or HBeAg) at least 6 months apart (indicative of CHB). Severe outcomes included incident hepatic decompensation, hepatocellular carcinoma (HCC), liver transplant and death, and prevalent and incident liver cirrhosis. For each outcome, we estimated the distribution of characteristics including age, sex, race/ethnicity, and lab values (alanine aminotransferase [ALT], alpha-fetoprotein [AFP], MELD score).

Results. Our final study population included 5,427 CHB-diagnosed patients with 411 (7.6%) cases of liver cirrhosis, 123 (2.3%) of hepatic decompensation, 65 (1.2%) of HCC, 8 (0.1%) of liver transplant, and 164 (3.0%) deaths. Compared to the total cohort, those who developed severe outcomes were older (median age for each outcome >50 years vs. 47 years in total CHB population). Among those with severe outcomes, the majority were male (>56%) and Asian. Diabetes was more prevalent in patients with hepatic decompensation, HCC, and death versus the entire cohort (25% vs. 8%, respectively, P< 0.0001), and twice as prevalent among those with cirrhosis. All severe outcomes were associated with >2 x upper limit of normal ALT levels.

Conclusion. The characteristics of those with severe outcomes were consistent with those of overall CHB, although there was a 2-3 times higher prevalence of diabetes in those with severe outcomes. Identifying characteristics that are more prevalent in those with severe outcomes can help inform screening and management of CHB.

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907. The HCV Care Continuum Among Hospitalized Persons Who Inject Opiates: Missed Opportunities for Screening and Referral to Treatment

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Session: P-52. Hepatitis

Background. Despite an effective cure, hepatitis C virus (HCV) remains a major public health problem for persons who inject opioids. Hospitalization provides an opportunity to identify chronic HCV infection and provide referral and linkage to outpatient care upon discharge. We examined the HCV care continuum among hospitalized persons who inject drugs and have opiate use disorder (OUD).

Methods. The CHOICE Study is a retrospective chart review of adults hospitalized with infectious complications of OUD and injection drug use at four academic medical centers (University of Maryland, George Washington University, University of Alabama, and Emory University). The sample included patients hospitalized between 1/1/2018-12/31/2018, had ICD9/10 diagnosis codes consistent with OUD and acute bacterial/fungal infection, and chart review verification of active infection associated with OUD. Data on HCV antibody (Ab) and RNA test timing and referral to HCV treatment within the medical system were abstracted from medical records.

Results. Of 287 patients, median age was 40 (IQR: 32-52), 59% were male, and 63% were white and 34% black. Overall, 38% (n=108) had known HCV infection at hospitalization; of those with unknown status, only 41% (n=73) were screened for HCV. Among those, 67% were HCV Ab+. Of patients who were HCV Ab+ or had known HCV infection (n=157), only 52% were tested for HCV RNA, of whom 61% had detectable RNA. Only 40% of those with detectable RNA received a treatment referral prior to discharge (Fig 1). The length of stay of the admission was not associated with treatment referral, but a shorter length of stay was significantly associated with not being screened for HCV Ab or RNA tested (p< 0.05). Of five patients who were referred to care within the medical system, four initiated HCV treatment, and two achieved known sustained viral response.

908. Dismantling Barriers to Hepatitis Elimination: Automated Hepatitis C Screening with Care and Cure by a Primary Care Based Team

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Session: P-52. Hepatitis

Background. Liver cancer rates are rising in the US, viral hepatitis accounting for more than 65% of the cases. Yet more than half of viral hepatitis infections remain undiagnosed. In response to the rise in HCV due to the opioid epidemic, the Centers for Disease Control and Prevention began recommending a one-time HCV test for all adults in 2020. Screening, linkage to care (LTC) and access to HCV curative therapy must be scaled up to reach the WHO goal of eliminating hepatitis by 2030.

Methods. In 2018, automated HCV screening utilizing electronic medical record protocols began in the emergency department (ED) based on the date of birth. Drug testing and peer recovery consults were added as eligibility criteria. Screening became universal and expanded to the inpatient units in 2020. Patient navigators (PN) received alerts of positive results and worked with patients to arrange LTC, one site being a primary care based practice (PCP) where internists provided HCV care and support from ambulatory care clinical pharmacists.

Results. From Mar 2018 to Mar 2021, 50,873 people were screened for HCV, with 977 (1.9%) testing HCV Ab+, and 259 (0.5%) had confirmed infection by reflex HCV RNA. LTC 86.6% of patients, and 128 (49.4%) were newly diagnosed. Universal screening led to 35,482 tests from Jan 2020-Mar 2021. People born out of the 1945-65 birth cohort made up 75.8% of the screened and 39.1% of the infected. The PCP evaluated 47 HCV patients, initiated therapy in 38; 36 required prior authorization and 15 needed financial assistance. Treatment breakdown was: 29 (76.3%) glecaprevir/pibrentasvir, 6 (15.8%) sofosbuvir/velpatasvir & 3 (7.9%) ledipasvir/sofosbuvir. Pharmacist intervention with prior authorizations and financial assistance significantly reduced the cost (table 1). Thus far, 35 achieved cure with undetectable HCV RNA at 12 weeks.
Table 1. The Cost of Treatment before and after Pharmacist Assistance

| Medication | Treatment Duration | Cost of Treatment before Pharmacist Assistance | Cost of Treatment after Pharmacist Assistance |
|------------|--------------------|-----------------------------------------------|-----------------------------------------------|
| Maviret (Glecaprevir/Pibrentasvir) | 8 weeks | $31,679.0 | $0.0 |
| | | $25,564.0 | $0.0 |
| | | $31,679.0 | $14.0 |
| | | $3,000.0 | $0.0 |
| | | $25,422.0 | $0.0 |
| | | $27,838.5 | $9.0 |
| | | $24,934.1 | $3.0 |
| | | $8,454.0 | $10.0 |
| | | $31,679.0 | $0.0 |
| | | $26,571.0 | $14.0 |
| | | $31,679.0 | $0.0 |
| | | $28,329.0 | $8.0 |
| | | $25,344.0 | $0.0 |
| | | $31,679.0 | $0.0 |
| | | $7,754.0 | $0.0 |
| | | $31,679.0 | $0.0 |
| | | $2,000.0 | $15.0 |
| | | $25,672.0 | $0.0 |
| | | $31,679.0 | $0.0 |
| | | $1,516.0 | $0.0 |
| | | $8,250.0 | $10.0 |
| | | $31,679.0 | $0.0 |
| | | $31,679.0 | $0.0 |
| | | $31,679.0 | $0.0 |
| | | $31,679.0 | $0.0 |

12 weeks $31,679.0 $0.0 $4,477.0 $41.1 $0.0

16 weeks $27,838.5 $0.0 $25,866.0 $0.0 $25,866.0 $0.0 $22,382.0 $0.0 $25,119.0 $11.0 $22,382.0 $0.0 $3,018.0 $0.0

Median $23,750.5 $0.0 $1,516.0 $15.0 $4,688.0 $0.0 $11,790.0 $0.0

Harvoni (Ledipasvir/Sofofuvir) 12 weeks $150.0 $15.0 $4,688.0 $0.0 $11,790.0 $0.0

Median $4,688.0 $0.0

Conclusion. Automated universal testing was an effective and seamless way to scale up HCV screening. Warm handoffs from a PN were important for engaging patients in care. A team approach assisted with removing barriers in therapy access, including prior authorization, specialist requirements, and financial assistance. Novel strategies utilizing ED and hospitals for testing with coordination to PCP are needed to find the missing millions and achieve hepatitis elimination.

909. Treating Hepatitis C Virus (HCV) in Young Adult Active Drug Users Is Possible
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Session: P-52. Hepatitis

Background. Successful treatment of HCV in persons who inject drugs (PWIDS), has been reported for patients who were older or who had used drugs more than 6 months prior. The young, < 35 year of age (yoa), active user has not been well studied or reported. We performed a pilot treatment study in a young cohort of PWIDS to evaluate cure rates of HCV in this population.

Methods. Young, active PWIDS using < 6 months earlier, < 35 yoa were identified. Treatment for HCV with glecaprevir/pibrentasvir (G/P) and concurrent treatment for opiate use disorder with XR Naltrexone (XR-NTX) was provided. Two patients chose methadone. Patients were followed up to 12 months after enrollment. Patients were evaluated for adherence, side effects, alanine aminotransferase (ALT) levels, urine drug screens (UDS) and opioid craving scores using a visual analog scale (VAS) while on XR-NTX to assess management of their addiction. Rates of treatment completion, SVR 4 & 12 were determined.

Results. 30 patients were recruited: 18 were women. Average age was 28 with a range of 23-35. Recent injection drug use was common with 22 (73%) having injected within the 30 days and all having injected within 3 months of recruitment. The average ALT on enrollment was 106. Genotypes were 1 (15), 3a (11), and unknown (4). Of the 30 patients, 15 failed to come for the required 2 visits prior to starting G/P. Lost to follow up occurred due to relapse of addiction (9), overdose death (1), lost communication and suspected relapse (4). 15 began and completed G/P. 15 were cured of their HCV infection. 17 patients receive one or more doses of XR-NTX. On average patients were on XR-NTX for 4.8 months. Sobriety was measured for patients on XR-NTX using Opiate Craving Scores using the Visual Analogue Scale (VAS) and UDS (Figure 1) demonstrating excellent control of craving and significant declines positive UDS. Toxicities were uncommon with no treatment limiting adverse events. Adverse effects of XR-NTX included mild injection site irritation. No ALT abnormalities were noted.

Conclusion. Young active PWIDS can successfully be cured of HCV. Their addiction can be concurrently managed with XR-NTX. Our findings suggest it is safe to treat active users with active HCV with XR-NTX improving elimination goals.

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910. Evaluation of an Enzymatic Immunoassay System for Detection and Differentiation of Rat Hepatitis E Virus Infection in Humans
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Session: P-52. Hepatitis

Background. Previously, hepatitis E in humans was believed to be caused exclusively by species A variants of the Orthohepevirus genus (HEV-A) of the family Hepeviridae. However, we have previously demonstrated that Orthohepevirus species C (HEV-C), also known as rat hepatitis E virus, also causes hepatitis in humans. Due to high sequence divergence between HEV-A and HEV-C, serological tests based on HEV-A are often insensitive for HEV-C diagnosis. Therefore, we developed an enzymatic immunoassay (EIA) system for differentiating HEV-A and HEV-C antibody signatures in human sera.

Methods. A two-step enzymatic immunoassay for differentiating anti-HEV-A and anti-HEV-C was developed. The two-step EIA employs two capture antibodies, one specific to HEV-A and the other to HEV-C, to capture HEV-A and HEV-C antibodies. A mouse monoclonal anti-HEV-A capture antibody was used in the first step, followed by a secondary anti-HEV-C capture antibody in the second step. The two-step EIA was evaluated using sera from healthy controls and patients with acute hepatitis E.

Results. The two-step EIA was able to differentiate between HEV-A and HEV-C antibodies. The sensitivity and specificity of the EIA were 100% and 95%, respectively. The EIA was able to differentiate between HEV-A and HEV-C antibodies in all sera tested.

Conclusion. The two-step enzymatic immunoassay system for detecting and differentiating HEV-A and HEV-C antibodies is a sensitive and specific tool for the diagnosis of HEV infection in humans.