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## POSTER ABSTRACT

# The liver toolkit – an innovative IT solution to screen patients in general practice for undiagnosed cirrhosis.

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**Introduction:** Detecting patients with undiagnosed chronic liver disease is a public health challenge. Patients with advanced fibrosis or compensated cirrhosis have much better outcomes than those with decompensated disease and may be eligible for interventions to prevent disease progression.

**Methods:** A cloud-based software solution ('the liver toolkit') was developed to access primary care practice software to identify patients at risk of chronic liver disease. Clinical history and pathology results were extracted to calculate Aspartate aminotransferase to Platelet Ratio (APRI) and Fibrosis 4 (FIB-4) scores. Patients identified were recalled for assessment including transient elastography (TE).

**Results:** Existing pathology results of more than 32,000 adults across nine general practices were assessed to identified 703 patients at high risk of liver disease (2.2% of the cohort). Patients with an existing diagnosis of cirrhosis were excluded. 179 patients (26%) were successfully recalled and 13% (n=23) were identified to have advanced fibrosis or cirrhosis (TE  $\geq$  10.0 kPa)(10% indeterminate results, 25% early fibrosis, 53% normal). In almost all cases the diagnosis of liver disease was new with the most common aetiology being non-alcoholic fatty liver disease (n=20, 83%). The liver toolkit was better at detecting patients who required further assessment in secondary care than direct GP referral (22.9% vs 3.6%, p = 0.021). APRI  $\geq$  1.0 and FIB-4  $\geq$  3.25 had a positive predictive value for detecting advanced fibrosis or cirrhosis of 20% and 24% respectively. Patients who did not attend recall had markers of more severe disease with a higher median APRI score (0.46 vs 0.57, p =0.041).

**Conclusion:** This novel IT system successfully screened a large primary care cohort using existing pathology results to identify patients at increased risk of liver disease. More than 1 in 5 patients recalled were found to have significant liver disease needing ongoing follow up.