–414.
- 19 Hla TKBS, Binks P, Gurruwiwi GG, et al. A "one stop liver shop" approach improves the cascade-of-care for Aboriginal and Torres Strait Islander Australians living with chronic hepatitis B in the Northern Territory of Australia: results of a novel care delivery model. *Int J Equity Health* 2020; 19: 64.
- 20 Treloar C, Hopwood M, Cama E, et al. Evaluation of the Deadly Liver Mob program: insights for roll-out and scale-up of a pilot program to engage Aboriginal Australians in hepatitis C and sexual health education, screening, and care. *Harm Reduct J* 2018; 15: 5.
- 21 Ivers R, Jackson B, Levett T, et al. Home to health care to hospital: Evaluation of a cancer care team based in Australian Aboriginal primary care. *Aust J Rural Health* 2019; 27: 88–92.
- 22 Mohsen W, Chan P, Whelan M, et al. Hepatitis C treatment for difficult to access populations: can telementoring (as distinct from telemedicine) help? *Intern Med J* 2019; 49: 351–357.
- 23 Herman A, Bullen C, Finau S, Ofanoa M. Mobilising Pacific people for health: insights from a hepatitis B screening programme in Auckland, New Zealand. *Pac Health Dialog* 2006; 13: 9–15.
- 24 Becker DM, Tafoya CA, Becker SL, et al. The use of portable ultrasound devices in low- and middle-income countries: a systematic review of the literature. *Trop Med Int Health* 2016; 21: 294–311.
- 25 Ladep NG, Dona AC, Lewis MR, et al. Discovery and validation of urinary metabolites for the diagnosis of hepatocellular carcinoma in West Africans. *Hepatology* 2014; 60: 1291–1301.