Introduction:
The aim of this study is to determine if routine BBV testing in the ICU contributes to the discovery of undiagnosed BBV infections. ICU patients may require renal replacement therapy (RRT). Sharing RRT equipment carries a risk of BBV transmission, which mainly relates to Hepatitis B (HBV), Hepatitis C (HCV) and HIV. Since 2012, all Glasgow Royal Infirmary ICU patients undergo routine BBV screening, with RRT machines allocated for patients with specific BBV statuses. Routine BBV testing is beneficial to both the individual and society. HCV is a pertinent health issue in Scotland. The Scottish government aims to eliminate HCV by 2030 and is researching innovative and cost-effective methods to identify undiagnosed infections.

Methods:
This single-centre retrospective observational study examined prospectively collected clinical data from 1069 ICU admissions. Proportions were compared using a two-proportion z-test and a logistic regression model was carried out to determine if deprivation quintile was independently associated with the seroprevalence of BBVs.

Results:
The BBV seroprevalence in the cohort studied: 0.45% (HBV), 11.7% (HCV), 0.91% (HIV). The seroprevalence of HBV in the cohort studied was similar to that of Scotland (p=0.11), but the seroprevalence of HCV (p<0.001) and HIV (p=0.01) were statistically significantly higher than that of Scotland. Due to the small number of reactive test results for HBV and HIV, the relationship between deprivation and BBV seroprevalence was explored for HCV only. The only independent variable associated with a reactive anti-HCV test result was “current or previous illicit drug use” (adjusted odds ratio of 40.2; 95% confidence interval of 21.1-76.4; p<0.001).

Conclusion:
This study shows that routine BBV testing in the ICU is useful in discovering new BBV infections. This is the first observational study focusing on the value of routine BB testing in an ICU setting to our knowledge.