eXtreme review and consulted with a leading hepatologist and pathologist to identify the appropriate procedure codes associated with liver biopsy; we assumed MRE would be reimbursed using CPT-4 code 74,181 (magnetic resonance (eg., proton) imaging, abdomen; without contrast materials)). We assigned the appropriate allowable charges to the identified procedure codes using the 2010 Medicare Physician Fee Schedule. Finally, we assumed negative predictive values (NPV) of 0.8, 0.9 and 0.95, and that patients with a false-negative MRE ultimately received a biopsy. **RESULTS:** The cost of a liver biopsy was $1424 (ultrasound $164, surgical $881, pathology $347, laboratory $32) and the cost of an MRE (without contrast) was $946 (hospital setting) or $666 (non-hospital setting). In a hospital setting, MRE is potentially cost saving if the test-negative rate is greater than 83%, 74% and 70% for NPVs of 0.8, 0.9 and 0.95, respectively. In a non-hospital setting, MRE can reduce diagnostic costs when more than 58%, 52% and 49% or patients have negative MRE results for the corresponding NPV values. **CONCLUSIONS:** The cost of liver biopsy is substantial as compared to MRE. MRE offers the potential of reducing the cost of diagnosing liver fibrosis by avoiding unnecessary biopsies. Cost saving potential increases with MRE’s negative predictive value and negative test rate.