ended and open ended multi-country questionnaire was designed to collect data from 715 participants (186 Barbers and 529 Clients). Blood samples were withdrawn after obtaining an informed consent and were tested for HBV and HCV markers by Chromatography, enzyme-lined immunosorbent assay (ELISA) and polymerase chain reaction (PCR). **RESULTS:** The mean age was 28.47±9.7 years in both groups of Barbers (n-186) and Clients (n=529). Among both groups, the sero-prevalence of HBV and HCV was 5.7% and 14.4%, respectively. Clients knew about hepatitis B and C viruses while barbers were not quite aware. The knowledge about the route of transmission was poor among barbers and good among clients. Half of the respondents in both groups knew about hepatitis B vaccination and only 15% were vaccinated. Sixty percent of the barbers claimed disinfecting the instruments between clients and (88.9%) claimed using of new blades. During actual observation of practices, only 28% disinfected instruments between clients and 62% used new blades for each client. **CONCLUSIONS:** There is some awareness among barbers and clients about hepatitis B and C viruses but poor knowledge about the mode of transmission. This warrants conducting health education campaigns to increase awareness about these two blood borne viruses and the risk factors associated with their transmission particularly at barbers' shop and to implement interventions to prevent spreading Hepatitis.

GASTROINTESTINAL DISORDERS – Cost Studies

PGI6

AN ASSESSMENT OF THE ECONOMIC IMPACT OF MECHANICAL VERSUS HAND-SUTURED FIXATION OF INTRA-PERITONEAL ONLAY MESH (IPOM) IN OPEN VENTRAL HERNIA REPAIR

Panish JM[1], Hammond J[1], Roy S[2]
[1]*Ethicon Surgical Care, Somerville, NJ, USA,* [2]*Ethicon Surgical Care, Johnson & Johnson, Cincinnati, OH, USA*

OBJECTIVES: Reduction in operative time has been shown to offer significant clinical benefits in many procedures including hernia repair surgeries. Ethicon Securestrap™ Open, a new mechanical absorbable strap fixation device, takes significantly shorter time compared to hand-sutured fixation of IPOM mesh in open ventral hernia surgery. This analysis assesses the potential economic value of reduction in operative time with mechanical fixation compared to suture fixation. **METHODS:** An economic model was developed to evaluate the budget impact to hospitals of adopting Ethicon Securestrap™ Open repair of ventral hernia. A reduction in mean fixation time comparing suture to mechanical fixation was included based on a preclinical study that demonstrated about 89% reduction. Related benefits in terms of risk of surgical site infections, owing to shorter operative duration were included based on the literature. Costs of the mechanical fixation device and suture supplies, OR time, anesthesia time, and potentially avoided surgical site infections were considered in the economic model. **RESULTS:** Based on the model inputs, an overall potential saving of $259,604 (43%) was estimated for 100 fixations if they were done using Ethicon Securestrap™ Open versus sutures. Although the use of Ethicon Securestrap™ Open added $50,000 in supplies costs, this was completely offset by potential savings in OR time costs ($186,570), potential reduction in avoided surgical site infection or seroma costs due to shorter operating room time ($104,210), and in anesthesia costs ($14,324). Use of Ethicon Securestrap™ Open was also estimated to be potentially freeing up a total of about 58 hours in OR time per 100 conversions. **CONCLUSIONS:** This analysis represents the first economic evaluation of Ethicon Securestrap™ Open use in open ventral hernia surgery. Adoption of Ethicon Securestrap™ Open fixation device would likely result in significant savings for hospitals, driven by shorter procedure time and its related clinical benefits.

PGI7

COST ANALYSIS OF A FIBRIN SEALANT PATCH FOR PARENCHYMAL BLEEDING DURING ELECTIVE HEPATIC SURGERY: A GERMANY HOSPITAL PERSPECTIVE

Jamous N[1], Corral M[2], Hollmann S[3], Ferko N[3]
[1]*Ethicon Biosurgery, Berkshire, UK,* [2]*Ethicon Biosurgery, Somerville, NJ, USA,* [3]*Cornerstone Research Group, Burlington, ON, Canada*

OBJECTIVES: Hemostasis after liver resection may be difficult to achieve and there is thus an increased focus on reducing blood loss and resource use with hemostatic products. This study estimated the cost impact of a novel fibrin sealant patch (i.e., EVARREST) vs. standard of care (SoC) for bleeding control in hepatic resection. **METHODS:** An economic analysis quantified 30-day cost impact of EVARREST vs. SoC from a German hospital perspective. This analysis used data from a randomized trial, which included aggregated resource use reported within 30 days. Resources included initial treatment and re-treatment, operating time, hospitalization, transfusions, and ventilator. SoC was composed of manual compression with a small percentage using hemostats. The primary analysis included resources clinically related to the significant hemostasis benefit of EVARREST vs. SoC (i.e., initial treatment and re-treatment with hemostasis methods, operating time, transfusions, and blood units). A secondary analysis included all resources evaluated in the primary analysis with the addition of hospital stay, proportion of patients using ventilator, and mean ventilator hours. A projected global price for EVARREST was used based on average USD to Euro exchange rate over the last 10 years. Published data on German costs were applied to resource use. Sensitivity analyses were conducted on several variables including EVARREST costs (€472 to €735) for available sizes. **RESULTS:** The primary analysis predicted that EVARREST acquisition cost is offset with cost impact reduced to €82 per patient vs. SoC (sensitivity range: -€86 to €225). Secondary analyses predicted further resource reduction with EVARREST leading to cost-savings (i.e., -€458 per patient). Operating time and hospital stay were important analysis drivers. **CONCLUSIONS:** This analysis suggests that EVARREST may result in cost savings, in addition to meeting an important unmet need for controlling bleeding in hepatic surgery. Further study in more patients may be required to confirm findings.

PGI8

MEDICARE HEPATITIS C PATIENTS – ARE PATIENTS UNDER 65 DIFFERENT?

Meckley LM, Wang Z, Miyasato G, Scaife J, Sanchez H
Trinity Partners, LLC, Waltham, MA, USA

OBJECTIVES: Previous studies have shown that the majority of Medicare patients with HCV are under age 65. This study examines how patient characteristics and cost differ between Medicare patient age groups. **METHODS:** An analysis of HCV patients was conducted using the 2010-2011 Centers for Medicare and Medicaid Services Parts A and B fee-for-service claims. Patients with an HCV ICD-9 code and 6 months of follow-up were included. Patient characteristics, resource utilization and 6-month costs were compared between patients age<65 and age≥65. The impact of age on medical costs adjusting for demographics, reason for entitlement(OREC), Medicaid status, and overall health status (measured by CCI) was assessed using generalized linear models fit with a gamma distribution and log link function. **RESULTS:** 16,417 HCV patients with complete data were identified. Patients under 65 (n=11,286) were more likely to have an OREC of disability (89%), while patients 65+ OREC was primarily due to old age and survivors insurance (80%). ESRD accounted for 8.8% of patients age<65 and 1.7% aged 65+. Medicaid dual-eligibility was twice as common among younger patients (38.0% vs. 66.8%, p<0.01). Younger patients had a higher prevalence of alcoholism (35.6% vs. 30.6%, p<0.01) and drug abuse (43.3% vs. 12.2%, p<0.01), comorbidities that are also risk factors for HCV. Yet overall health, as measured by CCI, was higher for younger patients (1.82 vs. 2.51, p<0.01). Younger patients had more hospitalizations (0.48 vs 0.33, p<0.01) and emergency department visits (2.04 vs. 1.77, p<0.01). 6-month medical costs for patients age<65 were $1,285 higher than those 65+ (p=0.01). After adjusting for OREC, HCV-related comorbidities, CCI, demographics and Medicaid status, age was no longer associated with cost. **CONCLUSIONS:** Medicare HCV patients under 65 are more expensive to treat. However, this appears to be due to higher rates of disability, ESRD and comorbidities, rather than age itself.

PGI9

COST OF ILLNESS (COI) ASSOCIATED WITH GASTROINTESTINAL AND LIVER DISEASE: A STUDY CONDUCTED AT AN INDIAN TERITARY CARE HOSPITAL

Shah CS[1], Bansal D[2], Chavda M[3], Sachdev A[4]
[1]*SJM College of Pharmacy, Chitradurga, India,* [2]*National Institute of Pharmaceutical Education and Research, Punjab, India,* [3]*National Institute of Pharmaceutical Education and Research, Mohali, India,* [4]*Govt Med Coll Hosp, Chandigarh, India*

OBJECTIVES: To study cost of illness (COI) by calculating direct and indirect cost in the patients with gastrointestinal and liver disease from societal perspective. **METHODS:** Study was conducted in general medicine ward of government tertiary care hospital, north India by including inpatients diagnosed with gastrointestinal and liver disorders. In terms of time perspective prevalence approach was used to study COI. Direct cost was estimated using admission fee, cost of bed, diet charge, cost of medications and diagnostic tests/surgical procedures. Indirect cost was estimated using loss of wages, travelling cost, food cost, and cost of bed for attendant/s of patient due to hospital stay. Estimated costs were converted to purchasing power parity dolor (PPP$) for cross country comparison. To estimate the productivity loss, human capital approach was used with assumption that income reflects productivity. **RESULTS:** A total 202 patients (83% males) were included in the study. Most prevalent disorder includes alcoholic liver disease (32.5%) and most common class of drug prescribed was proton pump inhibitor (94%). Majority of the patients (53%) with these diseases has hospital stay of 1 to 7 days. The total direct costs and indirect cost of disease for study patients were PPP$ 23518 and PPP$ 30187 respectively. Direct and indirect cost of disease for each patient was PPP$ 231 and PPP$ 277 respectively. The cost of medication (17.8%) and loss of wages (43.9%) contributes major component of direct and indirect cost respectively. Total cost for males (PPP$ 276.0±145) is significantly higher (P <0.05) than the total cost for females (PPP$ 232.6±146.6). Mean direct and indirect costs incurred by female patients were significant less than that of male patients. **CONCLUSIONS:** Cost of medication and loss of wages of patients contributes major component of COI. Increasing the number of day of hospital stay leads to higher cost of burden.

PGI10

ESTIMATION OF HEPATITIS C COSTS IN TURKEY VIA EXPERT OPINION: DELPHI PANEL

Ormeci N[1], Akarca U[2], Aladag M[3], Balik I[4], Kadayifci A[5], Kalayci C[6], Kaymakoglu S[7], Koksal I[8], Ozkan H[1], Tabak F[7], Saka G[9]
[1]*Ankara University, School of Medicine, Ankara, Turkey,* [2]*Ege University, School of Medicine, Izmir, Turkey,* [3]*Inonu University, School of Medicine, Malatya, Turkey,* [4]*Ankara University School of Medicine, Ankara, Turkey,* [5]*Gaziantep University, School of Medicine, Gaziantep, Turkey,* [6]*Florence Nightingale Hospital, Istanbul, Turkey,* [7]*Istanbul University, School of Medicine, Istanbul, Turkey,* [8]*Karadeniz Technical University, School of Medicine, Trabzon, Turkey,* [9]*Merck Sharp Dohme, Istanbul, Turkey*

OBJECTIVES: The aim of the study is to estimate the cost of Hepatitis C in Turkey through reaching consensus on the current clinical practice, resource use and the course of treatment. **METHODS:** This study uses the Delphi method to reach experts' consensus on the clinical practices currently being used in Turkey. Delphi method has been widely used in medical areas where empirical data is scarce. The survey developed for this study includes questions to understand the clinical resource use in order to calculate the associated costs. According to the literature, the panelists' answers are unlikely to change after the second iteration. Similar to theory, a two-iteration panel was needed to reach a consensus in practice. The consensus is then used to calculate the cost of chronic hepatitis C, compensated cirrhosis, decompensated cirrhosis, hepatocarcinoma and liver transplant health states from the payer's perspective. **RESULTS:** The Delphi panel included gastroenterologists, infectious diseases specialists and a gastroenterologist with transplantation experience. According to panel consensus, among all of the patients that an expert follows, the rate of patients who need hepatitis C treatment (regardless of diagnosis) is 1% for gastroenterologists and 20% for infectious diseases specialists.

50% of Hepatitis C patients in Turkey are female and the mean age of patients is 50. Approximately 60% of patients are treatment naïve. Approximately 900 liver transplants are performed in Turkey per year and the success rate is around 85%. From the payer's perspective, the average annual cost (excluding hepatitis C drug costs) of a chronic hepatitis C, compensated cirrhosis, decompensated cirrhosis, hepatocarcinoma and liver transplant patient is USD 446.83, USD 577.56, USD 1984.39, USD 2474.15, USD 42,469.27 respectively. **CONCLUSIONS:** Early diagnosis and treatment is crucial not only from the clinical perspective, but also from the cost perspective as a more severe disease costs significantly more.

PGI11

NEW ALL ORAL THERAPY FOR CHRONIC HEPATITIS C VIRUS (HCV): A COST-BENEFIT ANALYSIS

Orsi J[1], Einodshofer M[2], Kirkham H[1], Glover P[1], DuChane J[1]
[1]*Walgreen Co., Deerfield, IL, USA,* [2]*Walgreen Co., Carnegie, PA, USA*

OBJECTIVES: New *all oral* HCV therapies are recognized as having higher cure rates than current *standard of care* (SOC) treatments. However, the cost-benefit of providing new all oral therapy versus SOC treatment is currently unknown. We undertook a study to examine the financial impact of anticipated all oral therapy for genotype 1 disease and approved all oral therapy for genotypes 2 and 3 disease versus SOC treatments. **METHODS:** We calculated pharmacy costs of approved drugs using wholesale acquisition costs, assuming a full course of therapy for genotypes 1, 2, and 3 diseases, respectively. Anticipated all oral therapy for genotype 1 was estimated at 1.5 times the cost of all oral therapy for genotype 2. Costs for medical treatment over 14 years were based on published data for four therapeutic endpoints: cured, not cured and no cirrhosis, not cured with cirrhosis, not cured with cirrhosis and end stage liver disease. The study also accounted for the frequency of genotypes 1, 2, and 3 HCV disease within the U.S. population for pooled analysis across genotypes. **RESULTS:** Genotype 1 all oral therapy is anticipated to provide overall cost savings of 13% compared to SOC. However, overall costs among approved genotypes 2 and 3 all oral therapy were 9% and 44% higher compared to SOC even with cure rates 20% and 18% higher. After accounting for genotype frequency within the general U.S. population, pooled analysis across genotypes showed a net cost savings of $1,248 per utilizing member per year for all oral treatment versus SOC. **CONCLUSIONS:** If our predicted cost of new genotype 1 therapy is accurate, cost savings will only be observed among the anticipated new all oral therapy for genotype 1 disease. However, these savings will provide a net cost savings across genotypes for all oral therapy compared to SOC treatment.

PGI12

COST-EFFECTIVENESS OF ADALIMUMAB FOR THE TREATMENT OF MODERATELY TO SEVERELY ACTIVE ULCERATIVE COLITIS IN CANADA

Ghosh S[1], Desjardins O[2], Skup M[3], Wang S[3], Yang M[4], Yang H[4], Qi C[4], Bao Y[3], Chao J[3]
[1]*University of Calgary, AB, Canada,* [2]*AbbVie Canada, St-Laurent, QC, Canada,* [3]*AbbVie Inc., North Chicago, IL,* [4]*Analysis Group, Inc., Boston, MA, USA*

OBJECTIVES: To evaluate the cost-effectiveness of adalimumab plus standard of care (ADA+SOC) vs. SOC alone in moderate-to-severe ulcerative colitis (UC) patients with an inadequate response to SOC and to assess the total cost differences comparing ADA+SOC to infliximab (IFX)+SOC and to golimumab (GOL)+SOC. **METHODS:** A Markov model was developed to simulate the progression of patients receiving ADA+SOC or SOC over a 5-year time horizon from the Canadian publicly-funded health system's perspective, considering direct costs only in the base case. Transitional probabilities of pre-surgery and surgery-related states for ADA+SOC and SOC were derived from ADA trials and from literature. Health utility and cost inputs (medications, medical services, surgery, and surgery-related mortality) came mainly from literature. Additionally, a cost-minimization analysis (CMA) compared the total 5-year costs of biologics (ADA, IFX and GOL) assuming IFX and GOL having the same efficacy as ADA. Results were expressed in costs per quality-adjusted-life-years (QALY) gained for ADA+SOC vs. SOC alone and in total cost differences for ADA+SOC vs. IFX+SOC and vs. GOL+SOC. Deterministic and probabilistic sensitivity analyses (DSA, PSA) were performed. **RESULTS:** In the base case, the incremental costs per QALY gained for ADA+SOC vs. SOC were C$96,812 (in 2013 Canadian dollars [C$]). Results from DSA ranged from C$62,362 to C$109,461. PSA revealed that ADA+SOC was cost-effective in 58% and 81% of cases at C$100,000/QALY and C$120,000/QALY thresholds, respectively. The CMA predicted total cost savings of C$23,823 and C$4,279 comparing ADA+SOC to IFX+SOC and to GOL+SOC over 5 years. DSA and PSA results showed that ADA+SOC led to cost savings in all scenarios comparing to IFX+SOC and in all but one DSA-based and all PSA-based scenarios comparing to GOL+SOC. **CONCLUSIONS:** The ADA+SOC strategy appeared to provide reasonable cost-effectiveness value compared with SOC alone and significant cost-saving benefits compared to IFX+SOC and GOL+SOC.

PGI13

COST-EFFECTIVENESS OF HEPATITIS C SCREENING IN UNITED STATES PRISONS: AN AGENT-BASED APPROACH

He T[1], Roberts MS[2], Grefenstette JJ[1], Chhatwal J[3]
[1]*University of Pittsurgh, Pittsburgh, PA, USA,* [2]*University of Pittsburgh, Pittsburgh, PA, USA,* [3]*MD Anderson Cancer Center, Houston, TX, USA*

OBJECTIVES: The seroprevalence of hepatitis C virus (HCV) is 16-41% in United States (US) prisons, yet no standard protocols exist for HCV screening. The objective of our study was to evaluate the cost-effectiveness HCV screening in prisons and HCV prevention in society by interventions in prisons **METHODS:** We developed an agent-based simulation model that simulated the transmission and progression of HCV disease in US population in prisons and society. Injection drug use was the main route of HCV transmission. Chronic stages of HCV were modeled as Markov states. We used US Department of Justice data to simulate movement of people between prisons and society. We evaluated two screening scenarios: no screening, and 1-time screening of all existing inmates followed by screening (and treatment) of any incoming inmate for 5 years (5YR screening). We projected the total cost, quality-adjusted life years (QALYs), cumulative incidence of cirrhosis, decompensated cirrhosis (DC), hepatocellular carcinoma (HCC), and liver-related deaths (LRD). We also projected the number of new HCV infections in society due to HCV-infected people released from prisons. **RESULTS:** The total costs under no and 5YR screening were $6.9 million and $8.3 million per 10,000 people, respectively for 30-year simulation. The corresponding QALYs were 190,428 and 190,462, respectively. The incremental cost-effectiveness ratio of 5YR screening was $43,000 per QALY. In comparison with no screening, 5YR screening can avoid 136,000 new HCV infections in the next 30 years, **where** 71% of these infections can be attributed to infected persons released from prisons back in the society. The 5-year screening can also reduce the cumulative incidence of DC, HCC, LT and LRD by 14-17%. **CONCLUSIONS:** HCV screening followed by treatment in prisons is cost-effective at $50,000 willingness-to-pay. Resources spent in prisons can substantially reduce the burden of HCV in both prisons and the society at large.

PGI14

COMPARISON COSTS OF ERCP AND MRCP IN PATIENTS WITH SUSPECTED BILIARY OBSTRUCTION BASED ON A RANDOMIZED TRIAL

Adam V[1], Lu Y[2], Bhat M[2], Martel M[2], Da Silveira E[3], Reinhold C[2], Valois E[2], Barkun J[2], Barkun A[2]
[1]*McGill University, Montreal, QC, Canada,* [2]*McGill University Health Center, Montreal, QC, Canada,* [3]*San Jose Gastroenterology, San Jose, CA, USA*

OBJECTIVES: The optimal management of patients with suspected biliary obstruction remains unclear, and includes the possible performance of magnetic resonance cholangiopancreatography (MRCP) and endoscopic retrograde cholangiopancreatography (ERCP). We completed a medical effectiveness randomized trial comparing an ERCP-first to a MRCP-first approach in patients with suspected bile duct obstruction. **METHODS:** The management strategies are based on a medical effectiveness trial of 257 patients over a 10-month follow-up period. Direct and indirect costs were included, adopting a societal perspective. The cost values are expressed in 2012 Canadian dollars. **RESULTS:** Direct costs attributable to visits were CAN$5350 in the ERCP and CAN$5750 in the MRCP group. The procedures costs were CAN$233,852 and CAN$267,952 for the ERCP and MRCP groups, respectively. Second procedures were incurred twice more in the MRCP than in the ERCP group. Direct costs of complications amounted to CAN$207,708 (ERCP group) and CAN$252,347 (MRCP group). Total direct costs added up to CAN$446,910 for the 126 patients in the ERCP-first strategy and CAN$525,689 for the 131 MRCP-first patients. With regards to indirect costs, MRCP group patients spent more days in scheduled GI visits (8 days) and hospitalizations (49 days), but less days in procedures (18 days) and in time away from activity of daily living (44 days). Overall total indirect costs were quite similar (ERCP-first CAN$92,219 versus MRCP-first CAN$90,912). **CONCLUSIONS:** This cost analysis suggests only a small difference in total costs, favoring the ERCP-first group, and is principally attributable to procedures and hospitalizations with little impact from indirect cost measurements.

PGI15

HEALTH AND ECONOMIC OUTCOMES OF SOFOSBUVIR THERAPY AS PREDICTED BY A MARKOV MODEL IN THE HCV/HIV CO-INFECTED COHORT

Younossi Z[1], Gordon S[2], Saab S[3], Ahmed A[4], Park H[5], Sulkowski M[6]
[1]*Inova Fairfax Hospital, Falls Church, VA, USA,* [2]*Henry Ford Hospital, Detroit, MI, USA,* [3]*David Geffen School of Medicine at UCLA, Los Angeles, CA, USA,* [4]*Stanford University, Stanford, CA, USA,* [5]*University of Florida, Gainesville, FL, USA,* [6]*Baltimore, MD, USA*

OBJECTIVES: A decision-analytic Markov model was developed to predict the health outcomes of using sofosbuvir (SOF) -based regimen compared with current treatment options for patients who are co-infected with hepatitis C (HCV) and HIV. **METHODS:** The analysis modeled a cohort of treatment-naïve genotype 1 patients co-infected with HIV and HCV with a mean age of 54 years and 25% with cirrhosis. The model was evaluated from a US third-party payer perspective for a lifetime time horizon. SOF+pegylated interferon + ribavirin (PR) for 12 weeks was compared with telaprevir (TVR)+PR for 48 weeks, and boceprevir (BOC)+PR for 48 weeks. Sustained virologic response (SVR) rates were derived from clinical trials conducted in the HCV/HIV co-infected patient population. Transition probability, utility, and cost estimates were based on a literature review, public sources, and consensus by a panel of 4 hepatologists. **RESULTS:** In the HCV/HIV co-infected cohort, the SOF-based regimen was associated with the lowest incidence of liver disease complications including hepatocellular carcinoma, decompensated cirrhosis, need for liver transplantation, and HCV-related death (reduction of 52% compared to TVR+PR and 65% compared to BOC+PR). In addition, patients receiving SOF+PR experienced more quality-adjusted life-years (QALYs), compared to those treated with other options (ranged from 0.63 to 1.10 QALYs). In terms of incremental quality adjusted life years gained, SOF+PR dominated over TVR+PR and BOC+PR. The sensitivity analysis indicated that the results were robust to changes in model inputs and assumptions, such as SVR rates, adverse event incidence, costs for treatment monitoring and management of adverse events, and transition probability estimates. **CONCLUSIONS:** The SOF-based regimen of shorter duration, improved tolerability profile and high SVR rates was projected to yield the most favorable health and economic outcomes in the genotype 1 HIV and HCV co-infected population compared to current treatment regimens using telaprevir or boceprevir.

PGI16

ECONOMIC EVALUATIONS OF TREATMENTS FOR INFLAMMATORY BOWEL DISEASES

Lachaine J, Miron A, Beauchemin C
University of Montreal, Montreal, QC, Canada

OBJECTIVES: In recent years, there has been a rapid growth in the development of novel biological treatments. Numerous economic evaluations have been performed to evaluate these treatments in inflammatory bowel diseases (IBD). The objective of this project was to explore the existing evidences regarding the cost-effectiveness of treatments in IBD. **METHODS:** A systematic review of the literature was