Royal College of General Practitioners

Example of innovative and best practice in the management of liver disease

Name of project:	The Scarred Liver Project		
Project start date:	May 2013	**Project end date:**	Ongoing
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Introduction:

Chronic liver disease has risen up the public health agenda due to increasing mortality rates and the preventable burden of disease within the general population caused in the majority by lifestyle related risk factors. These include excess alcohol use, obesity and Type 2 diabetes. Alcoholic liver disease (ALD) and non-alcohol fatty liver disease (NAFLD) are now the most common causes of chronic liver disease within Western civilisations.

Current strategies to identify liver disease within the community are inadequate. In primary care, liver function tests (LFTs) are the main diagnostic modality; however these are insensitive in diagnosing disease. Subsequently, in the UK, 50% of patients with cirrhosis are first diagnosed when hospitalised with symptoms of a decompensating event [1]. This results in a reduced quality of life, a poor prognosis and an expensive associated healthcare cost [2, 3]. In contrast, many patients who have abnormal LFTs do not have any disease resulting in an avoidable referral to secondary care and the possibility of patients undergoing unnecessary invasive investigations, such as biopsies.

Transient elastography (Fibroscan®, Echosens, Paris) is a non-invasive test that has high sensitivity and specificity for identifying patients with liver fibrosis. It has had extensive validation in secondary care with diagnostic studies performed against the gold standard of a liver biopsy in more than 10,000 patients [4]. The availability of a portable device enables implementation into a community setting and a recent systematic review highlights the rationale of this approach [5].

Therefore, there is the potential to establish a community based diagnostic pathway for chronic liver disease which stratifies patients with established risk factors using validated non-invasive tests. At

present, this pathway does not exist in clinical practice. The Scarred Liver Project aims to address this burgeoning issue.

The project sought to establish the feasibility of this approach by enabling GPs to actively identify and refer patients with risk factors rather than solely relying upon abnormal LFTs. A Fibroscan is performed in the community which risk stratifies the patient based on the severity of liver fibrosis. This can then be used to decide which patients need referral to secondary care. All patients who attend the pathway receive lifestyle advice irrespective of their scan result. The integration of this brief intervention with a point of care diagnostic test provides added value to the pathway.

Aims of the project:

1. Increased early detection and diagnosis of chronic liver disease
2. Patient responding to suspected diagnosis of chronic liver disease and changing their behaviours
3. Secure CCG buy-in to commission the Scarred Liver Project diagnostic pathway locally
4. To provide a roadmap for CCGs to adapt and implement on a national level.

Actions:

The Scarred Liver Project initially piloted the community diagnostic pathway in 5 GP practices across the East Midlands through 3 separate deployments. The first deployment (May 2013) set out to determine the feasibility of this approach whilst further iterations (April 2014, January 2015) were to determine the success of the project within different socio-economic and geographical areas.

Further work has been occurring in parallel in order to facilitate and sustain implementation, support a commissioning case for the pathway and promote adoption of the pathway both regionally and nationally. This includes:

- A health economic evaluation
- A service evaluation: The life cycle of service design from the participants perspective
- Construction of an evaluation framework to assess the wider impact on other health care services of implementing the diagnostic pathway.
- Development of an implementation toolkit to enable others to adopt and adapt the pathway within their own health care setting. Resources can be found at www.scarredliverproject.org.uk

A commissioning case for the pathway was successfully developed and implemented across 4 CCGs in South Nottinghamshire in September 2016. The pathway is now accessible to more than 100 GPs serving a population of approximately 700,000 people. Following an algorithm GPs are able to refer patients with a defined risk factor for chronic liver disease directly for a specialist test (Fibroscan) before considering a referral to secondary care.

Results:

Pilot

This successfully demonstrated the feasibility of implementing the community pathway in 3 separate areas of the East Midlands:

- A population of 25,018 adults were analysed; 3688 patients were identified to be at risk
- 20% of patients attending Fibroscan clinics had signs of significant liver disease and 39 new cases of cirrhosis were diagnosed – asymptomatic cases that would have otherwise gone undetected
- All patients attending community clinics were given brief lifestyle interventions including information from the British Liver Trust on improving their liver health.

The commissioned pathway across South Nottinghamshire - Commenced September 2016

- 752 patients have attended for a Fibroscan and received brief intervention (correct as of June 2017)
- 126 patients had a Fibroscan reading of 8-14.9kPa which suggests the presence of liver fibrosis
- 45 patients had a Fibroscan reading of >15kPa which suggests the presence of significant liver disease
- Over 100 GPs from across South Nottinghamshire have been trained by the project team

Patient experience and engagement

- Attendance rates for scans were 95% in community versus 60% in hospital
- Over 90% of patients said they would recommend it to family and friends

Health Economics

- Economic evaluation has demonstrated that this pathway is cost effective compared to current standard of care and is within the NICE threshold of £20,000 per quality-adjusted life-year (QALY).
- For a patient diagnosed with NAFLD the pathway costs £2,138 per QALY gained and for ALD it costs £6,537 per QALY gained.

Summary of the impact of this practice, project or intervention:

The Scarred Liver Project has successfully piloted a community based risk stratification pathway for chronic liver disease which is now commissioned within the local area. The pathway integrates primary and secondary care enabling patients with liver disease to be diagnosed earlier where interventions could reduce, stop or even reverse the progression of disease. Patient satisfaction is consistently high and the pathway has been shown to be cost effective compared to current standard of care.

Team role	**Involvement in delivery**	**Impact upon their role**
GP	• Identification of patients at risk of chronic liver disease. • Referral of patients to secondary care by completion of an electronic request form. • Acting upon the scan result and referring to Hepatology outpatients/ weight management services/ alcohol liaison services as required. • Patient education about their risk factor(s) for chronic liver disease and how this can be managed.	• Provides a mechanism to reduce repeat LFTs which have a cost both financially and on time resource • Direct referral form can be created on primary care computer systems
General practice nurse	• Identification of patients at risk of chronic liver disease. E.g. Via diabetic annual reviews • Referral of patients to secondary care by completion of an electronic request form. • Patient education about their risk factor(s) for chronic liver disease and how this can be managed.	• Minimal impact
Other (Dietician)		• Possibility of an increase in referrals for patients who require this service.
Other (Alcohol liaison nurse)		• Possibility of an increase in referrals for patients who require this service.

References

1. Ratib, S., et al., *1 and 5 year survival estimates for people with cirrhosis of the liver in England, 1998-2009: a large population study.* J Hepatol, 2014. **60**(2): p. 282-9.
2. Scalone, L., et al., *The societal burden of chronic liver diseases: results from the COME study.* BMJ Open Gastroenterology, 2015. **2**(1).
3. Ratcliffe, J., et al., *Assessing health-related quality of life pre- and post-liver transplantation: a prospective multicenter study.* Liver Transpl, 2002. **8**(3): p. 263-70.
4. Friedrich-Rust, M., et al., *Performance of transient elastography for the staging of liver fibrosis: a meta-analysis.* Gastroenterology, 2008. **134**(4): p. 960-74.
5. Harris, R., et al., *Prevalence of clinically significant liver disease within the general population, as defined by non-invasive markers of liver fibrosis: a systematic review.* Lancet Gastroenterol Hepatol, 2017. **2**(4): p. 288-297.