Addressing healthcare barriers to improve liver health outcomes

MANAGING LIVER DISEASE IN RURAL AUSTRALIA: STRATEGIES, CHALLENGES, AND SOLUTIONS

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SESSION OUTLINE

- Overview of Liver Diseases in Australia
- Challenges in Diagnosis and Management
- Strategies for Effective Management
- Improving Outcomes and Future Directions

SNAPSHOT OF LIVER DISEASE IN AUSTRALIA

Liver disease:

- affects 3 in 10 people in Australia
- Cost 51 Billion $ per year
- Affected Australians expected to rise to 8m by 2030 [1]
- 5.5m adults have MAFLD [1,2]
- 500,000 Australians affected by other liver diseases caused by:
  - Excess alcohol consumption
  - Viral infections
  - Genetic disorders
  - Autoimmune disease

Hepatocellular carcinoma(HCC):

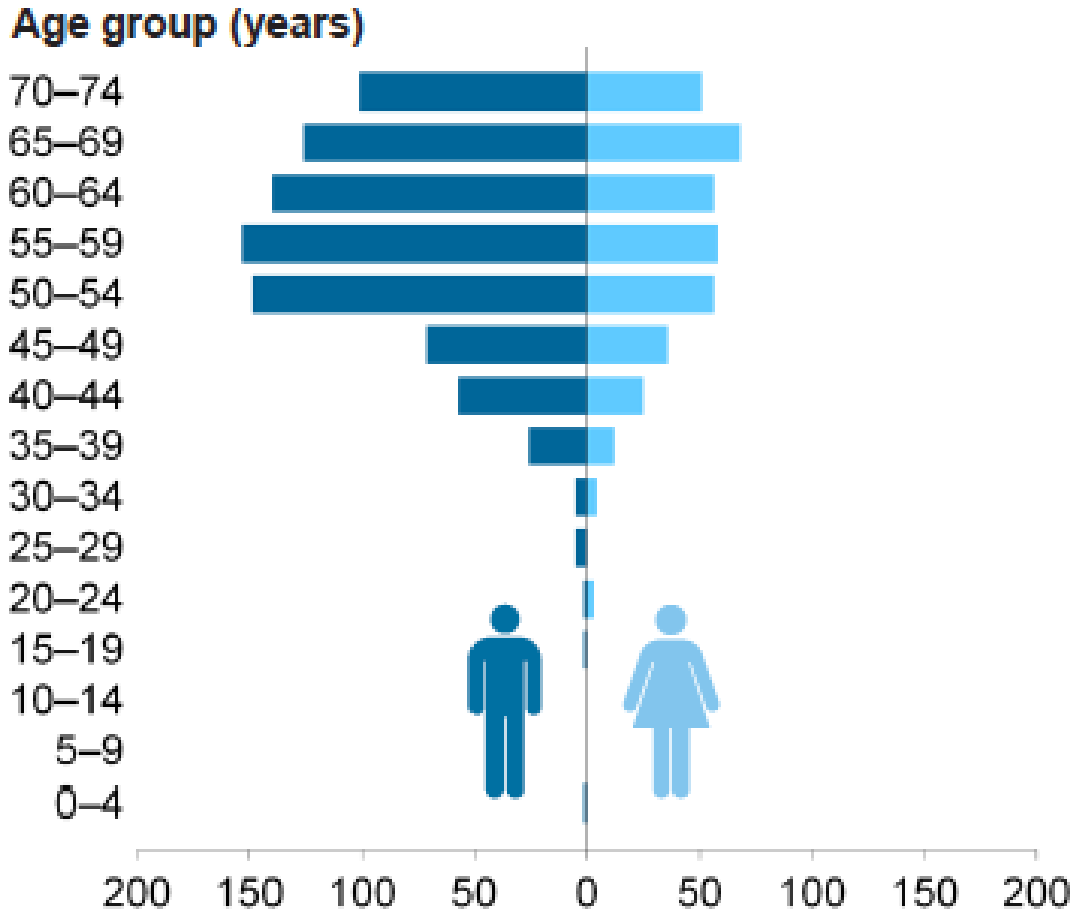
- 2nd second fastest growing incidence rate of all cancers
- Fastest growing cause of cancer-related deaths in Australia.
- Incidence rates have increased by more than 380% over the last four decades [3].

. Deloitte Access Economics (2013). The economic cost and health burden of liver diseases in Australia. Available at: https://www2.deloitte.com/au/en/pages/economics/articles/social-economic-cost-primary-liver-cancer-australia.html
. Adams LA et al. J Gastroenterol Hepatol 2020;35:1628–35. 3. Australian Institute of Health and Welfare 2015. Leading cause of premature mortality in Australia fact sheet: liver disease. Cat. no. PHE 199. Canberra: AIHW.
https://www.deloitte.com/au/en/services/economics/perspectives/social-economic-cost-primary-liver-cancer-australia.html

WHO DIES PREMATURELY FROM LIVER DISEASE IN AUSTRALIA?

Premature deaths due to liver disease, by sex and age group, 2012

69%♂



1. Australian Institute of Health and Welfare 2015. Leading cause of premature mortality in Australia fact sheet: liver disease. Cat. no. PHE 199. Canberra: AIHW.

COMMON TYPES OF LIVER DISEASES AFFECTING POPULATIONS

Non-Alcoholic Fatty Liver Disease

Non-alcoholic fatty liver disease arises due to lifestyle with prevalence due to obesity , T2DM and metabolic disease

Alcoholic Liver Disease Impact

Excessive alcohol consumption leads to alcoholic liver disease, a major health concern in rural communities.

Hepatitis B and C Prevalence

At the end of 2023 approx. 47029 individuals in Qld living with viral hepatitis

Genetic Liver Diseases:

Haemochromatosis and Alpha 1 Antitrypsin deficiency

METABOLIC DYSFUNCTION -ASSOCIATED FATTY LIVER DISEASE (MAFLD)

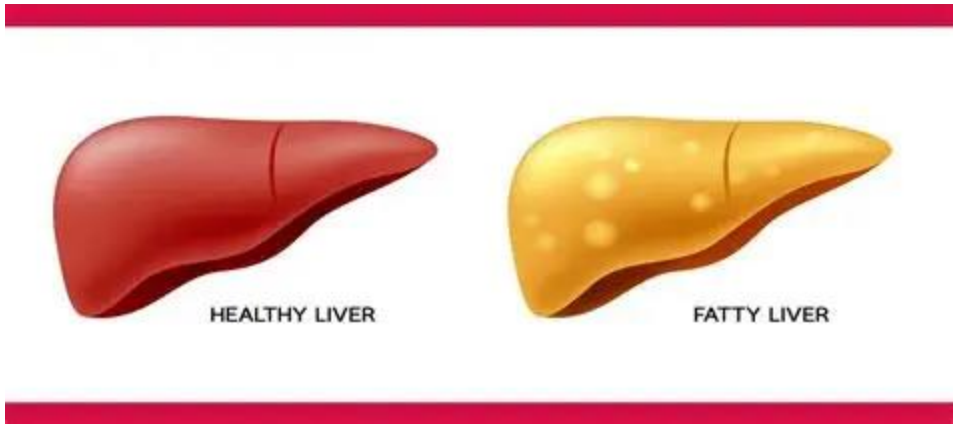
Assessment for MAFLD in people with:

- type 2 diabetes,
- obesity or
- 2+ metabolic risk factors (including hypertension, dyslipidaemia and Prediabetes).
- Associated with CVD,OSA and CKD

Diagnosis:

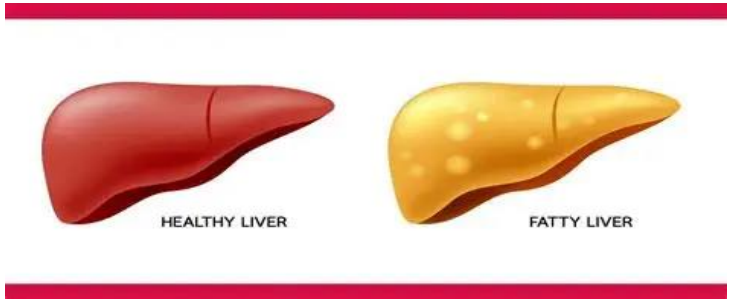
- Liver ultrasound sensitivity and specificity of ultrasound were 0.87, 82% and 87%, respectively, for the detection of hepatic steatosis of ≥5%,
- Controlled attenuation parameter (CAP) using FibroScan- 87% sensitivity and 82% specificity

Risk factor	Prevalence of MAFLD [10,27]
Overweight	30%
Obesity	55–75%
Type 2 diabetes	55–60%
Dyslipidaemia	55%
Hypertension	50%
Metabolic syndrome*	70%



Consensus statement published by GESA in 2024

MAFLD



Exclude co-existing conditions

- Excess alcohol consumption,
- Medications(corticosteroids, methotrexate, antipsychotics, valproate, amiodarone, tamoxifen)
- Other liver diseases-viral hepatitis, AIH,

Monitoring for progression: Non-invasive tests: FiB 4, Fibroscan, Enhanced liver Fibrosis

Fibrosis progression increased with elevated liver enzymes and poor diabetic control

Over 75 yo with MALFD with out advance fibrosis –low risk

Treatment:

Lifestyle interventions: Weight loss 5kg -31% improvement in liver fibrosis

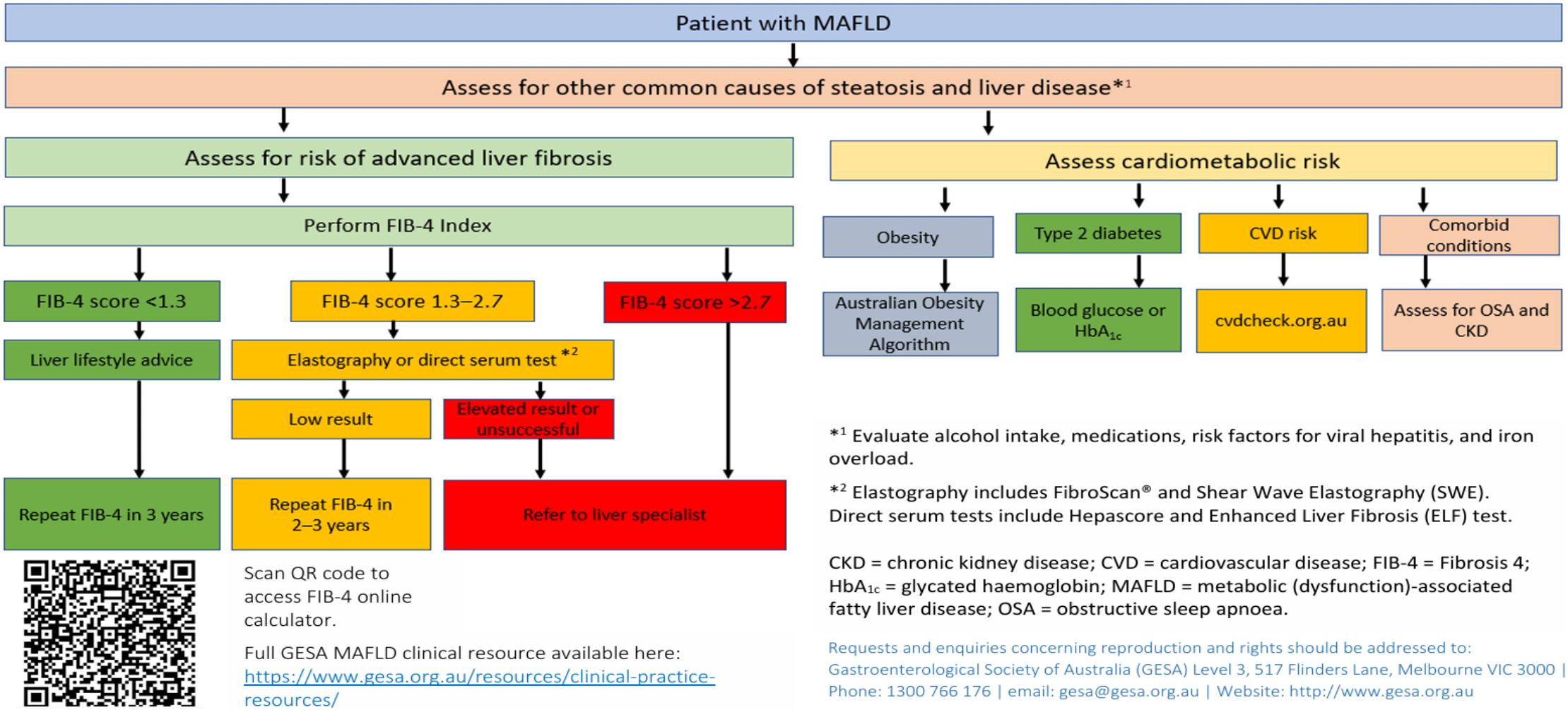
Coffee -2 cups per day- reduce fibrosis progression

GLP1 –tirzepatide/semaglutide,

Bariatric surgery

Common cause of death is: CVD-1/4 of all deaths then extra hepatic cancers – 2nd most common cause of death - 2x increase- GI, breast, lung, thyroid & genitourinary; CKD-43% increased risk over 10 years

Assessment Algorithm for a Patient Presenting with MAFLD



Scan QR code to access FIB-4 online calculator.

Full GESA MAFLD clinical resource available here: https://www.gesa.org.au/resources/clinical-practice-resources/

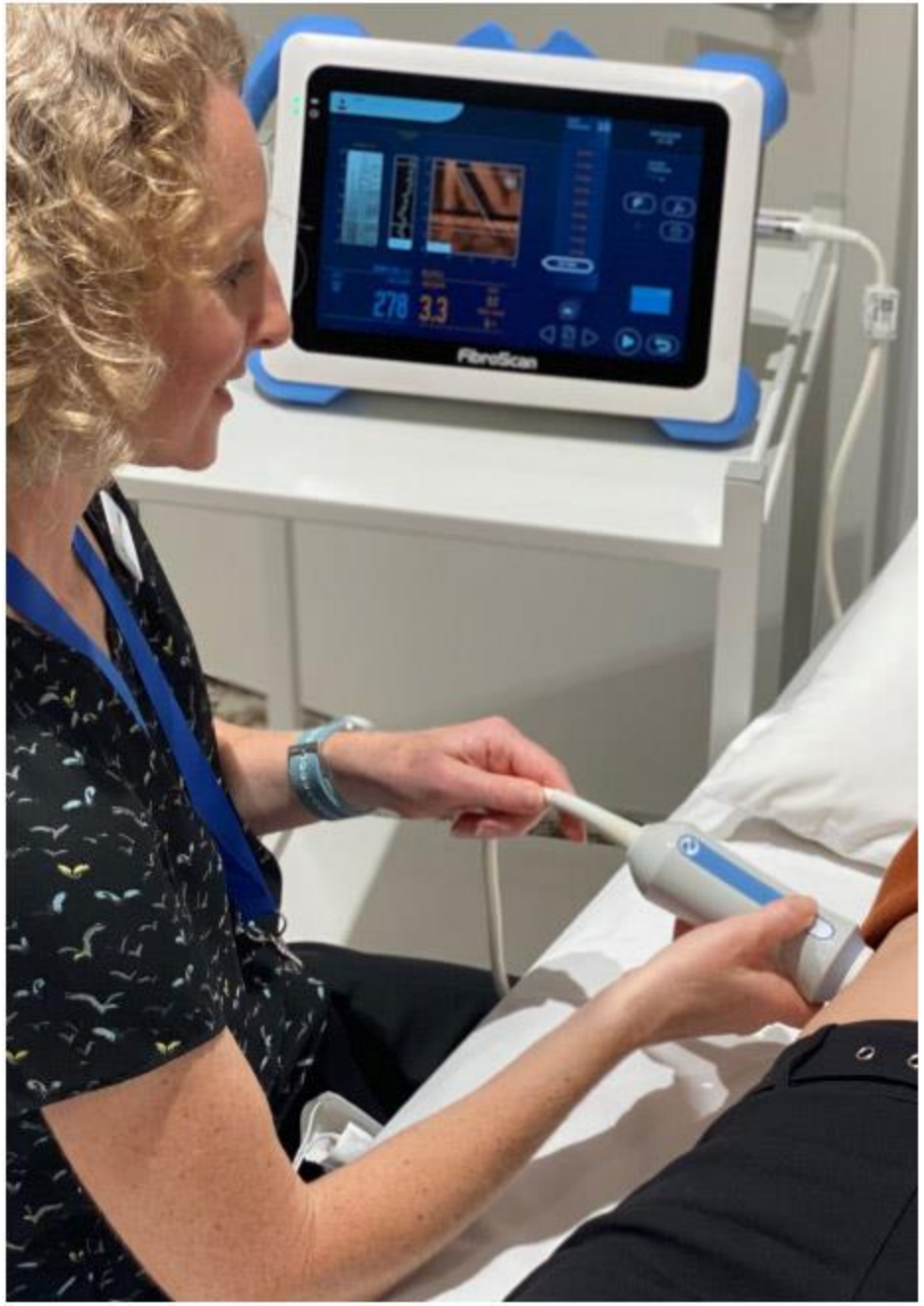
*1 Evaluate alcohol intake, medications, risk factors for viral hepatitis, and iron overload.

*2 Elastography includes FibroScan® and Shear Wave Elastography (SWE). Direct serum tests include Hepascore and Enhanced Liver Fibrosis (ELF) test.

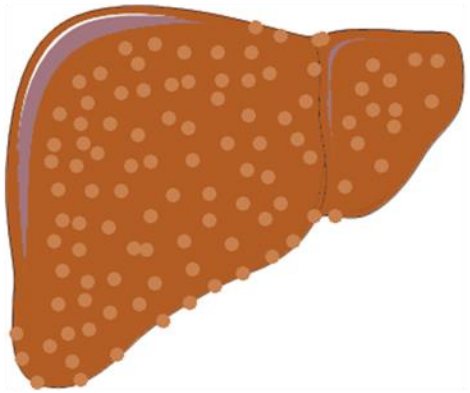
CKD = chronic kidney disease; CVD = cardiovascular disease; FIB-4 = Fibrosis 4; HbA_{1c} = glycated haemoglobin; MAFLD = metabolic (dysfunction)-associated fatty liver disease; OSA = obstructive sleep apnoea.

FIBROSCAN ASSESSMENT

- Most liver centres have use of a FibroScan machine
- <8.0 kPa excluding advanced fibrosis with 86% sensitivity and an NPV of 98–99%
- falsely elevated readings in acute hepatitis, cholestasis, liver congestion (eg, right heart failure), non-fasting states or focal liver lesions
- SWE available in some services with abdominal USS but is less validated in MAFLD compared with Fibroscan-sensitivity (72–80%) and specificity (72–86%) for predicting advanced liver fibrosis.
- SWE is less accurate with increasing body mass index (BMI) or in individuals with a skin to liver capsule distance greater than 30 mm, and thus reliability criteria should be included in elastography reports.



ALCOHOL RELATED LIVER DISEASE



- About 5% of Australians drink alcohol daily,
- alcohol-related fatty liver disease developing in 90% of people who drink more than 40 g of alcohol per day over a sustained period.
- Moderate alcohol consumption (between 5–30 g per day), may increase the risk of liver fibrosis,
- risk of harm is lowered when less alcohol is consumed than NHMRC guidelines (10/week).
- WHO states that there is no safe level of alcohol consumption- a Group 1 carcinogen
- Cirrhotic patients should abstain from alcohol due to the increased risk of HCC & decompensation.

Treatment:

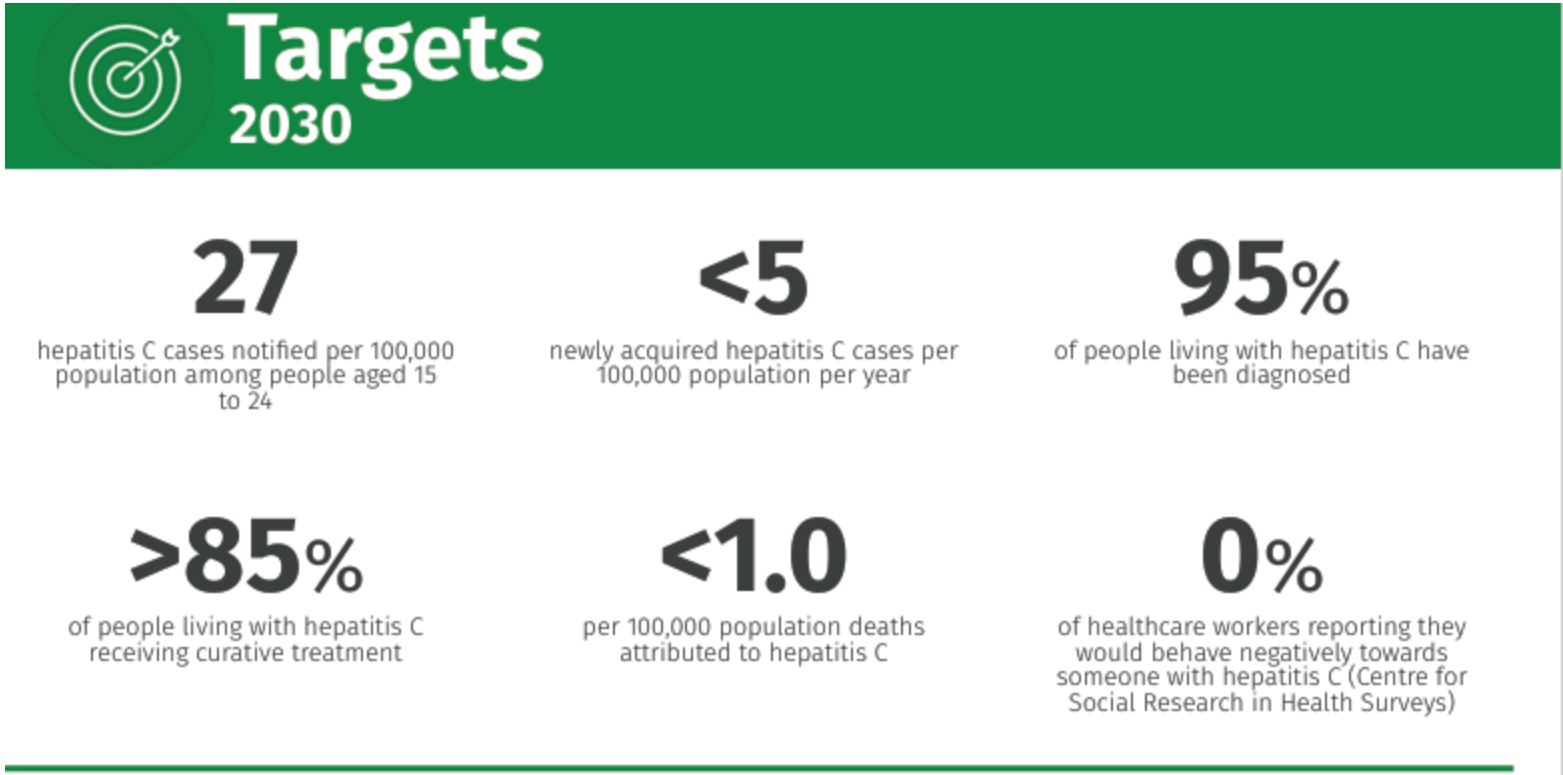
Addiction support services

https://qheps.health.qld.gov.au/darlingdowns/services-units/mental-health/mentalhealth-aods

HEPATITIS C

2023 notification data

- 26% Aboriginal and Torres strait Islander people & 40% in correctional settings
- Correctional settings 39%
- Decrease of 13% in non-correctional settings
- about 13,260 living with hepatitis C
- 91% have been diagnosed



https://www.health.qld.gov.au/__data/assets/pdf_file/0032/1438862/hepatitis-c-plan-2030.

HEPATITIS C

Often asymptomatic

All patients with elevated liver enzymes should be tested

Implementation of automatic reflex RNA testing following all hepatitis C positive antibody tests to support timely diagnosis of chronic infection

Curable with 8-12 weeks of treatment: https://ashm.org.au/resources/decision-making-in-hepatitis-c/

- Authority script by GP, NP and specialist
- No safety data for treatment in pregnancy
- Test for co-infections of HIV and Hepatitis B and assess for cirrhosis (APRI)
- Check for DDI https://www.hep-druginteractions.org/checker

Patients with ongoing risk factors should be tested yearly

Late presentations –patients with cirrhosis /or HCC

HEPATITIS B

35000 in Queensland

¾ of people living with hepatitis B are overseas born and Aboriginal and Torres strait people

Carcinogen

Vaccination –anticancer

Asymptomatic

Testing to include: HBsAg, HBcAb and HBsAb

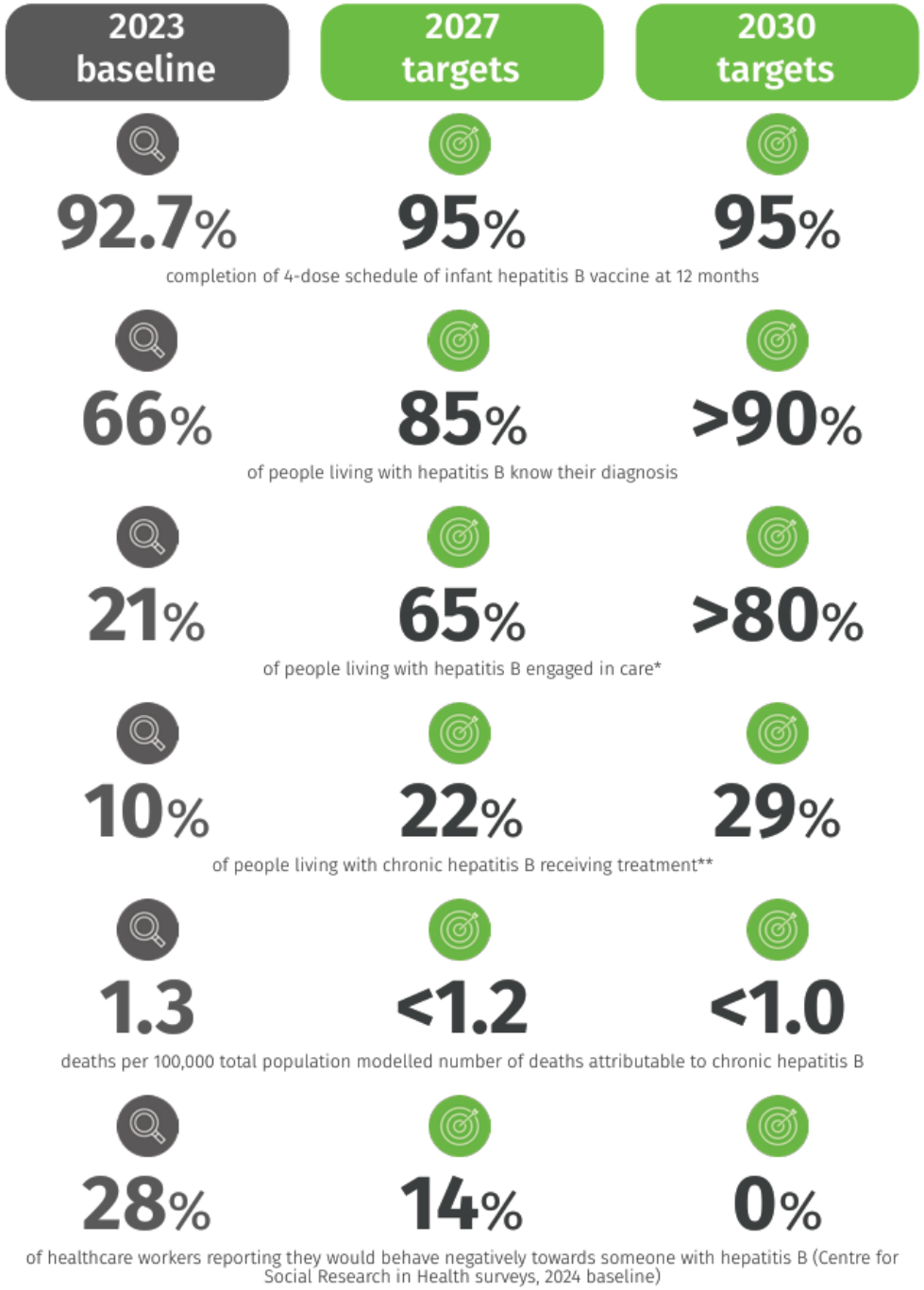
Needing surveillance 6/12 abdominal USS and Bloods

Treatment -antiviral oral therapy- long term

s100 prescribers in DDHS -ASHM course

Health Undertakings: https://immi.homeaffairs.gov.au/help-support/meeting-our-requirements/health/health-undertakir

https://ashm.org.au/resources/decision-making-in-hepatitis·



HEPATITIS B

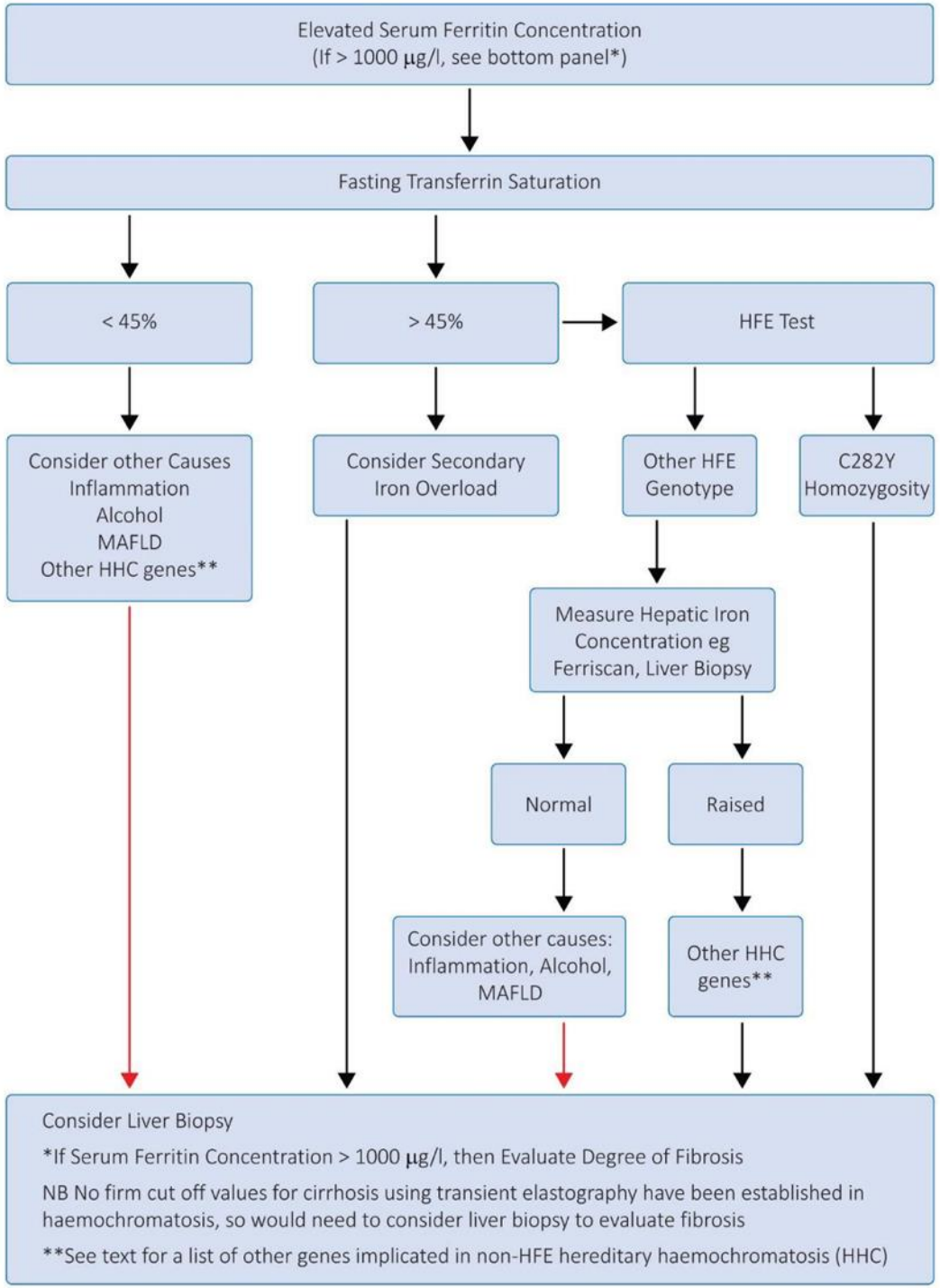
PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Darling Downs and West Moreton PHN	**676,793**	**3,567**	**0.53%**	**15.2%**	**7.3%**
Burnett	52,190	224	0.43%	10.5%	5.7%
Darling Downs – East	44,837	147	0.33%	#	#
Darling Downs (West) – Maranoa	45,892	213	0.46%	#	#
Granite Belt	43,384	158	0.36%	#	#
Ipswich Hinterland	72,630	288	0.40%	8.9%	4.8%
Ipswich Inner	126,698	676	0.53%	13.4%	6.5%
Springfield – Redbank	118,280	1,067	0.90%	24.0%	11.0%
Toowoomba	172,882	794	0.46%	11.7%	6.1%

Special considerations:

- Aboriginal & Torres Strait Islanders
- Overseas born in endemic countries
- Agricultural workers and overseas workers- visa requirements- health undertakings
- Pregnant women
- Non-responders to vaccination
- Reactivation of hepatitis B

HAEMOCHROMATOSIS

- common in people of Celtic or northern European descent.
- C282Y homozygote (C282Y/C282Y) 60-80% develop iron overload
- Treatment goals :SF to <300 µg/L for men and postmenopausal women, and <200 µg/L for women.
- Family genetic testing
- Reduce modifiable risk factors and other liver diseases
- Phlebotomy is not indicated in patients with hyperferritinnemia in the absence of genetic haemochromatosis or iron overload (ie, normal transferrin saturation levels) as it does not improve the underlying metabolic dysfunction or liver injury.



ALPHA-1 ANTITRYPSIN DEFICIENCY (A1ATD)

- Genetic disease- more prevalent among individuals of European ancestry
- 30,000 people in Australia and New Zealand have AATD, but less than 10% have been diagnosed
- Reduce modifiable risk factors- smoking/alcohol , exposure to inhalants, manage weight, immunisations
- Baseline RFT and abdominal USS.

Phenotype	[AAT] 95% Range (g/L)*	Risk of Emphysema	Risk of liver disease
M/M	1.0-2.73	No increased risk	No increased risk
M/S	0.84-2.25	No increased risk	No increased risk
M/Z	0.61-1.56	Slight increased risk	Slight increased risk
M/Null	0.47 – 1.3	Possible slight increased risk	No increased risk
S/S	0.49-1.81	Possible slight increased risk	No increased risk
S/Z	0.42-1.08	Moderate risk (20-50%)	Slight increased risk
Z/Z	0.15-0.57	High risk (80-100%)	High risk
Null	0	High risk	No increased risk

*It should be noted that AAT is an acute phase reactant and therefore levels may be higher than expected during acute infection/inflammation regardless of phenotype.

CHALLENGES IN DIAGNOSIS AND MANAGEMENT

Alcohol Consumption-Higher rates of alcohol consumption in rural areas increase the risk of liver disease among residents.

Limited Health Education--Limited access to health education in rural communities contributes to poor disease prevention and awareness.

Viral Hepatitis Prevalence in first nations and emerging communities –Untreated Viral hepatitis is prevalent in rural populations, increasing liver disease incidence rates

Socioeconomic Status Impact-Lower socioeconomic status limits access to quality healthcare and increases disease prevalence in rural communities.

Travel Challenges-Geographic isolation hinder timely access to medical facilities and services.

Healthcare Infrastructure Limitations-Limited healthcare infrastructure in rural areas reduces availability of essential medical care and resources

LIMITED ACCESS TO HEALTHCARE SERVICES

Healthcare Provider Shortage

Rural areas have fewer healthcare providers, leading to reduced access to medical care- wait times

Travel Distance Challenges

Patients in rural regions face longer travel times to reach healthcare facilities.

Limited Specialist Availability

Specialist medical services are scarce in rural locations, delaying diagnosis and treatment.

BARRIERS TO EARLY DETECTION AND ONGOING SCREENING/MONITORING

Lack of Awareness

Many of the affected individuals are unaware of screening benefits, leading to low participation rates and delayed diagnosis.

Insufficient Screening Programs

Limited availability and accessibility of screening programs reduce early detection opportunities.

Logistical Difficulties

Challenges like transportation and scheduling hamper timely access to screening services.

CULTURAL AND EDUCATIONAL OBSTACLES

Impact of Cultural Beliefs

Cultural beliefs influence health behaviours and can prevent individuals from seeking timely medical care.

Role of Stigma

Health-related stigma creates fear or shame, discouraging people from following medical advice.

Low Health Literacy

Limited understanding of health information hinders effective management and treatment adherence.

STRATEGIES FOR EFFECTIVE MANAGEMENT

Collaborative Care Models and Local Partnerships Integrated Care Pathways are coordinated care models improve patient outcomes by streamlining liver disease treatment in rural areas

Telemedicine enables remote specialist service consultations, overcoming geographic barriers in healthcare delivery.

Mobile clinics provide on-site screening services and healthcare access directly to rural communities.

Community organisations contribute resources and support for continuous care and patient education

COMMUNITY-BASED EDUCATION AND PREVENTION PROGRAMS

Community Empowerment

Education empowers communities to make informed decisions about liver health and disease prevention.

Liver Health Awareness

Raising awareness about liver health and risk factors encourages proactive health behaviours.

Disease Burden Reduction

Prevention programs help reduce the burden of liver disease in communities.

TRAINING RURAL HEALTHCARE PROFESSIONALS

Skill Enhancement

Specialised training improves rural healthcare workers' abilities in diagnosis and treatment.

ASHM prescriber course https://ashm.org.au/prescriber-programs/hepatitis-b/

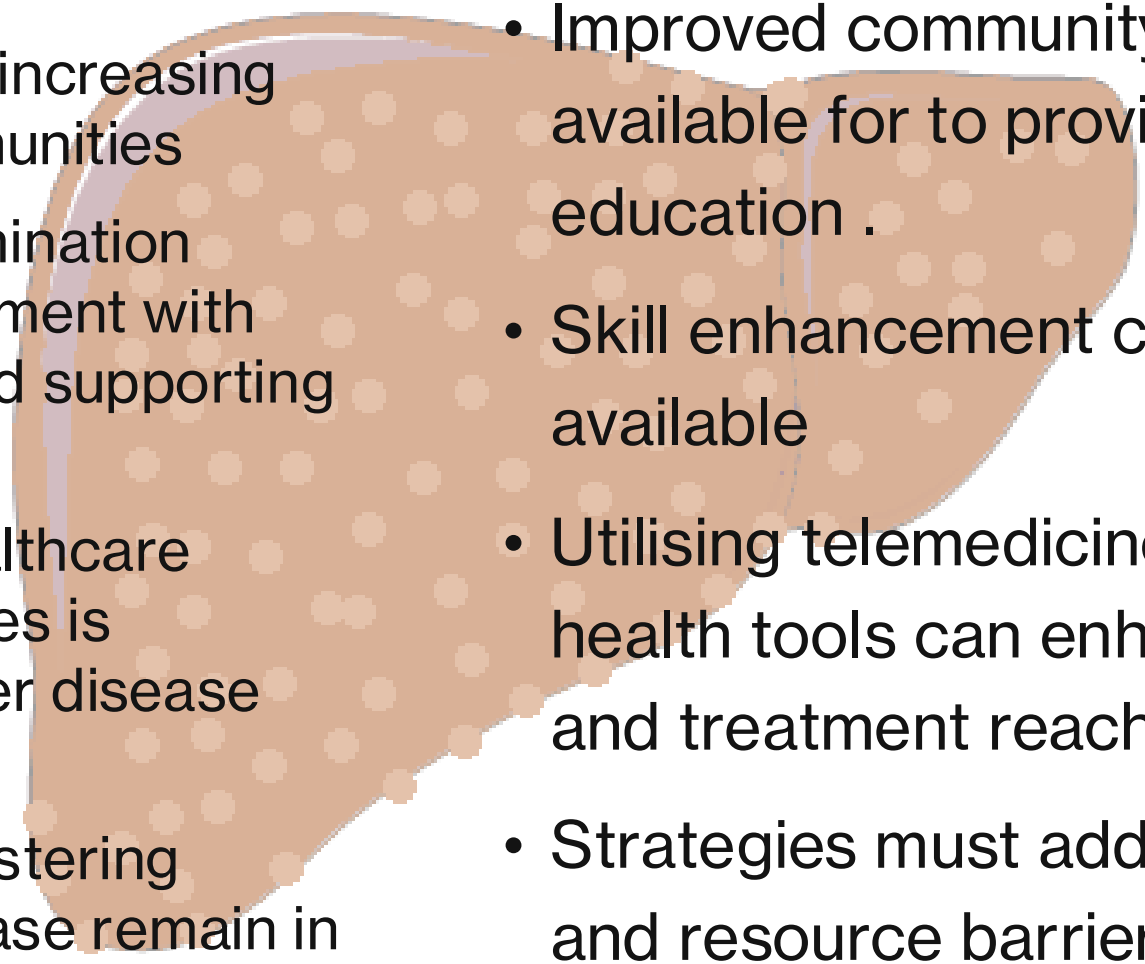
Liver foundation :GP education https://liver.org.au/health-professionals/gp-information/

AHA Advanced liver course https://www.hepatologyassociation.com.au/education/Introduction%20to%20Advanced%20Liver%20Disease%20course/

Improved Patient Management-Training empowers providers to manage patient care more effectively in rural settings.

CONCLUSION

- Prevalence Data reports increasing liver disease in our communities
- Viral Hepatitis -WHO elimination targets requiring engagement with affected communities and supporting improved outcomes
- Collaboration among healthcare providers and communities is essential for effective liver disease management
- Support is available to fostering strong collaboration please remain in contact



- Improved community resources available for to provide patient education .
- Skill enhancement courses are available
- Utilising telemedicine and digital health tools can enhance diagnosis and treatment reach
- Strategies must address geographic and resource barriers to improve liver disease care in rural regions.