High-sensitivity troponin (hs-cTn) concentrations above the manufacturer recommended upper limit of normal (ULN) are frequently seen in patients without a clinical presentation consistent with type 1 myocardial infarction. There is increasing evidence that these concentrations may act as a marker of prognosis in a range of conditions. However, previous studies have been limited because they have only included patients in whom the clinician has requested the test. The aim of this study was to assess the relationship between medium term mortality and hs-cTn concentration in a large consecutive hospital population undergoing a blood test, regardless of whether there was a clinical indication for performing the hs-cTn. Method: This single centre study included 20,000 consecutive patients undergoing a blood test for any reason, in whom hs-cTn was added, regardless of the clinical indication (CHARIOT population). Mortality data up to 2.25 years was obtained via NHS Digital. The association between hs-cTn concentration and one year mortality was evaluated using Kaplan-Meier plots (with log-rank test) and Cox proportional hazards analyses. After the cohort was considered as a whole, each of the clinical areas (inpatient (IPD), outpatient (OPD), emergency department (ED)) were considered separately. Furthermore, in the IPD and ED populations, a landmark analysis was performed excluding those patients who died within 30 days to assess whether any longer term relationship was driven by short term mortality.

Results Overall, 2825 (14.1%) patients had died at 2.25 years. The mortality at 2.25 years was significantly higher if the hs-cTn concentration was above the ULN (45.3% versus 12.3% p<0.001 (log rank) in the entire cohort (figure 1). Multivariable Cox regression analysis demonstrated that the log(10)hs-cTn concentration was independently associated with 2.25 year mortality (hazard ratio (HR)1.69 (95%CI 1.59 – 1.80)). Further analysis by excluding those patients that died within 30 days demonstrated that the relationship between hs-cTn concentration and mortality persisted and it was not driven by short term mortality.

Conclusion In a large, unselected hospital population of both in- and out-patients, the majority of whom there was no clinical indication for testing, hs-cTn concentration was independently associated with medium term mortality. These data suggest that hs-cTn may have a role as a biomarker of future risk.

Conflict of Interest All of the assays used in our studies were provided free of charge by beckman coulter.
1. A full lipid profile is measured at first presentation
2. Patient education on lifestyle modifications for secondary prevention of cardiovascular disease are delivered
3. Patients are started on a high-intensity statin (Atorvastatin 80 mg) before discharge
4. Repeat lipid profile & liver function tests are obtained at their first outpatient clinic appointment
5. Ezetimibe should be considered in addition to high-intensity statin for patients who have not reached the lipid reduction target (>50% LDL-C reduction from baseline, or LDL-C <1.4 mmol/L) or as an alternative lipid-lowering therapy in patients intolerant to statins

Methods and Results After exclusion, a total of 203 inpatients at a district general hospital diagnosed with AMI from February 1st 2021 to September 31st 2021 were identified. Data was compiled from patient case records using clinical notes, a web-based laboratory reporting system, and healthcare summary records to assess relevant blood test results, ward round entries, and relevant correspondence including discharge and outpatient clinic letters. In the 8-month period, we have failed to achieve our >90% target threshold for any of the five criteria. 47% patients admitted with an AMI had lipid profiles taken on admission, and 72% had this retested at their follow-up outpatient review. 78% received lifestyle modification advice during admission, and high-intensity statin therapy was initiated for only 87%. For the 70 patients indicated for further lipid-lowering therapy with Ezetimibe, only 16% of them had received this recently licensed therapy.

Conclusion Dyslipidaemia is a leading reversible cause of cardiovascular morbidity and mortality, and opportunities to fully address this risk factor have not been consistently taken in secondary care. Ezetimibe has strong evidence on its efficacy in LDL reduction, hence strategies should be aimed at more effective identification of those who may benefit from this recently approved therapy. Cost-effective interventions such as educational presentations and poster information on relevant wards will be trialled with data collected to monitor the progress of each intervention as it is introduced.

Conflict of Interest None