Research Day | April 15, 2016 | At-A-Glance

Time	*Session Name*	*Location*
7:30 – 8:30 am	Registration and breakfast	Chicago Room
8:30 – 8:45 am	Welcome	Burnham Ballroom
8:45 – 9:15 am	**Keynote: The Evidence for Overuse** Rita Redberg, MD, Chief Editor, JAMA Internal Medicine; Professor and Director, Women's Cardiovascular Services, University of California, San Francisco	Burnham Ballroom
9:15 – 10 am	**Abstract Slam Sessions A1 & A2** Posters 1-7 presented during Abstract Slam A1 Posters 8-14 presented during Abstract Slam A2	A1: Palace A2: Oriental
10– 10:15 am	Break	
10:15 – 11:15 am	**Oral Abstracts: Drivers of Overuse**	Burnham Ballroom
11:15 – Noon	**Panel Discussion: Drivers of Overuse**	Burnham Ballroom
Noon - 12:15 pm	Break	
12:15 – 1 pm	**Abstract Slam Sessions B1 & B2** Posters 15-23 presented during Abstract Slam B1 Posters 24-31 presented during Abstract Slam B2	B1: Palace B2: Oriental
1 – 2:30 pm	**Lunch and Poster Session**	Lunch: Chicago Posters: Burnham Ballroom
2:30 – 3:30 pm	**Oral Abstracts: Interventions to Reduce Overuse**	Burnham Ballroom
3:30 – 4:15 pm	**Panel Discussion: Interventions to Reduce Overuse**	Burnham Ballroom
4:15 – 4:30 pm	Break	

4:30 – 5 pm	**Keynote: The Evidence Ecosystem--A Model for Producing Valid Evidence and Getting it to the Bedside** Gordon Guyatt, MD, Distinguished Professor, Department of Clinical Epidemiology & Biostatistics, McMaster University	Burnham Ballroom
5 – 5:15 pm	**Awards and Closing**	Burnham Ballroom
6:30 - 8:30 pm	Cocktail Reception Meet the speakers and fellow conference attendees.	Burnham Ballroom

Research Day | April 15, 2016

Time	***Session Name***
8:30 – 8:45 am	Welcome
8:45- 9:15 am	**Keynote *The Evidence for Overuse*** Rita Redberg, MD, Chief Editor of JAMA Internal Medicine; Professor and Director, Women's Cardiovascular Services University of California, San Francisco
9:15 – 10 am	***Abstract Slam Session A1 | Posters 1-7***

OCCAM's Conference, Overuse as a Medical Error
Hyung (Harry) Cho[1], Carlo Lutz, Tuyet-trinh (Trini) Truong[1], Mather (Dilan) Jogendra[1], Karen Blanchard[1], Andrew Dunn[1], Susanna O'Kula[1], Shelley Greebel[1], Deborah Korenstein[2]
[1]Icahn School of Medicine at Mount Sinai; [2]Memorial Sloan Kettering Cancer Center

Overuse of Protein C Testing by Teaching and Non-Teaching Service Teams in Patients Hospitalized for Stroke and Venous Thromboembolism
Ashrei Bayewitz[1], Rose Calixte[2], Jonah Feldman[2]
[1]Maimonides Medical Center; [2]Winthrop University Hospital

Inpatient Care at the End of Life: Too much Too Late?
Alison Wiesenthal, Debra Goldman, Deborah Korenstein
Memorial Sloan Kettering Cancer Center

CT Pulmonary Angiography for Diagnosis of Pulmonary Embolism: Towards More Balanced Use of Resources
Jeffrey Deuker, Matt Diveronica, Shona Hunsaker, Renne Segura
Oregon Health and Science University/Portland VA Health Care System

Syncope Evaluation: Overuse of Head CT, Underuse of Orthostatics
Susanna O'Kula, John Di Capua, Hyung (Harry) Cho, Celine Goetz
Icahn School of Medicine at Mount Sinai

Origin, evolution and drivers of the thyroid cancer epidemic in South Korea
Juan Brito[1], Hyun Jung Kim[2], Minji Ko[2], Kyeong Sik Ahn[2]
[1]Mayo Clinic, Rochester, MN; [2]Korea University

The Relationship Between Health Care Administrative Costs and Health System Efficiency: An International Comparison
Ryan Gamlin
University of Cincinnati College of Medicine

9:15 – 10 am	***Abstract Slam Session A2 | Posters 8-14***

Choosing Wisely in healthcare epidemiology and antimicrobial stewardship
Daniel Morgan[1], Lindsay Croft[1], Kyle Popavich[2], Chris Crnich[3], Arjun Srinivasan[4], Neil Fishman[5], Kristina Bryant[6], Sara Cosgrove[7], Surbhi Leekha[1]
[1]University of Maryland School of Medicine; [2]Rush University; [3]University of Wisconsin, [4]Center for Disease Control and Prevention; [5]University of Pennsylvania; [6]University of Louisville; [7]Johns Hopkins University

Choosing Wisely in Primary Care: Re-designing Dartmouth-Hitchcock's General Internal Medicine (GIM) preoperative evaluation process to decrease un-necessary testing and improve efficiency
John Matulis
Mayo Clinic, Rochester, MN

Ordering Wisely: A Resident-Led Initiative to Improve Value
Matthew Modes, Jeanne Farnan, Vineet Arora
University of Chicago Medicine

Choosing Wisely: Ordering Patterns of CKMB and Troponin in Academic Teaching Hospitals Over Time
Sam Hohmann[1], **Micah Prochaska[2]**, Vineet Arora[2]
[1]University HealthSystem Consortium; [2]University of Chicago Medicine

Skip the Drips: Reining in Unnecessary Continuous Intravenous Infusions
Nikhil Bassi[1], Emmanuel Coronel[1], Sarah Sokol[1], Ellen Byrne[1], Andrew Levy[2], Gautham Reddy[1], Vinnet Arora[1]
[1]University of Chicago Medicine; [2]University of Colorado School of Medicine

Does this patient still need labs?: A multidisciplinary intervention to reduce routine labs in clinically stable patients.
Surafel Tsega, Michelle O'Connor, Colin Iberti, Hyung (Harry) Cho
Icahn School of Medicine at Mount Sinai

Nurse-driven urinary catheter removal protocol decreases catheter-associated urinary tract infections
Sinthuya Selvendrarajah
Advocate Trinity Hospital

10:15 – 11:15 am

Introduction to Oral Presentations on Drivers of Overuse

Identifying "Cultural" Barriers to Guideline Adherence at an Academic Children's Hospital
Colin Sallee, Lauren Anderson, Megan Brown, Jeffrey Holzberg, Sarah Pinney, Stephanie Bourque, Jim Todd, James Gaensbauer
University of Colorado School of Medicine

Accessing Unpublished Clinical Trials: How to Obtain the Hidden Data and What it Reveals.
Kendra Lawrence[1], Jonathan Beaumier[3], Tom Jefferson[4], Jim Wright[1,2,5], Tom Perry[1,5], Lorri Puil[1,2], Barbara Mintzes[6]
[1]Therapeutics Initiative; [2]Cochrane Collaboration; [3]Vancouver Coastal Health Authority; [4]Center for Evidence Based Medicine, Oxford University; [5]University of British Columbia; [6]University of Sydney

Late Chemotherapy: Oncologists Explain Why They Offer It
Minnie Bluhm[1], Cathleen Connell[2], Raymond De Vries[3], Nancy Janz[2], Kathleen Bickel[4], Maria Silveira[3]
[1]Eastern Michigan University; [2]University of Michigan School of Public Health; [3]University of Michigan Medical School; [4]Geisel School of Medicine at Dartmouth

Triggers for the diagnosis of thyroid nodules undergoing ultrasound guided fine needle aspiration biopsy: Population based study
Naykky Singh Ospina, Spyridoula Maraka, Ana Espinosa De Ycaza, Juan Brito, John C. Morris, M. Regina Castro, Victor Montori

Mayo Clinic

11:15am - Noon **Panel Discussion on Drivers of Overuse**

Noon - 12:15 pm *Break*

12:15pm – 1 pm ***Abstract Slam Session B1 | Posters 15-21***

Effects of Levothyroxine Therapy on Pregnancy Outcomes in Women with Subclinical Hypothyroidism
Spyridoula Maraka, Naykky Singh Ospina, Derek O'Keeffe, Ana Espinosa De Ycaza, Rene Rodriguez Gutierrez, Charles Coddington, Marius Stan, Victor Montori
Mayo Clinic, Rochester, MN

Implementing a High Value Change in Obstetrics and Gynecology
Lauren Demosthenes
Department of Obstetrics and Gynecology, Greenville Health System

Prevention of the Primary Cesarean Delivery Through a Multi-factorial Approach
Aliye Runyan, Steven Dudlick, Sejal Tamakuwala, Karoline Puder
Wayne State University/Detroit Medical Center

The Daily Draw: Clinician Perceptions of Inpatient Laboratory Testing
Cilian J. White, Benjamin R. Roman, James Masciale, Deborah Korenstein
Memorial Sloan Kettering Cancer Center

Effects of a Physician-Specific Hospital Bounceback Policy to Reduce Readmissions
Nathan Moore, Emily Fondahn, Melvin Blanchard
Washington University in St. Louis

Geographic Variation and the Relationship between Bed Supply and Admission Rates to Neonatal Intensive Care Units
Wade Harrison, David Goodman
Geisel School of Medicine at Dartmouth and The Dartmouth Institute for Health Policy and Clinical Practice

National Guidelines for Surveillance Testing in Patients with Solid Tumors: Variation and Specificity
Shrujal Baxi, Rubaya Yeahia, Deborah Korenstein
Memorial Sloan Kettering Cancer Center

12:15 pm – 1 pm ***Abstract Slam Session B2 | Posters 22-29***

Early Evidence Human-Centered Decision Aids Help People Make More Appropriate Care Decisions
Geri Baumblatt, Lauren Rees
Emmi Solutions

Resident Education of RightCare, Right Now
Arun Singavi, Jennifer Schmidt, Shiytej Kaushal, Rochelle Herre, Ryan Tomlinson, Tadeo Diaz-balderrama, Kathlyn Fletcher
The Medical College of Wisconsin

Learning to Talk: Overuse and Patient-Centered Care

Sarah Lappin, Lisa Oliver, Sandra Banas, Steven Harris, Steven Knohl
Upstate University Hospital

Deconstructing the Patient Experience: Cultivating Medical Student Empathy through Experiential Learning
Eric Jung[1], Elizabeth Wei[2], Aaron Cantor[1], Glenn Geeting[3], Paul Haidet[1]
[1]Pennsylvania State University College of Medicine; [2]Rutgers Robert Wood Johnson Medical School; [3]Penn State Milton S. Hershey Medical Center

The public as policy-makers: strategies to reduce overuse of low-value care from the perspectives of low-to-moderate income Californians
Marge Ginsburg[1], **Susan Perez**[2]
[1]Center for Healthcare Decisions; [2]California State University, Sacramento

A novel interactive icon-array software improves comprehension of absolute risk in medical trainees and helps transform a large risk communication site into a potent resource for Shared Decision Making
Fred Amell[1], Jacob Solomon[2], Brian Zikmun-Fisher[2], Caroline Park[3], Yaara Zisman-Ilani[4], Konstantin Boroda[1], Santiago Thibaud[1], Anand Jagannath[1], Frederick Yick[1], Tina Shah[1], Taylor Miller[5], Ramachandra Reddy, Joshua Cho[3], Michelle Pong[3], Shey Mukundan[1], Kim Renwick[6], Esther Mizrachi[7], Kenny Ye[3], Ashley Ceniceros[1], Darlene LeFrancois[1]
[1]Einstein-Montefiore Internal Medicine; [2]University of Michigan; [3]Einstein School of Medicine; [4]Dartmouth Hitchcock Medical Center; [5]Mt. Sinai School of Medicine; [6]Montefiore Comprehensive Family Care Center; [7]Long Island Jewish Emergency Medicine

Understanding Patient's Real Concerns to Enable True Shared Decision Making
Geri Baumblatt[1]**,** Corey Siegel[2]
[1]Emmi Solutions; [2]Dartmouth Hitchcock Medical Center

Synthesizing patient preferences and clinical evidence at the point of care in men with prostate cancer
David Johnson, Dana Mueller, Mary Dunn, Angela Smith, Michael Woods, Eric Wallen, Raj Pruthi, Matthew Nielson
University of North Carolina, Chapel Hill

Lunch & Poster Session | 1 – 2:30 pm

Poster #	**Poster Title**
1	***OCCAM's Conference, Overuse as a Medical Error*** **Hyung (Harry) Cho[1]**, Carlo Lutz, Tuyet-trinh (Trini) Truong[1], Mather (Dilan) Jogendra[1], Karen Blanchard[1], Andrew Dunn[1], Susanna O'Kula[1], Shelley Greebel[1], Deborah Korenstein[2] *[1]Icahn School of Medicine at Mount Sinai; [2]Memorial Sloan Kettering Cancer Center*
2	***Overuse of Protein C Testing by Teaching and Non-Teaching Service Teams in Patients Hospitalized for Stroke and Venous Thromboembolism*** **Ashrei Bayewitz[1]**, Rose Calixte[2], Jonah Feldman[2] *[1]Maimonides Medical Center; [2]Winthrop University Hospital*
3	***Inpatient Care at the End of Life: Too Much Too Late?*** **Alison Wiesenthal**, Debra Goldman, Deborah Korenstein *Memorial Sloan Kettering Cancer Center*
4	***CT Pulmonary Angiography for Diagnosis of Pulmonary Embolism: Toward More Balanced Use of Resources*** **Jeffrey Deuker**, Matt Diveronica, Shona Hunsaker, Renne Segura *Oregon Health and Science University/Portland VA Health Care System*
5	***Syncope Evaluation: Overuse of Head CT, Underuse of Orthostatics*** **Susanna O'Kula**, John Di Capua, Hyung (Harry) Cho, Celine Goetz *Icahn School of Medicine at Mount Sinai*
6	***Origin, Evolution and Drivers of the Thyroid Cancer Epidemic in South Korea*** **Juan Brito[1]**, Hyun Jung Kim[2], Minji Ko[2], Kyeong Sik Ahn[2] *[1]Mayo Clinic, Rochester, MN; [2]Korea University*
7	***The Relationship Between Health Care Administrative Costs and Health System Efficiency: An International Comparison*** **Ryan Gamlin** *University of Cincinnati College of Medicine*
8	***Choosing Wisely in Healthcare Epidemiology and Antimicrobial Stewardship*** **Daniel Morgan[1]**, Lindsay Croft[1], Kyle Popavich[2], Chris Crnich[3], Arjun Srinivasan[4], Neil Fishman[5], Kristina Bryant[6], Sara Cosgrove[7], Surbhi Leekha[1] *[1]University of Maryland School of Medicine; [2]Rush University; [3]University of Wisconsin, [4]Center for Disease Control and Prevention; [5]University of Pennsylvania; [6]University of Louisville; [7]Johns Hopkins University*
9	***Choosing Wisely in Primary Care: Re-Designing Dartmouth-Hitchcock's General Internal Medicine Preoperative Evaluation Process to Decrease Unnecessary Testing and Improve Efficiency*** **John Matulis** *Mayo Clinic*
10	***Ordering Wisely: A Resident-Led Initiative to Improve Value*** **Matthew Modes**, Jeanne Farnan, Vineet Arora *University of Chicago Medicine*

11	***Choosing Wisely: Ordering Patterns of CKMB and Troponin in Academic Teaching Hospitals Over Time*** Sam Hohmann[1], **Micah Prochaska[2]**, Vineet Arora[2] *[1]University HealthSystem Consortium; [2]University of Chicago Medicine*
12	***Skip the Drips: Reining in Unnecessary Continuous Intravenous Infusions*** **Nikhil Bassi**[1], Emmanuel Coronel[1], Sarah Sokol[1], Ellen Byrne[1], Andrew Levy[2], Gautham Reddy[1], Vinnet Arora[1] *[1]University of Chicago Medicine; [2]University of Colorado School of Medicine*
13	***Does This Patient Still Need Labs?: A Multidisciplinary Intervention to Reduce Routine Labs in Clinically Stable Patients*** **Surafel Tsega**, Michelle O'Connor, Colin Iberti, Hyung (Harry) Cho *Icahn School of Medicine at Mount Sinai*
14	***Nurse-Driven Urinary Catheter Removal Protocol Decreases Catheter-Associated Urinary Tract Infections*** **Sinthuya Selvendrarajah** *Advocate Trinity Hospital*
15	***Effects of Levothyroxine Therapy on Pregnancy Outcomes in Women with Subclinical Hypothyroidism*** **Spyridoula Maraka**, Naykky Singh Ospina, Derek O'Keeffe, Ana Espinosa De Ycaza, Rene Rodriguez Gutierrez, Charles Coddington, Marius Stan, Victor Montori *Mayo Clinic*
16	***Implementing a High Value Change in Obstetrics and Gynecology*** **Lauren Demosthenes** *Department of Obstetrics and Gynecology, Greenville Health System*
17	***Prevention of the Primary Cesarean Delivery Through a Multi-Factorial Approach*** **Aliye Runyan**, Steven Dudlick, Sejal Tamakuwala, Karoline Puder *Wayne State University/Detroit Medical Center*
18	***The Daily Draw: Clinician Perceptions of Inpatient Laboratory Testing*** **Cilian J. White**, Benjamin Roman, James Masciale, Deborah Korenstein *Memorial Sloan Kettering Cancer Center*
19	***Effects of a Physician-Specific Hospital Bounce-back Policy to Reduce Readmissions*** **Nathan Moore**, Emily Fondahn, Melvin Blanchard *Washington University in St. Louis*
20	***Geographic Variation and the Relationship between Bed Supply and Admission Rates to Neonatal Intensive Care Units*** **Wade Harrison**, David Goodman *Geisel School of Medicine, Dartmouth and The Dartmouth Institute for Health Policy and Clinical Practice*
21	***National Guidelines for Surveillance Testing in Patients with Solid Tumors: Variation and Specificity*** **Shrujal Baxi,** Rubaya Yeahia, Deborah Korenstein *Memorial Sloan Kettering Cancer Center*

22	***Early Evidence Human-Centered Decision Aids Help People Make More Appropriate Care Decisions*** **Geri Baumblatt,** Lauren Rees *Emmi Solutions*
23	***Resident Education of Right Care, Right Now*** **Arun Singavi**, Jennifer Schmidt, Shiytej Kaushal, Rochelle Herre, Ryan Tomlinson, Tadeo Diaz-balderrama, Kathlyn Fletcher *The Medical College of Wisconsin*
24	***Learning to Talk: Overuse and Patient-Centered Care*** **Sarah Lappin**, Lisa Oliver, Sandra Banas, Steven Harris, Steven Knohl *Upstate University Hospital, SUNY*
25	***Deconstructing the Patient Experience: Cultivating Medical Student Empathy through Experiential Learning*** **Eric Jung**[1], Elizabeth Wei[2], Aaron Cantor[1], Glenn Geeting[3], Paul Haidet[1] *[1]Pennsylvania State University College of Medicine; [2]Rutgers Robert Wood Johnson Medical School; [3]Penn State Milton S. Hershey Medical Center*
26	***The Public as Policymakers: Strategies to Reduce Overuse of Low Value Care from the Perspectives of Low-to-Moderate Income Californians*** Marge Ginsburg[1], **Susan Perez**[2] *[1]Center for Healthcare Decisions; [2]California State University, Sacramento*
27	***A Novel Interactive Icon-Array Software Improves Comprehension of Absolute Risk in Medical Trainees and Helps Transform a Large Risk Communication Site into a Potent Resource for Shared Decision Making*** **Fred Amell**[1], Jacob Solomon[2], Brian Zikmun-Fisher[2], Caroline Park[3], Yaara Zisman-Ilani[4], Konstantin Boroda[1], Santiago Thibaud[1], Anand Jagannath[1], Frederick Yick[1], Tina Shah[1], Taylor Miller[5], Ramachandra Reddy, Joshua Cho[3], Michelle Pong[3], Shey Mukundan[1], Kim Renwick[6], Esther Mizrachi[7], Kenny Ye[3], Ashley Ceniceros[1], Darlene LeFrancois[1] *[1]Einstein-Montefiore Internal Medicine; [2]University of Michigan; [3]Einstein School of Medicine; [4]Dartmouth Hitchcock Medical Center; [5]Mt. Sinai School of Medicine; [6]Montefiore Comprehensive Family Care Center; [7]Long Island Jewish Emergency Medicine*
28	***Understanding Patients' Real Concerns to Enable True Shared Decision Making*** **Geri Baumblatt**[1]**,** Corey Siegel[2] *[1]Emmi Solutions; [2]Dartmouth Hitchcock Medical Center*
29	***Synthesizing Patient Preferences and Clinical Evidence at the Point of Care in Men with Prostate Cancer*** **David Johnson**, Dana Mueller, Mary Dunn, Angela Smith, Michael Woods, Eric Wallen, Raj Pruthi, Matthew Nielson *University of North Carolina, Chapel Hill*
30	***Using Reflection and Digital Stories to Counteract the Culture of Overuse in Medicine and Enhance the Patient-Provider Relationship*** **Daniel Nicklas**[1], Lindsey Lane[2], Jason Owens[2], Janice Hanson[2] *[1]Children's Hospital Colorado; [2]University of Colorado School of Medicine*
31	***A New Model for Addiction Services to an Urban Population*** **Kandie Tate** *Howard University*
32	***Impact of Ethics Sessions on Trainees' Moral Distress: Results from the MedStar Washington Hospital Center Transforming End-of-Life Care Program***

	Gustavo Guandalini[1], Olubukunola M. Tawose[2], Deborah Topol[3], Nneka Sederstrom[3] *[1]New York University School of Medicine; [2]University Hospitals Case Medical Center; [3]MedStar Washington Hospital Center*
33	***Observed Structured Clinical Exam in Shared Decision Making*** **Jay Zimmerman**, David Richard *Penn State Hershey Medical Center*
34	***Stanford Youth Diabetes Coaching Program: Creating a New Generation of Empowered Patients*** **Nancy Morioka-Douglas**, Eunice Rodriguez, Liana Gefter *Stanford University School of Medicine*
35	***Visual Approaches to Gather Rapid Insights to Optimize Care Management and Decision-Making*** **Ketan Mane**, Gerardo Hernanez-Diaz, Joseph Territo *Kaiser Permanente Mid-Atlantic*
36	***Outcomes of a Multi-disciplinary Team Care Primary Care Worksite Clinic for High-Risk, High-Cost Patients*** **Ann Lindsay** *Stanford School of Medicine*
37	***Where Does All the Money Go?*** **Michael Lubin** *Emory University*
38	***Modifying Clinical Practice Guidelines to Encourage Person-Centered Care in Chronic Disease: Recommendations for Guideline Developers*** Aaron Leppin[1], Michael Gionfriddo[1], Nilay Shah[1], **Kasey Boehmer**[1], Ian Hargraves[1], Lori Christiansen[2], Sara Dick[1], Gabriela Spencer Bonilla[1], Victor Montori[1] *[1]Knowledge and Evaluation Research Unit, Mayo Clinic; [2]Southeast Minnesota Area Agency Aging*
39	***Learning Clinical Pharmacology Can Lead to Safer Care*** **Tom Perry**[1,2], Aaron Tejani[1,2,3], Jim Wright[1,2,3] *[1]Therapeutics Initiative; [2]University of British Columbia; [3]Cochrane Collaboration*

Time	Event
2:30 – 2:40 pm	Introduction to Oral Presentations on Interventions to Reduce Overuse
	Using "Electronic Nudges" to Reduce Unnecessary Overnight Medical Care Disruptions in Hospitalized Patients **Nimit Desai**, Ambrosio Tuvilleja, Jacqueline Ramos, Dawn Kohl, Mary Ann Francisco, William Marsack, Cynthia Lafond, Samantha Anderson, Mila Grossman, Jay Balachandran, Babak Mokhlesi, Jeanne Farnan, Vineet Arora *University of Chicago*
	Awareness of Choosing Wisely and outcomes in Accountable Care Organisations (ACOs) in the national survey. **Marthe Haverkamp**[1], David Peiris[1], Alexander Mainor[2], Meredith Rosenthal[1], Thomas Sequist[3], Carrie Colla[2] *[1]Harvard T. Chan School of Public Health, Department of Health Policy and Management; [2]The Dartmouth Institute for Health Policy and Clinical Practice and the Geisel School of Medicine at Dartmouth; [3]Harvard Medical School*
	Trends of head CT imaging, detection of intracranial bleeding and skull fractures, and outcomes in pediatric traumatic brain injury **Eric Coon**[1], Matt Hall[2], Susan Bratton[1], Jacob Wilkes[1], Alan Schroeder[3] *[1]University of Utah; [2]Children's Hospital Association; [3]Santa Clara Valley Medical Center*
	Best Case/Worst Case: Development of a communication tool to assist frail older adults facing acute surgical decisions **Lauren Taylor**[1], Jacqueline Kruser[2], Michael Nabozny[1], Nicole Steffens[1], Jennifer Tucholka[1], Karen Brasel[3], Martha Gaines[1], Kristine Kwekkeboom[1], Tony Campbell[1], Margaret (Gretchen) Schwarze[1] *[1]University of Wisconsin, [2]Northwestern University, [3]Oregon Health and Science University*
	Student High Value Care Committee: A Model for Student-Led Implementation **Hyung (Harry) Cho**[1], Celine Goetz[1], Andrew Dunn[1], John Di Capua[1], Irene Lee[1], Sonya Makhni[1], Deborah Korenstein[2] *[1]Icahn School of Medicine at Mount Sinai, [2]Memorial Sloan Kettering Cancer Center*
3:30 – 4:15 pm	**Panel Discussion on Interventions to Reduce Overuse**
4:15-4:30 pm	*Break*
4:30-5 pm	**Keynote *The Evidence Ecosystem: A Model for Producing Valid Evidence and Getting it to the Bedside*** Gordon Guyatt, MD, Distinguished Professor, Department of Clinical Epidemiology & Biostatistics, McMaster University
5 – 5:15 pm	Awards and Closing

ABSTRACTS

Drivers of Overuse: Oral Presentations 10:15-11:15am

Identifying "Cultural" Barriers to Guideline Adherence at an Academic Children's Hospital

Colin Sallee, Lauren Anderson, Megan Brown, Jeffrey Holzberg, Sarah Pinney, Stephanie Bourque, Jim Todd, James Gaensbauer

University of Colorado School of Medicine

Background: National pediatric guidelines for simple febrile seizures and bronchiolitis recommend that diagnostic testing should not be routinely performed. We sought to measure the frequency of testing in children with these conditions at a large academic pediatric hospital and to use these conditions as paradigms to characterize underlying "cultural" themes that act as barriers to the practice of effective pediatric medicine.

Methods: Using internal databases, we assessed utilization of common testing and treatments for febrile seizures and bronchiolitis in 2013. Data were then presented to a focus groups of pediatric trainees, and general and specialist pediatricians. Comments during the group session were analyzed in an inductive method to articulate thematic barriers preventing better adherence to the national guidelines.

Results: Laboratory testing for children with simple febrile seizures was common (43% received at least one diagnostic test), and 50.4% of children with bronchiolitis received a chest radiograph. Focus group discussions revealed a number of common barriers to better resource utilization, including an intolerance of uncertainty on behalf of residents (particularly in patients perceived to be sicker), testing to meet a perceived desire of future caregivers who had not yet seen the patient (e.g. attending, consultant, covering resident), pressure from parental expectation to "do something", and a strong influence of anecdote/past personal experience.

Conclusions: To change behaviors and practices that lead to excessive or inefficient diagnostic testing, it is imperative to understand the underlying influences that drive medical decision making at the point of care. Our findings suggest that many of these influences are complex and subjective, and are intrinsically tied to the "culture" of medical practice at an institution. A broader approach which aims to increase awareness of and identify solutions to these fundamental cultural influences may be more productive for an institution than piecemeal creation of individual guidelines.

Accessing Unpublished Clinical Trials: How to Obtain the Hidden Data and What it Reveals.

Kendra Lawrence[1], Jonathan Beaumier[3], Tom Jefferson[4], Jim Wright[1,2,5], Tom Perry[1,5], Lorri Puil[1,2], Barbara Mintzes[6]

[1]Therapeutics Initiative; [2]Cochrane Collaboration; [3]Vancouver Coastal Health Authority; [4]Center for Evidence Based Medicine, Oxford University; [5]University of British Columbia; [6]University of Sydney

Introduction: Selective reporting and publication bias are major obstacles to understanding and practicing evidence informed medicine. Unless there is access to all of the data from all of the trials, even high-quality systematic reviews will fail to minimize bias and enhance validity, and the true net benefit versus harm of an intervention will remain misrepresented.

Methods: Through the Access to Documents Policy, a formal request to the European Medicines Agency was submitted to release full, unpublished clinical study reports (CSRs) pertaining to olanzapine versus placebo for the treatment of schizophrenia. Similar requests for full CSRs were made to Eli Lilly and the sponsors of placebo-controlled trials that used olanzapine as a comparator (e.g., Roche, Merck, Pfizer) by accessing their data sharing platforms. After comparing the published trials and the unpublished CSRs, we discovered that important outcomes such as suicides, adverse events and quality of life were selectively reported or not reported at all.

Discussion: It would appear that including data from unpublished CSRs is an important step in creating a more complete assessment of

the true benefit versus harm of a medical intervention. However, there are obstacles to obtaining CSRs, such as the lengthy amount of time required and the subjective approval of the pharmaceutical industry when using their data sharing platforms. We will provide practical guidance on how to avoid pitfalls inherent to obtaining unpublished trials. Furthermore we will demonstrate that relying entirely on data from published trials is inadequate to know the true benefits and harms of medical interventions.

Late Chemotherapy: Oncologists Explain Why They Offer It

Minnie Bluhm[1], Cathleen Connell[2], Raymond De Vries[3], Nancy Janz[2], Kathleen Bickel[4], Maria Silveira[3]

[1]Eastern Michigan University; [2]University of Michigan School of Public Health; [3]University of Michigan Medical School; [4]Geisel School of Medicine at Dartmouth

Purpose: An estimated 20-50% of incurable cancer patients receive chemotherapy in the last 30 days of life, although little data supports this practice. Continued use of chemotherapy typically precludes hospice enrollment. It may also result in more symptoms, increased use of aggressive treatments, and worsening quality of life. Despite this, few studies have explored oncologists' rationales for administering chemotherapy near death. The purpose of this study is to examine factors that oncologists report influence their decisions about late chemotherapy.

Methods: In-depth individual interviews were conducted with 17 oncologists using a semi-structured interview guide. Interviews were audio-recorded and transcribed verbatim. Transcripts were coded and content analyzed.

Results: 1) Clinical factors drive oncologists' late chemotherapy decisions when they point to clear treatment choices, along with patient preferences. When clinical factors are ambiguous, non-clinical factors become salient. 2) Late chemotherapy is patient-driven. It is used to palliate physical and emotional symptoms and maintain patient hope, even when physical benefit is unexpected. 3) Oncologists experience difficulties caring for dying patients that are eased by offering late treatment, including: emotional exhaustion, communication about stopping or not starting chemotherapy, overwhelming sense of responsibility for life and death, feeling badly about the limitations of oncology, and prognostic uncertainty.

Conclusion: Findings reveal a nuanced understanding of why it can be so difficult for oncologists to refuse chemotherapy treatment to patients near death. Future work is needed on the impact of caring for dying patients on oncologists and on supportive interventions that assist them in making optimal treatment decisions.

Triggers for the diagnosis of thyroid nodules undergoing ultrasound guided fine needle aspiration biopsy: Population based study

Naykky Singh Ospina, Spyridoula Maraka, Ana Espinosa De Ycaza, Juan Brito, John C. Morris, M. Regina Castro, Victor Montori
Mayo Clinic

Introduction: The overdiagnosis of thyroid nodules precedes and fuels the current epidemic of indolent thyroid cancers. Understanding the mechanism of thyroid nodule detection may help alter the course of this epidemic.

Methods: Population based study using the Rochester Epidemiology Project database between 2003 and 2006 to identify patients who underwent thyroid ultrasound guided biopsy (USFNA) followed by detailed medical record review to determine the triggers for nodule detection.

Results: We identified 520 thyroid nodules that underwent USFNA. Patients harboring these nodules were mostly women (n: 404, 78%) and the mean age at the time of USFNA was 52(SD 17) years. Only a small number of patients had a family history of thyroid cancer (5%) or neck radiation (2%) and 17% had a previous history of thyroid disease.

Thyroid nodule detection resulted most commonly from physical examination conducted in asymptomatic patients (n: 214, 41%) and incidental findings on imaging tests performed for non-thyroid related issues (n: 121, 23%). The thyroid nodules diagnosed by imaging were most commonly found on CT scan (63%) or on MRI (11%). Only 13% of thyroid nodules were found in patients complaining of symptoms

associated with this condition. Neither the size of the thyroid nodules nor the frequency of malignant or suspicious USFNA results differed across the detection categories. Most detected thyroid cancers were at low risk of mortality (n: 41, 89%) and only one patient presented with metastases.

Abstract Slam Session A1
9:15 – 10 am

OCCAM's Conference, Overuse as a Medical Error

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Introduction: Despite increasing attention to overuse, methods for reducing it are unclear. In contrast, ways of identification, analysis, and prevention of medical errors have improved considerably since the pivotal Institute of Medicine report, "To Err is Human," However, overuse has not been explicitly framed as a medical error, and methods of analyzing errors have not been applied overuse. A framework in which overuse is considered a medical error would facilitate understanding and implementation.

Methods: A monthly series called Overuse Clinical CAse Morbidity & Mortality (OCCAM's) Conference was created. The audience includes students, residents, faculty, and administrators. Cases where overuse led to patient harm or near miss are presented. Discussion on value and cost is moderated, with an emphasis on the patient's social and financial history. A root cause analysis (RCA) is completed, utilizing a modified fishbone diagram (Figure 1) to explore drivers of overuse and systems factors. Finally, a brainstorm session is held to suggest methods of improving the system. The results of these conferences are conveyed to the OCCAM's Workgroup, where faculty and trainees work together to implement actual systems change.

Results: We evaluated attitudes toward overuse and cost-containment through surveys collected from residents (n=95) prior to first conference.

Discussion: Most thyroid nodules that underwent USFNA were found in asymptomatic patients as a result of routine physical examination. To our knowledge, this is the first study in the United States to recognize this practice as the main driver of thyroid nodule detection that can lead to the overdiagnosis and overtreatment of thyroid cancer
Results include: "Trying to contain costs is the responsibility every physician" (93% agree); "Ordering unnecessary tests is NOT harmful to patients" (95% disagree); "Faculty ask me to order tests I think are unnecessary" (5% disagree). Follow-up surveys will address attitudinal changes associated with conference attendance. Nine conferences were held. Topics of overuse include proton pump inhibitor use with steroids and ultrasounds for acute renal failure.

Discussion: OCCAM's Conference provides a unique process to identify, discuss, and analyze cases of overuse as medical errors through a modified RCA format. It also provides a natural avenue for implementing systems change.

Overuse of Protein C Testing by Teaching and Non-Teaching Service Teams in Patients Hospitalized for Stroke and Venous Thromboembolism

Ashrei Bayewitz[1], Rose Calixte[2], Jonah Feldman[2]

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Background: The prevalence of unnecessary testing in our country's Academic Medical Centers has often been attributed to physician training programs, yet few studies have evaluated whether graduate medical education is truly a driver of overuse. Overuse amongst resident physicians has been attributed to lack of medical knowledge, clinical inexperience, and misplaced scientific curiosity. To be ordered appropriately Protein C level testing demands advanced knowledge of clinical medicine, physiologic principles, and judiciously directed inquisitiveness; as such one would expect extensive overuse of this test amongst resident physicians.

Objective: To compare the frequency of unnecessary Protein C testing in the setting of acute stroke or DVT/PE between teaching

(medical resident) and non-teaching (PA/NP) service teams at an independent Academic Medical Center.
Methods: We performed a retrospective study from 2009-2014 on all hospitalized patients at Winthrop University Hospital that were discharged with the ICD-9 codes corresponding to acute ischemic stroke or acute DVT/PE. We collected identifiers on each patient, date of admission, date of discharge, gender, age, BMI, attending physician, hospital department, and ordering provider. We looked at Protein C testing in this patient population as the current guidelines define Protein C level testing for acute CVA or acute DVT/PE to be inappropriate.

Results: During the study period, 3,328 patients were admitted with CVA or DVT/PE. Amongst these patients 6.1 inappropriate tests were ordered by residents per 100 transfers to the resident teaching service team, compared with 8.1 orders by other midlevel providers per 100 transfers to the PA/NP non-teaching service team, (P-value < 0.004) adjusted OR 0.76 (95% CI 0.62-0.93).

Conclusions/Discussion: Overuse of Protein C testing is prevalent, but teams that included resident physicians were actually less likely to overuse this test. Further research is needed to help elucidate the complex factors contributing to overuse in our country's Academic Medical Centers.

Inpatient Care at the End of Life: Too much Too Late?

Alison Wiesenthal, Debra Goldman, Deborah Korenstein

Memorial Sloan Kettering Cancer Center

Introduction: Appropriate end of life (EOL) care helps avoid overuse and can aid in patient comfort. Goals of care discussions at EOL in the inpatient setting frequently focus on cardiopulmonary resuscitation and Allow Natural Death directives; continued treatment, medication use and diagnostic studies may not be discussed. The objective of this study was to assess trends in care provided during patients' terminal admission, specifically within 3 days of death (3dod).

Methods: With IRB approval, we used the electronic institutional database to identify solid tumor patients who died during admission (length of stay > 3 days) between December 2012 and December 2014 at a tertiary cancer center in New York City. We recorded the proportion of patients receiving cytotoxic chemotherapy (CC) and the timing of delivered services and categorized some services based on their potential to palliate.

Results: Of 695 patients identified, during 3dod, 541(77.8%) had blood draws, 348(50.1%) received scans, 114(16.4%) received blood products, 29(4.2%) received RT, 85(12.2%) received CC, and 279(40.1%) had non palliative consultations. Rates for the entire terminal admission were 692(99.6%) for blood draws, 667(96%) for scans, 286(41.2%) for blood products, 78(11.8%) for RT, 275(39.6%) for CC, and 279(40.1%) for non-palliative consultations. Services appeared to taper 3-4 days before death, but were still present on the day of death (Figure).

Conclusions: Non-palliative services were often provided to hospitalized cancer patients at EOL. Though services tapered off 3-4days before death, many services which were unlikely to have contributed to patient comfort were delivered within 3dod and even on the day of death. Further research is needed to understand the drivers behind these trends in order to improve the patient experience at EOL and avoid non-beneficial care.

CT Pulmonary Angiography for Diagnosis of Pulmonary Embolism: Towards More Balanced Use of Resources

Jeffrey Deuker, Matt Diveronica, Shona Hunsaker, Renne Segura

Oregon Health and Science University/Portland VA Health Care System

Introduction: The judicious use of CT Pulmonary Angiography (CTPA) for diagnosis of pulmonary embolism (PE), through use of an algorithm to assess pretest probability, followed by D-dimer testing if low probability, has been studied and accepted as best practice(1,2). Campaigns such as ABIM's "Choosing Wisely" have also advocated for avoiding CTPA as the initial diagnostic tool in low pretest probability PE scenarios. Yet, CTPA continues to be employed frequently first line for diagnosis of

PE.

Methods: We reviewed all CTPA tests ordered to evaluate for PE in the emergency department and medical inpatient setting at a single center over a 12 month period. There were 381 CTPA studies that met inclusion criteria and were reviewed. Of these, 100 were randomly selected for an in-depth chart review by the authors.

Results: The rate of positive CTPA for PE in the entire cohort was 12%. In the in-depth sample, clinical decision making was only documented 36% of the time, and of these cases, use of a standardized tool (Wells score), was documented only 39% of the time. Retrospective assessment of PE risk revealed that 51% of patients undergoing CTPA were low probability for PE as determined by dichotomized Wells score but did not undergo initial D-dimer testing.

Discussion: For half the patients in the in-depth cohort, the use of CTPA as the initial diagnostic test for PE potentially represents overuse. Conversely, the lack of D-dimer as an initial test likely represents underuse. Explorations into root causes revealed cognitive biases, fear of litigation, and long turn-around times for D-dimer testing, as well as assumptions that D-dimer testing would be unhelpful, as drivers for this current state. We plan to test a standardized ordering process, with built-in pretest probability assessment, to determine if this affects D-dimer and CTPA ordering for diagnosis of PE.

Syncope Evaluation: Overuse of Head CT, Underuse of Orthostatics

Susanna O'Kula, John Di Capua, Hyung (Harry) Cho, Celine Goetz

Icahn School of Medicine at Mount Sinai

Background: Syncope is a common reason to seek medical attention. Neurally-mediated syncope causing orthostatic hypotension accounts for over 75% of syncope causes. Unfortunately, the work-up for syncope often prioritizes head CTs which exposes patient to radiation and is more costly, while high-yield orthostatic vital signs are omitted.

Methods: We performed a retrospective chart review over a four-month period (10/2014 - 1/2015) of patients admitted to the observation unit of an urban tertiary care center in New York City with the ICD-9 DRG of "symptom, syncope and collapse." All patients followed the unit's syncope protocol including cardiac, vascular, and neurologic exam; ECG, labs, 12 hours of telemetry monitoring; transthoracic echocardiogram (TTE) if new murmur appreciated. We used the American College of Emergency Physicians (ACEP) Choosing Wisely recommendation for appropriate CT head in asymptomatic adult patients with syncope to determine the appropriateness of each head CT ordered.

Results: 60 patient encounters were reviewed. Cause of syncope was documented as neurally-mediated in 10 cases, cardiac in 2, seizure in 3, alcohol/medication-induced in 7, but never definitively established in the remaining 63% of cases. Orthostatic blood pressure measurements were not documented in 54 patients (90%). Orthostatics were documented as "positive," "negative," or "done" in 5 patients (8%). Exact numeric orthostatics were documented for only 1 patient. Twenty-three patients received a CT head (48%). Of those scans, nine were inappropriate (39%) according to the ACEP Choosing Wisely recommendation. None of the CTs showed acute changes, such as hemorrhage, that would have changed medical management.

Conclusions: For the vast majority of patients admitted to the observation unit for syncope, orthostatics were not documented, but head CTs were ordered for nearly half of patients, of which 39% were inappropriate. We anticipate devising an intervention to integrate orthostatics into the observation unit workflow.

Origin, evolution and drivers of the thyroid cancer epidemic in South Korea

Juan Brito[1], Hyun Jung Kim[2], Minji Ko[2], Kyeong Sik Ahn[2]

[1]Mayo Clinic, Rochester, MN; [2]Korea University

Introduction: Thyroid cancer (TC) epidemic is a worldwide phenomenon. The country where the incidence has increased the most is South Korea. The goal of this study is to provide an overall understanding of the origin, evolution and drivers of this epidemic.

Data source: To assess possible drivers of TC

diagnosis we use the Korea Community Health Survey which asked in 2010 to 229,229 subjects from 16 different geographic areas if they have been screened for TC in the last two years. To estimate the origin and evolution of the diagnosis of TC, we used the Korea Central Cancer Registry, and the Statistics Korea Database.

Results: The incidence of TC rose from 11.9 per 100 000 per year in 1999 to 120.4 per 100 000 per year in 2012 in women and from 2.3 per 100,000 population per year in 1999 to 27.5 per 100,000 population per year in 2012 in men. TC screening occurred in 13,2% of the population in 2010. There was a strong correlation between screening in a region in 2010 and the regional incidence of TC in 2009-2010 (for females, r2=0.78, p=0.01). However, when the spatial distribution of TC rates across the study region was mapped (Figure), it shows the increase of TC started in the south region of the country ; followed by a rapid but not homogeneous increase of TC in central and northwest region of the country.

Discussion: Rarely a chronic disease becomes an epidemic with the severity and speed characteristic of an infectious disease; for cancer this pattern had never been observed. About 13% of the population is currently screened for TC and drives the incidence of this malignancy; however, the origin and time spacial distribution of this epidemic demonstrates significant geographic variations. The source of this variation is still unclear.

The Relationship Between Health Care Administrative Costs and Health System Efficiency: An International Comparison

Ryan Gamlin

University of Cincinnati College of Medicine

Introduction: The costs to administer health care exhibit substantial international variation. While research has explored the relative financial efficiency of health systems with disparate health financing schemes, to date there has been little study of the relationship between the scale of a country's health administration expenditures and patient or provider experiences with health care systems.

Objective: To compare the relationship between health care administrative costs and various measures of health system delivery efficiency across ten industrialized countries.

Methods: Pearson correlation coefficients (r) were calculated to assess the statistical relationship between health care administration expenditures as a percentage of national health care spending as reported by the OECD's "Health Statistics 2014", and selected measures of health care system efficiency from patient and provider perspectives as reported by the Commonwealth Fund's "Mirror, Mirror on the Wall: How the Performance of the U.S. Health Care System Compares Internationally".

Results: High administrative expenditures as a percentage of national health care spending are associated with poor performance on a number of health system efficiency measures.

Doctors report time spent on administrative issues related to insurance or claims is a major problem: r = 0.67

Doctors report time spent getting patients needed medications or treatment because of coverage restrictions is a major problem: r = 0.73

Patients sent for duplicate test in past year: r = 0.81

Patient's insurance denied payment for medical care or did not pay as much as expected: r = 0.75

Conclusion: This research provides a foundation for inquiry into the relationship between health system administrative structure and iatrogenic harm, health care labor and capital optimization, and patient and provider experiences of care.

Abstract Slam Session A2
9:15 -10 am

Choosing Wisely in healthcare epidemiology and antimicrobial stewardship

Daniel Morgan[1], Lindsay Croft[1], Kyle Popavich[2], Chris Crnich[3], Arjun Srinivasan[4], Neil Fishman[5], Kristina Bryant[6], Sara Cosgrove[7], Surbhi Leekha[1]

[1]University of Maryland School of Medicine; [2]Rush University; [3]University of Wisconsin, [4]Center for Disease Control and Prevention; [5]University of Pennsylvania; [6]University of Louisville; [7]Johns Hopkins University

Objective: The American Board of Internal Medicine Foundation developed the Choosing Wisely Campaign® to limit medical overuse and invited the Society for Healthcare Epidemiology of America (SHEA) to join.

Methods: SHEA identified potential items through surveys of a hospital epidemiology listserv, SHEA committee members, and review of "SHEA-IDSA Compendium of Strategies to Prevent Healthcare-Associated Infections in Acute Care Hospitals: 2014 Update," and ranked by SHEA Research Network members by Delphi method voting. The top 10 items were reviewed by the SHEA Guidelines Committee for appropriateness for Choosing Wisely. Five final recommendations were formally approved via individual member vote by committees and the SHEA Board.

Results: Ninety six items were proposed by 87 listserve members and 99 SHEA committee members. The top 40 items were ranked by 24 committee members and 64 of 226 SHEA Research Network members. The five final recommendations are: 1. Don't continue antibiotics beyond 72 hours in hospitalized patients unless patient has clear evidence of infection. 2. Avoid invasive devices (including central venous catheters, endotracheal tubes, and urinary catheters) and, if required, use no longer than necessary. They pose a major risk for infections. 3. Don't perform urinalysis, urine culture, blood culture, or Clostridium difficile testing unless patients have signs or symptoms of infection. 4. Do not use antibiotics in patients with recent C. difficile without convincing evidence of need. Antibiotics pose a high risk of C. difficile recurrence. 5. Don't continue surgical prophylactic antibiotics after the patient has left the operating room. Five runner-up recommendations are included.

Conclusions: These 5 SHEA Choosing Wisely items and 5 runner-up items are important ways to limit overuse and improve patient care in healthcare epidemiology.

Choosing Wisely in Primary Care: Re-designing Dartmouth-Hitchcock's General Internal Medicine (GIM) preoperative evaluation process to decrease un-necessary testing and improve efficiency

John Matulis

Mayo Clinic, Rochester, MN

Introduction: Minimizing the provision of low-value services is essential in moving health care systems towards sustainability. Routine preoperative testing, particularly for low risk surgeries is widely considered to be a low-value service.

Global Aim: To reduce the unnecessary use of diagnostic testing in pre-operative evaluations at DHMC's section of GIM.

Specific Aim: Reduce the rate of unnecessary preoperative testing, defined by published guidelines, in patients undergoing preoperative assessment for all low risk surgeries in the Dartmouth-Hitchcock GIM clinic from 36% to 10% by June 2015

Methods: A multi-disciplinary improvement team was created in May of 2014. PDSA cycles consisted of creation of a dedicated associate provider run preoperative clinic, operationalizing a scheduling scheme, educational interventions, and employment of electronic medical record tools to facilitate reliable completion of these visits. Process changes were informed by a clinical microsystems approach and tools such as cause and effect diagrams and process mapping was used to inform these interventions. Statistical Process Control (SPC) methods were employed in data analysis.

Results: Compared to baseline rates of 36% of preoperative patients receiving unnecessary testing, the associate provider run preoperative clinic showed rates of 5% within 3 months of implementation. Numbers of EKGs, CBC and metabolic blood tests ordered similarly showed statistically significant decreases. Time of visit decreased from 48 minutes to 40 minutes. Differences were statistically significant by accepted rules of SPC.

Conclusions: An embedded preoperative clinic within an academic primary care section can improve reliability, guideline concordance, and

efficiency while reducing unnecessary testing. Similar clinics may serve as powerful tools in efforts to limit provision of low-value services. Identifying appropriate patients for inclusion in these clinic types while optimizing primary care provider collaboration are important challenges moving forward.

Ordering Wisely: A Resident-Led Initiative to Improve Value

Matthew Modes, Jeanne Farnan, Vineet Arora

University of Chicago Medicine

In the spirit of the national Choosing Wisely campaign, we identified four laboratory tests which rarely add value to medical decision-making but are commonly ordered by internal medicine residents at an academic medical center. We focused on CK-MB, inpatient thyroid studies, ANA and sub-serologies, and folate. Based on literature review and working with sub-specialists pertinent to the test in question (ie Cardiology, Endocrinology, and Rheumatology), we developed cost-conscious practice recommendations for each test. Case-based interactive sessions were then conducted with internal medicine residents highlighting the institution's practice patterns and our cost-conscious recommendations including evidence and sub-specialist support for them. Interactive polling during the sessions engaged participants and helped gauge baseline knowledge. Pocket-cards highlighting the recommendations were distributed to participants for reference on the wards. Results of pre/post session surveys using a Likert scale revealed improvement in knowledge. Specifically, when asked to rate their knowledge level of each test, participants chose "high" or "very high" 19% vs 92% for CK-MB, 33% vs 94% for inpatient thyroid studies, 25% vs 92% for ANA and sub-serologies, and 31% vs 97% for folate ($p<0.0001$ for all). Additionally, when asked to rate their knowledge level of "price, reimbursement, and cost" of the tests as well as the "impact of practice habits formed during GME on future spending patterns of physicians", participants chose "high" or "very high" 8% vs 67% and 19% vs 75% respectively ($p<0.0001$ for both). Furthermore, 100% of participants selected "agree" or "strongly agree" when asked if the session content was relevant to their role as residents, the teaching methods were appropriate for the topic, and if they plan to change behavior as a result of the session. To assess for behavior change, analysis is ongoing to determine rates of laboratory test ordering on general medicine and cardiology wards pre/post educational intervention.

Choosing Wisely: Ordering Patterns of CKMB and Troponin in Academic Teaching Hospitals Over Time

Sam Hohmann[1], Micah Prochaska[2], **Vineet Arora[2]**

[1]University HealthSystem Consortium;
[2]University of Chicago Medicine

Introduction: As part of Choosing Wisely™, the American Society for Clinical Pathology recommends that providers not test for myoglobin or CK-MB in the diagnosis of acute myocardial infarction (AMI), but rather use troponin I or T. We aimed to describe the patterns of CK-MB and troponin ordering pattern in a national sample of academic teaching hospitals both before and after the Choosing Wisely recommendations, as well as describe characteristics of hospitals more likely to follow the Choosing Wisely recommendations.

Methods: Troponin, myoglobin, and CK-MB ordering data was extracted from UHC's clinical database/resource manager (CDB/RM) for hospitals reporting all 36 months of 2012 through 2014. Hospital rates of combinations of ordering were generated and compared across time, institutions, and other dimensions of patients' hospital encounters.

Results: Using data from 6.4 million encounters in 83 academic teaching hospitals, hospital rates of troponin only varied from nearly 0% to more than 90% for some quarters in the study period. Hospitals in the Midwest had slightly higher troponin-only rates than other regions. Rates were also higher when thoracic surgeons were the discharging physician. Rates of troponin only ordering increased from 29% (first quarter 2012) to 49% (fourth quarter 2014). About 10% of hospitals had rates in the top quintile across quarters. Characteristics of high performers and hospitals demonstrating notable improvement can be used to discriminate future performance related to troponin-only ordering patterns.

Discussion: Wide variation exists in academic medical centers with respect to utilization of

CKMB and Troponin in the diagnosis of AMI. Interestingly, the use of CKMB in academic teaching hospitals started to decline before the Choosing recommendation reflects secular trends that were already taking place. However, many hospitals still use CKMB and provide a natural target for the Choosing Wisely recommendation for this area.

Skip the Drips: Reining in Unnecessary Continuous Intravenous Infusions

Nikhil Bassi[1], Emmanuel Coronel[1], Sarah Sokol[1], Ellen Byrne[1], Andrew Levy[2], Gautham Reddy[1], Vinnet Arora[1]

[1]University of Chicago Medicine; [2]University of Colorado School of Medicine

Introduction: Continuous intravenous infusions – or "drips" – can be burdensome for patients and clinicians. With this in mind, we identified three scenarios for which providers could safely "skip the drip" in favor a therapeutic alternative: 1) continuous proton pump inhibitor (PPI) infusions for patients with gastrointestinal bleeding; 2) continuous intravenous diuretic therapy in congestive heart failure; and 3) sodium bicarbonate drips in lactic acidosis.

Methods: Our quality improvement initiative was submitted by 2 residents to the hospital's "Choosing Wisely" challenge. The intervention mapped to the COST Framework: Culture (faculty subspecialty champions who send Departmental emails); Oversight (tracking usage by pharmacy); Systems change (electronic health record changes to remind clinicians about indications) and Training (in-person and email education of medicine and emergency department house-staff and hospitalists). To date, we focus on appropriateness of continuous PPI orders in the three months post-intervention, compared to three-month historical control period pre-implementation. Time-driven activity-based costing (TDABC) was used to calculate cost savings based on US Department of Labor wages for nursing and pharmacy.

Results: The number of PPI drips post-intervention was 52, compared to 80 pre-intervention. Specifically, post-endoscopic PPI continuous IV therapy was appropriately discontinued at a significantly greater rate post-intervention (from 60% to 93%, $p<0.001$). The choice of post-endoscopy PPI was also more likely to follow established guidelines (79% vs. 95%, p=.02). Using TDABC, we calculated a $277.45 difference in cost per patient day for using continuous PPI infusion vs. twice-daily PPI, and a net savings of over $93,000 over one year just for this portion of the intervention.

Discussion: A house-staff led quality improvement project led to improvement in appropriate use of PPI continuous infusions. More work remains to more sustain this intervention, and to study utilization of bicarbonate and diuretic infusions.

Does this patient still need labs?: A multidisciplinary intervention to reduce routine labs in clinically stable patients.

Surafel Tsega, Michelle O'Connor, Colin Iberti, Hyung (Harry) Cho

Icahn School of Medicine at Mount Sinai

Introduction: Daily routine labs are a common source of inpatient overuse. Downstream effects can include increased cost, lab error, potentially unnecessary testing and treatment, and most importantly, nuisance and pain detrimental to a patient's experience. We propose a structured multidisciplinary intervention that identifies patients stable for discharge that no longer require daily testing.

Methods: We targeted two inpatient units through a quality improvement process. Mobile, patient-centered multidisciplinary rounds were held with the hospitalist, social worker, nurse, and nurse manager, following a script highlighting the goals of the day and patient safety. Utilizing Plan-Do-Study-Act (PDSA) cycles, we incorporated a prompt identifying clinically stable patients for next-day discharge, followed by a second prompt to the hospitalist to discontinue labs when appropriate. The first PDSA cycle tasked the medical director to initiate the inquiry. The second PDSA cycle utilized an observer to intermittently ensure compliance.

Data were generated from electronic medical records for 12-month baseline period (n=2022) followed by a 6-month intervention period (n=720). Routine lab orders were quantified as the percent of patients with at least one of the following labs ordered within 24 hours of

discharge: complete blood count (CBC), CBC with differential, basic metabolic panel and complete metabolic panel.

Results: During the intervention period, the average percent of patients with routine lab orders within 24 hours of discharge was reduced to 41.7%, from 50.1% at baseline. The data resulting from the second PDSA cycle shows further reduction below the baseline median (Figure 1).

Discussion: Our intervention successfully reduced unnecessary daily laboratories in patients stable for discharge. The intervention was integrated into the multidisciplinary discharge process, encouraging multiple levels of providers to discontinue active orders. Moving forward, we hope to extrapolate the observed decrease to unnecessary labs through the entire admission.

Nurse-driven urinary catheter removal protocol decreases catheter-associated urinary tract infections

Sinthuya Selvendrarajah

Advocate Trinity Hospital

An indwelling urinary catheter is a notable source of infection in hospitalized patients. CDC states that catheter-associated urinary tract infections (CAUTIs) are the second most common type of acute hospital-associated infection. CAUTIs can lead to various complications, including cystitis, pyelonephritis, bacteremia and meningitis. Complications associated with CAUTIs cause significant patient harm, ranging from discomfort, prolonged hospital stay to increased cost and mortality. CAUTI-associated deaths are reported to be more than 13,000/year. The most important risk factor in developing a CAUTI is prolonged use of the urinary catheter. In efforts to reduce CAUTIs, our 193-bed acute-care hospital, implemented a nurse-driven urinary catheter removal protocol, which allows the nurse to remove an indwelling urinary catheter without a physician's order if patient meets protocol guidelines.

The protocol was established by hospital's Infection Control department and the corporate CAUTI team. The protocol was approved by the hospital's medical, nursing and quality management oversight committees. Nurses and physicians received education on using the protocol during huddles and staff meetings. Posters and visual aids were posted at all nursing stations.

After five months of implementation (May-September, 2015), total monthly urinary catheter utilization days (UCUD) were compared to the first four months' UCUD (January-April, 2015). There was a statistically significant decrease in monthly UCUD after implementation ($M= 564.20$, $SD= 68.98$) than prior to implementation of protocol ($M=717.25$, $SD=99.12$), $t(7)=2.74$, $p<0.0289$. Moreover, when compared to previous calendar year's monthly UCUD ($M=681.67$, $SD=65.66$), there was a very statistically significant decrease in urinary catheter utilization days after implementation of protocol, $t(15)=3.31$, $p=0.0047$). Additionally, in 2014, our hospital reported 5 CAUTIs in 12 months compared to 1 CAUTI reported in the first three quarters of 2015.

Hence, the nurse-driven urinary catheter removal protocol has shown to decrease CAUTIs and consequently patient harm at our institution. Further surveillance should be conducted.

Abstract Slam Session B1
12:15 – 1 pm

Effects of Levothyroxine Therapy on Pregnancy Outcomes in Women with Subclinical Hypothyroidism

Spyridoula Maraka, Naykky Singh Ospina, Derek O'Keeffe, Ana Espinosa De Ycaza, Rene Rodriguez Gutierrez, Charles Coddington, Marius Stan, Victor Montori

Mayo Clinic, Rochester, MN

Introduction: Subclinical hypothyroidism (SCH) has been associated with an increased risk of adverse pregnancy outcomes in some, but not all, studies. Despite the uncertainty regarding the impact of levothyroxine therapy (LT4) on improving health outcomes in pregnant women with SCH, current guidelines recommend LT4 for this population.

Methods: To assess the potential benefits of LT4, we reviewed medical records of women

who met the criteria for SCH during pregnancy (TSH > 2.5 mIU/L for 1st trimester or > 3 mIU/L for 2nd and 3rd trimester but ≤ 10 mIU/L) from January 2011 to December 2013. Women were divided into two groups: group A was started on LT4, whereas group B was not. Women were followed until pregnancy loss or post-partum visit. We excluded subjects with twin pregnancy or use of medications affecting thyroid function. We compared the rate of pregnancy loss (primary outcome) and other pre-specified adverse outcomes between groups.

Results: There were 79 women in group A and 285 in group B. The groups were not different regarding age, history of pregnancy loss or smoking. Group A had higher BMI compared to group B and higher TSH level. There was no significant difference between the two groups in rates of pregnancy loss or other adverse pregnancy outcomes. There was a significant decrease in frequency of low birth weight in group A vs. group B and Apgar score ≤7 at 5 min (Table 1).

Conclusion: This is the largest cohort reporting pregnancy outcomes of women with SCH who received LT4 compared to untreated. Our study found an association of LT4 with decreased risk for low birth weight and low Apgar score, but no difference in pregnancy loss or other adverse outcomes. Before the widespread use of LT4, clinicians should engage in frank shared decision making with pregnant women with SCH.

Implementing a High Value Change in Obstetrics and Gynecology

Lauren Demosthenes

Department of Obstetrics and Gynecology, Greenville Health System

Introduction: Practicing obstetrician/gynecologists (OB/GYN) have an important leadership role to play in the practice of high value healthcare, as 25% of hospitalizations in the United States are pregnancy related.

The objectives of this study were 1) To assess physician knowledge of the costs of commonly used OB/GYN products, tests, and services, and 2) To identify products, tests, and services which could be eliminated without decreasing quality of care.

Methods: An anonymous electronic survey was distributed to 70 OB/GYN providers at Greenville Memorial Hospital. Survey items included common laboratory tests, medications, and clinical services. The survey was used to identify high cost (total cost to hospital) items for which there were less costly, but equally efficacious alternatives. A grand rounds reviewing the results of the survey as well as recommendations that would allow for high value healthcare changes was conducted as an educational intervention. Utilization and cost savings were tracked for 1 year pre-intervention and 2 year post-intervention.

Results: 50 of 70 providers (71%) completed the survey. Dinoprostone vaginal inserts were targeted for intervention. During the first year post-intervention, utilization of the dinoprostone vaginal insert decreased 50.5% with a savings of $66,500 when comparing the pre-intervention to the post-intervention period. Utilization remained fairly stable at this rate during the second year post-intervention. This information was taken to the department of ObGyn Women's Operation Committee with a recommendation to remove dinosprostone vaginal inserts and replace with the equally effective, safe and less costly cytotec tablets. This was approved and is now being discussed at the Pharmacy and Therapeutics Committee with anticipation of removing it from the formulary.

Discussion: OB/GYN providers at our institution had a poor working knowledge of cost. Through the use of a survey and an educational intervention, we demonstrated that simple interventions can lead to high value healthcare changes.

Prevention of the Primary Cesarean Delivery Through a Multi-factorial Approach

Aliye Runyan, Steven Dudlick, Sejal Tamakuwala, Karoline Puder

Wayne State University/Detroit Medical Center

Objective: The prevention of primary cesarean delivery is a current focus of quality of care initiatives, as its rate has risen without improvement in patient outcomes. This conflict encompasses the spectrum of cost of care,

overuse of an intervention, and need for a culture change within a hospital system. The goal of this project is to better understand indications for primary cesarean delivery.

Methods: This study includes a retrospective chart review of the past 6 months of data from patients who underwent a primary cesarean delivery at Hutzel Women's Hospital and Sinai Grace Hospital. Factors include whether or not the patient was admitted for an induction of labor, indications for the induction, trends in provider behavior, and indications for cesarean delivery. Tailored educational training will foster conversations on the topic within the department.

Results: The initial chart review will be used to identify opportunities for improvement, target education efforts, and to note differences in pre- and post-educational implementation. Identification of the primary cesarean deliveries that are performed without an ACOG-defined indication creates an opportunity for education of providers, and potential for practice improvement.

Conclusion: The primary cesarean delivery rate for DMC hospitals for January - July 2014 range from 10.3 to 15.2% at our primary academic medical center, and from 10.6 to 21.5% at our academic community hospital. There is a notable variability in the cesarean delivery rate from month to month. It is important to determine factors that contribute to this variability so that our hospitals, and hospitals nationwide, may better develop strategies to decrease their rates of primary cesarean delivery. It is hoped that the multifactorial approach to the process - through chart review, analysis, and education of providers, will help to modify behaviors that affect the incidence of cesarean delivery.

The Daily Draw: Clinician Perceptions of Inpatient Laboratory Testing

Cilian J. White, Benjamin R. Roman, James Masciale, Deborah Korenstein

Memorial Sloan Kettering Cancer Center

Introduction: Inappropriate laboratory test utilization in hospitalized patients contributes to high health costs and may harm patients; drivers are unclear. We assessed attitudes and self-reported lab utilization among healthcare providers at Memorial Sloan Kettering Cancer Center (MSKCC) in New York City, in an attempt to identify intervention targets.

Methods: We developed a 12-item survey based on one previously administered at another academic medical center. All clinicians (RNs, NPs, PAs, Physicians) with inpatient responsibilities during a two-week survey period were eligible to participate and received an email with a link to the survey. Email invitations were resent three times during the survey period. As an incentive, participants completing the survey received a coupon for a free coffee. Domains for attitude questions were established empirically using principal components analysis and statistical approaches included factorial Analysis of Variance, Chi-Square, and Kruskal-Wallis H test.

Results: There were 1580 eligible participants; 837 (53%) completed surveys. Among prescribers (non-RNs), 53% reported ordering/asking for unnecessary labs. Participants across provider types most commonly reported that daily labs are done to satisfy attending physicians. Attitudes toward lab testing differed by provider type (Table), with physicians, particularly attendings, placing lower value on lab testing and recognizing more unnecessary labs on their units. Among all participants, factors most commonly identified as “contributing a lot” to unnecessary lab testing were habit (74.9%) and institutional culture (61.6%), without differences by provider type.

Discussion: Inpatient clinicians at our cancer center report high rates of unnecessary lab testing. While non-attendings reported ordering lab tests to satisfy attendings, attending physicians themselves endorsed comfort with less testing. Our findings highlight the role of poor communication in unnecessary lab testing. Interventions to improve interprofessional communication may reduce lab overuse and cost and improve the patient experience.

Effects of a Physician-Specific Hospital Bounceback Policy to Reduce Readmissions

Nathan Moore, Emily Fondahn, Melvin Blanchard

Washington University in St. Louis

Background: Medical services across the country commonly use a bounceback policy to determine the admitting physician for readmitted patients in an attempt to improve quality of care and reduce readmissions. Despite their widespread use, there have been no studies of hospital bounceback policies for readmitted patients. In 2011, the Internal Medicine residency program at Washington University strengthened their bounceback policy.

Methods: The primary objective of this retrospective cohort study was to determine the effect of a stronger bounceback policy for the general medicine teaching service at Barnes-Jewish Hospital on 30-day readmission rates, length of stay (LOS), and adjusted LOS index. The secondary objective was to assess the effect of time within clinical rotations on the same outcomes. Participants included patients admitted to the teaching and nonteaching general medicine services from 2009 to 2013; total number of hospitalizations analyzed was 61,149. We utilized a difference-in-differences design to compare outcomes on the teaching and nonteaching medical services.

Results: When comparing patients discharged after the bounceback policy was implemented to those discharged before, the teaching service had a 7.92% lower relative risk ratio of 30-day readmission compared to the nonteaching service (p =.007), a change in mean LOS of -0.28 days (p=0.008), and no significant difference in LOS index. For patients with diagnoses of heart failure, acute MI, pneumonia, and COPD only, there was no significant difference in LOS or readmission rates, but LOS index decreased by 0.09 on the nonteaching service when compared to the teaching service (p = 0.03). LOS and readmission rates were not significantly correlated to the number of days from the start of a rotation to the patient's discharge.

Conclusions: A stronger bounceback policy for the teaching service resulted in a small but significant decrease in 30-day readmission rates and LOS, without a significant difference in LOS index.

Geographic Variation and the Relationship between Bed Supply and Admission Rates to Neonatal Intensive Care Units

Wade Harrison, David Goodman

Geisel School of Medicine at Dartmouth and The Dartmouth Institute for Health Policy and Clinical Practice

Introduction: For premature infants, neonatal intensive care is highly effective with the potential for underuse. For more mature newborns the decision to admit is often less certain. Increasing NICU admission rates in this group may represent overuse. We sought to identify geographic variation in admission rates and whether Level III/IV NICU bed supply is related to a newborn's chance of admission.

Methods: The study population included live births to US residents in 2013 recorded using the revised US Standard Certificate of Live Birth. Newborns and beds were assigned to neonatal intensive care regions (NICR) based on maternal residence and hospital location, respectively. Descriptive statistics of variation were calculated across NICRs. For individual newborns, logistic regression was used to examine the relationship between bed supply and odds of admission to a level III/IV unit after adjusting for maternal and newborn characteristics.

Results: Admission rates for very low birth weight (VLBW; <1,500 g) newborns demonstrated the least regional variation (Coefficient of Variation [CoV] = 0.10), while normal (2,000-3,999 g) and high (>4,000 g) birth weight newborns demonstrated the greatest variation (CoV = 0.32 and 0.36). Admission rates were not significantly related to capacity except for newborns 1,500-2,000 g for whom high and very high supply of beds was associated with significantly greater odds of admission (1.30; p=0.05 and 1.31; p=0.03).

Discussion: Increased regional variation in NICU admission rates among larger newborns is consistent with the greater clinical uncertainty in this group. If overuse of neonatal intensive care is occurring, this did not appear to be driven by bed supply. On the other hand, potential underuse of neonatal intensive care for VLBW newborns was not associated with lower bed supply suggesting that NICU expansion as a strategy to improve access and address underuse is potentially less important than systems improvements like improved regionalization.

National Guidelines for Surveillance Testing in Patients with Solid Tumors: Variation and Specificity

Shrujal Baxi, Rubaya Yeahia, Deborah Korenstein

Memorial Sloan Kettering Cancer Center

Background: With nearly 15 million cancer survivors in America requiring post-treatment surveillance, clinicians use clinical practice guidelines (CPGs) to provide recommendations for appropriate cancer-specific post-treatment follow-up. CPGs are developed by a variety of organizations to provide evidence- or expert-based recommendations for the management of different diseases. There are numerous CPGs available for cancer surveillance and inconsistencies could lead to both overuse and underuse. We explored variations in recommendations among current CPGs for the most common cancers - breast, colon, non-small cell lung and prostate.

Methods: We included CPGs created by professional societies and government-based organizations in North America and Europe. We used online search engines (PubMed, Google, National Guideline Clearinghouse) and organization websites to identify guidelines developed for clinicians. Surveillance recommendations were categorized by modality (imaging studies, blood testing, etc) and classified by their nature (recommend for/against, no clear recommendation, not addressed).

Results: We identified 26 CPGs, 8 each for breast and colorectal cancer and 5 each for non-small cell lung and prostate cancer. Guidelines were from the US (42%), UK (23%), Canada (8%), and Europe (27%). Seventy-seven percent were developed by professional organizations and 35% were based on systematic reviews. Guidelines recommended mammography in breast cancer (100%), colonoscopy (100%) and CEA (87.5%) in colorectal cancer, CT chest (80%) in lung cancer, and PSA (100%) in prostate cancer (Table). The proportion of recommendations with a testing frequency were 100% for mammography, 100% for colonoscopy, 85.7% for CEA, 100% for chest CT, 80% for PSA and 45% for history and physical. Most frequencies were presented as ranges and were not specific. Very few CPG's provided an end date for surveillance.

Conclusion: In general, CPGs agree on the most important aspects of post-treatment care but lack of specificity on testing frequency and duration likely contribute to both overuse and underuse of surveillance.

Abstract Slam Session B2
12:15 – 1 pm

Early Evidence Human-Centered Decision Aids Help People Make More Appropriate Care Decisions

Geri Baumblatt, Lauren Rees

Emmi Solutions

Conditions like chronic low back, hip, and knee pain and low-risk prostate cancer are frequently over-treated. AHRQ reports spinal fusion surgery increased from 61,000 in 1993 to 465,000 in 2011. This has not improved outcomes or reduced disability rates. Patients frequently catastrophize their pain and avoid beneficial activities like walking. Men with low-risk prostate cancer often react with fear and opt for surgery. An RCT showed a multimedia program created with a human-centered design approach reduced anxiety.* Multimedia decision aids created with an empathic HCD approach can help address emotions and help people engage in calm deliberation and understand their options so they can make more appropriate treatment decisions.

Patients were prescribed multimedia decision aids developed using a human centered design approach to help them understand their condition, treatments, the pros and cons, tradeoffs, and to consider their values and preferences. After viewing, patients could opt to take a survey.

7,300 surveys from July 1, 2012 through November 4, 2015 across 15 decision aids* found:
•97% now understand there is more than one way to treat their condition
•95% better understand the pros and cons of treatments
•90% have a better sense of which treatment(s) are right for them

36-42% with low back, hip, or knee pain or low-

risk prostate cancer reported a change of mind and now lean away from aggressive treatment:
•2,826 with low back pain (36%)
•1,176 with hip pain (42%)
•1,759 with knee pain (38%)
•466 with low-risk prostate cancer (37%)

Patient comments reveal improved understanding.*

Survey responses were opt in. However, a large number of patients were interested to take the survey. Increased interest in less aggressive treatments only shows patient intention. Tracking what treatments patients actually receive and looking at outcomes would provide greater insight.

Resident Education of RightCare, Right Now

Arun Singavi, Jennifer Schmidt, Shiytej Kaushal, Rochelle Herre, Ryan Tomlinson, Tadeo Diaz-balderrama, Kathlyn Fletcher

The Medical College of Wisconsin

Introduction: Medical overuse is a growing problem in the United States. The RightCare Educator program offers grants to chief residents to develop educational initiatives on mindful care. Using this grant, we created a week-long "RightCare" program for Internal Medicine residents to increase awareness and knowledge of overuse.

Methods: At an Internal Medicine residency program, multiple study interventions were utilized to raise awareness. An initial presentation introduced basic concepts of "RightCare". Further interventions included an overuse count, Do No Harm report, daily emails, clinical vignette contest and reception with gift card incentives for participation. Knowledge and awareness of overuse/costs were assessed with a survey before and after the intervention. Analysis included descriptive and univariate analysis with 2-tailed tests with significance at $p<0.05$. Ward residents were analyzed separately.

Results: 8/8 (100%) teams at hospital one and 3/9 (33%) teams at hospital two participated in the overuse count with 24 and 12 counts submitted respectively. Nineteen clinical vignettes were submitted. For both overall and ward-only analysis, a statistically significant difference in correct answers to 1/3 knowledge questions was seen. No statistically significant difference was seen in awareness assessment questions.

Discussion: The purpose of our study was to educate residents on proper care utilization. In both pre and post-surveys, the preponderance of answers showed greater than occasional consideration of cost to both patient and healthcare system in resident decision-making. This shows that residents had some awareness of "RightCare" and a one week introductory initiative alone is insufficient to influence resident practice significantly. Residents responded that there was rarely discussion of costs with attending staff, both pre and post-intervention. Taking both of these ideas, we feel that a cultural shift toward mindful care is necessary. Future plans include continued discussion of RightCare during daily didactics and residency social media with a follow-up awareness survey.

Learning to Talk: Overuse and Patient-Centered Care

Sarah Lappin, Lisa Oliver, Sandra Banas, Steven Harris, Steven Knohl

Upstate University Hospital

Introduction: Over the past year we used an OSCE based encounter to help students develop proficiency in identifying overuse/misuse of specific testing on patients, while working on their communication skills. Our planned OSCE is centered on a young woman of average risk requesting an MRI for breast cancer screening. She is very persistent on having this done as a friend of hers recently died from breast cancer. We then had the student explain to the patient the limits of screening and why the test was not recommended in a way that both fulfilled their professional obligations and their patient care obligations. Faculty assessment was done in real time and then we had a debriefing session.

Methods: Post encounter questionnaire asking if they ordered imaging and if having the cost of each test was helpful.

Anonymous survey later asking:
1.) Have you had experience like this previously in your medical education?
2.) Did you find this experience meaningful?

Results: 99 students total participated in this project. 49 of these 99 students ordered imaging post encounter based on her persistence though they all wrote these tests were not indicated. 60 of the 99 students found having the cost of each test available helpful.

55 students respond to the survey:
1.) Have you had any experience like this previously in your medical education?
Yes: 16.36% (n=9)
No: 83.64% (n=46)
2.) Did you find this experience meaningful?
Yes: 83.64% (n=46)
No: 16.36% (n=9)

Discussion: I feel this activity empowers our students with strategies to begin discussions with patients regarding overuse/misuse of tests. It is very difficult to say no to your patient and learning this tool of communication earlier in your career will give you more practice and therefore more confidence to have these discussions when you are the attending overseeing your patients' care.

Deconstructing the Patient Experience: Cultivating Medical Student Empathy through Experiential Learning

Eric Jung[1], Elizabeth Wei[2], Aaron Cantor[1], Glenn Geeting[3], Paul Haidet[1]

[1]Pennsylvania State University College of Medicine; [2]Rutgers Robert Wood Johnson Medical School; [3]Penn State Milton S. Hershey Medical Center

Multiple studies demonstrate that empathy declines as students advance through clinical training. This might be partly due to educational experiences that lack individual patient context and student inexperience with the functional limitations that patients must endure. We aimed to design an activity that simulates the types of limitations associated with a common clinical scenario and stimulates opportunities for reflection.

We offered students a training session on volar arm splinting and asked them to wear the splint on their dominant arm for twenty-four hours. Students then completed a written reflection and participated in a group discussion about their experience. Students completed the Jefferson Scale of Empathy (JSE) before and after being splinted. We compared cohort scores and performed a qualitative content analysis of written reflections and transcripts of the group discussions.

25 students (20 first-year medical, 4 junior and senior nursing, and 1 first year physician assistant) participated in the study. Mean age was 24 years, and 72% were female. Total JSE scores increased from a mean of 114.7 pre-session to 117.6 post session (p=0.05). Similar increases were observed in JSE subscales representing the patients' personal experience. Qualitative analysis revealed that splints disrupted students' lives with a level of authenticity that promoted contemplation of the patient role in ways that students did not anticipate. Students also described changes in thinking about patient compliance with therapy and the lived experience of illness.

Our study demonstrates that a simple simulation can have a powerful effect for health profession students, and baseline empathy is amenable to change. Further work is needed to evaluate the longevity of this effect, and how well it translates to behavioral change in clinical environments.

The public as policy-makers: strategies to reduce overuse of low-value care from the perspectives of low-to-moderate income Californians

Marge Ginsburg[1], **Susan Perez**[2]

[1]Center for Healthcare Decisions; [2]California State University, Sacramento

The project is called Doing What Works. This involves deliberative discussion groups with Medi-Cal members and other lower-to-moderate income Californians throughout the state on the topic of overuse of wasteful and/or harmful medical care. As "deliberative" discussions, these are not focus groups; they are structured to ask participants to be social decision-makers, advising state leaders on the best strategies for reducing the over-use of four interventions: 1) antibiotics for adult bronchitis; 2) unnecessary C-sections; 3) MRIs for LBP; and 4) the use of a cancer drug that is marginally better but much more costly. This project is being conducted on behalf of the CA Statewide Work Group to Reduce Over-use, spearheaded by Covered California, Dept. of Health Care Services and

CalPERS. It is funded by Calif. HealthCare Foundation and KP National Community Benefit Fund.

Ten half-day discussion groups of 12 participants each are being held from Sept. to December 2015; two sessions are conducted in Spanish. While this is primarily a qualitative process, pre- and post-discussion survey are used to gauge changes in attitudes and beliefs. All sessions are audiotaped, transcribed and analyzed. The results are expected to be widely communicated in early Spring. Findings will indicate how the public views various approaches to overuse: influencing patient demand, physician prescribing, health plan coverage or doing nothing.

A novel interactive icon-array software improves comprehension of absolute risk in medical trainees and helps transform a large risk communication site into a potent resource for Shared Decision Making

Fred Amell[1], Jacob Solomon[2], Brian Zikmun-Fisher[2], Caroline Park[3], Yaara Zisman-Ilani[4], Konstantin Boroda[1], Santiago Thibaud[1], Anand Jagannath[1], Frederick Yick[1], Tina Shah[1], Taylor Miller[5], Ramachandra Reddy, Joshua Cho[3], Michelle Pong[3], Shey Mukundan[1], Kim Renwick[6], Esther Mizrachi[7], Kenny Ye[3], Ashley Ceniceros[1], Darlene LeFrancois[1]

[1]Einstein-Montefiore Internal Medicine; [2]University of Michigan; [3]Einstein School of Medicine; [4]Dartmouth Hitchcock Medical Center; [5]Mt. Sinai School of Medicine; [6]Montefiore Comprehensive Family Care Center; [7]Long Island Jewish Emergency Medicine

Central barriers to shared decision making by novice physicians include: 1) identifying preference-sensitive decisions (where absolute risks=benefits) 2) finding time to educate patients, and 3) accessing rapid risk communication tools effective for innumerate patients. TheNNT.com is an increasingly comprehensive non-commercial rapid-risk communication site, and one of our current multi-center interventional surveys of Internal and Emergency Medicine residents found that simple exposure to numerical absolute risk reductions reduces the providers stated intention to "strongly recommend" test and treatment decisions (1.04 point movement on 5-point Likert, p=0.03, n=41), and increases intention to share decisions (1.03 points, p=0.04). This data supports that site exposure helps learners reframe interventions they thought were "effective care" as preference sensitive.
Unfortunately, theNNT is predominantly quantitative, and thus sub-optimal for sharing with innumerate patients. Powerful visual risk communication tools such as icon arrays can work for a broad range of numeracy but they become visually overwhelming when more than 2 clinical endpoints are displayed at once . We have developed a non-commercial interactive Drill Down Array (DDA) technology that can supplement theNNT.com and sequentially present a multitude of clinical endpoints based on the interests of doctor and patient, without overwhelming them. Intentional hiding of less-valued endpoints also facilitates a critical value-formation process. Our ongoing RCT for novice physicians and students, is showing that complementing theNNT.com with a DDA for Lung Cancer Screening, increases accuracy of risk perception beyond combination of both theNNT summaries and a static Icon Array (control) (p=0.004 n=51) and trended towards significantly increased belief that their patient's would benefit. Trials are on-going and will be presented at the 4th Annual Lown Conference before large-scale public launch on theNNT.com.

Understanding Patient's Real Concerns to Enable True Shared Decision Making

Geri Baumblatt[1], Corey Siegel[2]

[1]Emmi Solutions; [2]Dartmouth Hitchcock Medical Center

Introduction: While we hear about preference misdiagnoses, clinicians also misjudge patient fears and concerns, which affects shared decision making discussions. In this case, physicians assumed patients with ulcerative colitis (UC) are most fearful about medication side effects to treat UC. Our aim was to better understand what aspects of UC, and UC management, are most concerning to patients, and how they would like to be informed about treatment options.

Methods: A web-based survey was sent to UC patients throughout the United States (US) and Australia (AUS). In addition to standard closed

response questions, audio clips were embedded in the survey and respondents showed their strength of agreement or disagreement using moment-to-moment affect trace methodology. Standard quantitative analysis was used for the survey results, and cluster analysis was performed on the affect trace responses.

Results: 460 patients with UC (370 US, 90 AUS) responded to the survey. 53% of the respondents were women, mean age 49 (range 19 to 81). Most patients (87%) wanted to share treatment decision-making with their doctors. The majority, 98%, wanted more than just a basic understanding of their disease. Patients were most concerned about the risk of colorectal cancer (37%), and the possible need for an ileostomy (29%). Only 14% of patients indicated that side effects from medications was their biggest concern. On affect trace analysis, the most divergence in opinion centered on the appropriate timing for colectomy.

Conclusions: To facilitate treatment decisions for UC patients, in addition to reviewing the benefits and risks of medications, it is also important to discuss the best strategies for decreasing the risk of colorectal cancer, including surgery for colectomy. These insights were taken into account when creating a decision aid for UC. And self-determination theory was used to address patients' top fears.

Paper accepted for/pending publication in IBD Journal.

Synthesizing patient preferences and clinical evidence at the point of care in men with prostate cancer

David Johnson, Dana Mueller, Mary Dunn, Angela Smith, Michael Woods, Eric Wallen, Raj Pruthi, Matthew Nielson

University of North Carolina, Chapel Hill

Introduction: Men with clinically localized prostate cancer (LPC) face an archetypal "preference sensitive" treatment decision. Professional societies endorse shared decision making (SDM) in this setting, however a variety of practical challenges hamper effective implementation. We sought to evaluate the feasibility and benefit of implementing a novel SDM application as part of routine care, and to investigate associations between patient preferences and treatment choice in a setting where SDM was implemented.

Methods: We utilized a novel, web-based application that provides education, preference measurement, and personalized decision analysis for patients prior to their initial consultation for LPC. Preferences are measured using conjoint analysis. The application ranks treatment options according to their "fit" (expected value) based on clinical factors and personal preferences. This report is used during physician counseling at the University of North Carolina Multidisciplinary Genitourinary Oncology Clinic.

We administered the Decisional Conflict Scale (DCS) before and after completion of the application (prior to consultation). Additionally, we compared patients' perception of SDM after their physician visit between a baseline cohort receiving usual care and a cohort of men seen after the application was integrated into the standard clinical flow.

Results: 109 men completed the application prior to their consultation and had decisional conflict (DC) measured before and after use. Overall DC decreased by 37% ($p<<0.000001$). Analysis of the DCS subscales revealed statistically significant improvements in all five domains

Patients' perception that SDM occurred during counseling improved by 43% in those completing the application (n=24) compared to the usual care group (n=33) ($p=0.04$).

Discussion: Implementation of this web-based intervention is feasible and associated with less DC and enhanced elements of SDM.

Abstracts for posters 30-39 begin on page 33.

Interventions to Reduce Overuse: Oral Presentations
2:30 – 3:30 pm

Using "Electronic Nudges" to Reduce Unnecessary Overnight Medical Care Disruptions in Hospitalized Patients

Nimit Desai, *Ambrosio Tuvilleja, Jacqueline Ramos, Dawn Kohl, Mary Ann Francisco, William Marsack, Cynthia Lafond, Samantha Anderson, Mila Grossman, Jay Balachandran, Babak Mokhlesi, Jeanne Farnan, Vineet Arora*

University of Chicago

Introduction: While sleep is vital to the recovery process, many studies show hospitals are far from restful. In fact, the Choosing Wisely™ campaign advocates that inpatients not be awakened unnecessarily for routine care. Our goal was to develop and implement a protocol informed by evidence and local practice to minimize overnight disruptions for inpatients.

Methods: Focus groups of nursing staff and hospitalists were held to brainstorm the top disruptors to patient's sleep overnight. Additionally, 200 patients on two units were surveyed about disruptions they faced. The most commonly reported disturbances included: vital signs (especially for stable patients in whom these were unlikely to change management), 4 AM phlebotomy, and medication administration, with TID heparin being biggest offender. Many disruptions were "hard wired" into the electronic medical record (EMR). For instance, a question regarding whether vitals should be continued overnight defaulted to "yes". Similarly, labs defaulted to 4AM and were cumbersome to change.

Results: Using this data, we partnered with IT to build electronic "nudges" to encourage forgoing overnight disruptions. In September 2015, we debuted a modified General Medicine Admit order set which removed "default" vitals so that clinicians were asked whether they wanted them continued overnight, provided a "one click" option to change future labs from 4AM to 10PM, and added BID heparin to the order set (recent review of the literature showed BID was equivalent to TID in preventing VTE in medical inpatients). Since implementation, this order set has been used over 300 times a month, highlighting the opportunity to impact practice change.

Discussion: Using "nudges" built into the EMR is one novel way to promote reducing unnecessary care disruptions. Future work will assess the effectiveness of this protocol on hospital noise, patient satisfaction and sleep.

Awareness of Choosing Wisely and outcomes in Accountable Care Organisations (ACOs) in the national survey.

Marthe Haverkamp[1], David Peiris[1], Alexander Mainor[2], Meredith Rosenthal[1], Thomas Sequist[3], Carrie Colla[2]

[1]Harvard T. Chan School of Public Health, Department of Health Policy and Management; [2]The Dartmouth Institute for Health Policy and Clinical Practice and the Geisel School of Medicine at Dartmouth; [3]Harvard Medical School

Introduction: Accountable care organizations (ACOs) have novel payment models intended to reduce unnecessary healthcare services and lower costs. Under ACO contracts providers share in savings made for a defined population through the delivery of efficient care. The Choosing Wisely (CW) campaign has an aligned goal to reduce waste. It promotes conversations between providers and patients on reducing unnecessary medical services. In this study we hypothesized that ACOs that are taking steps to reduce CW tests are associated with higher savings and quality scores compared to ACOs that are not engaged in CW.

Methods: The National Survey of ACOs is conducted in 398 ACOs over three waves since 2012. From its second wave, questions were asked on awareness of CW. We analyzed associations between three groups of ACOs (not aware of CW, aware but no action, aware and steps taken) and their quality scores and mean savings per beneficiary for up to 3 performance years using Center for Medicare and Medicaid Services data.

Results: 268 ACOs of 306 surveyed answered the CW awareness question. Of those that

responded 112 ACOs (42%) were not aware of CW, 71 (26%) were aware but had not taken steps and 85 (32%) had taken steps to reduce testing. There was no significant difference between these ACOs and mean savings per beneficiary (p=0.055). There was no difference in overall quality scores (p=0.14). For quality sub-domains there were no differences in patient satisfaction, care-coordination and at risk cardiovascular and diabetes measures. Active participation in CW was associated with higher scores for preventive health measures (p=0.037), but when adjusted for ACO-size this was non-significant.

Discussion: Although the ACO model is intended to stimulate efficient healthcare, a minority of ACOs surveyed is actively involved in the CW campaign. More effort is needed to engage ACO providers in waste-reduction strategies.

Trends of head CT imaging, detection of intracranial bleeding and skull fractures, and outcomes in pediatric traumatic brain injury

Eric Coon[1], Matt Hall[2], Susan Bratton[1], Jacob Wilkes[1], Alan Schroeder[3]

[1]University of Utah; [2]Children's Hospital Association; [3]Santa Clara Valley Medical Center

Background: Studies have shown that head computed tomography (CT) for pediatric traumatic brain injury (TBI) has decreased over the last 5-7 years.

Objective: Analyze the impact of a reduction in head CT imaging on the detection of abnormalities and outcomes.

Methods: Multicenter retrospective cohort of children <18 years old presenting with TBI to emergency departments in the Pediatric Health Information System (PHIS) database from 2004-2014. Patients transferred out were excluded. Outcomes were ascertained using billing data and included rates of head CT, intracranial bleeding or skull fracture, hospitalization, neurosurgical intervention, mortality or neurologic impairment, and re-presentation within 7 days of the incident visit. Tests of temporal trends were computed with Poisson regression.

Results: A total of 542,496 TBI cases were identified. Head CT rates decreased by 60% (Not pictured, P trend <0.01). Figure 1 shows decreases in the detection of intracranial bleeding or skull fracture (P trend <0.01), hospitalization (P trend <0.01), and neurosurgery (P trend=0.06). There was no change in the rates of re-presentation (P trend=0.64) and mortality or neurologic impairment (P trend=0.32).

Conclusion: The reduction in head CT imaging for pediatric TBI between 2004-2014 was accompanied by decreased detection of abnormalities and decreased interventions without a change in patient outcomes. While these findings reassure recent efforts to reduce head CT exposure among children, they also suggest that intracranial abnormalities can be overdiagnosed- that is correctly identified without benefit to the patient.

Best Case/Worst Case: Development of a communication tool to assist frail older adults facing acute surgical decisions

Lauren Taylor[1], Jacqueline Kruser[2], Michael Nabozny[1], Nicole Steffens[1], Jennifer Tucholka[1], Karen Brasel[3], Martha Gaines[1], Kristine Kwekkeboom[1], Tony Campbell[1], Margaret (Gretchen) Schwarze[1]

[1]University of Wisconsin, [2]Northwestern University, [3]Oregon Health and Science University

Background: Acute care surgery often requires burdensome postoperative treatments and can start a frail older patient on a care trajectory that may be inconsistent with end-of-life goals. Current standards of informed consent fail to provide the information patients need to make value-concordant decisions. To address this gap, we developed the Best Case/Worst Case (BC/WC) communication tool for in-the-moment face-to-face clinical decision making. The tool incorporates narrative and a graphic aid to present treatment options and foster a discussion about preferences.

Methods: We conducted focus groups with surgeons and seniors to refine the tool. We then performed a single-site, prospective, pre(control)/post(intervention) pilot with surgeons, older frail inpatients and their family members. We audio recorded conversations with

surgeons and patients facing a decision between surgery or a less invasive palliative option and conducted semi-structured interviews with patients up to 120 days after treatment. We measured patient engagement, patient satisfaction, decisional conflict, treatment intensity, and critical-illness stress-related symptoms and analyzed transcripts using qualitative content analysis.

Results: Seniors and surgeons endorsed the tool and made suggestions to improve the graphic aid. Twenty-nine surgeons, 32 patients and 30 family members enrolled in the pilot. Surgeons used the tool to offer a range of treatments including amputation, bowel resection, and esophagectomy. Patient engagement improved in the intervention group. Participants reported that BC/WC facilitated dialogue about options and allowed them to anticipate outcomes. (Table) Patient satisfaction was high in both groups. The decisional conflict scale was less than 25 for nearly all participants suggesting no decisional conflict and most did not report stress-related symptoms.

Conclusion: Surgeons can use BC/WC to present a range of surgical decisions and engage patients in deliberation about surgery and non-operative options including comfort care. Although well received by patients, future efficacy studies will need to employ more discriminate measures of decision quality.

Student High Value Care Committee: A Model for Student-Led Implementation

Hyung (Harry) Cho, Celine Goetz, Andrew Dunn, John Di Capua, Irene Lee, Sonya Makhni, Deborah Korenstein

Icahn School of Medicine at Mount Sinai

Introduction: Formal curricula for teaching medical students high value care are lacking, and there is little evidence identifying strategies that can effectively impact the knowledge and skills of students. Research is needed to develop models for student-led HVC implementation in healthcare settings.

Methods: We created a Student High Value Care (sHVC) Committee, led by two student Co-Chairs paired with two faculty Co-Directors. All medical students at Icahn School of Medicine were invited to apply to join the committee. The sHVC longitudinal initiative focused on six core elements: (1) Student leadership (2) Peer learning group, (3) Faculty mentorship, (4) Institutional and data support, (5) Curriculum for value improvement, and (6) Scholarship.

Results: Twenty-one students were accepted to the committee. The students were divided into three teams, each paired with a faculty mentor. Small team brainstorming sessions enabled student-led selection of a topic of related to overuse (e.g. reducing "daily labs") and development of innovative ideas for implementation of a project to reduce overuse. Committee time is split between reporting on progress, and also for delivery of a formal Student Value Improvement Curriculum (sVIC), focusing on traditional quality improvement topics such as process mapping and Plan-Do-Study-Act cycles, and principles of change management, value, cost, drivers of overuse (figure 1). After four months of meetings, groups presented their projects at the "sHVC Innovations Pitch Day" and faculty offered feedback. The sHVC Committee has led to creation of a sHVC website, social media outreach efforts, and obtaining an official Icahn School of Medicine student organization status. We are currently formalizing this initiative into a medical school elective.

Conclusion: The sHVC Committee and sVIC allowed for student-led experiential learning on high value care and created the structure and support for implementation of meaningful projects at our institution.

Abstracts for Posters 30-39

Poster #	*Poster Title*
30	***Using Reflection and Digital Stories to Counteract the Culture of Overuse in Medicine and Enhance the Patient-Provider Relationship*** **Daniel Nicklas**[1], Lindsey Lane[2], Jason Owens[2], Janice Hanson[2] *[1]Children's Hospital Colorado; [2]University of Colorado School of Medicine* **Introduction**: The Lown Institute is an organization whose vision is that patients are safe from unnecessary diagnosis, treatment, and harm, and where patient's wishes are respected by their caregivers (RightCare). The Department of Pediatrics in Colorado incorporates narrative and/or digital story telling in resident curriculum to engage learners in reflective practice around the humanistic components of care. **Objective**: To facilitate creation of single-photo digital stories that depict patient experiences that illustrate problems of overuse in medicine and how "RightCare" approaches create a new perspective among medical students and residents. **Methods**: Four EPAC (Education in Pediatrics Across the Continuum) students and 2 residents participated in small group discussions and self-directed learning focused on: A) The prevailing culture of overuse in medicine, B) What "RightCare" means, and C) The relationship between compassion, communication, the patient/provider relationship and shared decision-making for "RightCare" in healthcare. These subjects then created single photo digital stories during a three-hour digital storytelling workshop. Three faculty used qualitative analysis to identify themes in story scripts. **Results**: Six digital stories were shown at Children's Hospital Colorado to an audience of 48 faculty, residents, students, and staff. Qualitative analysis of stories identified 2 themes: reflection on interactions with RightCare; provider self-awareness (evoked reaction/emotion within the provider and a sense of empowerment). Empowerment centered around compassion, communication, the patient/provider bond, and shared-decision making. **Discussion**: The 6 Digital stories centered around an emotion, focused on bonds with patients, grappled with the ambiguousness of over and under use, developed self-awareness, and led to empowerment. After initial purchase of tools and expertise to build stories, it is a sustainable process that may effectively lead to changes in behavior. Focus groups, follow up surveys with audience members and facilitation of additional digital stories will explore these themes in the future.
31	***A New Model for Addiction Services to an Urban Population*** **Kandie Tate** *Howard University* **Introduction** : Opioid addiction is a re-emerging epidemic in the United States. Urban populations are often under treated for opioid addiction and primary care. The Howard University Urban Health Initiative (HUUHI) focuses on providing opioid dependent patients with behavioral health, primary care and community services to lower the cost of health care for this high-use population while improving outcomes. **Methods** : HUUHI is in the first year of a 3-year project. The administrative period has included recruitment and protocol establishment. We are continuing in enrollment and have started with care coordination and with follow up for primary care, general health maintenance and specialty follow up. The enrolled patients are started and maintained on

buprenorphine and stabilized. Next steps include primary care interventions and social services. Care coordination services are provided to all enrolled to ensure services are received to help with care barriers.

Results: Currently there are 60 enrolled patients with targets of 700 enrollees. These patients are based in both academic and community based opioid addiction programs with a myriad of medical and behavioral health diagnoses. The program has completed the care coordination plan for enrollees based on medical and behavioral health risk stratification. Enrollees receive primary care services including screenings as well as specialty referrals and behavioral health and community services. All of the enrollees are currently receiving medical therapy with buprenorphine for opioid dependence and receives behavioral health counseling.

Discussion: Physician led care coordination is a new practice of providing patient centered care for a high-use patients. In this model, we seek to serve the medical, psychological and social needs of an underserved patient population to improve health outcomes and reduce care cost. This team-based approach can serve as a new delivery model of health care for high use patients with chronic medical conditions.

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Impact of Ethics Sessions on Trainees' Moral Distress: Results from the MedStar Washington Hospital Center Transforming End-of-Life Care Program

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Introduction. Moral distress around providing non-beneficial, overly aggressive interventions to dying patients is a major source of anxiety confronted by young physicians. These pressures around dealing with end of life are largely unnecessary and can be effectively remedied during medical resident training. Currently there are few models addressing this gap, so the current project has been structured to target this issue.

Methods. Monthly meetings were planned for medicine and surgery trainees on critical care rotations, providing opportunities to discuss difficult scenarios encountered when caring for dying patients. A questionnaire was administered to quantify moral distress using a 0-10 visual analog scale before and after each session. This tool addressed trainees' level of comfort/distress when withholding or withdrawing life-sustaining therapies such as vasopressors, ventilators, hemodialysis, antibiotics and nutrition/hydration. The project was approved by leadership from both Internal Medicine and Surgery residency programs and the Institutional Review Board committee from the MedStar Washington Hospital Center.

Results. Periodic meetings were held between December 2014 and May 2015 with 18 medicine and surgery trainees. These meetings were voluntary and happened in an intimate, non-hierarchical environment. In addition to the trainees, two ethicists, a clinician-educator and a chief resident participated in the discussions. Quantitative results are shown as bars representing change in comfort/distress for different scenarios, with positive bars representing increased distress and negative bars representing decreased distress after each session (figure). Wilcoxon signed-ranks test was statistically significant for decreased distress in limiting life-sustaining therapies after these sessions ($n=126$, $p=0.0011$).

Discussion. Moral distress is very prevalent among trainees caring for dying patients, which might contribute to disproportionate measures in critical care settings. Discussing ethical issues surrounding limitations of therapy improved participants' comfort level in avoiding overly aggressive care, which should improve their ability to advocate for high-quality, right care for patients at end of life.

33 ***Observed Structured Clinical Exam in Shared Decision Making***

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Introduction: One of the challenges faced in evaluating medical learners is how to evaluate shared decision making with patients. We developed a shared decision making (SDM) observed structured clinical examination (OSCE) for Physician Assistant (PA) students and Family Medicine residents which took the principles of Information Mastery (IM) (Evidence-based Medicine (EBM), clinical experience and patient preference) and allowed us to evaluate the higher level ACGME milestones of patient care, communication, professionalism and practice-based learning improvement using standardized patients (SP) and faculty by directly observing an exercise that utilizated point-of-care resources and SDM with the SP.

Methods: The OSCE was performed after the completion of a curriculum in communication and EBM for PA students and IM for Family Medicine residents. The learners were each given two real life scenarios, that lasted 8 minutes. The learners accessed the literature and engaged in shared decision making with the SP, directly observed by faculty. Learners were evaluated by the faculty and SP in a summative manner .
Results: Learners were able to successfully navigate and interpret the literature in less than 5 minutes and then provide information to the SP. The ability to utilize shared decision making in this setting had the widest variance, with a directive method being more common in the residents.

Discussion: The need and opportunity to directly observe learners in SDM and EBM is of greater importance in competency-based education. This exercise was developed to ensure these skills can be performed in a timely fashion with real world scenarios and to evaluate learners at the completion of an EBM/IM curriculum, utilizing the milestones assessment . The process resulted in formative training for our learners and the faculty was able to adapt the educational opportunities for future learners.

34 ***Stanford Youth Diabetes Coaching Program: Creating a New Generation of Empowered Patients***

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Introduction: Stanford Youth Diabetes Coaches Program (SYDCP) is a school based health program in which Family Medicine residents train healthy at-risk adolescents to become diabetes self-management coaches for family members with diabetes. An important requirement of “right care” is patient participation in their health care. This program aims to teach high school students to become active participants and to coach family members to do so also.

Methods: From 2012 – 2015, 10 high schools and one summer camp in the US and Canada and five residency programs participated. Physicians and other providers taught the SYDCP to ethnic-minority students from low-income communities. Student coaches completed pre- and posttest surveys which included knowledge and psychosocial asset questions (i.e. worth and resilience) as well as open-ended feedback questions. T-test pre-post comparisons were used to determine differences in knowledge and psychosocial assets, and open and axial coding methods were used to analyze qualitative data.

Results: A total of 216 participating high school students completed both pre-and posttests, and 96 nonparticipating students also completed these tests. Student coaches improved from

pre- to posttest significantly on knowledge ($p<0.005$ in 2012-13, 2014 and 2015); worth ($p<0.005$ in 2012 and $p<0.1$ in 2014-15); problem solving ($p<0.005$ in 2014 and $p<0.1$ in 2014-15); and self-efficacy ($p<0.05$ in 2014). Eighty-two percent of student coaches reported making a behavior change to improve their own health. Qualitative feedback themes included: acknowledgment of usefulness and relevance of the program, appreciation for physician instructors, knowledge gain, pride in helping family members, improved relationships and connectedness with family members, and lifestyle improvements.

Discussion: Overall, when disseminated, this program can increase health knowledge and some psycho-social assets of at-risk youth and holds promise to empower these youth with health literacy and encourage them to adopt healthy behaviors.

35 ***Visual Approaches to Gather Rapid Insights to Optimize Care Management and Decision-Making***

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Introduction: An aggregated electronic medical record (EMR) offers tremendous potential to leverage the EMR for care delivery and management. However, to make sense of large volumes of data requires significant time commitment and attention – both of which are scarce resources for stakeholders in decision making roles. Thus, a need exits to build approaches which help users' rapidly sift through volumes of data, and augment their ability to make sense from it.
At KPMAS, we are exploring novel ways to combine computational cycles and human intuitions in a learning loop to enhance care delivery experience. Our goal was to position technology to accelerate users' ability to gather actionable insights, and make informed decisions.

Methods: For use case, we focused on a subset of diabetes patients in the Kaiser Permanente-Mid Atlantic States region. In contrast to our current approach to disseminate reports in tabular format, we adopted a visual data-driven strategy to best support user's tasks to gather more information in less time. For rapid development, we used Tableau to build data views that can be snapped together in a dashboard. Stakeholders were part of the design process from inception to bring in important perspectives.

Results: Diabetes dashboard offers quick macro-to-micro level population insights. Interactions offered flexibility to instantly update views to inclusion/exclusion criteria. Decision-makers had instant access: to hotspots of diabetes population; to perform rapid hypothesis testing – if uncontrolled diabetic patients with uncontrolled depression leads to worsening diabetic care as an example; to help understand successful intervention strategies - do more A1c testing result in better outcome; and others.

Discussion: The designed visual data-driven dashboard offers to augment an user's ability to gather data insights and facilitate decision making. The approach shows a potential way to accelerate human knowledge acquisition through visual data interaction in order to boost performance.

36 ***Outcomes of a Multi-disciplinary Team Care Primary Care Worksite Clinic for High-Risk, High-Cost Patients***

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Stanford Coordinated Care (SCC) was established in May 2012 to develop and evaluate a model of care for high-risk high-cost patients in the Stanford self-insured health plans to achieve the triple aim: improved patient satisfaction, improved clinical outcomes and lower cost of care. At its inception SCC was a pioneer in soliciting patient input about care design, risk stratifying the patient population and providing patient centered team care focused on supporting patient self-management. Similar efforts are being developed across the country despite a paucity of data about effectiveness.

SCC primary care features team care with on-site multidisciplinary services planned on projected service needs: physical therapist for pain management, LCSW for management of depression and anxiety, pharmacist management for diabetes and other conditions and dietitian. We foster relationship based care and focus on promoting self-management. Physicians and medical assistants (Care Coordinators) each have their own panel of patients. Care Coordinators focus on serving their patients rather than "assisting" the doctors with whom they work. Care Coordinators attend all clinic visits of their patients, scribing the visits, entering orders and insuring follow up. They interact with their panel between clinic visits to encourage completion of the patient's action plans and follow up care. Care Coordinators independently perform routine preventive and chronic disease monitoring and medication refills by protocol.

SCC will report success in achieving triple aim outcomes, including changes in key clinic parameters over time: HbA1C, systolic blood pressure and SF-12. Patient satisfaction measured by Press Ganey survey of patients will be reported. The cost of care is reflected in metrics including ED visits, hospitalizations, prescription fills and overall cost of care. Changes in Patient Activation Measure over time will be reported as a key metric of success in fostering self-management with implications for overall cost of care and improved clinical outcomes.

37 ***Where Does All the Money Go?***

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Introduction: The cost of medical care will rise to levels unsustainable for our society. Multiple attempts have been made to document the reasons for these costs and how to decrease them without decreasing quality of care. Most of the studies have been done on large databases. I decided to see what could be gleaned from a very close look at one institution.

Methods: This paper reviews one month's internal medicine admissions to a safety net teaching hospital. I decided to retrospectively review all patients admitted to my team during the month of August, 2009. I reviewed notes from admission, discharge summaries, and pertinent data from admission: tests ordered, results of tests, decisions made about ordering tests, diagnoses made, and discharge diagnoses.

Results: There were 74 admissions to our service during the month.

Twenty eight admissions or 38% were not necessary. Of 18 admissions for acute coronary syndrome (ACS), none had ACS. There were 13 unnecessary admissions for non-coronary diagnoses; eight patients had no change from their previous stable situation. All of these 18 patients could have been cared for in the outpatient setting.

Thirty four major diagnostic tests were done including 15 head CTs, 9 abdominal CTs and 4 CT PE protocols. The decision about indication was made on the basis of information

available before testing not on the basis of the results of testing. Only four tests were indicated. None of 30 non-indicated tests was positive.

Discussion: These results indicate medical care spending could be substantially reduced by improving appropriateness of admissions and testing. Better history taking, physical examination and thoughtful evaluation are essential to decrease spending and likely provide better care.

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Modifying Clinical Practice Guidelines to Encourage Person-Centered Care in Chronic Disease: Recommendations for Guideline Developers

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Introduction: Person-centered approaches to chronic disease management aim to individualize treatment strategies to the values, preferences, and contexts of patients. Clinical practice guidelines, for scientific and practical reasons, orient their recommendations around specific diseases. We sought to develop recommendations that guideline developers could incorporate to facilitate the advancement of person-centered chronic disease care.

Methods: We synthesized the insights of 5 years of work from an international, multi-center research work group to create a draft framework for the recommendations. To this framework, we applied a set of criteria to enhance the value of the recommendations. Specifically, we required that the recommendations be based on evidence, actionable and understandable for frontline clinicians, and capable of influencing practice and policy.

Results: The clearest need for person-centered chronic disease practice guidelines is in the growing population of patients with multiple chronic conditions. For these patients, we recommend guideline developers incorporate 1) a caveat acknowledging the guideline's limited applicability in this setting, 2) a recommendation for a clinical assessment of the patient's context (in terms of his/her treatment workload and the capacity available to enact it), and 3) a proactive optimization of the treatment plan, when necessary, to fit the unique needs, preferences, and context of the patient.

Discussion: Efforts to advance the implementation of Right Care on the front lines are limited when quality metrics are tied to disease-centered practice guidelines. We present a theory-based and actionable approach for adapting practice guidelines in chronic disease. If used, these person-centered recommendations could alter practice incentives and redefine quality in the management of patients with multiple chronic conditions.

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Learning Clinical Pharmacology Can Lead to Safer Care

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Introduction: Drugs are overused in modern health care. Prescribers find it simpler to start drugs than to stop them. Patients and families often disapprove of polypharmacy, yet find resistance difficult, if not futile. Guidelines are often conflicted or based on weak, incomplete, or misinterpreted clinical trial evidence, and are not pertinent to typical patients. Their reification undermines old-fashioned clinical judgement, while curriculum changes have eroded knowledge of clinical pharmacology. Many health professionals are now remarkably ignorant about the effects of drugs on individual human beings.

Methods: We have pioneered lecture and small group teaching techniques to address polypharmacy by encouraging deprescribing. Video demonstration of beneficial and adverse effects of common drugs illustrates clinical pharmacology far more powerfully than a textbook. It can show uncommon but important adverse effects such as tardive dyskinesia. Critical appraisal of randomized controlled trials provides a more realistic assessment of evidence than facile memorization of guidelines, whether for drugs intended to prevent disease or drugs intended to relieve symptoms. Close attention to outcomes studied in trials is critically important to understanding "evidence". Teaching clinical pharmacology and a skeptical approach to "evidence" to inter-professional audiences and workshops encourages doctors, nurses, nurse practitioners, pharmacists, and students to reinforce each other's learning and practice.

Results: Many patients, families, and health professionals decry polypharmacy in situations where "the Emperor has no clothes". But as in the fable, they may not dare say what they think. Health professionals who want to address this problem by deprescribing can gain clinical confidence by learning clinical pharmacology and real evidence about drugs. Clarifying goals of therapy for each patient facilitates common sense thinking and clinical observation. Avoiding adverse drug effects or detecting and correcting them is professionally satisfying. Encouraging this approach in collaborative environments, can start a movement toward more appropriate, less dangerous prescribing.