

IU Gastroenterology and Hepatology – Report to GI Faculty

4/21/2017

Dear Colleague:

Attached you will find an overview of our division and our service line and selected updates from year 2016. We are one of the largest GI divisions in the country and we continue to be very successful. As you will see in this overview, we are multidimensional with very strong clinical presence in metro Indianapolis and well beyond. Our research is growing and, in addition to grooming our own talent, we are constantly looking to recruit more investigators to the division. Our fellowship is one of the most desirable and we continue to attract some of the best talent from throughout the country. We have had our share of setbacks and challenges in 2016. The



departure of Dr. Paul Kwo to Stanford is very difficult to recover as he was a very rare talent and was deep rooted in the division. We were fortunate to recruit Dr. Al-Haddad, who left for Cleveland Clinic in Abu Dhabi in 2014, back to the GI division in a leadership role. Since embarking on our Lean journey in 2014, our physicians have been stalwarts in process improvement and growth of our practice and over 90% of our physicians have participated in Lean training and rapid improvement events. We are continuing to be clinically productive and we exceeded our productivity target by 10,000 RVUs. Our physician engagement scores took a big hit in early 2016 but a more recent survey done in early 2017 shows our physician satisfaction is bouncing back up again. Much of the faculty members' feedback is instructive in terms of understanding reasons for their dissatisfaction, notably work life balance and support for clinical practice.

We remain an exceptionally strong division and we enjoyed many successes and reached new heights. As you read through this summary, just to mention a few highlights, you will note that our ERCP program remains the very best in the country, our relatively new GI motility program has rapidly become one of the major programs nationally, our newly started medical weight loss program is off to a very strong start, our liver transplant program remains one of the top in the nation, our full length publications exceeded 150 in year 2016 alone with many papers in top tier journals such as NEJM, Nature Genetics, Gastroenterology, Gut, Hepatology, and JAMA. We are very proud of Dr. Liangpunsakul who obtained two R01s, one R21, and a VA Merit Review grant in 2016 and Dr. Orman who obtained a K23 from the NIDDK in 2016. As you know, we recently conducted a day long divisional retreat which allowed us to identify our current challenges and immediate-and short-term goals for the division. We have named **Dr. Thomas Imperiale** as the first recipient of the **Lawrence Lumeng Professorship** in Gastroenterology and Hepatology, **Dr. John Wo** as the first recipient of the **Douglas Rex Professorship** in Gastroenterology and Hepatology, **Dr. Christen Dilly** as the **Phil Christiansen Educator** in Gastroenterology and Hepatology and **Dr. Monika Fischer** as the inaugural **Endowed Investigator** in Gastroenterology and Hepatology. With encouragement and support of our new Chairman, we are building sizable divisional reserve funds for supporting future academic growth and to withstand future healthcare reimbursement and research funding challenges.

Several faculty members are applying for new federal funding in 2017 and we plan to significantly expand our already robust clinical trials program. We are looking forward to Dr Eduardo Vilar-Gomez from Spain, Dr. Lauren Nephew from U Penn, Dr. Khaled Abdeljawad from Emory, Drs. John Holden, Ben Bick and Mark Gromski from IU, and Dr. Brian Sperl from Franciscan Health joining us as faculty members in July 2017. There is every reason to be confident that we will continue to succeed in 2017 and beyond. It is my privilege to be your colleague and your leader, and I want to thank each of you for your hard work, dedication, and thoughtfulness.

Sincerely,

Naga Chalasani, MD
David W. Crabb Professor & Director
Division of Gastroenterology and Hepatology

GI Division/Service Line General Facts (2016)

Faculty members	62 (Professors 13; Associate Professors 13; Assistant Professors 36 including 4 Psychologists and 2 Adjunct Faculty) (including those starting in 2017 academic year)
Fellows	16 regular GI fellows and 2 advanced endoscopy fellows
Administrative offices	702 Rotary Building
Practice locations	University Hospital, 103 rd /Springmill, IUH-North, IUH-Saxony, IUH-Tipton, IUH-Morgan, Witham (Lebanon), Hancock Regional (Greenfield), Margaret Mary (Batesville) Eskenazi & VA

Research Funding

Total federal (2016)	\$4,416,234
Total Pharma (2016)	\$8,364,488
Active clinical investigation (2016)	253
Peer Reviewed Publications (2016)	154

Recent Top Publications by the Division Faculty Members (IU GI faculty highlighted)

1. Coté GA, Slivka A, Tarnasky P, Mullady DK, Elmunzer BJ, Elta G, **Fogel E, Lehman G, McHenry L**, Romagnuolo J, Menon S, Siddiqui UD, **Watkins J**, Lynch S, Denski C, Xu H, **Sherman S**. Effect of Covered Metallic Stents Compared With Plastic Stents on Benign Biliary Stricture Resolution: A Randomized Clinical Trial. **JAMA**. 2016 Mar 22-29; 315:1250-7.
2. **Imperiale TF**, Monahan PO, Stump TE, Glowinski EA, Ransohoff DF. Derivation and validation of a scoring system to stratify risk for advanced colorectal neoplasia in asymptomatic adults: A cross-sectional study. **Ann Intern Med** 2015; 163: 339-346.
3. **Chalasani N**, Bonkovsky HL, Fontana RJ, Vuppalanchi R, Hayashi PH, et al. Drug-induced liver injury in the United States: A report of 899 events prospectively assessed. **Gastroenterology** 2015; 148:1340-1352
4. **Kwo PY**, Mantry PS, Coakley E, Te HS, Vargas HE, et al. An interferon-free antiviral regimen for HCV after liver transplantation. **N Engl J Med** 2014; 371: 2375-2382.
5. **Imperiale TF**, Yu M, Monahan PO, Stump TE, Tabbey R, Glowinski E, Ransohoff DF. Risk of Advanced Neoplasia Using the National Cancer Institute's Colorectal Cancer Risk Assessment Tool. **J Natl Cancer Inst**. 2016 Aug 31; 109(1).
6. **Crabb DW**, Bataller R, **Chalasani NP**, Kamath PS, Lucey M, Mathurin P, et al for the NIAAA Alcoholic Hepatitis Consortia.. Standard Definitions and Common Data Elements for Clinical Trials in Patients

With Alcoholic Hepatitis: Recommendation From the NIAAA Alcoholic Hepatitis Consortia.

Gastroenterology. 2016; 150:785-90.

7. **Liangpunsakul S**, Haber P, McCaughan GW. Alcoholic Liver Disease in Asia, Europe, and North America. **Gastroenterology.** 2016 Jun; 150:1786-97.
8. Durno C, Boland CR, Cohen S, Dominitz JA, Giardiello FM, Johnson DA, Kaltenbach T, Levin TR, Lieberman D, Robertson DJ, **Rex DK.** Recommendations on Surveillance and Management of Biallelic Mismatch Repair Deficiency (BMMRD) Syndrome: A Consensus Statement by the US Multi-Society Task Force on Colorectal Cancer. **Gastroenterology.** 2017 Mar 22. [Epub ahead of print]
9. Robertson DJ, Lee JK, Boland CR, Dominitz JA, Giardiello FM, Johnson DA, Kaltenbach T, Lieberman D, Levin TR, **Rex DK.** Recommendations on Fecal Immunochemical Testing to Screen for Colorectal Neoplasia: A Consensus Statement by the US Multi-Society Task Force on Colorectal Cancer. **Gastroenterology.** 2017 Apr; 152:1217-1237.e3..
10. **Kahi CJ**, Boland CR, Dominitz JA, Giardiello FM, Johnson DA, Kaltenbach T, Lieberman D, Levin TR, Robertson DJ, **Rex DK;** United States Multi-Society Task Force on Colorectal Cancer.. Colonoscopy Surveillance After Colorectal Cancer Resection: Recommendations of the US Multi-Society Task Force on Colorectal Cancer. **Gastroenterology.** 2016 Mar; 150(3):758-768.e11.

Procedures performed (including VA and outreaches in 2016)

EGD	10,429
Colonoscopies	13,159
ERCP including DBE and GI	2,970
EUS	2,223
Motility	2,207
Video Capsule	324
DBE	162
Total	31,474
Adult Liver Transplants	148
Patients seen (including outreaches in 2016)	24,889
New patients	7634
Returns	17,255
Annual wRVUs (for the IUHP DaLD service line in 2016)	
Target	189,864
Actual	200,282

Median Wait time for new patient appointment

35days

DaLD and Springmill

Hepatology 31 days; GI/IBD/ERCP/Mo 27 days
Springmill 47 days**NRC Picker Patient Satisfaction Scores (IUHP DaLD service line)**

Target

90.2%

Actual

83.3%

Physician Satisfaction**Internal physician satisfaction survey(Leichert scale –28 respondents August 2014, 33 respondents February 2017)**

0 Strongly Dissatisfied	1	2	3	4	5	6	7	8	9	10 Strongly Satisfied
2016 Results										
-	-	3.5%	18%	25%	7%	18%	11%	14%	-	4%
0	0	1	5	7	2	5	3	4	0	1
2017 Results										
-	-	3%	-	-	-	18%	24%	24%	24%	6%
0	0	1	0	0	0	6	8	8	8	2

Annual budget

Academic division \$5,130,424

Service line \$20,495,915

Academic Foundation Reserves \$9,179,580 (endowment \$6,362,535)**Service line chief's funds** \$21,825**Bench marks for compensation:** AAMC for IU academic salaries; McGladrey survey for IUHP compensation; and VA standard salary metrics for VA salaries**Division Leadership**

Division Chief	Naga Chalasani, M.D.
Director, IUHP Digestive and Liver Disorders	Naga Chalasani, M.D.
Clinical Director & Director of ERCP	Stuart Sherman, M.D.
Service Line Co-leaders	Dr. Sherman, Dr. Al Haddad, and Dr. McHenry

Program Director, GI Fellowship	Nabil Fayad, M.D.
Chief of GI, Roudebush VA Hospital	Charles Kahi, M.D., M.Sc.
Chief of GI, Eskenazi Hospital	Hala Fatima, MD
Medical Director, Ambulatory Endoscopy Centers	Nicholas Rogers, M.D.
Medical Director, Liver Transplantation	Marco Lacerda, M.D.
Director, Ambulatory GI Practice, SMO and DaLD	Lee McHenry, M.D.
Chief, Endoscopy at UH	Douglas K. Rex, M.D.
Chief, EUS Service	John Dewitt, MD
Director, IBD Service	Debra Helper, M.D.
Director, GI Motility Program	John Wo, MD
Director, Inpatient Hepatology	Marwan Ghabril, MD
Director, Clinical Hepatology	Raj Vuppalanchi, MD
Director, GI Grand Rounds	Nabil Fayad, M.D.
Director, ERCP & EUS Fellowship	Jeffrey Easler, M.D.

Division and Service Line Administration

Division	Service Line
Academic Administrator: Megan Barker Asst Administrator: Kelly Denney Research Manager: Fred Smith Grants Specialist: Amy Aluise Fellowship Coordinator: Vara Fore Senior Administrative Asst: Debbie Breed HR Specialist: James Audley	Administrator: Tony Pearson Nurse Manager: Michelle Juan Officer Manager: Nada Phoenix Administrative Asst: Sarah Phillips

FACULTY IN THE DIVISION OF GASTROENTEROLOGY/HEPATOLOGY (Updated on 4/9/2017)

1	Khaled Abdeljawad, MD	Dr. Abdeljawad is joining our faculty on 8/1/2017 as an Assistant Professor of Clinical Medicine and he is a clinician-educator with interests in general gastroenterology and inflammatory bowel disease. He is a former resident of our internal medicine residency program and is completing his GI fellowship from Emory University. He will serve as one of the anchors at Eskenazi.
2	Mohammad, Al-Haddad, MD	Dr. Al-Haddad is an Associate Professor of Medicine and is a senior faculty member in the Division. He currently is an Associate Professor and is one of the service line's clinical leaders. His expertise is in endosonography and bariatric endoscopy. He is leading our bariatric endoscopy program.
3	Ben Bick, MD	Dr. Ben Bick is a graduate of our GI fellowship and will start as a visiting Assistant Professor on 7/1/2017. He will be completing a two-year advanced endoscopy fellowship and Master's in Clinical Research.
4	Matthew Bohm, D.O.	He is an Assistant Professor of Medicine and he is a clinician-educator and is interested in clinical and translational research. His expertise is in IBD. He is developing clinical trials portfolio in IBD.
5	James Canavan, MD, PhD	He is serving an Adjunct (Volunteer) Associate Professor of Medicine and brings extensive research and clinical expertise in Inflammatory Bowel Disease. His primary appointment is with Eli Lilly and Co but spends half day each week at Eskenazi in the endoscopy unit and in the fellows weekly continuity clinic.
6	Thomas Carr, MD¶	He is an Assistant Professor of Medicine and he is a highly valued clinician-educator. He leads our Kenya initiative. He has interests in medical informatics and in hepatology.
7	Naga Chalasani, M.D. ¶	He is David W. Crabb Professor of Medicine and is the Division Chief. He is a hepatologist with expertise in clinical hepatology and liver transplantation. Current research includes NASH and drug hepatotoxicity. He has published over 200 peer-reviewed papers and has multiple NIH grants. His recent accomplishments include lead authorship on the Practice Guidelines on the Management of NAFLD developed by AASLD, ACG, and AGA, and the Diagnosis and Management of Drug Induced Liver Injury by the American College of Gastroenterology. He was elected to the American Society of Clinical Investigation in 2007 and to American Association of Physicians in 2017.
8	David Crabb, M.D. ¶	He is Joe Mamlin Professor & former Chairman of the Department of Medicine. He is currently serving as the Chief Medical Officer for Eskenazi Health. He is a recognized authority in alcohol research and hepatology. He is the Principal Investigator of our NIAAA-Alcohol Research Center in its 28 th year and the NIAAA-funded TREAT Consortium to investigate alcoholic hepatitis.
9	Christen Dilly, MD	She is Phil Christiansen Educator in Gastroenterology and Hepatology and is an Assistant Professor with expertise in general gastroenterology and advanced endoscopy. She recently obtained a Master's degree in Medical Education from Johns Hopkins and is rapidly establishing

		herself as a leader of our educational endeavors.
10	John DeWitt, M.D.	He is Professor of Medicine and is a thought-leader in endosonography. He is well published and is the Director of our EUS program. He is a nationally known endosonography researcher. He serves as the Director of our Interventional EUS program. He recently developed our POEM program for endoscopically treating Achalasia.
11	Jeffrey Easler, M.D.	He is an Assistant Professor of Medicine and he is a clinician-educator with an interest in clinical research. He is an advanced endoscopist and is an expert in ERCP and EUS.
12	Ihab El Hajj, M.D.	He is an Assistant Professor of Medicine and he is a clinician-educator with an interest in clinical research. He is an advanced endoscopist and is an expert in ERCP and EUS.
13	Hala Fatima, M.D.	She is an Associate Professor and is the Section Chief at Eskenazi Hospital. She has expertise in general endoscopy procedures as well as luminal advanced procedures such as EMR and colonic stents. She was a previous recipient of the Teacher of the Year award chosen by the graduating fellows.
14	Nabil Fayad, M.D.	He is an Associate Professor of Clinical Medicine and is the Program Director of our GI fellowship program. He is a clinician-educator who practices primarily at the VA and he is in charge of our endoscopy unit at the VA Hospital. He was a previous recipient of the Teacher of the Year award chosen by the graduating fellows.
15	Monika Fischer, M.D. ^Ω	Dr. Fischer is an <i>“Endowed Investigator in Gastroenterology and Hepatology”</i> and is an Associate Professor in the division. She leads our IBD program which is rapidly developing regional recognition and developed our nationally recognized “Fecal Microbial Transplantation” program.
16	Evan Fogel, M.D. ^Ω	He is a senior member of our division and he is a Professor of Medicine. He is an internationally recognized expert in therapeutic ERCP and is the Director of our ERCP fellowship. He is the PI for an U01 funded by the NIDDK on Chronic Pancreatitis.
17	Samer Gawrieh, MD ^{¶Ω}	He is an Associate Professor of Medicine with clinical and research interests in general hepatology. He is a well-trained transplant hepatologist. His primary research interests include nonalcoholic steatohepatitis.
18	Marwan Ghabril, M.D. ^{¶Ω}	Dr. Ghabril is an Associate Professor of Medicine and he is a hepatologist with interest in transplant hepatology. His research interests include inpatient hepatology, ICU mortality, disturbed sleep in cirrhosis and drug induced liver injury. He is a recent recipient of the IU Trustee’s Teaching Award.
19	Ashley Gilmore, MD	Dr Gilmore joined our division as an Assistant Professor and she is a graduate of our GI fellowship during which she also received additional training in obesity medicine and medical weight loss. She is leading our Medical Weight Loss Program at IUH-North which is one of its kind in Indianapolis.
20	Mark Gromski, MD	Dr. Mark Gromski is a graduate of our GI fellowship and will start as a visiting Assistant Professor on 7/1/2017. He will be completing a two-year advanced endoscopy fellowship and is a highly promising advanced endoscopist.

21	John Holden, MD¶	Dr. Holden is a graduate of our fellowship program and will start as Assistant Professor of Clinical Medicine. He is a transplant hepatologist with special interest in hepatocellular carcinoma and palliative care of patients with decompensated cirrhosis.
22	Rachel Holmes, PhD	Clinical Psychologist with expertise in alcohol and drug abuse therapy. She also helps in the management of psychological problems commonly seen in GI and transplant patients. She is our substance abuse specialist and psychologist for our Liver Transplant Program.
23	Timothy Imler, MD ^o	He is as an Assistant Professor of Medicine and his expertise is in general GI and in medical informatics. He serves as the Director of the Data Core for the Regenstrief Institute. His research interests include application of medical informatics tools to investigate common GI problems and procedures.
24	Thomas Imperiale, M.D. ^o .	He is Lawrence Lumeng Professor of Medicine . He has a joint appointment with the Division of General Internal Medicine. He is a nationally recognized gastroenterologist/hepatologist with expertise in outcomes research including meta-analysis. He has been well-funded by NIH and by VA Merit Review and has published extensively. He is a mentor to many faculty members and an advisor to fellows.
25	Toyia James, M.D.	Dr. James-Stevenson is a clinician-educator and is an Assistant Professor. She is a graduate of IUSM and has completed her GI training at Emory in Atlanta. She has established a robust general GI practice with focus on pelvic floor disorders and also functional bowel disorders at our Northside location. She is very active on several committees for the medical school and for the division.
26	Charles Kahi, M.D. ^o	Dr. Kahi is Professor of Medicine and is nationally recognized for his research in colorectal cancer screening. His research has been funded by VA Merit Review. He is our section chief at the VA hospital.
27	William Kessler, M.D.	He is an Associate Professor of Clinical Medicine and he has special interests and expertise in Barrett's esophagus and acid reflux disease. He is an excellent clinician-educator.
28	Hak Nam Kim, MD	He is a clinician educator and is an Assistant Professor. His clinical expertise is in general gastroenterology and hepatology.
29	Michelle Koselke, Psy.D	She is a clinical psychologist with expertise in functional bowel disorders. She works with Dr Ann Marie Montero and supports our functional bowel disease program.
30	Audrey Krause, Ph.D.	Clinical Psychologist with expertise in alcohol and drug abuse therapy. She also helps in the management of psychological problems commonly seen in GI and transplant patients. She is our substance abuse specialist and psychologist for our Liver Transplant Program.
31	Marco Lacerda, M.D. ¶	He is an Associate Professor of Clinical Medicine and is the Director of our Liver Transplant Program. Our Liver Transplant Program is one of the largest programs nationally with excellent patient and graft survival.
32	Craig Lammert, MD¶Ω	He is an Assistant Professor of Medicine who joined our division in January 2014. He is a translational researcher in the field of genomic hepatology focusing on cholestatic liver disorders and autoimmune liver disease. His research is currently supported by a KL2 award.
33	Glen Lehman, M.D.	Dr. Lehman is one of the pioneers of our division and is the Schindler

		Award recipient for his excellence in endoscopic research and teaching. His recent clinical research endeavors include endoscopic treatment of GERD, i.e., the use of endoscopic sewing machine, the Stretta system, injection of collagen, etc., just to name a few. He is considered an icon in the field of Pancreato-biliary endoscopy. We recently named our endoscopy unit at the University Hospital after Dr. Glen Lehman.
34	Tiebing Liang, PhD	Dr. Liang is an Assistant Research Professor with expertise in molecular biology and genetics. She is funded through our Alcohol Research Center and through other extramural grants focusing on nonalcoholic steatohepatitis.
35	Suthat Liangpunsakul, M.D. ☞	He is Professor of Medicine and he is a basic-science researcher in the field of alcoholic liver disease. He serves as the Director of our Hepatology program at the VA hospital. His research is extensively funded by two R01 and one R21 award from the NIH, VA Merit Review, and a Department of Defense award.
36	Smitha Marri, MD	She joined our faculty as an Assistant Professor in 2016 and she is a clinician-educator. She is a graduate of our fellowship where she completed a combined GI-Clinical Pharmacology fellowship. She is predominantly at our VA Hospital but also supports our practice at Hancock Regional Hospital.
37	Howard Masuoka, MD, PhD ☞	Dr. Masuoka is an Assistant Professor and is basic scientist in liver cell injury related to lipoapoptosis. He was trained in Prof. Gores lab and Dr. Masuoka is investigating pathways responsible for lipoapoptosis. He is a trained clinical and transplant hepatologist and his clinical responsibilities include general hepatology.
38	Lee McHenry, M.D.	He is a senior faculty member and is a full Professor of Medicine. He is an excellent clinician and gifted teacher. He is one of the clinical leaders of our division and also our practice plan, Indiana University Health Physicians. He is the Medical Director of our Springmill ambulatory practice and also Medical Diagnostic Center at University Hospital.
39	Ann Marie Montero, PhD	She is an Assistant Professor of Medicine and Psychology. She is one of our faculty psychologists. She is an excellent clinician and has an expanded role in our functional bowel program.
40	Lauren Nephew, MD [☞]	Dr. Nephew will be joining our faculty in August 2017 as an Assistant Professor as a researcher-clinician. She is completing GI fellowship from U Penn and was at Harvard for her Internal Medicine training. Her research will focus on racial disparities in organ allocation and the management of hepatocellular carcinoma.
41	David Nelson, PhD	Dr. Nelson is an Associate Professor in the Department of Microbiology and Immunology with a joint appointment in our division. He is an expert in microbiome and his research is extensively funded by federal grants. He is our gut-microbiome expert in-residence.
42	Thomas Nowak, M.D. [☞]	Dr. Nowak has joined the GI Division as a full professor in June 2012. His expertise is in GI motility disorders and he is a co-investigator on a highly competitive SPARC grant from the NIH in collaboration with investigators from Purdue University. He has large practice consisting of patients with gastroparesis.

43	Eric Orman, MD ^Ω ¶	He is an Assistant Professor of Medicine and is a hepatologist with federal funding. His clinical interests include general hepatology and his research interests include clinical and translational aspects of advanced liver disease. His research is currently supported by a K23 from the NIDDK.
44	Arie Regev, M.D.	He is an Adjunct Associate Professor in the Division. He is a volunteer faculty member with primary appointment at Eli Lilly. He is the head of Eli Lilly's Global Liver Safety Program. He volunteers at Eskenazi on a weekly basis.
45	Douglas Rex, M.D.	He is an outstanding clinician and researcher with a nationally and internationally recognized track record on research on many aspects of colonoscopy. He is a Schindler Award recipient for his excellence in endoscopic research and teaching from the ASGE. He was President of the ACG from 2003 to 2004 and is on track to become the President of the American Society of Gastrointestinal Endoscopy in 2019. He is the Chief of GI Endoscopy for our division. He recently received the rank of Indiana University's Distinguished Professor, highest honor to be bestowed upon any faculty member.
46	Chris Robinson, PhD ^Ω	Dr. Robinson is an Assistant Professor in the Department of Microbiology and Immunology with a joint appointment in our division. His research is currently supported by a K01 and his research focuses on enteric viral infections and gut microbiome.
47	Nick Rogers, M.D.	He is a clinician-educator and is an Assistant Professor. He is a well-rounded gastroenterologist and is the leader of our practice at Saxony. He is the Medical Director of our three outpatient endoscopy centers. He is a recent recipient of the IUSM Trustee's Teaching Award.
48	Niharika Samala, MD^Ω ¶	Dr. Samala joined our faculty as a Visiting Assistant Professor in 2016 and she is a physician-scientist with clinical focus on hepatology and basic science research related to nonalcoholic fatty liver disease. She is a graduate of our GI fellowship and she completed a hepatology fellowship from the NIDDK previously.
49	Sashidhar Sagi, MD	He is an Assistant Professor of Clinical Medicine and he is a clinician-educator. His clinical interests include IBD and his practice is largely located at IUH-University Hospital.
50	Stuart Sherman, M.D.	He is the Director of the Pancreatico-biliary Section of the Division. His expertise is in ERCP and EUS. He is one of the best recognized national and international authorities on ERCP. He serves as our Clinical Director—a very important position in the Division. He holds the Glen Lehman Chair in the Division of Gastroenterology. He is the recipient of 2012 Attending of the Year by GI fellows.
51	Andrea Shin, MD^Ω ¶	Andrea joined our faculty as an Assistant Professor in 2015. She is clinician-researcher focusing on GI motility. She was trained under Dr. Michael Camilleri who is a world renowned researcher in the field of GI motility and functional bowel disorders. Her research is currently funded by a KL2 award from our CTSI.
52	Rob Siwiec, MD	Rob is a graduate of GI fellowship from Medical College of Wisconsin under the mentorship of Dr. Reza Shaker. His expertise is in foregut dysmotility and has tremendous experience in functional neuroimaging. He is an Assistant Professor of Medicine. He is the section chief of our IUH-North practice.

53	Meg Sozio, M.D. ¶	Dr. Sozio is an Assistant Professor who practices at UH and also at the VA. She is a hepatologist with focus on general hepatologist.
54	Brian Sperl, MD	Dr. Sperl is joining our faculty in July 2017 after a distinguished career in private practice at Franciscan. He specializes in general GI and in IBD. His clinical practice will be based at the VA Hospital and at Hancock and Batesville.
55	John Tang, D.O.	Dr. Tang is a clinician-educator and has joined the division in March 2011 as an Assistant Professor of Clinical Medicine. In addition to his practice at Wishard, he practices at Saxony, a growing practice in Northern suburbs.
56	Eduardo Vilar-Gomez, MD, PhD	Dr. Vilar-Gomez was just recruited as Research Associate Professor in the Division and he is a successful clinical researcher in hepatology. He was one of the hepatology leaders in Cuba before he relocated to Spain where he worked with leading hepatologists in Barcelona and in Seville.
57	Raj Vuppalanchi, M.D. Ω¶	He is an Associate Professor of Medicine and is the director of our Clinical Hepatology. He has expertise in drug disposition and liver disease. He is an outstanding clinician and researcher. His research is focused on NASH and drug hepatotoxicity. He is currently a co-investigator of several NIH grants and is the PI for an intramural Clarian Values grant to investigate drug metabolism in individuals who have had gastric bypass procedures. He recently received IU Trustee's Teaching Award.
58	James Watkins, M.D.	He is an established therapeutic endoscopist with expertise in ERCP. He is a great clinician and excellent teacher. He was a previous recipient of the Teacher of the Year award chosen by the graduating fellows.
59	Joel Wittles, M.D.	He is an Associate Professor of Clinical Medicine. He is a clinician-educator. His interests cover general GI, hepatology and more specifically, video capsule imaging and GI motility disorders.
60	John Wo, M.D.	Dr. Wo is Douglas Rex Professor and is the head of our GI motility program. Under his leadership, our GI motility program has grown to be one of the largest motility programs in the country. His expertise is in foregut dysmotility. He is a clinical investigator and a gifted educator.

Adjunct Faculty from Purdue University

61	Wanqing Liu, PhD ^Ω	Dr. Liu is Associate Professor of Pharmacy at Purdue School of Pharmacy and holds an adjunct appointment in the GI division. He is an expert in systems biology of fatty liver disease and is funded by an R01 from the NIDDK. He works closely with Dr Chalasani and the fatty liver research group.
62	Mathew Ward, PhD ^Ω	Dr. Ward is Assistant Professor at Purdue School of Engineering. He is an expert in biomedical engineering and forged strong collaborations with Drs. Nowak and Wo.

In **BOLD** are our women faculty; ¶ Our Hepatology faculty; Ω Investigators with federal funding focus

Research

Research is one of the major missions of the division. Our research goal is to be a leading GI/Hepatology division in the US in research and mentoring in GI/Liver-related diseases. We have ongoing research programs covering most, if not all aspects of gastrointestinal and liver diseases. Our research programs are diverse and expand from studies which are federally-funded to investigator-initiated pharmaceutical studies. We have a robust clinical and translational program as well as basic research to study the mechanism of alcohol and non-alcoholic liver diseases.



Our division has a nice trajectory in obtaining federal funding (from the NIH, VA, or Department of Defense), despite very competitive environment. We received 2 new R01s (from NIAAA and NIDDK), 1 new R21 (from NIAAA), and 1 new VA Merit Award (competitive renewal, VA Office for Research and Development), 1 patient-oriented career development award (K23 from NIDDK), 1 collaborative research for chronic pancreatitis (U01 from NIDDK), and 1 SPARC funding (NCATS) in 2016. Because of the depth and breadth of our clinical programs, pharmaceutical supports to conduct the clinical trials in all facets of GI/Liver diseases are on the rise with over 250 active studies. We published a total of 154 original papers/review articles/editorials in 2016 in high quality, high impact journals. We also have a strong presence at the annual meeting of GI/Liver societies (DDW, ACG, and AASLD).

Thematically, our research can be broadly categorized into:

GI-Luminal studies

- (a) Colorectal cancer screening and polypectomy by Drs. Rex, Imperiale, and Kahi
- (b) Device and new technology research – primarily conducted by Drs. Rex, Lehman, Sherman, Dewitt, Al-Haddad and Kessler.
- (c) Inflammatory bowel disease and fecal microbial transplantation by Drs. Fischer, Bohm and Sagi
- (d) GI motility led by Drs. Wo and Nowak. Other members in this group include Drs. Siwiec, Shin, and Ward. This and our IBD group works closely with Dr. David Nelson (a faculty in Microbiology with joint appointment in GI division) on gut microbiome and GI motility disorders.

Pancreatobiliary studies

- (a) Pancreatobiliary research conducted by the ERCP and EUS groups on acute and chronic pancreatitis, pancreatic cancer, endoscopic devices, and prevention of post-ERCP pancreatitis.

Obesity and Nutrition studies

- (a) Obesity and weight loss program led by Dr. Ashley Gilmore
- (b) Endoscopic-based treatment for obesity led by Dr. Al-Haddad

Liver disease research studies

- (a) Complications of cirrhosis including encephalopathy and disturbed sleep– Drs. Ghabril and Orman
- (b) Fatty liver disease – Drs. Chalasani, Vuppalanchi, Gawrieh, Liangpunsakul, and Samala
- (c) Alcoholic liver disease – Drs. Crabb, Liangpunsakul, and Chalasani
- (d) Drug induced liver disease – Drs. Chalasani, Ghabril, and Vuppalanchi
- (e) Cholestatic liver diseases – Drs. Vuppalanchi and Lammert

- (f) Autoimmune hepatitis and genomic hepatology – Drs. Lammert and Chalasani
- (g) Liver transplantation related studies - Drs. Ghabril, Lacerda, and Holden.
- (h) Basic research in alcoholic and non-alcoholic liver diseases – Drs. Liangpunsakul, Masuoka, and Samala

Currently, Drs. Crabb, Chalasani, Fogel, Liangpunsakul, Nelson, Nowak and Orman are NIH funded as primary investigators. Drs. Lammert and Shin are supported by KL2 funding mechanism; an internal support by our NIH funded CTSI. Drs. Vuppalanchi, Ghabril, Gawrieh, and Liang are co-investigators on several NIH grants.

The following faculty members are applying for their first NIH funding as PIs:

Dr. Gawrieh – has applied for an R01 to investigate the impact of HIV and NAFLD (awaiting for funding)

Dr. Lammert – Has applied for K23 to further study the genetic determinant of autoimmune hepatitis

Our goals in the next 3 years on research program are:

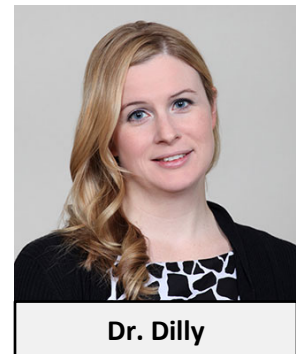
1. **Continue to expand our clinical trial portfolio.** This is a natural extension to our clinical excellence. We now have an established infrastructure (administrators and coordinators) dedicated for clinical trials. We will engage our faculty and expand the number of clinical trialists.
2. **Expand the number of NIH funded PIs.** This is a very challenging goal. But we will continue to focus on growing our internal talent and recruit funded faculty members with basic science departments. We will form a task force to recruit GI epidemiologists/outcomes researchers to the division.
3. **Continue to enhance the infrastructure** that will support scholarly activities of our faculty at all levels in our division by utilizing the resources within the division, DOM, and IUSM
4. **Expand basic science portfolio** in the division by working closely with our basic science departments. **Expand our epidemiology/outcomes/informatics portfolio** by jointly recruiting with other departments and centers.

Education (non-fellowship)

As Key Clinical Educator, Christen Dilly manages the division’s educational effort as it pertains to students, residents and faculty development. Christen will earn her Master of Education in the Health Professions degree in May 2017.

Mission Statement

The GI division aims to provide an excellent educational experience to medical students, residents and fellows in our training programs. We strive to develop and deliver excellent lectures, clinical experiences, advising, assessment and research mentorship for our trainees. We continuously assess and address the needs of our faculty members for skill development and try to maximize the intrinsic and extrinsic rewards of teaching. We offer educational support to our colleagues throughout the state who treat and refer



patients with GI/liver disease. Through these efforts, we contribute to the mission of the Department of Medicine and train the workforce that will meet the needs of the people of Indiana.

Medical students

Our goals for educating medical students include inspiring students to enter careers in internal medicine and providing strong clinical and preclinical training in gastroenterology & hepatology. The IU School of Medicine (IUSM) matches an average of 64 medical students in internal medicine each year. We mentor students by acting as faculty advisors and networking through the Internal Medicine Special Interest Group and Alpha Omega Alpha. As part of IUSM's curriculum reform initiative, our prior lectures (led by Drs. Rex and Ghabril) are being phased out. Christen Dilly will coordinate our division's contributions to the new curriculum. In 2016, students from the Indianapolis campus did better on the GI questions than on any other component of Step 1. A number of faculty members act as preceptors to medical students of all levels in clinic. Our GI and hepatology electives have become increasingly popular with medical students from IU and with visitors from other medical schools.

Residents

Our main goals in working with our residents are to inspire residents to pursue careers in GI/Hepatology and to provide strong clinical training in GI. Our faculty members mentor residents as faculty advisors and by mentoring research projects and senior talks. Our GI curriculum for residents has been revised, including restructuring IMPACT lectures and developing online modules to better meet the objectives covered on the ABIM exam. Twelve of our faculty members host residents in their clinics. For each of the past two years, we have matched three internal medicine residents into GI fellowship programs here at IU or elsewhere.

Faculty Development

Our goals with respect to faculty development are to offer sufficient faculty development opportunities to meet each individual's teaching needs, to grow future clinician-educators, and to produce educational scholarship. A new Clinician Educator Training Pathway is under development for fellows entering internal medicine subspecialties. Our educational scholarship effort is growing; so far we have received one internal and one external educational grant.

GI Fellowship Program

Our ACGME-accredited our GI fellowship program is led by Dr. Nabil Fayad, and is doing very well. Ms. Vara Fore is the fellowship coordinator since February 2016. Several committees assist Dr. Fayad in directing the fellowship program: the Program Evaluation Committee (PEC- chaired by Dr. Fayad); the Clinical Competency Committee (CCC- co-chaired by Dr. Vuppalanchi and James-Stevenson); the Research Training Committee (chaired by Dr. Chalasani). Dr. Fayad updated all the fellowship policies in November 2014. We also updated the fellowship curriculum at the end of 2015, based on the Entrust able Professional Activities established by the GI societies in July 2014.



Dr. Fayad

We are approved by the ACGME for 16 fellows, and we currently have all positions filled. We have been very successful in our recruiting efforts in the last few years, and have been attracting and matching high quality candidates. We continue to customize fellowship plans for each fellow, to help everyone achieve their career goals.

Clinical training is carried out at the main three teaching hospitals on campus: IUH University Hospital, Eskenazi Health Hospital and Roudebush Veterans' Affairs Medical Center. In addition, we started a new rotation at IUH North Hospital in October 2014 to provide fellows a different experience from the traditional rotations on campus. Training includes a half-day per week of continuity clinic, which is provided either at Eskenazi Health or at the VA Medical Center.

We have a robust training both in the inpatient and outpatient settings, covering the various aspects of general gastroenterology, inflammatory bowel disease, motility disorders, pancreato-biliary diseases and liver diseases. Our fellows gain a large experience in managing transplant patients, including liver transplant and multivisceral transplant. Their endoscopy experience exceeds national requirements both in quantity and nature of procedures.

In addition, our fellows are engaged in multiple research opportunities. Three years ago, we have expanded our fellows' research experience to a minimum of 6 dedicated months. We have restructured the research curriculum, and included better guidance and assistance in selecting and conducting projects. Our fellows have been quite productive, presenting several abstracts at the leading national GI meetings, and publishing in the prominent GI journals.

Over the past few years, we have consolidated the didactic activities for the fellows. In addition to the weekly GI Grand Rounds, these include a weekly textbook chapter review, a clinical guidelines series, core curriculum lectures, clinical case conferences, pathology conferences, journal club, as well as mortality and morbidity conferences.

Our graduates continue to be successful in passing the GI Board exam, with a 100% Board pass rate on the first attempt in the past decade.

Our graduates continue to embark on successful careers after fellowship training. Among our 27 graduates in the last 5 years, three completed advanced training in IBD, four others in hepatology, four others in pancreato-biliary diseases, two fellows in motility, and one fellow in medical bariatrics. One fellow enrolled in a Master's in Health Professions Education program, another completed training in Biomedical Informatics, and another is associate fellowship director at his institution. **It is remarkable that 21 of the 27 graduates entered and stayed in the academia (Table below).**

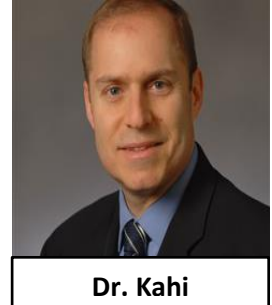
Graduate Name	Graduation Year	Type of Practice	Current Position
Ashley Gilmore, M.D.	2016	Academia	Assistant Professor of Medicine Indiana University, Indianapolis, IN
Smitha Marri, M.D.	2016	Academia	Assistant Professor of Medicine Indiana University, Indianapolis, IN
Niharika Samala, M.D.	2016	Academia	Assistant Professor of Medicine Indiana University, Indianapolis, IN
Kunal Dalal, M.D.	2016	Private practice	Wilmington Gastroenterology Wilmington, NC
Ji Bang, M.D.	2016	Academia	Endoscopic Ultrasound Fellow Center for Interventional Endoscopy, Orlando, FL
Andrea Shin, M.D.	2015	Academia	Assistant Professor of Medicine Indiana University, Indianapolis, IN

Abdul El Chafic, M.D.	2015	Academia	Assistant Professor of Medicine Ochsner Medical Center, New Orleans, LA
Patrick Barrett, M.D.	2015	Private practice	Southeastern Indiana Gastroenterology Columbus, IN
Ashish Aggarwal, M.D.	2015	Private practice	Community Health Network Indianapolis, IN
Melissa Martinez, M.D.	2015	Academia	Assistant Professor of Medicine Southern Illinois University, Carbondale, IL
Darren Ballard, M.D.	2014	Academia	Assistant Professor of Medicine Medical College of Wisconsin, Milwaukee, WI
Matthew Bohm, D.O.	2014	Academia	Assistant Professor of Medicine Indiana University, Indianapolis, IN
Mollie Jackson, D.O.	2014	Academia	Assistant Professor of Medicine University of Kansas, Kansas City, KS
John Jacobs, M.D.	2014	Academia	Assistant Professor of Medicine, Associate Program Director, GI Fellowship University of South Florida, Tampa, FL
Viplove Senadhi, D.O.	2014	Private practice	Jackson Hospital and Clinic Montgomery, AL
Sweta Tandra, M.D.	2014	Private practice	St. Vincent Health Carmel, IN
Ihab El Hajj, M.D.	2013	Academia	Assistant Professor of Medicine Indiana University, Indianapolis, IN
Timothy Imler, M.D.	2013	Academia	Assistant Professor of Medicine Indiana University, Indianapolis, IN
Christen Dilly, M.D.	2013	Academia	Assistant Professor of Clinical Medicine Indiana University, Indianapolis, IN
Sashidhar Sagi, M.D.	2013	Academia	Assistant Professor of Clinical Medicine Indiana University, Indianapolis, IN
Nadia Umar, M.D.	2013	Private practice	UHMP Gastroenterology Cleveland, OH
Saurabh Agrawal, M.D.	2012	Academia	Assistant Professor of Clinical Medicine University of South Florida, Tampa, FL
Ann Flynn, M.D.	2012	Academia	Assistant Professor of Medicine University of Utah, Salt Lake City, UT
Kartik Jinjuvadia, M.D.	2012	Academia	Assistant Professor of Medicine Wayne State University, Detroit, MI
Arslan, Kahloon, M.D.	2012	Academia	Assistant Professor of Medicine University of Tennessee, Chattanooga, TN
HariPriya Maddur, M.D.	2012	Academia	Assistant Professor of Medicine University of Missouri, Kansas City, MO
Margaret Sozio, M.D.	2012	Academia	Assistant Professor of Clinical Medicine Indiana University, Indianapolis, IN

In addition to general GI training, our division offers advanced training in ERCP, EUS, IBD and Hepatology; these programs are not ACGME-accredited.

GI and Liver Section at the VA

Headed by Dr. Charles Kahi, our GI section at the VA is doing well. The VA GI group has grown from a small team of general gastroenterologists, to a large multi-disciplinary group that provides a comprehensive array of subspecialty services to Veterans. The number of clinical Full Time Equivalents (FTE) has increased from 2.4 in 2010, to 5.5 in 2015. A total of 13 IU faculties have appointments at the VA, up from 6 in 2010. The team now includes hepatologists (Drs. Liangpunsakul and Sozio) with expertise in transplant Hepatology and the treatment of viral hepatitis, experts in endoscopic ultrasonography (Dr. Easler) and endoscopic retrograde cholangiopancreatography (Dr. Fayad), esophageal disorders (Dr. Dilly), inflammatory bowel disease (Dr. Bohm), and gastrointestinal bleeding, in addition to the core emphasis on colorectal cancer prevention (Drs Kahi and Imperiale). The Endoscopy Unit has state-of-the-art equipment and is staffed by a dedicated team of 36 nurses, technicians, schedulers, and case managers. This team now provides around-the-clock elective and emergency services. The number of endoscopic procedures has grown from 5,261 in 2008 to around 6,000 since 2014. The Endoscopy unit provides high-quality general endoscopy services (such as screening colonoscopy and upper endoscopy), in addition to the following specialized services: (1) Advanced Colonoscopy and Polypectomy, (2) Radiofrequency Ablation (RFA) for the treatment of precancerous Barrett's esophagus, (3) Balloon-assisted enteroscopy, (4) Endoluminal stenting, and (5) Fecal Microbiota Transplantation (FMT) for the treatment of recurrent *Clostridium difficile* infection.



Several of the VA-based attendings have important roles in the IU School of Medicine and beyond: Dr. Nabil Fayad, our pancreatic-biliary endoscopy expert, also serves as the GI Fellowship Program Director, Dr. Christen Dilly, who oversees our RFA program, is the Key Clinical Educator for the GI division, Dr. Suthat Liangpunsakul is a federally-funded translational researcher leading our Hepatology team, Dr. Thomas Carr oversees the IU GI Kenya program, and Dr. Thomas Imperiale is an internationally-recognized outcomes researcher who is also co-PI for the national VA CONFIRM trial .

A quality assurance and safety monitoring program for endoscopic procedures performed at the Roudebush VAMC has been in effect since 2009. The program documents specific physician performance variables indicative of high quality endoscopy (including adenoma detection rates in screening colonoscopy, and time spent examining the colon), monitors state-of-the-art endoscope reprocessing and infection control practices, and tracks procedure-related complications. As a result, the Roudebush VAMC Endoscopy unit received the coveted American Society for Gastrointestinal Endoscopy (ASGE) recognition for promoting the highest standards of quality and safety, and has successfully renewed the recognition twice in 2012 and 2015. Our VA is one of 5 VA Centers now leading a Quality Enhancement Research Initiative (QUERI) aiming to improve colonoscopy care quality through a standardized assessment of colonoscopy quality metrics; this project will replicate on the national level the processes we pioneered at the Roudebush VAMC.

The Roudebush VAMC outpatient GI clinic has also expanded. The fellows' clinic has 7 fellows supervised by 2 attendings, a clinical pharmacist, and a nutritionist. Several other clinics have been created, including dedicated Hepatology and Inflammatory Bowel Disease clinics (run by Drs. Meg Sozio and Matthew Bohm, respectively), nurse practitioner clinics in both general gastroenterology and Hepatology, and a Fibroscan clinic, which allows the non-invasive assessment of liver fibrosis via transient elastography.

Major challenges are (a) meeting VA's access mandates (scheduling patients for clinic and procedures within VA timeframe guidelines) and (b) keeping the VA anchored within the IU academic missions. With new Chief of Medicine and Chief of Staff at our VA, we look forward to meeting these challenges and continue to excel as one of the top VA GI units nationally.

Eskenazi GI and Liver

Headed by Dr. Hala Fatima, our GI section at Eskenazi is doing reasonably well. Beyond Drs. Fatima and Crabb we do not have other physicians who serve as anchors for our practice at Eskenazi. Drs. Tang, Kim, Imler, James-Stevenson, Gawrieh, Orman, Samala and Ghabril spend 1-2 days each week at Eskenazi. However with the addition of Dr. Khaled Abdeljawad in August 2017, we will add another anchor to the GI service at Eskenazi to improve coverage.

We provide comprehensive inpatient, outpatient, and procedural services at Eskenazi. Our GI faculty staff 2 week consult blocks along with a fellow and/or a resident and medical student. It has a high educational value and provides comprehensive consultative service for the inpatients.

Most of the outpatients are seen on Thursday AM in fellows clinic supervised each week by 3 staff attendings (Drs. Sozio, Fatima, and Crabb). In addition there are two half day clinic sessions run by the GI physician assistant and a hepatitis C clinic. In addition we have also started performing Fibroscans for our liver patients which are done during a separate clinic session. There is a high need for ambulatory GI/hepatology care at Eskenazi and currently we receive about 35 new consults/month. Our median lag for clinic continues to be high with the most recent numbers indicating 132 days. In keeping with the demands, we plan to add 2 additional GI clinic sessions per week.



For the most part, we perform general GI procedures and some advanced luminal procedures such as advanced polypectomy, endoscopic stenting, chromoendoscopy and endoscopic mucosal resection. We also perform video capsule imaging and esophageal pH monitoring. However, manometry, ERCP, EUS and DBE are not offered at Eskenazi. In the past year we have also started performing fecal microbiota transplant for patients with C diff. It is the only site on campus that provides Nurse Administered Propofol Sedation. We are a highly accessible endoscopy unit and our wait times for screening colonoscopy average about 30 days. We comply with all the core measures and have been a 100% compliant with screening and surveillance colonoscopy guidelines. In order to measure quality and continued improvement we provide all endoscopists with quarterly report cards. Our average adenomas detection rate continues to be higher than the national average.

Eskenazi has achieved many accomplishments over the past few years. These include designing the new endoscopy unit, improving patient flows in the clinic as well as the endoscopy unit, improved systems to record and track quality measures, improved oversight of physicians, development of transition to the new EPIC medical record system and multidisciplinary collaboration with other departments including surgery, radiology and oncology. We have also partnered with the School of Nursing to do endoscopy centric studies. One recently started study is to *"compare interventions to increase CRC screening in low income and minority patients"*. One major accomplishment is the re-introduction of Nurse Administered Propofol Sedation (NAPS) for GI endoscopy – only of its kind in the State of Indiana.

In keeping with the mission to monitor quality in service we present our clinic and endoscopy data to the CSOC committee twice a year. Eskenazi now has its own Tumor board where we present and discuss liver and colorectal cancers and other GI malignancies. Eskenazi continues to cater to a wide variety of patients allowing for a comprehensive exposure to learners and it continues to be a major venue for fellows training and it is a rotation of growing value and strength for medical students and residents. In addition we also provide procedural skills training to surgical residents. We are also a learning site for the IU and Marian university nursing students.

The new IUHP- Eskenazi agreement that came into effect last year imposes a financial penalty in the event of cancelled clinics, median new patient lag of >21 days and low patient satisfaction scores. The Eskenazi GI department is working hard to improve patient satisfaction scores. Our staff and physicians are offered training by the Studer Group to improve these scores. Steps to improve median lag are by the addition of new clinics. In addition, we are planning to hire APPs to provide additional access for outpatient visits.

The harsh reality is that Eskenazi GI has not received the same level of support or attention as our IUHP practices elsewhere, although this has improved over the last decade. Over next 2-3 years we would like to address our challenges related to high no-show rates for clinics and for endoscopy, lack of Eskenazi-related infrastructure in the clinic, and insufficient Eskenazi-centric research.

General Hepatology

We have one of the largest general hepatology groups in the country and the following physicians provide general hepatology outpatient and inpatient-care for the division –Drs. Crabb, Chalasani, Liangpunsakul, Gawrieh, Vuppalanchi, Masuoka, Sozio, Orman, Lammert, Samala, Holden, and Nephew. Dr. Vuppalanchi serves as the Director of our Clinical Hepatology program. We have dedicated general hepatology clinics at UH, Springmill, and VA, and both Eskenazi clinic and our Lebanon outreach also have extensive hepatology practice. Drs. Sozio and Liangpunsakul have dedicated liver clinics at the VA and Drs. Crabb and Sozio are the hepatology anchors for fellows’ continuity clinic at Eskenazi. Some of the hepatologists serve as attendings on the liver consult service at UH and they share overnight call with transplant hepatology attendings. They are also in-charge of “Medically Urgent Liver Clinics” conducted at DaLD four days each week. Our general hepatology practice along with our transplant hepatology practice is one of the key distinguishing features relative to other groups in the State. Our general hepatology program serves as a major source for pre-transplant referrals.



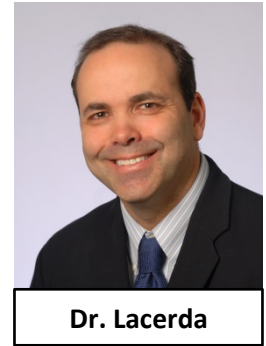
General Hepatologists are engaged in clinical and translational research with high success. The focus of this group’s research is broad –liver cancer (Drs. Gawrieh and Chalasani), fatty liver (Drs. Chalasani, Vuppalanchi, Gawrieh and Samala), drug hepatotoxicity (Drs. Chalasani, Vuppalanchi, Ghabril), alcoholic liver disease (Drs. Liangpunsakul, Crabb, and Chalasani), complications of cirrhosis including encephalopathy and inpatient hepatology (Drs. Ghabril, Orman, and Chalasani), genomic hepatology including autoimmune hepatitis and cholestatic liver diseases (Dr. Lammert) and finally industry initiated clinical trials for NAFLD/NASH (Drs. Chalasani, Vuppalanchi, Gawrieh) , Cirrhosis/Portal hypertension (Drs. Chalasani, Ghabril and Orman), and PSC/PBC/AIH (Drs. Vuppalanchi and Lammert). These investigator-initiated NIH funded research activities and industry-initiated studies are described in more detail in the Research Section of this document.

The past challenges with improving access time and research portfolio were partially overcome using lean process and strategic hiring of personnel with the required skill sets (Manager and Assistant Business manager for research), additional major opportunities and challenges include continued improvement in our access time, establish disease specific clinic (fatty liver clinic and rare disease clinic) and expanding our research portfolio. Currently, a new liver patient appointment takes nearly two months and we do not have a consistent screening mechanism to assure that we see sick liver patients in a timely fashion. In 2017, this problem will be addressed using our lean process and starting a program of advanced practice providers (APP) working strategically alongside hepatologists with high volume. We also hope to address physician burnout by addressing issues such as loss of control over work, increased performance measurement (quality, cost, and patient experience), the increasing complexity of medical care, the implementation of EHRs, and inefficiencies in the practice environment. We also hope to be more involved in the multidisciplinary liver tumor board to support a collaborative, team-based model of care where physician

expertise from transplant surgery, hepatobiliary surgery, radiation oncology, medical oncology and interventional radiology is maximally utilized for patient benefit. We have identified Dr. John Holden as the primary physician in charge of liver tumor board. The plan is to discuss every case of liver tumor at the tumor board before any definite therapy and establish a shared database to track long term outcomes. While the hepatology group is aggressively pursuing federal funding, there is an increasing opportunity to significantly expand our clinical trials portfolio. Over the course of next 3 year, we will continue to emphasize on building infrastructure and resources to expand our clinical trials portfolio for hepatology and for other subsections within the division.

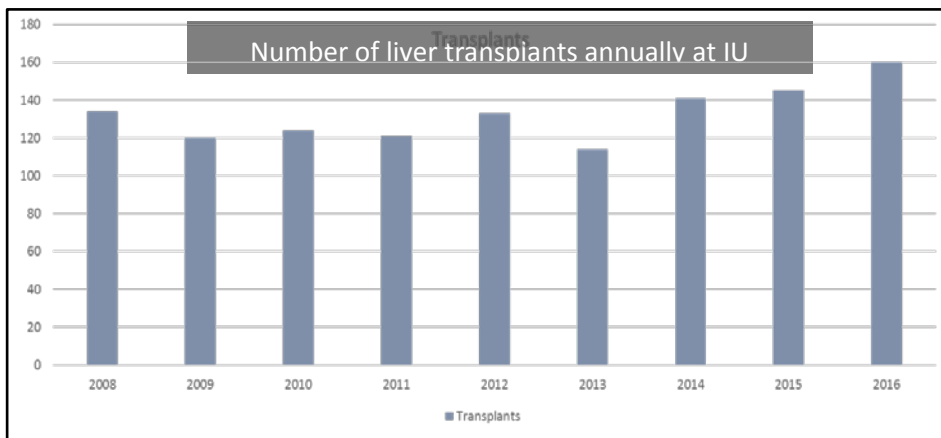
Transplant Hepatology Program

Headed by **Dr. Marco Lacerda**, we have one of the strongest transplant hepatology programs in the country. Last year we ranked #5 in the US in transplant volume. Drs. Marco Lacerda and Marwan Ghabril carry presently the major clinical load with significant contribution by Drs. Chalasani and Gawrieh. We are fortunate to have recruited for this coming year Dr. John Holden who will also play a significant role in our Transplant Hepatology practice. We are currently recruiting an advanced provider to help with the significant growth in our patient portfolio.



Dr. Lacerda

Over the past 10 years we have received a number of approximately 500 to 600 new referrals to the Liver Transplant group every year. Of these, a significant number (160 in 2016) – end up receiving a liver transplant. These facts, added with excellent long term survival of liver transplant recipients, make up for a very busy and growing clinical practice, both inpatient and outpatient. Quality remains priority despite volume, and excellent results and very high patient satisfaction scores endorse this. Our one- year patient survival is close to 95% for first liver transplants (compared to 1 year national survival of 90.8%). We serve as an international destination for transplantation as well as a referral center from other U.S. transplant centers and we use this national and international reputation to build our Hepatology practice in end stage liver disease as well as orthotopic liver transplantation. Despite the high volume of patients, and their complexity, the liver service has been consistently rated as one of the best inpatient learning experiences in the residency program. Transplant hepatology attendings serve as excellent role models for clinical research projects for internal medicine residents and our subspecialty fellows.



We are proud that our relationship with our liver transplant surgical colleagues is excellent. There is great respect from each group to another in a truly interactive and cooperative environment. Despite significant departures from both groups – Drs. Tector and Kwo – our liver transplant

program continues to thrive and undertaking new initiatives such as Liver Transplant outreach clinics, aimed at areas which historically referred patients to neighboring states. Upon analyzing UNOS maps of organ distribution, the northwest and southeast extremes of the state provide an opportunity to start our outreach clinics. Another area of advancement is collaboration with Dr. Ashley Gilmore in bariatric medicine for our liver transplant candidates who are morbidly obese. Many patients referred for transplant

with proper indication end up not having their candidacy approved given significant obesity, a known risk for poor prognosis. This new collaboration will bring benefits with improved patient care; increased number of patients formally approved for listing for transplant and opens a new avenue for research.

Overall, our transplant program is functioning at a high level with high volume, high acuity and complexity of patients and has continued to thrive despite obstacles. We are proud of our accomplishments over the last decade and we are very confident about the future of our program over the next decade.

GI Motility Program

Our GI motility program has rapidly become one of the major programs nationally. Dr. **John Wo**, the director of our GI Motility Program, is the first recipient of the Douglas Rex Professorship in Gastroenterology and Hepatology. Dr. Wo's arrival from University of Louisville in conjunction with Dr. **Tom Nowak's** return to IU from private practice gave us a significant jumpstart to establish a leading motility program. Additional physicians specializing in the motility area are **Drs. Joel Wittles, William Kessler, Robert Siwiec, Toyia James-Stevenson, and Andrea Shin**. Dr. Wittles focuses on video capsule imaging and functional pain, Dr. Kessler on Barrett's esophagus and endoscopic treatment of gastroesophageal reflux, Dr. Siwiec on foregut motility disorders, and Dr. James-Stevenson on pelvic floor disorders and colonic dysmotility. **Dr. Shin** is a clinician-researcher focusing on the effects of bile acids and microbiome in irritable bowel syndrome, and she is currently funded by a KL2 award from our CTSI. The GI Motility Clinics are supported by our clinical psychologists, **Drs. Ann Mary Montero and Michelle Koselke**. Collaboration includes our joint faculty member, **Dr. David Nelson**, who is an expert in gut microbiome and extensively funded by federal grants and our adjunct faculty from Purdue Biomedical Engineering, **Dr. Matthew Ward**, who is an expert in vagal stimulation of the stomach. This group has a large clinical and procedural portfolio and we clearly are one of the most prominent sites for providing care for patients with gastroparesis. The new GI motility lab at the University Hospital has accommodated our large patient volume and provided state-of-the-art diagnostic testing. We are working with IUH administration to develop a robust gastric electric stimulation program.



This group is engaged in clinical, translational, and device research. They are engaged in clinical trials and in investigator-initiated translational studies in collaboration with the Department of Cellular and Integrative Physiology at Indiana University and with the Center of Implantable Devices at Purdue University, School of Biomedical Engineering. Dr. Nowak is a co-investigator on a highly competitive SPARC (Stimulating Peripheral Activity to Relieve Conditions) grant from the NIH in collaboration with investigators from Purdue University. This group under the leadership of Dr. John Wo has the clear cut potential to rise to the next level of cutting edge clinical care, high patient satisfaction, scholarship, funding, and publication. We have the potential to become one of the national leaders in the GI motility field.

Procedural volumes from IU Hospital GI Motility Lab

	2011	2012	2013	2014	2015	2016
Esophageal testing	386	893	998	884	1,053	1,434
Stomach-Small Bowel testing	9	183	203	263	292	239
Colorectum testing	52	430	455	423	437	530
Capsule video endoscopy	273	448	438	396	409	399
TOTAL	720	1,954	2,094	1,955	2,191	2,602

IBD Program

We have the only dedicated IBD program in the State developed by Dr. Helper. Since her retirement in 2015, the IBD program has grown substantially in areas of clinical practice, industry-funded clinical trials and investigated-initiated research. Under the leadership of Dr. Fischer joined by Drs. Sagi and Bohm, all of whom are IU graduates; our IBD practice is clinically well rounded with outpatient and inpatient management expertise, and excellent procedural capability (colonoscopy, chromoendoscopy, endoscopic stricture dilation and double balloon enteroscopy). In the DALD downtown, we offer six half-day clinics and at our Northside location, three half-day clinics focusing on IBD patients supported by a rapidly expanding team of IBD-centered clinical nurses, MAs and research staff. The volume of industry and federally funded clinical trials has grown exponentially in the last 5 years: **from only 2 trials in 2013 to 20 active trials in 2017**. Dr. Fischer's fecal microbial transplant (FMT) program falls under this program and it adds another significant dimension to this group. The FMT program established in 2012 became one of the highest volume centers in the country performing 140-160 procedures yearly. Implementation of a highly successful FMT protocol at IUH for the treatment of hospitalized severely ill patients suffering from *C. difficile* infection (CDI) in 2013, led to significant decline in CDI-related mortality and colectomy. With a large number of our faculty performing FMT, we are able to provide 24/7 care to our inpatient CDI population. Our FMT program is nationally recognized. The Center for Disease Control (CDC) and Crohn's and Colitis Foundation of America fund our ongoing FMT research for CDI and IBD trials and our collaborators include thought-leaders from Harvard, Brown, Mount Sinai, and Open Biome, among others.



There is significant clinical demand for our IBD physicians and there is a significant lag in new patient appointments. This patient population is fairly labor- and resource intensive but generates significant downstream revenue to the health care system (imaging, pathology, endoscopic procedures, infusions, hospitalizations, and surgical referrals).

Over the next 3-5 years, this group has the potential to consolidate its market share, expand its clinical trials portfolio even further, given the recent exponential jump in the number of investigational IBD drugs, and grow its investigator-initiated studies and publish. This patient population is ideally suited for "chronic disease management model" – focused on the concepts of value-based health delivery. This requires a multidisciplinary team and a well thought out infrastructure supported by the health care system.

Double Balloon Enteroscopy (DBE) program

Currently led by Dr. Fischer, we are the only DBE program in the State. Over the last 5 years, only two physicians have performed DBE on Fridays in the OR. To meet the growing demand for DBE, we have recently trained all inpatient endoscopists in deep device assisted enteroscopy at IUH. We currently perform 1-2 DBEs in the OR at UH from Monday through Friday. With these efforts, we shortened our backlog from 3 months to 2 weeks for outpatients and able to accommodate urgent inpatient cases within 24-48 hours. This step resulted in greatly improved patient and referring physician satisfaction. **Of note, this time consuming procedure is resource and effort intensive and yet wRVU poor.** Some case reports, abstracts, and two full publications have resulted from this program but to most part this has been providing an important service to our patients. Some of the DBEs are combined with ERCP and are done in the ERCP suite.

ERCP program

Headed by Dr. Sherman, our ERCP group consists of Dr. Lehman, Dr. Fogel, Dr. Watkins, Dr. El Hajj, and Dr. Easler. Our prized ERCP program had another stellar year. Our procedure volumes continue to grow in the new \$10 million dollar ERCP unit which opened in May 2014. It features 4 spacious rooms equipped with state of the art fluoroscopy units, video integration systems, the most advanced endoscopes and accessories, designed for efficient and safe patient flow and a quality patient experience. The ERCP group continues to excel in their missions of service, research and teaching. Our program remains the largest ERCP volume program in North America performing nearly 3000 ERCPs in addition to 1000 other interventional procedures such as therapeutic EUS, enteral stenting, G-J tube placement, DBE-ERCP. **Patients have come for their services from 48 states in the USA and 12 different countries.** We are closely aligned with our very strong HPB surgeons, interventional and abdominal imaging radiologists which allows us to provide the best comprehensive care for patients with pancreaticobiliary diseases.



Dr. Sherman

Research remains a major focus of the group. One of their NIH funded studies on **“Optimizing the role of ERCP in evaluating indeterminate bile duct strictures”** is in its final stages of data analysis. We anticipate that the results will be transformative and alter the way we approach these strictures. Dr. Fogel was awarded a UO1 grant to be part of the **Consortium to Study Chronic Pancreatitis, Diabetes and Pancreatic Cancer Clinical Centers (CPDPC)**. This consortium has been given the task of further elucidating the relationship between chronic pancreatitis, pancreatogenic diabetes, and pancreatic ductal adenocarcinoma (PDAC), with a focus on establishing early diagnoses. The group also has several industries, society, and pharmaceutical funded studies and numerous ongoing investigator initiated protocols

During the past year the ERCP group published 16 peer reviewed manuscripts in several high profile journals including Gastroenterology, JAMA, Annals of Surgery and the leading endoscopic journal, Gastrointestinal Endoscopy. They published 18 abstracts and presented many of them as posters and podium presentations at DDW. Several of the ERCP staff moderated symposia, gave state of the art lectures and spoke at the ASGE post graduate course at DDW. The group remains very committed to training advanced endoscopists from the USA and abroad. This highly competitive fellowship has trained more than 30 international fellows from Asia, Europe, South America, Africa and the Middle East. These fellows return to their country, assume academic leadership positions, provide expert consultation and endoscopic treatment for patients with complex pancreaticobiliary diseases and perform research. This year 2 trainees have come from South Korea, 1 from Turkey and 1 from the USA. The group continues to educate community GI physicians, GI nurses, GI techs and fellows from other programs through their well-attended ERCP courses. The group is energized in their new state of the art ERCP unit and is highly motivated to continue to do cutting edge research, provide the best care for patients with pancreaticobiliary disease, and train the future therapeutic endoscopists across the nation and internationally.

EUS program

The EUS service at University Hospital (UH) is thriving and currently performed at three locations. These sites include: 1) Glen Lehman Endoscopy Suite (GLES) for low risk outpatient procedures; b) ERCP suite for inpatients, patients requiring combined EUS and ERCP or for high-risk interventional EUS cases (i.e. pseudocyst drainage) and; c) operating room for higher risk outpatient cases. On campus, the only other location where EUS is performed is at the VA hospital. Our procedure volume at UH peaked in 2011 at 2715 cases whereas from 2014-2016 we performed between 2262-2371 cases annually. This drop off was partly

attributed to the departure of Dr. Mohamad Al-Haddad to Cleveland Clinic in Abu Dhabi in 2014. Fortunately, after two years he returned recently and has become fully reintegrated in our program. Our EUS program is led by Dr. John DeWitt and co-directed by Dr. Mohamad Al-Haddad. Procedures are also expertly performed by Drs. Stuart Sherman, Ihab El Hajj, Jeff Easler and Lee McHenry. With our staff back up to full capacity, we expect these procedural numbers to increase. Nevertheless, these EUS volumes at UH remain one of the top five programs nationally.



Dr. Dewitt

Over the last four years we have trained three fellows in EUS who are actively performing endoscopy in Canada, Thailand and California. Our current fellow Dr. Mark Gromski is learning EUS and ERCP as will be Dr. Ben Bick who starts training in July 2017. We are expecting and looking forward to both of them joining our faculty after finishing their training.

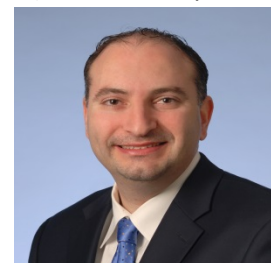
Over the last 5-10 years our EUS program has evolved to offer cutting edge interventional procedures such as rendezvous EUS-ERCP procedures, injection of gastric varices, and placement of fiducials for cancer patients and use of lumen opposing stents to drain walled off pancreatic necrosis and obstructed bile ducts. These novel procedures offer patients a minimally invasive approach to treat medical conditions.

Current research in EUS is focusing on multiple topics including: photodynamic therapy of pancreatic cancer combined EUS and endoscopic pancreatic function tests, cyanoacrylate injection of gastric varices, aspiration of pancreatic cysts and neurolysis for chronic pancreatitis.

Challenges for the program include poor reimbursement for existing CPT codes and lack of CPT codes for other procedures done with EUS guidance. We also have noticed decreased referrals due to the influx of providers in the Indianapolis area and state of Indiana who perform EUS. Finally, coordination of schedules among staff to perform EUS in GLES while also performing novel interventional cases in the OR or ERCP has proved difficult. Our goals for the EUS program are to continue to increase referrals, extramural funding, train fellows and continue to offer cutting edge care for both basic and advanced EUS procedures.

Innovative Luminal Endoscopy Program

Led by Drs. John DeWitt and Mohamad Al-Haddad, our innovative luminal endoscopy program over the last 5 years has focused on the development of endoscopic submucosal dissection (ESD) and related procedures. ESD involves initial injection of submucosal fluid to elevate the mucosa of the gastrointestinal tract followed by use an electro-surgical knife to incise the mucosa around a dysplastic lesion or sub epithelial tumor. To date, we have performed about 20 ESD procedures to remove tumors and so far have had excellent outcomes in these patients.



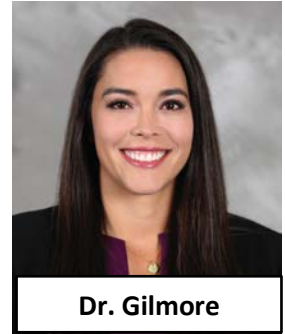
Dr. Al-Haddad

Related procedures to ESD which we now offer include per-oral endoscopy myotomy (POEM) for achalasia and endoscopic repair of Zenker's diverticula. To date, we have performed POEM in 30 patients with a 90% short term success rate. We have now performed flexible endoscopic repair of 5 patients with Zenker's diverticula with 100% short term success rates. After performing a recent animal lab, we are now excited to offer a gastric POEM for treatment of refractory gastroparesis.

Challenges with these techniques include the additional training required to learn these procedures, relatively expensive equipment needed and poor reimbursement. Nevertheless, patients desire a minimally invasive, incision-free approach for treatable conditions when possible. We are excited about offering these options to patients and are closely tracking outcomes for research and quality metrics.

Medical and Endoscopic Weight Loss Program

In the fall of 2016 the IU nonsurgical obesity treatment program was reintroduced as a new section of the division. The mission of this program is to address the increasing obesity burden, as well as prevent or improve obesity related comorbidities of our community. This initiative fills a void in the system to specifically address these needs in Indianapolis. Dr. Ashley Gilmore, a recent graduate of our program, participated in a specially designed fellowship to receive training in non-surgical management of obesity. Over the past several months, Dr. Gilmore has been involved in clinic program design as well as the development of patient treatment protocols. The program offers comprehensive and individualized patient treatment plans utilizing a variety of nonsurgical interventions including different meal replacement plans, specialized diets and pharmacotherapy. Additionally, under the direction of Dr. Mohammad Al Haddad, we will soon introduce endoscopic-based weight loss options including gastric balloons and endoscopic sleeve gastropasty. These nonsurgical obesity interventions are all components of the program's comprehensive and personalized patient treatment plans. The program has recently added a dietician to the team and will be adding an advanced practitioner in the coming months. We anticipate this program will also be a rich research resource to not only describe this patient group but also to describe the effects of different weight loss techniques. Enrollment of patients thus far has been by word of mouth. We expect a large increase with a recent effort to communicate with primary care physicians in the area.



IUH-North

Over the course of the last 3-4 years we have slowly and strategically grown our practice at IUH-North. Currently, we provide full service GI –inpatient consults, outpatient clinics, inpatient and outpatient endoscopy, ER coverage, and weekend rounding. This practice is led by Dr. Rob Siwec and Dr. James-Stevenson also covers this location one day a week. Night call, weekend rounding, and call coverage is done by our Northside pod which also covers IUH-Saxony. Traditionally, Meridian GI has been at this location but slowly and certainly we have taken over this practice – thanks to Dr. Siwec's hard work. We will be adding Dr. Andrea Shin in September 2015 and we anticipate that she will bring additional strength to this location. There is a potential that we may further expand our practice at this location in 2016 by adding Dr. Ashely Cuellar who will participate in its bariatrics program and develop weight loss program and participate in our GI practice there. We have recently started to have GI fellows at this location, largely to cover inpatient consults during weekdays. This practice is strategically important because of IUH's intent to add nearly 20 PCPs in this area and large Gynecology presence at this location. Hospital administration and leadership is generally very supportive of our group and have agreed to provide a guarantee to Andrea Shin, if her practice does not pick up as expected. One of the tricky issues is that growing our presence at IUH-North will certainly eat into open-access endoscopy referrals to DRES at Springmill because there is a sizable overlap in the referring MDs between two locations.



2016 Procedural volume: EGD: 495; Colonoscopy: 617; Other: 25; Total: 1137
2016 Patient visits: Inpatient: 1144 and Outpatient: 855
2016 wRVUs: 7,610

IUH- Saxony

We are the sole GI providers at this location. Technically we provide full GI coverage at this location - inpatient consults, outpatient clinics, inpatient and outpatient endoscopy, ER coverage, and weekend rounding. This practice is spearheaded by Dr. Nick Rogers and Drs. Nowak and Tang cover this one day each week at this location. Our practice is certainly growing at this location and we expect it to grow further. This location has limited research and education potential though. We perform outpatient endoscopic procedures in their outpatient endoscopy center which is owned partially by physicians – we (i.e., Department of Medicine) own 6 shares and we purchased them at an inexpensive price. No major changes are expected at this location but there is a consideration to add outpatient EUS if we can enlist local oncologists referrals from Anderson and Marion.



2016 Procedural volume; EGD: 154 and Colonoscopy: 285; Other: 10; Total: 449

2016 Patient visits: Inpatient: 115; Outpatient: 848
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2016 wRVUs: 4,453

GI at Margaret Mary Hospital in Batesville

Our outreach practice at Batesville in one of the oldest and farthest from our main campus and was established by Drs. Rex, Hawes, and Helper in late 1980s. Recently we have had recent physician turnover at this location but currently Drs. Imperiale, Sagi, Marri, and Sperl practice there. Our presence at this location will be increasing over next couple of year and our contributions are highly appreciated by local physicians, residents, and the hospital administration. We have recently established a new contract with this hospital which is expected to generate downstream revenue for the service line. This location has excellent payer mix and offers great nursing support. The nurse Manager and administration at the hospital are very thankful of our contributions and are a pleasure to work with.



2016 GI procedural volume: EGD: 89; Colonoscopy: 214; Other: 10; Total 313

2016 inpatient and outpatient encounters: Inpatient: 6; Outpatient: 544

2016 total number of wRVUs generated: 2,398
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GI at Hancock Regional Hospital in Greenfield

This outreach practice is doing quite well under Dr Watkins leadership. Other physicians serving this practice include Drs Tang, Carr, and Marri. We are expecting Dr Sperl joining this practice in July as well. We are the major GI group in town (Dr.



Yakhmi goes there to do GI procedures in their surgery center) and there is tremendous potential for this practice.

We provide inpatient GI consultations, perform outpatient and inpatient endoscopic procedures in their OR, and see outpatients in a clinic that is located in its medical office building. Interestingly, this hospital system has an outpatient surgery center and some physicians such as Dr. Yakhmi and general surgeons have ownership in that unit. So there are some issues of divided loyalties that impact our referrals. We are in the process of having a financial arrangement with the hospital system so this practice offers financial incentive. Its CEO (Mr Steve Long) and CMO (Dr Michael Fletcher) are forward thinking and are enthusiastic to partner with us in a mutually beneficial fashion.

2016 GI procedural volume: EGD: 456; Colonoscopy: 550; Other: 3; Total: 1,009
2016 inpatient and outpatient encounters: Inpatient: 73; Outpatient: 1,167
2016 total number of wRVUs generated: 4,466

GI at IUH-Morgan and in Morgan County

This practice is in transition, largely due to the changing nature of the IUH-Morgan Hospital which is now largely an outpatient facility with a surgery center and ER. Dr. Imler goes there once a week and he has built a strong relationship there and good clinic and procedural volume. Dr Gilmore has been going there to meet patient care and endoscopy demands. The payer mix is not very good but there is great need for GI service at this location. We have an agreement with the hospital that makes it revenue neutral for us. There is some confusion with regards to future of GI at this location (steady state vs growth) but our general sense is that IUH would like our presence there.



2016 GI procedural volume: EGD: 94; Colonoscopy: 203; Total: 297
2016 inpatient and outpatient encounters: Inpatient: 1 and Outpatient: 274
2016 total number of wRVUs generated: 1,493

GI at Witham and in Lebanon

Established in 1990s, our outreach practice at Witham in Lebanon is quite robust. We are the sole providers of GI services at Witham. Currently, we have presence all 5 days each week and Drs. Kim, Kessler, Wittles, Fogel, and Vuppalanchi practice there. We provide inpatient consultations, perform inpatient and outpatient endoscopic procedures in the outpatient surgery center located at Witham, and see outpatients at a separate location that we lease from Witham. On all fronts it is a thriving practice and our presence is widely appreciated by their physicians and their hospital administration. We bring in a lot of revenue to Witham!! This outreach practice is unique because of its proximity to the metro area – thus we are able to bring some downstream procedures to the AHC. Some challenges at this location include (a) relatively high overhead (rent, staff, etc); (b)



its general alignment with St Vincent’s, and (c) Witham’s reluctance to provide support such as medical directorship. An interesting aspect about this practice is that all stakeholders except our service line benefit from this outreach. Witham Hospital (largely from our procedures) and IUH (from our referrals), physicians practicing at that location (no competition and dependable referral sources) benefit from this practice, but our service line and IUHP lose money from this practice because of its payer mix, high overhead, and lack of Witham support. We will be working hard to negotiate professional service agreement with Witham Health Services to better our financial arrangement with them. Additionally, we anticipate Drs. Fogel and Vuppalanchi will be replaced by Drs. Abdeljawad and Holden respectively at this location.

2016 GI procedural volume: EGD: 685; Colonoscopy: 967; Other: 6 Total: 1,665
2016 inpatient and outpatient encounters: Inpatient: 252 and Outpatient: 1,594
2016 total number of wRVUs generated: 8,620

Global Health- AMPATH Gastroenterology

For many years, the IU GI division has been a participant in the AMPATH consortium. The Division currently leads GI for the consortium, with Dr. Carr as the North American director (GI) for the consortium. Dr. James-Stevenson is the IU GI director for the program.

Dr. Carr has extensive experience in global health in Kenya and Haiti. He has a diploma in Tropical Medicine from the Royal College of Physicians and Surgeons (D.T.M., RCP&S, Irl.) and completed West Virginia University’s tropical medicine diploma course. He has spent 2-3 months a year in Kenya since 2013. He was the IU GI director for the Kenya program before assuming leadership in GI for the consortium. Dr. James-Stevenson has been the IU director since 2014. She has spent several months in Kenya and contributed to the development of the GI global health elective.

The AMPATH consortium (Duke, IU, Brown, U Toronto, U Alberta, Mt. Sinai, UMass, Providence Portland, Lehigh Valley, Utah, and Purdue) began as the IU/Kenya program in 1989; in partnership with the Government of Kenya to establish Kenya’s 2nd state medical school (Moi University School of Medicine). With the AIDS epidemic in the early ‘90s in Kenya, the program expanded to the current institutions with significant funding from USAID and PEPFAR. In the new millennium, AMPATH has expanded its efforts to improve medical care and education in close cooperation with our Kenyan partners. A program of bilateral medical exchange in addition to the direct provision of care marks AMPATH’s current efforts.



Dr. Carr



Dr. James-Stevenson

Recent IU GI division activities in the consortium include:

- Co-directorship of Kenya’s first national GI conference.
- A GI global health rotation for consortium GI trainees to expose to GI in a developing country. The first trainee completed the rotation in 2016. This effort is supported by industry funding.
- Development of a research program with Purdue’s School of Biomedical Engineering to create a low-cost expandable stent for esophageal cancer.

- Development of an esophageal clinical program at Moi Teaching and Referral Hospital (MTRH) to help address the heavy burden of esophageal cancer in western Kenya.
- At least 2 months a year, the GI division has a faculty member at MTRH actively engaged in teaching and patient care.

Last but not least: Four years running on our Lean Journey in DaLD

Embarking on our fourth year of Lean process improvement, led by Dr McHenry and Ms Jennifer Zimmer (our transformation officer) we are poised to continue to tackle waste in our processes and add value to the patient experience in DaLD. We have made significant strides in our outpatient practices, and our physicians have begun to see how their practices have benefited. We have reduced the time patients spend in clinic from > 150 minutes to 67 minutes on average at both our downtown DaLD clinic as well as our SpringMill clinic in Carmel. Access has improved with our new patient visits have increased from 515 to 750 patients per month. Over 90% of our DaLD physicians have participated in Lean rapid improvement events and been indoctrinated in Lean Green training. **We have much more work to do. As we continue to improve, more waste becomes visible.**



Physician engagement and satisfaction are critical for success, and we must break down the barriers to bring the joy back to the practice of medicine for our providers. **Our physicians are spending on average 75 minutes of work after each 4 hour outpatient clinic session on the electronic medical record and with medical record dictations.** In addition, after-hours work (“pajama time”) on the electronic medical record is the most significant clinician dis-satisfier and will be a focus during our next year’s Lean journey. We will convene our 4th yearly Value Stream Analysis in June, 2017 to define the specific rapid improvement events and projects to drive our metrics. Although our lean activities are transforming our clinical practice and paying rich dividends, it costs to undertake lean activities and we are thankful for IUHP’s investment in our division’s lean endeavors. Our particular thanks to Dr Mike Ober who is the executive sponsor of our lean efforts and as the Vice Chair for Clinical Affairs he is a great supporter of the division.