

American Medical Informatics Association Annual Symposium (AMIA 2015)

San Francisco, California, USA
14-18 November 2015

Volume 1 of 3

ISBN: 978-1-5108-1601-5

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2015) by American Medical Informatics Association
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact American Medical Informatics Association
at the address below.

American Medical Informatics Association
4720 Montgomery Lane, Suite 500
Bethesda, Maryland 20814
USA

Phone: (301) 657-1291
Fax: (301) 657-1296

www.amia.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

ABSTRACT PRESENTATION

Model Selection For EHR Laboratory Tests Preserving Healthcare Context and Underlying Physiology	1
<i>David Albers ; Rimma Pivovarov ; J.M. Schmidt ; Noemie Elhadad ; George Hripcasak</i>	
Analysis and Classification of Patient Safety Reports in Computerized Prescriber Order Entry (CPOE) Systems and Refinement of a New Taxonomy for Classification of CPOE-Related Medication Errors	3
<i>Mary G. Amato ; Alejandra Salazar ; Thu-Trang Hickman ; Arbor J. Quist ; Lynn A. Volk ; Adam Wright ; Dustin S. McEvoy ; Sarah P. Slight ; David W. Bates ; Gordon Schiff</i>	
A Review and Analysis of Rounding and Handoff Document Content in Inpatient Resident Physician Teams	5
<i>Elliot G. Arsoniadis ; Rohini Khatri ; Jenna Marquard ; Courtney Moors ; Michael Kim ; Genevieve B. Melton</i>	
STEMPOWERMENT: A Prototype Online Intervention to Improve Outcomes in Stem Cell Transplant Survivors	7
<i>Martha Askins ; Jeffery McLaughlin ; Susan Peterson ; Dongsong Zhang</i>	
Assessing Variability in Breast Cancer Treatment Paths Using Frequent Sequence Mining	8
<i>Ravi V. Atreya ; Thomas A. Lasko ; Mia A. Levy</i>	
Six Important Characteristics for Patient Hand-Off Application in Inpatient Hospital Setting	10
<i>Soleh U. Ayubi ; Alexandra Pelletier</i>	
Capturing Preventive Care Services: Comparing Data Obtained from Manual Chart Review, Automated EHR Extraction, and Insurance Claims	12
<i>Steffani R. Bailey ; Megan Hoopes ; Heather Angier ; Rachel Gold ; John Heintzman ; Miguel Marino ; Jean P. O'Malley ; Jennifer E. Devoe</i>	
Medication Compliance in Pediatric Inpatients – What Are We Missing?	14
<i>Haresh Bhaitia ; Neal Patel ; Catherine H. Ivory ; Phillip Stewart ; Kim M. Unertl ; Christoph U. Lehmann</i>	
The Hidden Life of Nurses' Cognitive Artifacts	16
<i>Jacquelyn W. Blaz ; Alexa K. Doig ; Kristin G. Cloyes ; Nancy Staggers</i>	
Real Time Active Learning Study for Clinical Named Entity Recognition	18
<i>Yukun Chen ; Sungrim Moon ; Thomas A. Lasko ; Qiaozhu Mei ; Jingqi Wang ; Trevor Cohen ; Qingxia Chen ; Joshua C. Denny ; Hua Xu</i>	
A Real Time Electronic Registry As a Key Intervention to Reduce Treatment Disparities in Early Stage, Non-small Cell Lung Cancer: Preliminary Results	20
<i>Samuel Cykert ; Paul Walker ; Peggye Dilworth-Anderson ; Maria Cirino-Marcano , Lloyd Edwards</i>	
Improving Care Team Communication: Early Experience at Implementing a Patient-centered Microblog	22
<i>Anuj K. Dalal ; Jeffrey L. Schnipper ; Anthony F. Massaro ; Kelly McNally ; Patricia C. Dykes ; David W. Bates</i>	
Using a Software Program to Support Shared Decision-Making about Participation in Breast Cancer Clinical Trials	24
<i>Prudence Dalrymple ; Lisl Zach ; Michelle L. Rogers ; Amy Leader ; Ronald Myers ; Tiffany Avery ; Anna Quinn ; Anett Petrich ; Massimo Cristofanilli ; Russell Schilder</i>	
An EHR-Integrated Shared Decision Making Mobile App for Prostate Cancer Screening	26
<i>Frank C. Day ; Majid Sarrafzadeh ; Stephanie Smith ; Mohammad Pourhomayoun ; Konstantinos Sideris ; Amogh Param ; Jonathan Ben-Hamou ; Deidre Keeves ; Michael A. Pfeffer ; Douglas S. Bell</i>	
Polychromatic X-Ray Absorptiometry to Quantify Breast Density Volume, Ratio and their Associated Breast Cancer Risk in Full-Digital Mammography	28
<i>Luis De Sisternes ; Joseph Rothstein ; Abra Jeffers ; Weiva Sieh ; Daniel Rubin</i>	
Characterizing the Frequency of Pharmacogenomic Biomarker-Guided Prescribing for Drugs with Pharmacogenomic Biomarker information in the FDA Labelling: A Pilot Study Using Data from an Electronic Health Record	30
<i>Emily Devine ; Maher Khelifi ; Katelyn Keyloun ; Nathaniel Hendrix ; Patrick Mathias ; Christian Bock ; Peter Tarczy-Hornoch</i>	
2 Years Later: Follow-up to Analysis of Electronic Medication Orders with Large Overdoses	32
<i>Judith Dexheimer ; Eric Kirkendall ; Michal Kouril ; Thomas Minich ; Philip Hagedorn ; Cecilia Mahdi ; Stephen A. Spooner</i>	
Completeness and Timeliness of Notifiable Disease Surveillance Data Submitted by Providers to Public Health Authorities	34
<i>Brian E. Dixon ; Patrick T. Lai ; Uzay Kirbiyik ; Zuoyi Zhang ; Debra Revere ; Rebecca A. Hills ; P. Joseph Gibson ; Jennifer L. Williams ; Shaun Gramm</i>	
Pharmacy Drug Dispensing After Physician Discontinuation (Cancel) Orders	36
<i>Tewodros Eguale ; Aman D. Verma ; Enrique Seoane-Vazquez ; Rosa Rodriguez-Monguio ; David W. Bates ; Robyn Tamblyn ; Gordon Schiff</i>	
Computer-Mediated Intervention to Improve Medication Literacy in Seniors with Diabetes Results in Better Patient-Reported Outcomes and Glycemic Control	37
<i>Joseph Finkelstein ; McKenzie Bedra</i>	
Feature Selection Based LapSVM to Classify Medical Event Reports and Enhance Patient Safety	39
<i>Samah J. Fodeh ; Cynthia Brandt ; Perry Miller ; Michele Koss ; Andrea L. Benin</i>	
Developing a Collaborative Evaluation Framework for Utah's APCD	40
<i>Jennifer H. Garvin ; Kristina M. Doing-Harris ; Jonathan Cardwell ; Charles Hawley ; Wu Xu</i>	
An Integrative Review of Nursing Clinical Decision Support Systems: Examining the Impact on Process, Usability and Patient Outcomes	41
<i>Sheila M. Gephart ; Joanna Abraham ; Rebecca Raszewski ; Lauren Price ; Karen Dunn Lopez</i>	

Automating Guidelines for Clinical Decision Support (CDS): A Categorization of Knowledge Engineering and Implementation Decisions.....	43
Mary K. Goldstein ; Samson Tu ; Connie Oshiro ; Susana B. Martins ; Dan Y. Wang ; Amy Furman ; Michael Ashcraft ; Jonathan Mendoza ; Paul Heidenreich ; Kaeli Yuen	
Human Computation of Big Data in Biomedicine: Making STAR Annotations for Large Scale Functional Characterization of Disease.....	45
Dexter Hadley ; James Pan ; Osama M. El-Sayed ; Jihad Al-Jabban ; Imad Al-Jabban ; Tej Azad ; Shuaib Raza ; Mohamed Hadie, Bin Chen ; Hyojung Paik ; Sanchita Bhattacharya ; Marina Sirota ; Atul J. Butte	
Making Nursing Visible in Health Information Systems.....	47
Nicholas Hardiker ; Nicola Fortune ; Kay Jansen ; Claudia C. Bartz	
A Survey of Social Media for Understanding Patient-reported Medication Outcomes.....	48
Kimberly Harris ; Boshu Ru ; Lixia Yao	
Impact of Electronic Health Records on Quality of Care: Evidence on Inpatient Mortality, Readmissions, and Complications.....	50
Tina Hernandez-Boussard ; Catherine Curtin ; Doug Morrison ; Swati Yanamadala ; Katherine McDonald	
Discharge Instructions: What Do Patients Remember?.....	52
Brent D. Hill ; Qing T. Zeng	
What Are Frequent Data Requests from Researchers? A Conceptual Model of Researchers' EHR Data Needs for Comparative Effectiveness Research.....	54
Gregory W. Hruby ; Praveen Chandar ; Julia Hoxha ; Eneida A. Mendonca ; David A. Hanauer ; Chunhua Weng	
Neighborhood Internet Access and Patient Portal Use in Patients with Chronic Conditions.....	56
Jie Huang ; Richard Brand ; Margaret Warton ; Bruce Fireman ; John Hsu ; Ilana Graetz ; Mary Reed	
Usability Testing of an Ambulatory EHR Navigator.....	58
Gretchen Hultman ; Elliot G. Arsoniadis ; Jenna Marquard ; Rubina F. Rizvi ; Saif Khairat ; Keri Fickau ; Genevieve B. Melton	
Process Mining of Growing Adoption of Genomic Precision Medicine Testing Using Commercial Claims and Encounters Database.....	60
Vojtech Huser	
A Road Map for a National Health Information Technology Safety Center.....	62
Douglas Johnston ; Andrew Gettinger ; Kathy Kenyon ; Stephanie Rizk ; Colene Byrne ; Linda Dim	
A Genome- and Phenome- Wide Study of Diverticulosis.....	64
Yoonjung Y. Joo ; Jennifer A. Pacheco ; Loren L Armstrong ; William Thompson ; Robert J. Carroll ; Joshua C. Denny ; Peggy L. Peissig ; James Linneman ; Jyotishman Pathak ; Girish N. Nadkarni ; Laura J. Rasmussen-Torvik ; M Geoffrey Hayes ; Abel N. Kho	
Natural Language Processing Facilitates Delivery of Individualized Recommendations at the Point of Care.....	66
K. E. Ravikumar ; Rajeev Chaudhry ; James Masanz ; Joshua Pankratz ; Jane L. Shellum ; Steve G. Peters ; Ronald Hankey ; Daniel J. Cronk ; Jennifer J. Boysen ; Kristin Pavek ; Robert Roden ; Hongfang Liu	
Population Level Clinical Analytics Using the MapReduce Framework and a Production Rule System.....	68
Neelima Karipineni ; Howard S. Goldberg	
Demonstrating the Advantages of Applying Data Mining Techniques on Time-Dependent Electronic Medical Records.....	70
Uri Kartoun ; Vishesh Kumar ; Su-Chun Cheng ; Sheng Yu ; Katherine P. Liao ; Elizabeth . Karlson ; Ashwin Ananthakrishnan ; Zongqi Xia ; Vivian Gainer ; Andrew Cagan ; Guergana Savova ; Pei J. Chen ; Shawn N. Murphy ; Susanne Churchill ; Isaac S. Kohane ; Peter Szolovits ; Tianxi Cai ; Stanley Shaw	
Using Patient-Centered Technological Design to Improve Inpatient Fall Prevention.....	72
Zachary P. Katsulis ; Waiyin Leung ; Awatef Ergai ; Laura Schenkel ; Amisha Rai ; Jason Adelman ; James Benneyan ; David W. Bates ; Patricia C. Dykes	
Identifying and Understanding Data Quality Issues in a Pediatric Distributed Research Network.....	74
Ritu Khare ; Levon Utidjan ; Gregory Schulte ; Keith Marsolo ; Charles Bailey	
Evaluating the Effects of Cognitive Support on Interpreting ICU Patient Data.....	76
Peter V. Killoran ; Swaroop Gantela ; Sahiti Myneni ; Khalid Almoosa ; Bela Patel ; Thomas Kannampallil ; Vimla L. Patel ; Trevor Cohen	
A Framework for Person-centered, Community-wide Care Coordination.....	78
Katherine K. Kim ; Janice F. Bell ; Charles M. Boicey ; Janet Freeman-Daily ; Anna McCollister-Slipp ; Jill G. Joseph	
Representing Nursing Content within a Multi-Disciplinary Terminology.....	80
Tae Youn Kim ; Nicholas Hardiker ; Penni Hernandez ; Jane Millar	
Evaluating the Accuracy of Automated Notifiable Condition Detection in Free-Text Electronic Laboratory Report Results Using Contemporary Text Mining and Machine Learning Methods.....	82
Uzay Kirbiyik ; Patrick T. Lai ; Brian E. Dixon ; Shaun Grannis ; Suranga N. Kasthurirathne	
Ill-formed Sentence Identification And Entity Extraction In Clinical Notes.....	84
Aman Kumar ; Michael J. Cairelli ; Hassan Alam ; Rahul Kumar ; Shweta Sheet	
Human Factors of Health Information Exchange: Barriers and Facilitators to Use of the VA's CPRS and a Regional Health Information Exchange.....	86
Andre W. Kushniruk ; Elizabeth M. Borycki ; Helen Monkman ; Kenneth Bockvar	
Collection and Documentation of Sexual Orientation and Gender Identity Demographic Data in the Electronic Health Record: The Patient Perspective.....	88
Brandy D. Lau ; Laura Vail ; Lisa M. Kodadek ; Ryan Shields ; Danielle German ; Susan Peterson ; Adil Haider	
Rethinking Document Retrieval for Scientific Literature: A Learning to Rank Approach.....	90
Jesse M. Lingeman ; Hong Yu	
Identifying Novel Adverse Drug Events from Health Social Media Using Distant Supervision.....	92
Xiao Liu ; Hsinchun Chen	

Design Principles for Clinical Decision Support for Direct Use by Patients: Addressing Symptom Self-Management in Cancer Patients.....	94
<i>David F. Lobach ; Janet Abraham ; Donna Berry ; Michael S. Rabin ; Ilana Braun ; Manan Nayak ; Mary E. Cooley</i>	
Selecting and Implementing New Information Systems for STD Surveillance and Program Support: Lessons Learned.....	96
<i>Claire Loe ; Ninad Mishra</i>	
Leveraging Business Rules Techniques for Data Quality Assurance in Public Health Systems.....	98
<i>David Lyalin ; Warren Williams</i>	
Early Experiences with Meaningful Use and Online Portal Implementation among Providers/Staff and Patients/Caregivers in a Safety Net Healthcare System.....	99
<i>Courtney Lyles ; Lina Tieu ; Dean Schillinger ; Neda Ratanawongs ; Urmimala Sarkar</i>	
Using PopMedNet to Support a Multi-Site Research Network: Lessons from PCORnet.....	101
<i>Jessica Malenfant ; Jessica L. Sturtevant ; Laura G. Qualls ; Kyle Erickson ; Lesley H. Curtis ; Jeffrey Brown</i>	
Qualitative Study of an Electronic Tool for Facilitating Problem-Solving and Sensemaking in Diabetes Self-Management, Mobile Diabetes Detective.....	102
<i>Lena Mamykina ; Elizabeth M. Heitkemper ; Arlene M. Smaldone ; Rita Kukafka ; Patricia Davidson ; Elizabeth D. Mynatt ; Jonathan Tobin ; Andrea Cassells ; Carrie Goodman ; George Hripcasak</i>	
Protein Drug Target Prioritization for Illumination.....	104
<i>Subramani Mani ; Daniel Cannon ; Tudor I. Oprea ; Stephen Mathias ; Oleg Ursu ; Cristian Bologa</i>	
Intra-cluster Correlation Estimates for Design of Cluster-randomized Trials and Multi-clinic Studies That Utilize Electronic Health Record Data.....	106
<i>Miguel Marino ; John Heintzman ; Eve Dexter ; Stuart Cowburn ; Jean P. O'Malley ; Steffani R. Bailey ; Rachel Gold ; Jennifer E. Devoe</i>	
Identifying Abnormal Anatomy on Temporal Bone Computed Tomography Reports Using Readily Available Natural Language Processing Software.....	108
<i>Aaron J. Masino ; Robert Grundmeier ; Jeffrey W. Pennington ; E B. Crenshaw</i>	
Developing InSPECt: An Interactive Surveillance Portal for Evaluating Clinical Decision Support.....	110
<i>Allison B. McCoy ; Eric J. Thomas ; Marie Krousel-Wood ; Susan C. Guerrero ; Reuben J. Applegate ; Dean F. Sittig</i>	
Robust Sentence Segmentation for Clinical Text.....	112
<i>Timothy A. Miller ; Sean Finan ; Dmitry Dligach ; Guergana Savova</i>	
An Analysis of Patient Portal Use in the Acute Care Setting.....	114
<i>Eli Mlaver ; Anuj K. Dalal ; Harry Reyes Nieva ; Frank Y. Chang ; John R. Hanna ; Sucheta Ravindran ; Kelly McNally ; Dianna L. Stade ; Constance Morrison ; David W. Bates ; Patricia C. Dykes</i>	
Translating Electronic Clinical Quality Measures to Executable, Portable, and Customizable Workflows in KNIME.....	116
<i>Huan Mo ; Jennifer A. Pacheco ; Richard C. Kiefer ; Luke Rasmussen ; Jyotishman Pathak ; Joshua C. Denny ; William Thompson</i>	
Improving Radiology Procedure Identification for Inferior Vena Cava (IVC) Filters using EHR Text.....	118
<i>Dalia A. Mobarek ; Najeebah Bade ; Benjamin Viernes ; Patricia Nechodom ; Frederick R. Rickles ; Scott L. Duval</i>	
Computable Phenotypes Enabled by the i2b2 Validation Platform.....	120
<i>Shawn N. Murphy ; Vivian Gainer ; Victor M. Castro ; Alyssa Goodson ; Lori C. Phillips ; Sheng Yu ; Tianxi Cai</i>	
Will They Participate? Predicting Patients' Response to Clinical Trial Invitations.....	122
<i>Yizhao Ni ; Andrew F. Beck ; Regina G. Taylor ; Jenna Dyas ; Imre Solti ; Judith Dexheimer</i>	
Comparing Weight Redistribution and Distance Imputation Methods for Missing Data in Clear-text and Encrypted Record Linkage.....	124
<i>Toan C. Ong ; Lisa Schilling ; Michael G. Kahn</i>	
Quantifying Tobacco Exposure Using Clinical Notes and Natural Language Processing to Enable Lung Cancer Screening.....	126
<i>Travis Osterman ; Wei-Qi Wei ; Joshua C. Denny</i>	
Engaging Patients in Their Inpatient Care: Effect of Patient Access to Their Electronic Health Record During an Acute Care Hospitalization.....	128
<i>Jonathan Pell ; Chen Tan Lin ; Mary Mancuso ; Shelly Limon ; Kathleen Oman</i>	
Uncovering the Cognitive Demands of EHR Use via Task Analysis.....	130
<i>Mark S. Pfaff ; Ozgur Eris ; Amanda Anganes ; Tina Crofty ; Jonathan R. Nebeker ; Merry Ward</i>	
Status of the Health Center-Controlled Network Program: Advancing Health Care Quality through Health Information Technology at Community Health Centers.....	132
<i>Anna Poker ; Derrick Wyatt ; Dominick Black ; Suma Nair ; Beth Perrine ; Tracey Orloff</i>	
Interim Results of a Randomized Controlled Trial on Inpatient Engagement.....	133
<i>Jennifer Prey ; Beatriz Ryan ; Min Qian ; Ruth M. Masterson Creber ; Susan Restaino ; Suzanne Bakken ; Steven K. Feiner ; Rebecca Schnall ; George Hripcasak ; Jungmi Han ; David Vawdrey</i>	
What Causes Pneumonia? Kinds of Knowledge and the Case for Hybrid Representations.....	135
<i>Alan L. Rector</i>	
Understanding Challenges and Opportunities in Precision Medicine and Interoperability Using Informatics Approaches.....	137
<i>Jay Geronimo Ronquillo ; Chunhua Weng ; William T. Lester</i>	
An Empirical Analysis of Chaplain Charting Practices to Inform Electronic Health Record Template Redesign.....	139
<i>Matthew Sakamoto ; Rebecca Johnson ; Jeanne Wirpsa ; George Handzo ; Linda Emanuel ; Abel N. Kho</i>	
Improvement of Cytokine Annotation Using Ontology Synonym Mapping	141
<i>Demetrios Sarantis ; Steven H. Kleinstein ; Kei Cheung</i>	

A Framework for Individualized Prognosis of Disease Trajectories in Complex, Chronic Diseases: Application to Scleroderma, an Autoimmune Disease	143
<i>Peter Schulam ; C. Ligon ; R. Wise ; L. Hummers ; F. Wigley ; Suchi Saria</i>	
Are Meaningful Use Requirements Really Meaningful for Medication Use? Experiences from the Field and Future Opportunities	145
<i>Sarah P. Slight ; Eta S. Berner ; William Galanter ; Stanley M. Huff ; Bruce L. Lambert ; Carole Lannon ; Christoph U. Lehmann ; Brian J. McCourt ; Michael McNamara ; Nir Menachemi ; Thomas Payne ; Stephen A. Spooner ; Gordon Schiff ; Tracy Y. Wang ; Ayse Akincigil ; Stephen Crystal ; Stephen P. Fortmann ; Meredith L. Vandermeer ; David W. Bates</i>	
Detection of Colorectal Surgical Site Infections Using Bayesian Network and Natural Language Processing	147
<i>Sunghwan Sohn ; Majid Rastegar-Mojarad ; James M. Naessens ; Elizabeth B. Habermann ; David W. Larson ; Hongfang Liu</i>	
Clinical Language Annotation, Modeling, and Processing Toolkit (CLAMP) – A User-Centric NLP system	149
<i>Ergin Soysal ; Jingqi Wang ; Min Jiang ; Yonghui Wu ; Hua Xu</i>	
PCORnet Implementation of PopMedNet Data Characterization Tool	151
<i>Jessica L. Sturtevant ; Jessica Malenfant ; Melanie Davies ; Jose Rodrigues ; Laura G. Qualls ; Lesley H. Curtis ; Jeffrey Brown</i>	
Efficiency and Accuracy of Kinect and Leap Motion devices Compared to the Mouse for Intraoperative Image Manipulation	152
<i>Uchenna A. Uchidiuno ; Yuanyuan Feng ; Helena M. Mentis ; Hamid Zahiri ; Adrian Park ; Ivan George</i>	
Physician Participation in Meaningful Use and Rehospitalization of Medicare Fee-for-Service Enrollees	154
<i>Mark A. Unruh ; Hye-Young Jung ; Joshua R. Vest ; Lawrence Casalino ; Rainu Kaushal</i>	
Toward the Development of a Predictive Model for Patient Portal Adoption by Patients in a Federally Qualified Health Center	156
<i>Theresa L. Walunas ; Richard Kalu ; Matthew Sakumoto ; Kathryn Jackson ; Sarah Rittner ; Timothy Long ; Mita Sanghavi Goel</i>	
A Not So Lame Outlook for Injured Farm Workers in Pork and Dairy Operations: Return-to-Work Software Application Development	158
<i>Bryan Weichelt ; Iris A. Reyes ; Andrea Mahnke ; Will Ray ; Laurel Verhagen ; Shaun Halstead ; Matthew Keifer</i>	
A Guideline for Assessing EHR Data Quality for Secondary Use	160
<i>Nicole G. Weiskopf ; Chunhua Weng</i>	
Making Hypertensive Medication Data Meaningful	162
<i>Richard Williams ; Benjamin C. Brown ; Niels Peek ; Iain E. Buchan</i>	
Improving Weight in Patients with Serious Mental Illness: A Randomized Controlled Trial of Computerized Weight Services with Peer Coaches	164
<i>Alexander S. Young ; Amy N. Cohen ; Richard W. Goldberg ; Julie Kreyenbuhl ; Fiona Whelan</i>	
Iterative Design and Evaluation Methodology for Clinical Decision Support Systems	165
<i>Fei Yu ; Vincent Carrasco ; Ketan K. Mane ; Javed Mostafa</i>	
Improving Retrieval of PubMed Articles Using the TopicalMeSH Representation	167
<i>Zhiguo Yu ; Elmer V. Bernstam ; Trevor Cohen ; Byron C. Wallace ; Todd R. Johnson</i>	
Towards Computational Drug Repositioning: A Comparative Study of Single-task and Multi-task Learning	169
<i>Ping Zhang ; Zhaonan Sun ; Fei Wang ; Jianying Hu</i>	
Identification of Venous Thromboembolism from Electronic Medical Records with Information Extraction	171
<i>Shuai Zheng ; Raymund Dantes ; James J. Lu ; Sheri Chernetsky Tejedor ; Michele Beckman ; Asha Krishnaswamy ; Lisa Richardson ; Fusheng Wang</i>	
Rising Drug Allergy Alert Overrides in a Computerized Provider Order Entry System: A Decade of Experience	173
<i>Li Zhou ; Maxim Topaz ; Diane Seger ; Sarah P. Slight ; Foster R. Goss ; Kenneth Lai ; Paige Wickner ; Kimberly G. Blumenthal ; Neil Dhopeshwarkar ; Frank Y. Chang ; David W. Bates</i>	

DIDACTIC PANEL

The Sociotechnical Perspective in Biomedical Informatics: What Do We Understand and Measure?	175
<i>Jos Aarts ; Joan S. Ash ; Andre W. Kushniruk ; Dean F. Sittig ; Jessica S. Ancker</i>	
Recent Advances in Computational Drug Repositioning	178
<i>Atul Butte ; Nigam Shah ; Nicholas P. Tatonetti ; Hua Xu ; Ping Zhang</i>	
Health Data from Wearables: Clinical Implications of the Quantified Self	181
<i>Emil Chiauzzi ; Kevin Patrick ; Cinnamon Bloss ; Ernesto Ramirez</i>	
The Informatics Workforce for Population Health: Challenges, Initiatives and the Path Forward	183
<i>Brian E. Dixon ; Marty Laventure ; Bill Brand ; Arthur Davidson ; Shaun Grannis</i>	
Looking Back and Moving Forward: A Review of Public and Global Health Informatics Literature and Events	186
<i>Brian E. Dixon ; Jamie Pina ; Janise Richards ; Hadi Kharrazi ; Anne M. Turner</i>	
Building an Open, Global Research Collaboratory: Lessons from the OHDSI Initiative	189
<i>Jon Duke ; George Hripcasak ; Nigam Shah ; Patrick B. Ryan</i>	
ClinicalTrials.gov: Adding Value through Informatics	192
<i>Vojtech Huser ; Alexa McCray ; Neil R. Smalheiser ; Asba Tasneem ; Chunhua Weng</i>	
Clinical Decision Support: How to Apply Standards to Deliver Knowledge-Driven Interventions	195
<i>Robert A. Jenders ; Guilherme Del Fiol ; Kensaku Kawamoto ; Howard R. Strasberg</i>	
The Best of Imaging Informatics Research 2015	198
<i>Charles E. Kahn ; Bradley Erickson</i>	
User-Centered Methods to Optimize Clinical Decision Support: Examples from Pediatrics with Applicability to All Care Settings	200
<i>Dean J. Karavite ; Eric D. Shelov ; Levon Utidjian ; Jeremy Michel ; Eli M. Lourie</i>	

The Clinical Quality Framework Initiative to Harmonize Decision Support and Quality Measurement Standards: Defined Standards, Pilot Results, and Moving Beyond Quality Improvement	202
Kensaku Kawamoto ; Marc J. Hadley ; Thomas A. Oniki ; Julia Skapik	
Informatics Approaches to Supporting Emerging Accountable Health Care Delivery Models	205
Gilad Kuperman ; David W. Bates ; David Kaelber ; David A. Dorr	
Collaboration and Health Information Technologies: Towards Defining and Operationalizing the Collaboration Space	208
Craig Kuziemsky ; Madhu Reddy ; Katie A. Siek ; Sarah Collins	
The Implementation of Online Patient Portals in Safety Net Settings: The Realities of Meaningful Use Certification with Vulnerable Patient Populations	211
Courtney Lyles ; Urmimala Sarkar ; Neda Ratanawongsa ; Danielle E. Oryn	
Health Information Technology and Large-scale Adverse Events	214
Farah Magrabi ; Dean F. Sittig ; Jean Scott ; Peter Kilbridge	
Data Quality in Clinical Data Research Networks (CDRNs)	217
Allison B. McCoy ; Michael G. Kahn ; Lemuel R. Waitman ; Jason N. Doctor ; Rahul Jain	
Public Implementation Resources for Genomic Medicine	220
Josh F. Peterson ; Marc S. Williams ; Casey L. Overby ; Robert R. Freimuth ; Iftikhar J. Kullo	
Perioperative Clinical Decision Support: Improving Care of the Surgical Patient through Informatics	223
Karl Poterack ; Patrick Guffey ; Brian W. Pickering ; Bala G. Nair ; Richard H. Epstein	
Harmonization of ICD-11 and SNOMED CT – Not just mapping! Practical and Theoretical Lessons & Benefits to Users and Implementers	226
Alan L. Rector ; James R. Campbell ; Bedirhan T. Ustun ; Christopher Chute ; Harold R. Solbrig	
Developing Natural Language Processing Systems for Healthcare	229
Ruth M. Reeves ; Wendy Chapman ; Dezon Finch ; Jennifer H. Garvin ; Glenn T. Gobbel	
Natural Language Processing for Phenotype Extraction: Challenges in Extraction and Representation	232
Guergana Savova ; Rebecca Jacobson ; Joshua Denny ; Nicole Washington ; Harry Hochheiser	
Needs of the Digital Native: Adolescents and Access to PHRs	234
Catherine A. Smith ; Fabienne C. Bourgeois ; Pam Charney ; Patricia F. Brennan	
Rapid Development and Implementation of Critical Information Systems for Ebola Treatment Centres in West Africa: Lessons for Future Events	237
Jonathan M. Teich ; Hamish S. Fraser ; Eric Perakslis ; Shefali Oza ; Darius Jazayeri	
State of the Art of Clinical Narrative Report De-Identification and Its Future	240
Peter Szolovits ; John Aberdeen ; Stephane Meystre ; Mehmet Kayalp	
Informatics Research and Innovation in a Commercial Electronic Health Record: The Experience of Three Organizations Using Epic	243
Adam Wright ; David W. Bates ; Eric Kirkendall ; David A. Dorr ; Peter Devault	

INTERACTIVE PANEL

Challenges, Successes, and Future Directions of Consumer Health IT Evaluation	246
Uba Backonja ; Rupa Valdez ; William T. Riley ; Katie A. Siek ; Teresa Zayas-Cabán ; Kenneth W. Goodman	
Patient Portals: Best Practices and New Directions for Development and Investigation	249
Patricia C. Dykes ; Sarah Collins ; Anuj K. Dalal ; Ryan Greysen ; Cindy Dwyer	
The Informatics Sculptor & the Clinical Annotator: Effective Annotation Strategies	252
Nancy Gentry ; Elizabeth Hanchrow ; Glenn T. Gobbel ; Brett R South ; Steven M. Bradley ; Ruth Reeves	
Open Architecture for Pathways/Care Coordination	255
Robert A. Greenes ; S. Demuth ; M. Burton ; D. Sottara ; Keith Toussaint	
(Authoring) Rules, (Distributed Query) Tools, and Drools: the Challenging New World of High Throughput Phenotyping	258
Jennifer A. Pacheco ; Abel N. Kho ; Jyotishman Pathak ; Joshua C. Denny ; Shawn N. Murphy	
What Could Go Wrong?: Migrating from One EHR to Another	261
Richard Schreiber ; Ross Koppel ; Catherine K. Craven ; John D. McGreevey	
Patient Privacy and “De-Identified” Health Records in the Genomic Era	264
Jessica D. Tenenbaum ; Greg Biggers ; Bradley Malin ; Lucila Ohno-Machado ; Leslie Wolf	
Building the Computational Workforce for Precision Medicine	267
Jessica D. Tenenbaum ; Joshua C. Denny ; David Flannery ; Douglas B. Fridsma ; Marc Williams	
Opportunities for Social Media within Consumer Health Informatics	270
Rupa Valdez ; Sahiti Myneni ; Andrea L. Hartzler ; Lena Mamykina ; Nathan Cobb ; Laura Barnes	
Health Informatics Graduate Program Accreditation: CAHIIM Process and Standards Update	273
Judith J. Warren ; Stephen B. Johnson ; Suzanne A. Boren ; Stuart Speedie ; Guenter Tusch	
Career Opportunities for the Many Paths to Informatics	275
Laura K. Wiley ; Tiffany Kelley ; Virginia Lorenzi ; Vishnu Mohan ; Jessica D. Tenenbaum ; Julie W. Doberne	

PANEL

An Interactive User Interface for Drug Labeling to Improve Readability and Decision-Making	278
Hamed Abeddash ; Jon Duke	
Content and Usability Evaluation of Patient Oriented Drug-Drug Interaction Websites	287
Terrence J. Adam ; Joe Vang	

OpenHealth Platform for Interactive Contextualization of Population Health Open Data	297
<i>Jonas S. Almeida ; Janos Hajagos ; Ivan Crnosija ; Tahsin Kure ; Mary Saltz ; Joel Saltz</i>	
An Associative Memory Model for Integration of Fragmented Research Data and Identification of Treatment Correlations in Breast Cancer Care	306
<i>Ashis G. Banerjee ; Mridul Khan ; John H. Higgins ; Annarita Gianni ; Amar Das</i>	
The Nurse Watch: Design and Evaluation of a Smart Watch Application with Vital Sign Monitoring and Checklist Reminders	314
<i>Magnus Bang ; Katarina Solnevik ; Henrik Eriksson</i>	
Utilizing Multidimensional Computer Adaptive Testing to Mitigate Burden With Patient Reported Outcomes	320
<i>Michael Bass ; Scott B. Morris ; Richard Neapolitan</i>	
A Low-Cost Method for Multiple Disease Prediction	329
<i>Mohsen Bayati ; Sonia Bhaskar ; Andrea Montanari</i>	
Physician Handoffs: Opportunities and Limitations for Supportive Technologies	339
<i>Katherine Blondon ; Rolf Wipfli ; Mathieu R. Nendaz ; Christian Lovis</i>	
Model Checking for Verification of Interactive Health IT Systems	349
<i>Keith A. Butler ; Eric Mercer ; Ali Bahrami ; Cui Tao</i>	
Employing Complex Polyhierarchical Ontologies and Promoting Interoperability of I2b2 Data Systems	359
<i>James R. Campbell ; Walter S. Campbell ; Hubert Hickman ; Jay Pedersen ; James C. McClay</i>	
Implementation and Evaluation of a Tele-education System for the Diagnosis of Ophthalmic Disease by International Trainees	366
<i>John P. Campbell ; Ryan Swan ; Karyn Jonas ; Susan Ostmo ; Camila Ventura ; Maria-Ana Martinez-Castellanos ; Rachelle G. Anzures ; Michael F. Chiang ; R. V. P. Chan</i>	
Representation of Drug Use in Biomedical Standards, Clinical Text, and Research Measures	376
<i>Elizabeth W. Carter ; Indra N. Sarkar ; Genevieve B. Melton ; Elizabeth S. Chen</i>	
Similarity-Based Recommendation of New Concepts to a Terminology	386
<i>Praveen Chandar ; Anil Yaman ; Julia Hoxha ; Zhe He ; Chunhua Weng</i>	
Mining and Visualizing Family History Associations in the Electronic Health Record: A Case Study for Pediatric Asthma	396
<i>Elizabeth S. Chen ; Genevieve B. Melton ; Richard C. Wasserman ; Paul T. Rosenau ; Diantha B. Howard ; Indra N. Sarkar</i>	
Cloud-based Predictive Modeling System and its Application to Asthma Readmission Prediction	406
<i>Robert Chen ; Hang Su ; Yi Zhen ; Mohammed Khalilia ; Daniel Hirsch ; Michael Thompson ; Tod Davis ; Yue Peng ; Sizhe Lin ; Javier Tejedor-Sojo ; Elizabeth Searles ; Jimeng Sun</i>	
Inferring Clinical Workflow Efficiency via Electronic Medical Record Utilization	416
<i>You Chen ; Wei Xie ; Carl A. Gunter ; David Liebovitz ; Sanjay Mehrotra ; He Zhang ; Bradley Malin</i>	
Modeling a Nursing Guideline with Standard Terminology and Unified Modeling Language for a Nursing Decision Support System: A Case Study	426
<i>Jeeyae Choi ; Kay Jansen ; Amy Coenen</i>	
LORD: A Phenotype-genotype Semantically Integrated Biomedical Data Tool to Support Rare Disease Diagnosis Coding in Health Information Systems	434
<i>Remy Choquet ; Meriem Maaroufi ; Yannick Fonjallaz ; Albane De Carrara ; Pierre-Yves Vandenbussche ; Ferdinand Dhombres ; Paul Landais</i>	
Characterization of the Context of Drug Concepts in Research Protocols: An Empiric Study to Guide Ontology Development	441
<i>James J. Cimino ; Vojtech Huser</i>	
Improving EHR Capabilities to Facilitate Stage 3 Meaningful Use Care Coordination Criteria	448
<i>Dori Cross ; Genna R. Cohen ; Paige Nong ; Anya-Victoria Day ; Danielle Vibbert ; Ramya Naraharisetti ; Julia Adler-Milstein</i>	
COHeRE: Cross-Ontology Hierarchical Relation Examination for Ontology Quality Assurance	456
<i>Licong Cui</i>	
Using Workflow Modeling to Identify Areas to Improve Genetic Test Processes in the University of Maryland Translational Pharmacogenomics Project	466
<i>Elizabeth M. Cutting ; Casey L. Overby ; Meghan Banchero ; Toni Pollin ; Mark Kelemen ; Alan R. Shuldiner ; Amber Beitelhees</i>	
A Hybrid Manifold Learning Algorithm for the Diagnosis and Prognostication of Alzheimer's Disease	475
<i>Peng Dai ; Femida Gwadry-Sridhar ; Michael Bauer ; Michael Borrie</i>	
Extracting Characteristics of the Study Subjects from Full-Text Articles	484
<i>Dina Demner-Fushman ; James G. Mork</i>	
PHAST: A Collaborative Machine Translation and Post-editing Tool for Public Health	492
<i>Kristin N. Dev ; Anne M. Turner ; Loma Desai ; Nathalie Martin ; Adrian A. Laurenzi, Katrin Kirchhoff</i>	
Semi-supervised Learning for Phenotyping Tasks	502
<i>Dmitriy Dligach ; Timothy A. Miller ; Guergana Savova</i>	
POETenceph - Automatic Identification of Clinical Notes Indicating Encephalopathy Using a Realist Ontology	512
<i>Kristina M. Doing-Harris ; Charlene Weir ; Sean Igo ; Jianlin Shi ; Yijun Shao ; John F. Hurdle</i>	
Strategies for Managing Mobile Devices for Use by Hospitalized Inpatients	522
<i>Patricia C. Dykes ; Dianna L. Stade ; Anuj K. Dalal ; Sarah Collins ; Marsha Clements ; Frank Y. Chang ; Anne Fladger ; George Getty ; John R. Hanna ; Ravalil Kandala ; Lisa Lehmann ; Kathleen Leone ; Anthony F. Massaro ; Eli Mlavet ; Kelly McNally ; Sucheta Ravindran ; Kumiko Schnock ; David W. Bates</i>	
Effects of HIE/HIT Implementation and Coordination of Care on Health Outcomes and Quality	532
<i>Onyinyechi U. Enyia Daniel ; Edward Mensah</i>	
A Flexible Simulation Architecture for Pandemic Influenza Simulation	533
<i>Henrik Eriksson ; Toomas Timpka ; Joakim Ekberg ; Armin Spreco ; Örjan Dahlström ; Magnus Strömgren ; Einar Holm</i>	
Designing Asynchronous Communication Tools for Optimization of Patient-Clinician Coordination	543
<i>Jordan Eschler ; Leslie S. Liu ; Lisa Vizer ; Jennifer McClure ; Paula Lozano ; Wanda Pratt ; James Ralston</i>	

Reviewing 741 Patients Records in Two Hours with FASTVISU	553
<i>Jean-Baptiste Escudie ; Anne-Sophie Jannot ; Eric Zapletal ; Sarah Cohen ; Georgia Malamut ; Anita Burgun ; Bastien Rance</i>	
Supporting Clinical Cognition: A Human-Centered Approach to a Novel ICU Information Visualization Dashboard	560
<i>Anthony Faiola ; Preethi Srinivas ; Jon Duke</i>	
Automated Mutual Exclusion Rules Discovery for Structured Observational Codes in Echocardiography Reporting	570
<i>Thomas A. Forsberg ; Merlijn Sevenster ; Szymon Bieganski ; Puran Bhagat ; Melvin Kanasseril ; Yugang Jia ; Kirk Spencer</i>	
Patient Engagement in Cancer Survivorship Care through mHealth: A Consumer-centered Review of Existing Mobile Applications	580
<i>Yimin Geng ; Sahiti Myneni</i>	
Using Big Data to Evaluate the Association between Periodontal Disease and Rheumatoid Arthritis	589
<i>Michael A. Grasso ; Angela C. Comer ; Dana Direnzo ; Yelena Yesha ; Naphtali Rishe</i>	
Simulation-based Evaluation of the Generalizability Index for Study Traits	594
<i>Zhe He ; Praveen Chandar ; Patrick B. Ryan ; Chunhua Weng</i>	
JUFIT: A Configurable Rule Engine for Filtering and Generating New Multilingual UMLS Terms	604
<i>Johannes Hellrich ; Stefan Schulz ; Sven Buechel ; Udo Hahn</i>	
Mining Twitter as a First Step toward Assessing the Adequacy of Gender Identification Terms on Intake Forms	611
<i>Amanda Hicks ; William Hogan ; Michael W. Rutherford ; Bradley Malin ; Mengjun Xie ; Christiane Fellbaum ; Zhijun Yin ; Daniel Fabbri ; Josh Hanne ; Jiang Bian</i>	
mobile Digital Access to a Web-enhanced Network (mDAWN): Assessing the Feasibility of Mobile Health Tools for Self-Management of Type-2 Diabetes	621
<i>Kendall Ho ; Lana Newton ; Allison Boothe ; Helen Novak Lauscher</i>	
Uncertainty, Case Complexity and the Content of Verbal Handoffs at the Emergency Department	630
<i>Jan Horsky ; Edward H. Suh ; Osman R Sayan ; Vimla L. Patel</i>	
Surgical Duration Estimation via Data Mining and Predictive Modeling: A Case Study	640
<i>Narges Hosseini ; Mustafa Sir ; Christopher Jankowski ; Kalyan Pasupathy</i>	
Medical Inpatient Journey Modeling and Clustering: A Bayesian Hidden Markov Model Based Approach	649
<i>Zhengxing Huang ; Wei Dong ; Fei Wang ; Huilong Duan</i>	
Quality Assurance of Cancer Study Common Data Elements Using A Post-Coordination Approach	659
<i>Guoqian Jiang ; Harold R. Solbrig ; Eric Prud'Hommeaux ; Cui Tao ; Chunhua Weng ; Christopher Chute</i>	
In Search of Social Translucence: An Audit Log Analysis of Handoff Documentation Views and Update	669
<i>Silis Y. Jiang ; R. Stanley Hum ; David Vawdrey ; Lena Mamykina</i>	
Causal Phenotype Discovery via Deep Networks	677
<i>David Kale ; Zhengping Che ; Mohammad Taha Bahadori ; Wenzhe Li ; Yan Liu ; Randall Wetzel</i>	
Initial Readability Assessment of Clinical Trial Eligibility Criteria	687
<i>Tian Kang ; Noemie Elhadad ; Chunhua Weng</i>	

VOLUME 2

Automatic Assignment of Non-Leaf MeSH Terms to Biomedical Articles	697
<i>Ramakanth Kavuluru ; Anthony Rios</i>	
Challenges and Insights in Using HIPAA Privacy Rule for Clinical Text Annotation	707
<i>Mehmet Kayaalp ; Allen Browne ; Pamela Sagan ; Tyne McGee ; Clement J. McDonald</i>	
Clinical Predictive Modeling Development and Deployment through FHIR Web Services	717
<i>Mohammed Khalilia ; Myung Choi ; Amelia Henderson ; Sneha Iyengar ; Mark L. Braunstein ; Jimeng Sun</i>	
An Ensemble Method for Spelling Correction in Consumer Health Questions	727
<i>Halil Kilicoglu ; Marcelo Fiszman ; Kirk Roberts ; Dina Demner-Fushman</i>	
A Study of Concept Extraction Across Different Types of Clinical Notes	737
<i>Youngjun Kim ; Ellen Riloff ; John F. Hurdle</i>	
Supporting Multi-sourced Medication Information in i2b2	747
<i>Jeffrey G. Klann ; Pascal B. Pfiffner ; Marc Natter ; Emily Conner ; Paul Blazejewski ; Shawn N. Murphy ; Kenneth Mandl</i>	
Long-Term Engagement with Health-Management Technology: A Dynamic Process in Diabetes	756
<i>Predrag Klasnja ; Logan Kendall ; Wanda Pratt ; Katherine Blondon</i>	
Evolving Patient Compliance Trends: Integrating Clinical, Insurance, and Extrapolated Socioeconomic Data	766
<i>Joe Klobusicky ; Arun Aryasomayajula ; Nicholas Marko</i>	
Automated Reconciliation of Radiology Reports and Discharge Summaries	775
<i>Bevan Koopman ; Guido Zuccon ; Amol Wagholarikar ; Kevin Chu ; John O'Dwyer ; Anthony Nguyen ; Gerben Keijzers</i>	
Interpretable Probabilistic Latent Variable Models for Automatic Annotation of Clinical Text	785
<i>Alexander Kotov ; Mehedi Hasan ; April Carcone ; Ming Dong ; Sylvie Naar-King ; Kathryn Brogan Hartlieb</i>	
Representation of Functional Status Concepts from Clinical Documents and Social Media Sources by Standard Terminologies	795
<i>Jinqiu Kuang ; April F. Mohanty ; V. H. Rashmi ; Charlene R. Weir ; Bruce E. Bray ; Qing Zeng-Treitler</i>	
Reproducing a Prospective Clinical Study as a Retrospective Study in MIMIC-II	804
<i>Fabricio S. Kury ; Vojtech Huser ; James J. Cimino</i>	
Computer-Supported Feedback Message Tailoring for Healthcare Providers in Malawi: Proof-of-Concept	814
<i>Zach Landis-Lewis ; Gerald P. Douglas ; Harry Hochheiser ; Matthew Kam ; Oliver Gadabu ; Mwatha Bwanali ; Rebecca Jacobson</i>	

Contrasting Association Results Between Existing PheWAS Phenotype Definition Methods and Five Validated Electronic Phenotypes	824
Joseph B. Leader ; Sarah Pendergrass ; Anurag Verma ; David J. Carey ; Dustin N. Hartzel ; Marylyn Ritchie ; Lester Kirchner	
Building Structured Personal Health Records from Photographs of Printed Medical Records	833
Xiang Li ; Gang Hu ; Xiaofei Teng ; Guotong Xie	
Design, Development, and Initial Evaluation of a Terminology for Clinical Decision Support and Electronic Clinical Quality Measurement	843
Yanhua Lin ; Catherine J. Staes ; David E. Shields ; Vijayabhaskar R. Kandula ; Brandon M. Welch ; Kensaku Kawamoto	
Analysis of Empty Responses from Electronic Resources in Infobutton Managers	852
Jie Long ; Nathan C. Hulse ; Cui Tao	
A Novel Multiple Choice Question Generation Strategy: Alternative Uses for Controlled Vocabulary Thesauri in Biomedical-Sciences Education	861
Marcelo A. Lopetegui ; Barbara A. Lara ; Po-Yin Yen ; Ümit V. Çatalyürek ; Philip Payne	
Veterans Health Administration Experience with Data Quality Surveillance of Continuity of Care Documents: Interoperability Challenges for eHealth Exchange Participants	870
Jay Lyle ; Omar Bouhaddou ; Nathan Botts ; Marie Swall ; Eric Pan ; Theresa Cullen ; Margaret Donahue ; Nelson Hsing	
Towards Data Integration Automation for the French Rare Disease Registry	880
Meriem Maaroufi ; Remy Choquet ; Paul Landais ; Marie-Christine Jaulet	
Diagnostic Characteristics of Patient Self-Assessment of Preoperative Cardiac Risk for Non-Cardiac Surgery - Foundations for Patient Driven Decision Support	886
Sharad Manaktala ; Terrence J. Adam ; Todd Rockwood	
Expanding a First-Order Logic Mitigation Framework to Handle Multimorbid Patient Preferences	895
Martin Michalowski ; Szymon Wilk ; Daniela Rosu ; Mounira Kezadri ; Wojtek Michalowski ; Marc Carrier	
Design of a Community-Engaged Health Informatics Platform with an Architecture of Participation	905
Mari Millery ; Wilson Ramos ; Chueh Lien ; Alejandra Aguirre ; Rita Kukafka	
Knowledge Extraction from MEDLINE by Combining Clustering with Natural Language Processing	915
Jose Antonio Miñarro-Gimenez ; Markus Kreuzthaler ; Stefan Schulz	
Intelligent Simulation Model To Facilitate EHR Training	925
Vishnu Mohan ; Gretchen Scholl ; Jeffrey A. Gold	
Developing the Pathologists' Monthly Assignment Schedule: A Case Study at the Division of Anatomical Pathology of The Ottawa Hospital	933
Amine Montazeri ; Jonathan Patrick ; Wojtek Michalowski ; Diponkar Banerjee	
Reading and Writing: Qualitative Analysis of Pharmacists' Use of the EHR when Preparing for Team Rounds	943
Scott D. Nelson ; Joanne Lafleur ; Guilherme Del Fiol ; Scott Evans ; Charlene Weir	
Assessing the Utility of Automatic Cancer Registry Notifications Data Extraction from Free-Text Pathology Reports	953
Anthony Nguyen ; Julie Moore ; John O'Dwyer ; Shoni Colquist	
Nutrition Informatics Applications in Clinical Practice: A Systematic Review	963
Jennifer C. North ; Kristine C. Jordan ; Julie Metos ; John F. Hurdle	
Drug-drug Interaction Discovery Using Abstraction Networks for "National Drug File – Reference Terminology" Chemical Ingredients	973
Christopher Ochs ; Ling Zheng ; Huanying Gu ; Yehoshua Perl ; James Geller ; Joan Kapusnik-Uner ; Aleksandr Zakharchenko	
Machine Learning Approaches for Detecting Diabetic Retinopathy from Clinical and Public Health Records	983
Omolola Ogunyemi ; Dulcie Kermah	
Understanding Patients' Health and Technology Attitudes for Tailoring Self-management Interventions	991
Katie O'Leary ; Lisa Vizer ; Jordan Eschler ; James Ralston ; Wanda Pratt	
Understanding the Acceptance Factors of an Hospital Information System: Evidence from a French University Hospital	1001
Roxana Ologeanu Taddei ; David Morquin ; Hugues Domingo ; R. Bourret	
User Frustration in Hit Interfaces: Exploring Past HCI Research for a Better Understanding of Clinicians' Experiences.	1008
Gloria Opoku-Boateng	
Identifying the Clinical Laboratory Tests from Unspecified "Other Lab Test" Data for Secondary Use	1018
Xuequn Pan ; James J. Cimino	
Homophily of Vocabulary Usage: Beneficial Effects of Vocabulary Similarity on Online Health Communities Participation	1024
Albert Park ; Andrea L. Hartzler ; Jina Huh ; David W. McDonald ; Wanda Pratt	
Approaches to Supporting the Analysis of Historical Medication Datasets with RxNorm	1034
Lee Peters ; Olivier Bodenreider	
Just One More Patient: Optimizing EMR Documentation in Ambulatory Care	1042
Mark Pierce ; Tammy Toscos	
Casting a Wider Net: Data Driven Discovery of Proxies for Target Diagnoses	1047
Dusan Ramljak ; Adam Davey ; Alexey Uversky ; Shoumik Roychoudhury ; Zoran Obradovic	
Impact of Robotic Surgery on Decision Making: Perspectives of Surgical Teams	1057
Rebecca Randell ; Natasha Alvarado ; Stephanie Honey ; Joanne Greenhalgh ; Peter Gardner ; Arron Gill ; David Jayne ; Alwyn Kotze ; Alan Pearman ; Dawn Dowding	
Amia Members' "Vital Signs": What the Hit Implementation Listserv Says About Goals for Amia and for Medical Informatics	1067
Kourosh Ravvaz ; Craig Kuziemsky ; Ross Koppel ; Bonnie Kaplan ; Samantha Adams ; Martha B. Adams	

Public Perspectives of Mobile Phones' Effects on Healthcare Quality and Medical Data Security and Privacy: A 2-Year Nationwide Survey	1076
Joshua E. Richardson ; Jessica S. Ancker	
Automatic Extraction and Post-coordination of Spatial Relations in Consumer Language	1083
Kirk Roberts ; Larita M. Rodriguez ; Sonya E. Shooshan ; Dina Demner-Fushman	
Automatic Classification of Structured Product Labels for Pregnancy Risk Drug Categories, a Machine Learning Approach	1093
Larita M. Rodriguez ; Dina Demner-Fushman	
Validating Free-text Order Entry for a Note-centric EHR	1103
Adam Rule ; Steven R. Rick ; Michael Chiu ; Phillip Rios ; Shazia Ashfaq ; Alan Calvitti ; Wesley S. Chan ; Nadir Weibel ; Zia Agha	
Improving Continuity of Care via the Discharge Summary	1111
Farrant Sakaguchi ; Leslie A. Lenert	
Determinants of Consumer eHealth Information Seeking Behavior	1121
Ryan Sandefur ; Bonnie L. Westra ; Saif Khairat ; David Pieczkiewicz ; Stuart Speedie	
Smartphone Data in Rheumatoid Arthritis - What Do Rheumatologists Want?	1130
Phillip R. Say ; Daniel Stein ; Jessica S. Ancker ; Cheng-Kang Hsieh ; J. P. Pollak ; Deborah Estrin	
Vessel Delineation in Retinal Images using Leung-Malik filters and Two Levels Hierarchical Learning	1140
Ehsan Shahrian Varnousfaderani ; Siamak Yousefi ; Christopher Bowd ; Akram Belghith ; Michael Goldbaum	
Application of a Consumer Health Information Needs Taxonomy to Questions in Maternal-Fetal Care	1148
Jared A. Shenson ; Ebene Ingram ; Nadja Colon ; Gretchen P. Jackson	
Adaptation of a Published Risk Model to Point-of-care Clinical Decision Support Tailored to Local Workflow	1157
Jeffrey L. Sobel ; Craig C. Baker ; David Levy ; Carol Cain	
Data-driven Temporal Prediction of Surgical Site Infection	1164
Cristina Soguero-Ruiz ; Fei Wang ; Robert Jenssen ; Knut M. Augestad ; José Luis Rojo-álvarez ; Inmaculada Mora-Jiménez ; Rolv-Ole Lindsetmo ; Stein Olav Skrøvseth	
Ginkgo and Warfarin Interaction in a Large Veterans Administration Population	1174
Gregory J. Stoddard ; Melissa Archer ; Laura Shane-McWhorter ; Bruce E. Bray ; Doug Redd ; Joshua Proulx ; Qing T. Zeng-Treitler	
Recognizing Disjoint Clinical Concepts in Clinical Text Using Machine Learning-based Methods	1184
Buzhou Tang ; Qingcai Chen ; Xiaolong Wang ; Yonghui Wu ; Yaoyun Zhang ; Min Jiang ; Jingqi Wang ; Hua Xu	
Challenges and Solutions in Optimizing Execution Performance of a Clinical Decision Support-Based Quality Measurement (CDS-QM) Framework	1194
Tyler J. Tippetts ; Phillip B. Warner ; Polina Kukhareva ; David E. Shields ; Catherine J. Staes ; Kensaku Kawamoto	
Scaling Out and Evaluation of OBSecAn, an Automated Section Annotator for Semi-Structured Clinical Documents, on a Large VA Clinical Corpus	1204
Le-Thuy T. Tran ; Guy Divita ; Andrew M. Redd ; Marjorie E. Carter ; Matthew Samore ; Adi V. Gundlapalli	
Completing Death Certificates from an EMR: Analysis of a Novel Public-Private Partnership	1214
Jacob S. Tripp ; Jeffrey Duncan ; Leisa Finch ; Stanley M. Huff	
A Method to Compare ICF and SNOMED CT for Coverage of U.S. Social Security Administration's Disability Listing Criteria	1224
Samson Tu ; Csongor Nyulas ; Tania Tudorache ; Mark A. Musen	
Use of Patient Portals for Personal Health Information Management: The Older Adult Perspective	1234
Anne M. Turner ; Katie Osterhage ; Andrea L. Hartzler ; Jonathan Joe ; Lorelei Lin ; Natasha Kanagat ; George Demiris	
The State and Trends of Barcode, RFID, Biometric and Pharmacy Automation Technologies in US Hospitals	1242
Raymonde Charles Y. Uy ; Fabricio S. Kury ; Paul Fontelo	
Towards a Generalizable Time Expression Model for Temporal Reasoning in Clinical Notes	1252
Sumithra Velupillai ; Danielle Mowery ; Samir E. Abdelrahman ; Lee Christensen ; Wendy Chapman	
Organizational Uses of Health Information Exchange to Change Cost and Utilization Outcomes: A Typology from a Multi-Site Qualitative Analysis	1260
Joshua R. Vest ; Erika L. Abramson	
A Graph Based Methodology for Temporal Signature Identification from EHR	1269
Fei Wang ; Chuanren Liu ; Yajuan Wang ; Jianying Hu ; Guoqiang Yu	
DenguePredict: An Integrated Drug Repositioning Approach towards Drug Discovery for Dengue	1279
Quanqiu Wang ; Rong Xu	
Mortality Prediction in ICUs Using A Novel Time-Slicing Cox Regression Method	1289
Yuan Wang ; Wenlin Chen ; Kevin M. Heard ; Marin H. Kollef ; Thomas C. Bailey ; Zhicheng Cui ; Yujie He ; Chenyang Lu ; Yixin Chen	
Finding Cervical Cancer Symptoms in Swedish Clinical Text using a Machine Learning Approach and NegEx	1296
Rebecka Weegar ; Maria Kvist ; Karin Sundström ; Soren Brunak ; Hercules K. Dalianis	
Machine Learning for Treatment Assignment: Improving Individualized Risk Attribution	1306
Jeremy Weiss ; Finn Kuusisto ; Kendrick Boyd ; Jie Liu ; David Page	
Collecting Family Health History using an Online Social Network: A Nationwide Survey Among Potential Users	1316
Brandon M. Welch ; Nathaniel O'Connell ; Suparna Qanungo ; Chantia Halbert-Hughes ; Joshua Schiffman	
A Study of Neural Word Embeddings for Named Entity Recognition in Clinical Text	1326
Yonghui Wu ; Jun Xu ; Min Jiang ; Yaoyun Zhang ; Hua Xu	
Citation Sentiment Analysis in Clinical Trial Papers	1334
Jun Xu ; Yaoyun Zhang ; Yonghui Wu ; Jingqi Wang ; Xiao Dong ; Hua Xu	
tcTKB: An Integrated Cardiovascular Toxicity Knowledge Base for Targeted Cancer Drugs	1342
Rong Xu ; Quanqiu Wang	

Barriers and Facilitators to Patient-Provider Communication When Discussing Breast Cancer Risk to Aid in the Development of Decision Support Tools	1352
<i>Haeseung Yi ; Tong Xiao ; Parijatham Thomas ; Alejandra Aguirre ; Cindy Smalletz ; Jill Dimond ; Joseph Finkelstein ; Katherine Infante ; Meghna S. Trivedi ; Raven David ; Jennifer Vargas ; Katherine Crew ; Rita Kukafka</i>	
Evaluating Term Coverage of Herbal and Dietary Supplements in Electronic Health Records	1361
<i>Rui Zhang ; Nivedha Manohar ; Elliot G. Arsoniadis ; Yan Wang ; Terrence J. Adam ; Serguei V. Pakhomov ; Genevieve B. Melton</i>	
Handling Temporality of Clinical Events for Drug Safety Surveillance	1371
<i>Jing Zhao ; Aron Henriksson ; Maria Kvist ; Lars Asker ; Henrik Boström</i>	
Using a Clinical Knowledge Base to Assess Comorbidity Interrelatedness Among Patients with Multiple Chronic Conditions.....	1381
<i>Donna M. Zulman ; Susana B. Martins ; Yan Liu ; Samson Tu ; Brian B. Hoffman ; Steven M. Asch ; Mary K. Goldstein</i>	

POSTER

A Survey on E-prescribing: Awareness, Satisfaction, Benefits and Barriers in Florida.....	1390
<i>Pouyan Esmaeil Zadeh ; Monica C. Tremblay ; Gloria J. Deckard</i>	
Design, Development, and Initial Application of a Systematic, Semi-Automated Predictive Analytics Framework for Health Care	1391
<i>Samir E. Abdelrahman ; Kensaku Kawamoto</i>	
Building of Community Health Care Data Bank (EHR) Using Positional and Temporal Tracking and Collecting DATA	1392
<i>Masakazu Aihara ; Sizukiyo Ishikawa ; Masanobu Okayama ; Yasutomi Kinoshita ; Masayuki Honda ; Yoiti Seiki ; Yoshikazu Nakamura ; Eiji Kajii</i>	
Knowledge Base Acquisition For Rare Concepts Using Manual Bootstrapping	1393
<i>Patrick R. Alba ; Scott L. Duvall ; Joanne Lafleur ; Adam P. Bress ; Olga V. Patterson</i>	
Personalized Medicine Beyond Genetics: Using Personalized Model-based Forecasting to Help Type 2 Diabetics Understand and Predict Their Post-meal Glucose	1394
<i>David Albers ; Matthew Levine ; Bruce Gluckman ; George Hripcak ; Lena Mamkyina</i>	
Increase in Prescriber Error Rates Following Implementation of Computerized Physician Order Entry	1395
<i>Gretchen B. Alexander ; Gilbert M. Ramos</i>	
Identifying Home Care Clinical Practices Most Associated with Hospital Readmissions and Non-Admitted ER Visit Rates: Secondary Data Analysis	1396
<i>Dari A. Alhuwail ; Gunes Koru</i>	
Decision Analysis for Oropharyngeal Cancer in Radiotherapy.....	1397
<i>Ahmad K. Aljadaan ; John H. Gennari ; Mark H. Phillips ; Wade P. Smith</i>	
Medications and Events Most Commonly Discussed in Facebook and Twitter	1398
<i>Laurie Anderson ; Heidi G. Bell ; Greg Powell ; Lorrie A. Schifano ; Hoa V. Le ; Harold Rodriguez</i>	
Enhancing Use of the Problem List in the Inpatient Setting	1399
<i>Charles H. Andrus ; Kevin O'Bryan ; Phillip Asaro ; S. P. Hmiel ; Feliciano B. Yu</i>	
Feasibility and Acceptability of an Online Maternity Education Platform	1400
<i>Adriana Arcia ; Deren Bader ; Eva R. Warner</i>	
A Smartphone-based Gait Assessment System for the Elderly	1401
<i>Noaya Arisaka ; Kosuke Mizuno ; Yoshihiko Shiba ; Noritaka Mamorita ; Harukazu Tsuruta</i>	
Analysis of Computerized Clinical Reminder Activity and Usability Issues	1402
<i>Shazia Ashfaq ; Steven R. Rick ; Megan Difley ; Sara Mortensen ; Kellie Avery ; Nadir Weibel ; Braj Pandey ; Kristin Bell ; Charlene Weir ; Harry Hochheiser ; Yunan Chen ; Jing Zhang ; Kai Zheng ; Richard Street ; Mark Gabuzda ; Neil Farber ; Lin Liu ; Alan Calvitti ; Zia Agha</i>	
Evaluation of a Self-Triage Decision Aid System in Pregnancy-Induced Hypertension and Diabetes Mellitus: Preliminary Results of a Randomized Control Trial.....	1403
<i>Azam Aslani ; Fatemeh Tara ; Leila Galichi ; Sina Madani ; Ameen Abu-Hanna ; Saeid Eslami</i>	
Automating Identification of OEF/OIF Veterans Diagnosed with ALS	1404
<i>Jennifer M. Aucoin ; Shon G. Michael ; Amy C. Justice ; Perry Miller ; Cynthia Brandt ; Huned Patwa</i>	
Using Indirect and Direct Methods Enhances Online Health Community Research.....	1405
<i>Uba Backonja ; Albert Park ; Andrea L. Hartzler ; Megan N. Taylor ; Troy Griffiths ; Wanda Pratt</i>	
Learning Useful Abstractions from the Web	1406
<i>Abhishek Bafna ; Jenna Wiens</i>	
Data Error Transparency in Health Information Exchange.....	1407
<i>Gina B. Baker ; Shan He ; Darren K. Mann ; Pallavi Ranade-Kharkar ; Sidney N. Thornton</i>	
Patient-Centered Postoperative Wound Surveillance Using Smartphone Digital Photographs	1408
<i>Kate Baker ; Andrea Mahnke ; Sara Fernandes-Taylor ; Jason Wiseman ; K. Craig Kent</i>	
Integrating Conceptual Models to Inform the Design of a Family Health Information Management System for Hispanic Dementia Caregivers.....	1409
<i>Suzanne Bakken ; Maribel Granja ; Niurka M. Suero-Tejeda ; Samantha Stonbraker ; Robert J. Lucero</i>	
Analysis of Workflows: How Workflows Interact with CPOE to Contribute to Errors.....	1410
<i>Eleanor J. Barone ; Anne Miller</i>	
Visualization of Clinical Decision Support Failures	1411
<i>Mujeeb Basit ; Adam Wright</i>	
A Faceted-Search Mobile App for Matching Cancer Patients to Targeted Therapy Clinical Trials	1412
<i>Thomas P. Bechtold ; Elly J. Cohen ; Susan L. Colen ; Laura J. Esserman</i>	

Social Network Analysis: Data Collection Challenges and Solutions	1413
<i>Marge M. Benham-Hutchins ; Barbara Brewer</i>	
Using the Adverse Event Reporting System: Can Analysis be Streamlined by Text Processing?	1414
<i>Andrea Benin ; Samah J. Fodeh ; Michele Koss ; Kyle Lee ; Perry Miller ; Cynthia Brandt</i>	
Demographic Factors Associated with Differences between New York Inpatient Medicare Charges and Payments for (DRG 065) Stroke	1415
<i>Barbara A. Berkovich ; Elizabeth S. Stearman ; Craig W. Johnson</i>	
GeneLab: NASA's Open Access, Collaborative Platform for Systems Biology and Space Medicine	1416
<i>Daniel C. Berrios ; Terri Thompson ; Homer Fogle ; Jon Rask ; Joseph Coughlan</i>	
Adoption of Electronic Health Records in U.S. Nursing Homes	1417
<i>Ragnhildur I. Bjarnadottir ; Carolyn T. Herzog ; Jasmine Travers ; Patricia W. Stone</i>	
An Ontology-Driven Patient History Questionnaire System	1418
<i>Jonathan P. Bona ; Gunther Kohn ; Alan Ruttenberg</i>	
Development and Implementation of a Floor Admit Reevaluation Alert (FARA) in a Large Academic Emergency Department	1419
<i>James Booth ; Eta S. Berner ; Jorge A. Alsip</i>	

VOLUME 3

Integrating Electronic Health Record Competencies into Undergraduate Health Informatics Curricula: A Preliminary Qualitative Study	1420
<i>Elizabeth M. Borycki ; Janessa Griffith ; Andre W. Kushniruk</i>	
Home-care Scheduling, Supervision and Security (HC-SSS): A Status Report	1421
<i>Maria Botsisvaly ; Vasileios Pierros ; Michael Marinis ; Aris Tzavaras ; Basile P. Spyropoulos</i>	
Reducing Healthcare Costs through Medical Recommendations	1422
<i>Lina Bouayad ; Balaji Padmanabhan ; Kaushal Chari</i>	
Variable Importance in Recursive Feature Selection with Random Forests for Mortality Prediction in ICU	1423
<i>Sabri Boughorbel ; Rashid Al-Ali</i>	
Developing Intermediary Medication Phenotypes via Metabolomics Biotechnology Using an Electronic Health Record-Linked Biobank	1424
<i>Matthew K. Breitenstein ; Richard M. Weinshilboum ; Jyotishman Pathak ; Liewei Wang</i>	
The Internet: A Source of Near Real Time Infectious Disease Information	1425
<i>Juliana J. Brixey ; Catherine P. Pepper ; Jacqueline Brixey</i>	
A Literature Review of Medication-Related Clinical Decision Support	1426
<i>Clare L. Brown ; Sarah P. Slight ; Andrew K. Husband ; Neil Watson ; David W. Bates</i>	
Developing an Ontology from HIV-associated Elements in Research	1427
<i>William Brown III ; Chunhua Weng ; David Vawdrey ; Alex Carballo-Díéguez ; Suzanne Bakken</i>	
Cohort Selection Tool for Efficient Exploration of Patient Data	1428
<i>Anca Bucur ; Jasper V. Leeuwen ; Njin-Zu Chen ; Brecht Claerhout ; Kristof De Schepper ; David Perez-Rey ; Sergio Paraiso-Medina ; Keyur Mehta</i>	
Musculoskeletal Flowsheet Data Modeling for Clinical Research	1429
<i>Matthew D. Byrne ; Steven G. Johnson ; Beverly Christie ; Jung I. Park ; Lisiane Pruinelli ; Suzan G. Sherman ; Bonnie L. Westra</i>	
Automated Searches for Personalized Evidence to Prevent Hospital Acquired Infection	1430
<i>Amos Cahan ; Sonya E. Shooshan ; Larita M. Rodriguez ; Dina Demner-Fushman</i>	
CDS, EHR and Pharmacogenomics to Estimate Warfarin Dosing	1431
<i>Pedro J. Carballo ; Joseph A. Sutton ; Padma Rao ; Kelly Wix ; Wayne T. Nicholson ; Cloann Schultz ; Carolyn R. Rohrer Vitek ; Robert Bleimeyer ; Lois Hines ; David Blair ; Mark A. Parkulo</i>	
A Graph Data Model Facilitates Analysis of Collaboration in an Emergency Department	1432
<i>Matthew B. Carson ; Stephanie Gravenor ; Young Ji Lee ; Denise Scholtens ; Conor Frailey ; Nicholas Soulakis</i>	
Survey of Mayo Clinic Trainees' Knowledge, Attitudes, and Opinions Regarding Clinical Informatics	1433
<i>Tomas Carvajal Carvajal ; Karl Poterack</i>	
A Comparison of Clinical Decision Support Interventions from Commercial and Internally Developed Electronic Health Records	1434
<i>Burcu Celik ; Pegah Eghbali Alamdar ; Karen Bavuso ; Eileen Yoshida ; Saverio M. Maviglia ; Thomas Wetter ; Roberto A. Rocha ; Charles Lagor</i>	
HealthAlert: A Real-Time Health Monitoring App for Apple's HealthKit	1435
<i>Basil Chabbalout ; Ryan J. Shaw</i>	
Influences, Barriers, and Motivations for Healthy Behaviors Among Pediatric Cancer Patients: A Focus Group Approach	1436
<i>Michelle M. Chau ; Elena J. Ladas ; Lena Mamykina</i>	
Predicting Clinical Laboratory Turnaround Time	1437
<i>Alex C. Cheng ; Marc Beller ; Joshua C. Denny</i>	
Predicting The Initial Lapses After Alcohol Detoxification Using mHealth	1438
<i>Ming-Yuan Chih</i>	
Identifying High Risk of Hospitalization Among Long-Term Care Patients Using Conditional Inference Tree	1439
<i>Si-Chi Chin</i>	
Privacy Concerns of Internet Users and Implications for Health Information Technology	1440
<i>Hwayoung Cho ; Rebecca Schnall</i>	

Appropriateness of Overrides of Age-specific Medication Alerts for Elderly Outpatients	1441
Insook Cho ; Diane Seger ; Sarah P. Slight ; Karen C. Nanji ; Patricia C. Dykes ; Olivia Dalleur ; Mary G. Amato ; David W. Bates	
System Architecture of CDC I-SMILE Recommendation Engine.....	1442
Edward Choi ; Jina J. Deruz ; Sizhe Lin ; Aashu B. Singh ; Hang Su ; Kelly Ryder ; Sridhar R. Papagari Sangareddy ; Herman Tolentino ; Jimeng Sun	
Design Guidelines for Effective Data Visualization of Sensor Monitoring Data.....	1443
Yong Choi ; George Demiris ; Arjmand Samuel ; Danny Huang	
HomeSHARE: A Distributed Smart Homes Testbed Initiative	1444
Kay Connally ; Blaine Reeder ; Amanda K. Hall ; Kelly Caine ; Katie A. Siek ; George Demiris	
Towards Personalized Nutrition	1445
Costanza Conti ; Elena Rossi ; Sara R. Marceglia ; Vittorio Tauro ; Federica Rizzi ; Monica Lazzaroni ; Cristina Barlassina ; Laura Soldati ; Daniele Cusi	
User-Centered Design of the Clinical Dashboard for the MySafeCare Patient Safety Reporting System.....	1446
Brittany Couture ; Jessica Cleveland ; Awatef Ergai ; Zachary P. Katsulis ; Naoaki Ichihara ; Ann D. Smith ; Esteban Gershmanik ; Frank Y. Chang ; Alicia Goodwin ; Sarah Collins	
Design and Evaluation of an Infection-Risk Monitoring Application	1447
Matthew C. Cowperthwaite ; Anurekha Ramakrishnan ; Mark Burnett ; Michael Webb ; Douglas Fox	
To Improve Sensitivity and Specificity in Early Detection of Sepsis	1448
Vira S. Danak ; Hien Nguyen ; Albert Riedl	
Feasibility of Converting the Medicare Synthetic Public Use Data Into a Standardized Data Model for Clinical Research Informatics	1449
Mark Danese ; Erica A. Voss ; Jennifer Duryea ; Michelle Gleeson ; Ryan Duryea ; Amy Matcho ; Donald O'Hara ; William E. Stephens ; Adler Perotte ; Lee Evans ; Christian G. Reich	
Information System for Mobile Immersive Learning Environment for Just-in-Time Learning in Public Health	1450
Jina Deruz ; Kelly Ryder ; Edward Choi ; Sizhe Lin ; Aashu B. Singh ; Hang Su ; Sridhar R. Papagari Sangareddy ; Herman Tolentino ; Jimeng Sun	
The TISS Standard for Electronic Exchange of Information in the Private Health Insurance Sector in Brazil	1451
Sergio P. De Oliveira ; José Felipe Riani Costa	
Converting the Foundational Model of Anatomy to OWL2.....	1452
Landon T. Detwiler ; Jose Mejino ; James F. Brinkley	
Predicting the Factors of Improvement of Health Status of Home Health Care Patients: A Holistic Data Mining Approach	1453
Sanjoy Dey ; Katherine Hauwiller ; Pranjal Yadav ; Michael Steinbach ; Gyorgy Simon ; Vipin Kumar ; Connie W. Delaney ; Bonnie L. Westra	
Improving Vaccine-Preventable Disease Reporting through Health Information Exchange	1454
Brian E. Dixon ; P. Joseph Gibson ; Shaun Grannis	
Patient Centered Medical Home (PCMH) Team Huddle Tool	1455
Nhan V. Do ; Terry J. Newton ; Rick Barnhill ; Eric A. Shry	
Automatic Phone and Text Message Reminders to Increase Patient Completion of Outpatient Laboratory Testing	1456
Trygve Dolber ; David Kaelber	
Evaluating Mobile Information Use in Undergraduate Nursing Programs: Moving from Access to Interpretation and Application	1457
Glynda Doyle ; Karen Furlong ; Loretta Secco ; Judy Bailey ; B. Jamieson ; W. Hansen ; R. Pafford	
Using Social Media Data to Analyze Patient Satisfaction of Health Care Facilities	1458
Katherine Doyon ; Qing T. Zeng ; Rebecca Morris ; Catherine A. Smith ; Yijun Shao	
A Comparative Analysis of Factors for Predicting Inpatient Length of Stay for Colorectal Cancer Patients	1459
Prerna Dua ; Akhila Reddy ; Pradeep Chowriappa	
Initial Approach to Creating an Interactive User Interface Design Tool to Enhance User-Centered Design	1460
Kevin R. Dufendach ; Kim M. Unerl ; Christoph U. Lehmann	
Regenstrief ePRO: A Rule-Based Platform for Capturing Targeted Patient-Reported Outcomes	1461
Jon Duke ; Daniel J. Vreeman ; Jeremy Leventhal ; Chen Wen ; Katie Allen ; David Haggstrom	
Innovative Methods for Obtaining and Managing Patient Consent for Patient Centered Outcomes Research	1462
Prashila Dullabh ; Katherine Donaldson ; Melissa Goldstein ; Jane H. Thorpe ; Kathryn Li ; Daniel Bowers	
A Six State Review of Grantees' Experiences with the State HIE Program	1463
Prashila Dullabh ; Petry Ubri ; Lauren Hovey	
User Adherence to a Web-Based Application for Youth with Mild TBI	1464
Jenna R. Dyas ; Judith Dexheimer ; Brad Kurowski ; Shari L. Wade ; Nanhua Zhang ; Lynn Babcock	
Developing a Nurse Driven Telemetry Protocol Using a Sociotechnical Model.....	1465
Raychel R. Enck ; Deborah Ariosto	
The Evolution of a Clinical Decision Support Request Form.....	1466
Shirley Xiang Fei ; Sharon Bouyer Ferullo ; Charles Lagor ; Saverio M. Maviglia ; Eileen Yoshida	
Challenges for Residents in Following Instruction in Laparoscopic Surgery	1467
Yuanyuan Feng ; Hamid Zahiri ; Helena M. Mentis	
Implementing Automated Delivery of Evidence-based Medication Safety Information to the Point of Care.....	1468
Joseph Finkelstein ; Hayden Z. Adams ; Qinlang Chen ; Kuo Lin ; Carol Friedman	
Grantees' Lessons Learned in Implementing State HIE Initiatives	1469
Kathryn Fischer ; Prashila Dullabh ; Lauren Hovey	
A Baseline Assessment of the Dispensary Workflow in the Birmingham Free Clinic: A Time-Motion Study of Pharmacist Tasks.....	1470
Arielle Fisher ; Michael Q. Ding ; Harry Hochheiser ; Gerald P. Douglas	

Transforming the National Department of Veterans Affairs Data Warehouse to the OMOP Common Data Model.....	1471
<i>Fern Fitchery ; Jesse Brannen ; Jason Denton ; Jonathan R. Nebeker ; Scott L. Duvall ; Freneka F. Minter ; Jeffrey Scehnet ; Brian Sauer ; Lucila Ohno-Machado ; Michael E. Matheny</i>	
Determining the Factors Relevant to Patient Handoff by Role and Patient Population.....	1472
<i>Karol L. Fleming ; Ray A. McKelvy ; Nathan C. Gonzalez ; William B. Webb ; Robert L. Shapiro</i>	
Bridging the MedlinePlus Cloud to askMEDLINE.....	1473
<i>Paul Fontelo , Fang Liu</i>	
Implementation of a Clinical Decision Support Tool to Improve Guideline Compliance in the Prevention of Early-Onset Group B Streptococcus Infections in Neonates.....	1474
<i>Louise K. Francois Watkins ; David A. McLean ; Marion Nihen ; Jonathan M. Wortham ; Melvin Crum ; Philipp Carner ; Mike Jordan ; Stephanie Schrag</i>	
A Gap Analysis of Competencies and Curriculum in Host-Site Projects of a Field-Based Informatics Fellowship.....	1475
<i>Laura H. Franzke ; Sridhar R. Papagari ; Regina Bess ; Herman Tolentino ; Brenna Baccaro</i>	
Contextual Computing: Tracking Healthcare Providers in the Emergency Department via Bluetooth Beacons.....	1476
<i>Joshua Frisby ; Vernon Smith ; Vimla L. Patel</i>	
An Examination of Standalone Personal Health Record Use by Patients with Type 2 Diabetes.....	1477
<i>Kevin T. Fuji ; Amy A. Abbott ; Kimberly A. Galt</i>	
Therapeutic Area and Research Use Case Based Data Profiling & Quality Assessment Framework.....	1478
<i>Purav Gandhi ; Jasmine Avasia ; Shreshtha Anantha ; Rajinder Sobti</i>	
Dashboard Visualizations of Emergency Department Throughput Metrics.....	1479
<i>Swaroop Gantela ; Todd R. Johnson ; Nnaemeka G. Okafor ; David Robinson ; Amit Mehta ; Charles L. Maddow ; Brent King ; Tina Chacko ; Salsawit Shifarrow ; Vickie Nguyen ; Adriana Stanley ; Amy Franklin</i>	
Electronically Collecting Nocturnal Heart Failure Information.....	1480
<i>Cubby L. Gardner ; Harry B. Burke</i>	
Evaluating the Effect of a Nursing Flowsheet Merge on Clinical Nursing Documentation Efficiency in a Research Hospital.....	1481
<i>Kyungsook Gartrell ; Helen Mayberry ; Michael C. Krumlauf ; Michael E. Nansel ; Minni Raju ; Gwenyth R. Wallen ; Caitlin W. Brennan</i>	
Development and Validation of a Measure for EHR Related Unintended Consequences with Direct Care Registered Nurses.....	1482
<i>Sheila M. Gephart ; Judy L. Dye ; Alycia Bristol ; Brooke Finley ; Jane M. Carrington</i>	
Developing Principles and Best Practices for Structured Documentation.....	1483
<i>Emily J. Gesner ; Sarah Collins ; Perry L. Mar ; Roberto A. Rocha</i>	
Streamlining Access to Cancer Data - An Institutional Experience.....	1484
<i>Leanne Goldstein ; Rebecca Ottesen ; Kelli Olsen ; Janet Nikowitz ; Joyce C. Niland</i>	
A Tale of Two Layouts: Vignette vs. Structured Interview for Layout of an Electronic Handoff Tool.....	1485
<i>Nathan C. Gonzalez ; William B. Webb ; Ray A. McKelvy ; Karol L. Fleming ; Robert L. Shapiro</i>	
Integrated Clinical Decision Support Systems: Systematic Review and Classification of Online Medical Calculators.....	1486
<i>Tim A. Green ; Chi-Ren Shyu</i>	
Variation Among Providers in Cost of a Knee Replacement Episode.....	1487
<i>Thomas R. Gurgiolo ; Taylor R. Pressler ; Scott Orme ; Robert Kershner ; Jonathan Mathieu</i>	
Identifying Children with Technology Dependence through Use of Administrative Data.....	1488
<i>Baria Hafeez ; Babitha Haridas ; Anup D. Patel ; Zachary M. Grinspan</i>	
Understanding Ongoing Concerns after Implementation of Patient-Provider Messaging in the Acute Care Setting.....	1489
<i>John R. Hanna ; Kelly McNally ; Sucheta Ravindran ; Dianna L. Stade ; Eli Mlaver ; David W. Bates ; Patricia C. Dykes ; Anuj K. Dalal</i>	
Using a Socio-Technical Framework to Understand Technology Use Among Health Care Innovation Award Community Resource Planning Awardees.....	1490
<i>Saira N. Haque ; Lucia Rojas-Smith ; Debra J. Holden</i>	
Standardized Mapping of Sensitive Data Categories.....	1491
<i>Tiffany L. Harman ; Rachael Howe</i>	
Before-After Implementation of the Sniffer for the Detection of Failure to Recognize and Treat Severe Sepsis.....	1492
<i>A. M. Harrison ; Charat Thongprayoon ; John G. Park ; Daniels E. Craig ; Casey M. Clements ; Deepi G. Goyal ; Jennifer L. Elmer ; Ognjen Gajic ; Brian W. Pickering ; Vitaly Herasevich</i>	
Meal-Camera System to Support Nutritional Tele-Consultation for Diabetes.....	1493
<i>Masayuki Hashimoto ; Umi Nakamura ; Miki Akiyama ; Toru Takebayashi ; Marino Oshima ; Tomoki Kumegawa ; Hitomi Imachi ; Koji Murao</i>	
Conducting Health Insurance Surveillance with Electronic Health Record	1494
<i>Brigit Hatch ; Carrie Tillotson ; Miguel Marino ; Megan Hoopes ; Rachel Gold ; Jennifer E. Devoe</i>	
Mapping Hospital Infections to Inform Quality Improvement Interventions.....	1495
<i>Courtney L. Hebert ; Tara Borlawsky</i>	
Identifying ECG Features in Congenital Heart Disease Using Variants of Dynamic Time Warping	1496
<i>Emily P. Hendryx ; Craig Rusin ; Beatrice Riviere</i>	
Using MetaMap to Analyze Which Linguistic Concepts of an Imaging Study Indication Make it Helpful to a Radiologist.....	1497
<i>Andrew Herzik, Joshua M. Pevnick</i>	
Electronic Health Record Audit Logs: An Alternative Approach to Workflow Analysis	1498
<i>Annemarie G. Hirsch ; Virginia R. Lerch ; Walter F. Stewart ; J. B. Jones</i>	
'Smart Snack Box' System for Recording Snacking Behavior.....	1499
<i>Teruyoshi Hishiki ; Hiroki Yasui ; Yoshiko Matsunaga ; Takuro Tamura</i>	

RSS Feeds used by Medical Professionals, a Systematic Review and Guide	1500
<i>Pamela Hoffman ; Ronald G. Hauser</i>	
Displaying Price Information Lowers Cost and Quantity of Medical Tests: A Systematic Review of the Impact of Price Transparency	1501
<i>Katherine A. Homann ; Adam Rule ; Skylar G. Kerzner</i>	
Informational Content of Verbal Handoffs in Emergency Care	1502
<i>Jan Horsky ; Edward H. Suh ; Osman R Sayan ; Vimla L. Patel</i>	
Stakeholder Perspectives on Policy Implications Post the Conclusion of the State HIE Program	1503
<i>Lauren Hovey ; Petry Ubri ; Prashila Dullabh</i>	
Evaluation of a Local Terminology to SNOMED CT Crosswalk	1504
<i>Rachael Howe ; Tiffany Harman ; Pat Wilson ; Lee Min Lau</i>	
Migration of a Computerized Anticoagulation Clinic to a Commercially-Developed EHR	1505
<i>Ping Hu ; Mitchell Hedrick ; Aubrey Ramsey ; Christopher Radek ; Keith Huffman ; Adam Miklius ; Adam Wilcox</i>	
Deep Sequencing of Phage-Displayed Peptide Libraries Reveals Novel Peptide Motif that Detects Norovirus	1506
<i>Amy M. Hurwitz ; WanZhi Huang ; Robert L. Atmar ; Timothy G. Palzkill</i>	
ArticlesAboutMe.org: Disseminating Clinical Trials Results to Patients	1507
<i>Vojtech Huser ; Anil Yaman ; Chunhua Weng ; James J. Cimino</i>	
Examining the Role of Bug-tracking Systems in the Maintenance of Electronic Health Records (EHRs)	1508
<i>Salman T. Hussain ; Dustin S. McEvoy ; Thu-Trang Hickman ; Dean F. Sittig ; Adam Wright</i>	
Examining Cancer Case Reporting Processes and Timeliness: Preliminary Results	1509
<i>Abdulrahman Jabour ; Brian E. Dixon ; Joscette F. Jones ; David Haggstrom</i>	
Representation of Clinical Practice Guideline Data Elements Using the Health Level Seven Fast Healthcare Interoperability Resources (FHIR) Standard as a Proposed Data Formalism for the Arden Syntax	1510
<i>Robert A. Jenders</i>	
An Interactive System for Comprehensive Geriatric Telerehabilitation	1511
<i>In Cheol Jeong ; Joseph Finkelstein</i>	
Harmonization of Quality Data Model with HL7 FHIR to Support EHR-driven Phenotype Authoring and Execution: A Pilot Study	1512
<i>Guoqian Jiang ; Harold R. Solbrig ; Richard C. Kiefer ; Luke Rasmussen ; Huan Mo ; Jennifer A. Pacheco ; Enid Montague ; Jie Xu ; Peter Speltz ; William K. Thompson ; Joshua C. Denny ; Christopher Chute ; Jyotishman Pathak</i>	
Physician Participation in Meaningful Use and Rehospitalization of the Dually-Eligible	1513
<i>Hye-Young Jung ; Mark A. Unruh ; Joshua R. Vest ; Lawrence Casalino ; Rainu Kaushal</i>	
Natural Language Processing Facilitates Delivery of Individualized Recommendations at the Point of Care	1514
<i>K. E. Ravikumar ; Rajeev Chaudhry ; James Masanz ; Joshua Pankratz ; Jane L. Shellum ; Steve G. Peters ; Ronald Hankey ; Daniel J. Cronk ; Jennifer J. Boysen ; Kristin Pavek ; Robert Roden ; Hongfang Liu</i>	
Selection of a Database Engine for the National Master Patient Index of Malawi	1515
<i>Chimwemwe Kachaje ; Blessings Mhango ; Mwatha Bwanali ; Soyapi L. Mumba ; Jeremy U. Espino ; Gerald P. Douglas</i>	
Implementing an EMR-based “No Opiate” Policy In The Emergency Department	1516
<i>Zachary P. Kahler ; Paul Musey ; John Finnell ; Annelyssa Johnson ; Christi Saupp ; Christian Strachan ; Charles Shufflebarger</i>	
Characteristics of Older Adults’ Adherence to a Wearable Fall Detection Device	1517
<i>Youjeong Kang ; Shomir Chaudhuri ; Hilaire J. Thompson ; George Demiris</i>	
Question Types in Online Health Communities	1518
<i>Shaheen Kanthawala ; Courtland Vandam ; Barbara Given ; Joyce Chai ; Amber Vermeesch ; Marianne Huebner ; John Crowley ; Jina Huh</i>	
Aceso (After Cancer Education and Support Operations): A Clinical Decision Support System Approach for Engaging Breast Cancer Survivors	1519
<i>Akshat Kapoor ; Priya Nambisan</i>	
OpenMRS and FHIR: The Promise of a Domain Independent API for serving Healthcare Needs Across Underserved Settings	1520
<i>Suranga N. Kasthurirathne ; Harsha Kumara ; Burke Mamlin ; Paul G. Biondich</i>	
Design and Implementation of a Relevant Data Report Tool for Patients Presenting to the Emergency Department with Chest Pain	1521
<i>Chris Katsura ; Frank C. Day ; Lynnell McCullough</i>	
An Easy-to-Use Clinical Text De-identification Tool for Clinical Scientists: NLM Scrubber	1522
<i>Mehmet Kayaalp ; Allen Browne ; Zeyno Dodd ; Pamela Sagan ; Clement J. McDonald</i>	
Health Information Technology Evaluation Studies: Trends in Communities and Geography from 2004 to 2014	1523
<i>Marjorie M. Kelley ; Xiaonan Ji ; Po-Yin Yen ; Gina M. Torelli</i>	
Clinico-genomic Decision Support System for Precision Diagnostics and Management	1524
<i>Anuja Kench ; Vandana Janeja ; Amanda Niskar ; Yelena Yesha ; Naphtali Rishe</i>	
Understanding the Patient Through Visualization to Improve Provider-Patient Communication in Hospitals: Know Your Patient to Personalize Your Communication	1525
<i>Maher Khelifi ; Logan Kendall ; Sonali R. Mishra ; Barry Aaronson ; Ari Pollack ; Andrew Miller ; Wanda Pratt</i>	
Increasing Size of a Health Information Exchange Allows More Accurate Measurement of Early ED Returns	1526
<i>Eugene Kim ; George T. Loo ; Tina Lowry ; Bradley D. Shy ; Ula Hwang ; Nicholas Genes ; Cindy F. Clesca ; Lynne Richardson ; Jason S. Shapiro</i>	
Usability of Mobile Apps for Radiology Diagnostic Decision-making	1527
<i>Min Kim ; Michael Aro ; Kraig Lage ; Kevin Ingalls ; Vivek Sindhwani ; Mia K. Markey</i>	
Improving Detection of Reasons Not to Take a Medication by Leveraging Medication Prescription Status	1528
<i>Youngjun Kim ; Jennifer H. Garvin ; Julia Heavirland ; Stephane Meystre</i>	

Analysis of the Great Divide Between Cardiovascular Risk and Health Scores	1529
<i>Bobbie Kite ; Tasneem Motiwala ; Philip Payne</i>	
The Scalable Collaborative Infrastructure for a Learning Health System	1530
<i>Jeffrey G. Klann ; Marc Natter ; Douglas Macfadden ; Sarah R. Weiler ; Kenneth Mandl ; Shawn N. Murphy</i>	
Mixed-Methods Study of Risk Communication in a Patient Decision Aid	1531
<i>Krystal A. Klein ; Lindsey Watson ; Latha R. Kalaga ; Karen B. Eden</i>	
Interactive Voice Response Technology: Promises and Pitfalls in Facilitating Patient-Reported Monitoring for Adverse Drug Reactions	1532
<i>Elissa V. Klinger ; Alejandra Salazar ; Jeffrey Medoff ; Mary G. Amato ; Patricia C. Dykes ; Jennifer Haas ; David W. Bates ; Gordon Schiff</i>	
Text Mining of Patient Demographics and Diagnoses from Psychiatric Assessments	1533
<i>Eric J. Klosterman ; Rashmi Prasad</i>	
BigMouth: Development of a Scalable Infrastructure to Support Multi Institutional Data Sharing for Dentistry	1534
<i>Krishna Kumar Kookal ; Duong Tran ; Reuben J. Applegate ; Heiko Spallek ; Elsbeth Kalenderian ; Joel White ; Elmer V. Bernstam ; Muhammad F. Walji</i>	
A Novel Visualization for Rapid Summarization of Patient History: Application to Cirrhosis	1535
<i>Jejo Koola ; Samuel B. Ho ; Michael E. Matheny</i>	
Clostridium difficile Repeat Ordering Difficult to Control without CDS	1536
<i>Vishnoo Charan Reddy Kothapeta ; Alfred Caligiuri ; Kevin Bock ; Michael Oppenheim ; Eytan Behiri</i>	
A Lifecycle Management Solution to Manage Mississippi's Data Lake and Big Data Analytics Platform	1537
<i>Denise D. Krause</i>	
Visual Exploration of Temporal Data in Electronic Medical Records	1538
<i>Josua Krause ; Narges Razavian ; Enrico Bertini ; David Sontag</i>	
Problem List Quality in Ambulatory Medicine	1539
<i>John C. Krauss</i>	
Errors with Manual Phenotype Validation: Case Study and Implications	1540
<i>Polina Kukhareva ; Catherine J. Staes ; Tyler J. Tippets ; Phillip B. Warner ; David E. Shields ; Heather Mueller ; Kevin Noonan ; Kensaku Kawamoto</i>	
Integrated Health Information Architecture to Facilitate State-wide and National Evidence-Based Public Health Monitoring: A Case Study based in India	1541
<i>Manish Kumar ; Rohit Ramaswamy ; Javed Mostafa</i>	
Archetype Based Nationwide Electronic Health Record Development in Japan	1542
<i>Naoto Kume ; Shinji Kobayashi ; Kenji Araki ; Satoshi Inoue ; Hiroyuki Yoshihara</i>	
Integrating Usability Engineering into Undergraduate and Graduate Health Informatics Curricula	1543
<i>Andre W. Kushniruk ; Elizabeth M. Borycki</i>	
Information Acquisition Preferences in the Intensive Care Unit	1544
<i>Kathryn G. Kuttler ; Jorie M. Butler ; Eliotte Hirshberg ; Ramona Hopkins ; Emily Wilson ; James Orme ; Samuel Brown</i>	
Evaluation of Simulated Computerized Provider Order Entry Rules Toward Evidence Based Blood Utilization	1545
<i>Jaie Lavoie ; William Miller ; Min Kim</i>	
Semantic and Interactive Timeline for Patient Data Visualization	1546
<i>T. Ledieu ; Pascal Van Hille ; Guillaume Bouzillé ; Eric Renault ; Marc Cugia</i>	
The Master Data Element Visualization: A Consolidated View of the EHR Data at Intermountain Healthcare	1547
<i>Jaehoon Lee ; Farrant Sakaguchi ; Juntin Mundt ; Bart B. Dodds ; Nicole Hobbs ; Katherine Holzhauser ; Stanley M. Huff</i>	
Applying an Instant Messaging System at the Hospital to Support TRM	1548
<i>Ying-Li Lee ; Tsai-Feng Chien ; Hsiu-Chin Chen</i>	
Quantifying the Complexity of Discharge Planning in the Inpatient Cardiology Unit	1549
<i>Young Ji Lee ; Corrine M. Benacka ; Matthew Carson ; Gayle Shier Kricke ; Preeti Kansal ; Nicholas Soulakis</i>	
Design of a Knowledge Exchange for Community Health Workers	1550
<i>Harold P. Lehmann ; M. C. Gibbons ; Richard Singlerman ; Steve King ; Joe Warren ; John May</i>	
Decision Factors Influencing the Selection of a "Hand-off" Model Versus a "Hold-on" Model for Telehealth Service Lines	1551
<i>Cynthia Lerouge ; Suzanne J. Wood ; Ryan Sterling</i>	
Drug-Disease Associations in Guidelines, Drug Labels, and Practice	1552
<i>Tiffany I. Leung ; Michel Dumontier</i>	
Developing an Electronic Survey to Capture Current State of Acute Care Patient Portals to Inform Best Practices and Future Directions	1553
<i>Watinyin Leung ; Sarah Collins ; Anuj K. Datal</i>	
A Deep Learning Framework for Improving Medical Information Retrieval	1554
<i>Ding-Cheng Li ; Saeed Mehrabi ; Yue Yu ; Hongfang Liu</i>	
A Survey of Automated Information Retrieval for Genetic Disorder from Genereviews	1555
<i>Pu Li ; Qian Zhu</i>	
Detecting Mitral Valve Prolapse (MVP) From Heart Sound Recordings	1556
<i>Yihua Li ; Dorothy W. Curtis</i>	
Design of a "Synthetic" Data Set for Teaching and Evaluating Analytics Methodology in Accountable Care Organizations	1557
<i>Robert W. Ligon</i>	
Designing iSee, the Intelligent Search Expansion Tool	1558
<i>Ko-Wei Lin ; Dexter Friedman ; Hyeneui Kim</i>	
Health Care Providers' Perceived & Actual Problems in the Use of HIT in the ED	1559
<i>Mary L. Little ; Osman R Sayan ; Vimla L. Patel</i>	

An Analysis of PubMed4Hh App User Distribution	1560
<i>Fang Liu ; Paul Fontelo</i>	
Caveats of Using Social Media Data for Medical Research: A Report from a Study on Eye-Related Symptoms in Tweets	1561
<i>Yang Liu ; Tricia O'Brien ; Esha Sondhi ; Qiaozhu Mei ; David A. Hanauer ; Kai Zheng</i>	
A Cross Strait Cooperation Design and Implementation of Mobile Nursing Information System	1562
<i>Yun Liu ; Pinjen Huang ; Zejuan Gu ; Rong Wang ; Chunhong Gao ; Shan Tao ; Jianjun Guo ; Zhongmin Wang</i>	
Developing Clinical Decision Support for Patient Self-Management: A Prototype for Symptom Management in Cancer Patients	1563
<i>David F. Lobach ; Janet L. Abraham ; Donna Berry ; Michael S. Rabin ; Ilana Braun ; Manan Nayak ; Mary E. Cooley</i>	
Real-time SNOMED Post-coordination of Adverse Drug Reactions: Model Formulation for an Actionable Registry	1564
<i>Marcelo A. Lopetegui ; Mario Barbe ; Daniel R. Luna ; Alejandro Mauro</i>	
Mapping Workflows in a Surgical Clinic to Guide Implementation of a Patient-Centered Postoperative mHealth Wound Assessment System	1565
<i>Ross Lordon ; Heather L. Evans ; Andrea L. Hartzler ; Cheryl Armstrong ; Sarah Whitehead ; Patrick Sanger ; William B. Lober</i>	
Using OpenEMR in HIT Training	1566
<i>Virginia Lorenzi ; Anthony McCormick ; Brady Miller ; Kenneth Newman ; Carol Smyth ; Fred Rahamanian ; Frances Morrison</i>	
Designing a Plan Do Study Act Framework to Promote Proper Utilization of Early Detection Technology in the Acute Care Setting	1567
<i>Graham Lowenthal ; Patricia C. Dykes ; Stuart R. Lipsitz ; Catherine S. Yoon ; Ronen Rozenblum ; Perry G. An ; Suzanne Salvucci ; Christine Shaughnessy ; David W. Bates</i>	
Variability in the Sequence of HL7 2.x Event Code Types used to Represent Encounters Across a Health Information Exchange	1568
<i>Tina Lowry ; Eugene Kim ; Joseph Johnson ; Jason S. Shapiro</i>	
Generating the MEDLINE N-Gram Set	1569
<i>Chris J. Lu ; Destinee L. Tormey ; Lynn McCready ; Allen C. Browne</i>	
The Role of Technology Utilization in Designing Self-Management Systems	1570
<i>Robert J. Lucero ; Rosario Jaime-Lara ; Yamnia Cortes ; Dante Tipiani ; Maribel Granja ; Suzanne Bakken</i>	
Bridging the Representation Gap of Medical Image and Clinical Note through Semantic Association Mining	1571
<i>Jake Luo ; Timothy B. Patrick</i>	
Evaluation of the Accuracy of CDS for Cervical Cancer Screening and Surveillance	1572
<i>Kathy L. MacLaughlin ; Ravikumar Komandur Elayavilli ; Kavishwar Wagholar ; Marianne R. Scheitel ; Hongfang Liu ; Rajeev Chaudhry</i>	
A Framework for Incorporating Changes to a Reference Terminology on a Mapped Enterprise Terminology Subset	1573
<i>Sina Madani ; Trent Rosenbloom</i>	
Choosing to Build: Optimizing the Development of a Custom Pathology Laboratory Software Solution	1574
<i>Emilio Madrigal ; Victor Brodsky</i>	
Quantitative Evaluation of Dysarthria and Development of Vowel Sound Voice Training System	1575
<i>Hiroyuki Maeda ; Naoya Arisaka ; Wakana Hata ; Noritaka Mamorita ; Ikuyo Ishizaka ; Kazuhiko Yamashita ; Harukazu Tsuruta</i>	
Designing a Drawing-based Tool to Manage EBRT Process in an Open-Source Oncology EMR System	1576
<i>Manika Maheshwari ; Saptarshi Purkayastha</i>	
User-Centered Design of an Application to Aid in the Safe Return to Work of Injured Farm Workers	1577
<i>Andrea Mahnke ; Laurel Verhagen ; Bryan Weichelt ; Iris A. Reyes ; Will Ray ; Matthew Keifer</i>	
The Process of Using Focus Groups to Inform Development	1578
<i>Jennifer A. Mallow ; Laurie A. Theeke ; Elliott A. Theeke ; Brian Mallow</i>	
Responders and Nonresponders: Nurse Practitioner and Physical Therapist Personal Perceptions of Activity Monitors for Patient Use	1579
<i>Peggy J. Mancuso ; Sahiti Myneni</i>	
ICan'tCount: A Mobile App for Helping Children with Dyscalculia	1580
<i>Andrea Marchesini ; Vincenzo Maurelli ; Siria Pantano ; Giuseppe Vacante ; Marilena Coniglio ; Gianluca Palermo ; Vittorio Tauro ; Agostino Accardo ; Sara R. Marceglia</i>	
Qualitative Analysis of Responses to a Questionnaire via an EHR Patient Portal	1581
<i>Elizabeth A. Marshall ; Suparna Qanungo ; Jihad Obeid ; Jim C. Oates ; Melissa L. Habrat ; Robert W. Warren ; Leslie A. Lenert</i>	
Bring Your Own Device: From PDA To Smart Mobile Devices	1582
<i>Karen Martinez ; Karen Courtney ; Elizabeth M. Borycki ; Noreen Frisch</i>	
Optic Disc and Macula Detection in Fundus Images by Means of Template Matching	1583
<i>Maria A. Martinez-Castellanos ; Luvia Rodríguez Quiñones ; M. Elena Martínez-Perez ; Samantha Salinas-Longoria ; Tzolkin Garduno-Alvarado</i>	
Engaging Patients Using an Inpatient Web-based Patient Portal and Evaluating Effectiveness in a Pragmatic Randomized Controlled Trial	1584
<i>Ruth M. Masterson Creber ; Jennifer Prey ; Beatriz Ryan ; Jungmi Han ; Susan Restaino ; David Vawdrey</i>	
High Level Architecture and Evaluation of Patient Linkages for READY - An Electronic Measurement Tool for Rheumatoid Arthritis	1585
<i>Puneet Mathur ; Leslie A. Southern ; Aseem Bharat ; Shunchao Wang ; Chris Heckler ; Omkar Lele ; Peter J. Embi ; Jeffrey R. Curtis</i>	
Clinician Evaluation of Clinical Decision Support Alert and Response Appropriateness	1586
<i>Allison B. McCoy ; Eric J. Thomas ; Marie Krousel-Wood ; Dean F. Sittig</i>	
Stratification of Risk for Fall Resulting in Hospital Readmission through Medication Side Effects Profiles	1587
<i>Thomas H. McCoy Jr. ; Victor M. Castro ; Roy H. Perlis</i>	

A Taxonomic Analysis of Programming Errors in Electronic Health Records (EHRs) which Lead to Clinical Decision Support Malfunctions.....	1588
<i>Dustin S. McEvoy ; Salman T. Hussain ; Thu-Trang Hickman ; Dean F. Sittig ; Adam Wright</i>	
Partnering to Develop a Service-based CDS System for Public Health Reporting Specifications.....	1589
<i>Sunanda McGarvey ; Denisha Abrams ; Janet Hui ; Laura Conn ; Catherine J. Staes</i>	
Visualization of Laboratory, Vital, Precaution and Patient Status Data to Optimize Time on Task and Use Related Hazards.....	1590
<i>Ray McKelvy ; Nathan C. Gonzalez ; Karol L. Fleming ; William B. Webb ; Robert L. Shapiro</i>	
Born to Lose (the Call): Date of Birth Errors in Patient Identification in an Automated Adverse Drug Reaction Call System.....	1591
<i>Jeffrey Medoff ; Alejandra Salazar ; Elissa V. Klinger ; Japneet Kwatra ; Mary G. Amato ; Patricia C. Dykes ; Jennifer Haas ; David Bates ; Gordon Schiff</i>	
Exploring Gaps of Family History Documentation in HER.....	1592
<i>Saeed Mehrabi ; Mayya S. Safarova ; Iftikhar J. Kullo ; Hongfang Liu</i>	
Development of a Novel Application for Home Management of Chronic Low Back Pain	1593
<i>Brittany L. Melton ; Hannah Kevern ; Jenna Stones ; Neena Sharma</i>	
SCILHS Data Mart Creation Plugin.....	1594
<i>Michael E. Mendis ; Janice Donahoe ; Jeffrey G. Klann ; Vijay Raghavan ; Lori C. Phillips ; Alexander Turchin ; Shawn N. Murphy</i>	
Standardization of Ask At Order Entry Questions: A Prudent Question is One-Half Wisdom.....	1595
<i>Riki Merrick ; Cynthia Johns ; Pamela Banning</i>	
Intelligent Home Risk Monitoring To Enable Post Acute Care Surveillance.....	1596
<i>Hoda Moghimi ; Jonathan L. Schaffer ; Nilmini Wickramasinghe</i>	
Improving Evidence-Based Migraine Management in VA Primary Care Clinics by Utilizing Informatics Tools.....	1597
<i>Amir Mohammad ; Hamada Hamid ; Cynthia Brandt</i>	
Assessing and Simulating Scheduling Processes in Community Health Centers.....	1598
<i>Iman Mohammadi ; Ayten Turkcan ; Tammy Toscos ; Amy Miller ; Kislaya Kunjan ; Bradley N. Doebbeling</i>	
Usability of a Phenotype Builder Prototype and Lessons Learned for the Design of Phenotyping Tools.....	1599
<i>Enid Montague ; Jie Xu ; Luke Rasmussen ; Joshua C. Denny ; Guoqian Jiang ; Richard C. Kiefer ; Jennifer A. Pacheco ; Peter Speltz ; William Thompson ; Jyotishman Pathak</i>	
Using Natural Language Processing to Facilitate Medical Record Abstraction in Epidemiological Studies	1600
<i>Carlton Moore ; Kyle Shaffer ; Anna Kucharska-Newton ; Stephanie W. Haas ; Gerardo Heiss</i>	
The Everyday Practice of Health for Mexican Women in New Brunswick: Barriers and Opportunities	1601
<i>Miraida Morales ; Xiaomu Zhou</i>	
Implementing Customizable Asthma Action Plans into an Electronic Medical Record	1602
<i>Stephen J. Morgan ; Harley Z. Ramelson</i>	
Extending the Project HealthDesign Experience via On-Line Public Data Repositories.....	1603
<i>Andrew J. Morland ; Patricia F. Brennan</i>	
RECRUIT: Roadmap to Enhance Clinical trial Recruitment Using Information Technology.....	1604
<i>Tasneem Motiwala ; Chaitanya Shivade ; Satyajeet Raje ; Albert M. Lai ; Philip Payne</i>	
An Automated Tool to Replicate Data Between Multiple Versions of Profiles Research Networking Software's (RNS).....	1605
<i>Sukrit Mukherjee ; Sebastien Delta</i>	
Variation in EHR Implementations and the Impact on Safety of Test Result Follow-up.....	1606
<i>Daniel R. Murphy ; Michael W. Smith ; Dean F. Sittig ; Elise Russo ; Hardeep Singh</i>	
HDD Access – An Open Source Terminology Server with Publicly Available Healthcare Terminology Content	1607
<i>Senthil K. Nachimuthu ; Lee Min Lau</i>	
Network Infrastructure for Large Scale Regional Medical Information Network.....	1608
<i>Naoki Nakamura ; Masaharu Nakayama ; Takuo Suganuma ; Norio Shiratori ; Teiji Tominaga</i>	
A Prefectural Medical Information Network System Developed after the Great East Japan Earthquake	1609
<i>Masaharu Nakayama ; Hiroaki Shimizu ; Kazuo Sato ; Naoki Nakamura</i>	
Evaluation of Perioperative Medication Errors and Adverse Drug Events	1610
<i>Karen C. Nanji ; Sofia D. Shaikh ; Amit Patel ; Diane Seger ; David W. Bates</i>	
Automated Approach to Extract Cardiovascular Phenotypes from Echocardiography Reports.....	1611
<i>Chinmoy Nath ; Mazen Albaghdaoui ; Siddhartha R. Jonnalagadda</i>	
Development of a Methodological Protocol for Observing Pharmacist Information Needs While Using the EHR	1612
<i>Scott D. Nelson ; Joanne Lafleur ; Guilherme Del Fiol ; Scott Evans ; Charlene Weir</i>	
Early Detection of Heart Failure Using Data Driven Modeling Approaches on Electronic Health Records: How Far Can One Go Without Domain Knowledge?	1613
<i>Kenney Ng ; Yajuan Wang ; Jianying Hu ; Walter Stewart ; Steven R. Steinhubl ; Christopher Defilippi</i>	
Role of Social Media in Shaping Public Health Messages Regarding Human Papillomavirus (HPV) Vaccinations	1614
<i>Lien B. Nguyen ; Priya Nambisan</i>	
Finding Similar Drug Classes using RxClass	1615
<i>Thang Nguyen ; Lee Peters ; Olivier Bodenreider</i>	
Multi-Agent (Team) Microworld Environments for Healthcare	1616
<i>Vickie Nguyen ; Amy Franklin</i>	
Leveraging an Open Source Data Warehousing and Analytics Tool to Promote Longitudinal Research, Improve Knowledge Transfer and Avoid Redundancy Across Research Studies	1617
<i>Thomas Nutman, Alex Rosenthal, Joe Croghan, Cathy Steel, Karla Feghali, David Hardison</i>	

Development of Anatomical Radiology Ordersets	1618
<i>Kevin O'Bryan ; Charles H. Andrus ; Feliciano B. Yu ; Phillip Asaro ; S. P. Hmiel</i>	
Using National Database for Autism Research (NDAR) privacy-preserving record linkage protocol in the PEDSnet CDRN	1619
<i>Toan C. Ong ; Michael G. Kahn ; Dan J. Hall</i>	
Best Practices and Design Experiences in Health Information Technology (HIT) Systems: A Primer	1620
<i>Gloria A. Opoku-Boateng ; Anthony F. Norcio</i>	
Nurses' Use of Electronic Health Records to Document Symptoms in Inpatient Settings: Preliminary Systematic Review Results	1621
<i>Mustafa Ozkaynak ; Blaine Reeder ; Lilian Hoffecker ; Mary B. Makic ; Karen Sousa</i>	
Informatics Strategies to Address Cancer Worry of Urban Dominicans	1622
<i>Alsacia L. Paesi ; Suzanne Bakken</i>	
Privacy Preserving Sequential Pattern Mining Across Multiple Medical Sites	1623
<i>Doyel Pal ; Tingting Chen ; Johnson Thomas</i>	
Organizing Drugs in RxNorm by Therapeutic Classes	1624
<i>Matvey B. Palchuk ; Michael Kamerick</i>	
Perceptions of Health Information Technology Risks by Hospital Physicians	1625
<i>Sari Palojoki ; Lasse Lehtonen ; Kaija Saranto</i>	
Measuring HIE in States and Factors Associated with States' Success in HIE	1626
<i>Shriram Parashuram ; Seung Kim ; Tianne Wu ; Prashila Dullabh</i>	
Efficacy of Clinical Alerts Designed to Decrease the Incidence of Contrast Induced Nephropathy	1627
<i>Mark A. Parkulo ; Julia E. Crook ; Launia J. White ; Colleen S. Thomas ; March Rucci</i>	
Building Custom Lexicon for a Large Number of Related Concepts Using Templates	1628
<i>Olga V. Patterson ; Matthew Freiberg ; Scott L. Duval</i>	
Surveying Problem List Perceptions and Use in the Electronic Health Record	1629
<i>Darlene Peterson ; Timothy Burdick ; Joshua Cohen ; Indra N. Sarkar ; Julie Lin ; Dennis Plante ; Elizabeth S. Chen</i>	
Meta-Analysis of Ontology Applications in Healthcare	1630
<i>Kanitha Phalakornkule ; Suhila A. Sawesi ; Joscette F. Jones</i>	
A Simulation Framework for Longitudinal Electronic Health Records Data	1631
<i>Matthew Phelan ; Benjamin Goldstein</i>	
Use of an Adaptive Agent-Based Model in Evaluating Patient Preferences in Healthcare	1632
<i>Andrew B. Phillips ; Margarita Sordo</i>	
Data-driven Identification of Factors for Appropriate Selection of Lab Tests	1633
<i>Gouri Prakash</i>	
Usability Testing of a Complex CDS Tool in the ED; Lessons Learned	1634
<i>Anne Press ; Lauren McCullagh ; Sundas Kahn ; Salvatore Pardo ; Andy Schachter ; Thomas McGinn</i>	
Comparison of Knee Replacement Bundled Payment Pricing Variances Between Medicare, Medicaid, and Commercial Payers	1636
<i>Taylor R. Pressler ; Thomas Gurgiolo ; Scott Orme ; Robert Kershner ; Jonathan Mathieu</i>	
Clustering Health Data to Discover EBP Interventions for Sepsis Prevention and Treatment for Health Disparities	1637
<i>Lisiane Pruinelli ; Pranjal Yadav ; Andrew Hangsleben ; Kevin Schiroo ; Sanjoy Dey ; Gyorgy Simon ; Maribet C. McCarty ; Vipin Kumar ; Connie W. Delaney ; Michael Steinbach ; Bonnie L. Westra</i>	
Blood Flow Model for Improved Decision Support	1638
<i>Charles Puelz ; Beatrice Riviere ; Craig Rusin</i>	
Data Integration Opportunities and Challenges for the ADVANCE Clinical Data Research Network	1639
<i>Jon Puro ; Vance Bauer ; Jennifer E. Devoe ; Rachel Gold ; Erika Cottrell ; Andrew Brickman ; Christine Nelson ; Kenneth H. Mayer ; Abigail Sears ; Scott Fields ; Pedro Rivera</i>	
To be Discontinued: CPOE Medication Orders Discontinued with Reason Being "Error (Erroneous Entry)"	1640
<i>Arbor J. L. Quist ; Thu-Trang Hickman ; Alejandra Salazar ; Mary G. Amato ; Lynn A. Volk ; Adam Wright ; David W. Bates ; Gordon Schiff</i>	
Predictors of Medical Records Violation Punishments Filed with the Texas Medical Board (TMB) Before and After the HITECH Act	1641
<i>Mehdi Rais ; Craig W. Johnson ; Kavoos Eilami</i>	
Automated Citation Retrieval System for Clinical Knowledge Management	1642
<i>Kalpana Raja ; Andrew J. Sauer ; Melanie Klerer ; Siddhartha R. Jonnalagadda</i>	
Closing the Loop with an Enhanced Referral Management System	1643
<i>Harley Ramelson ; Amanda Von Taube ; Pamela M. Neri</i>	
Problem List Problems: A Look Into Data Integrity	1644
<i>Gilbert H. Ramirez ; Hyeon-Eui Kim ; Robert El-Kareh</i>	
Automating Maintenance of Care Team Relationships from Electronic Health Administrative Data to Decrease Variability of Care Coordination using the Health Information Exchange Infrastructure	1645
<i>Pallavi Ranade-Kharkar ; Greg E. Gurr ; Darren K. Mann ; Sidney N. Thornton</i>	
Non-Physicians E-Prescribe More than Physicians in a Pediatric Emergency Department	1646
<i>Mordechai D. Raskas ; Paul Mullan ; Brian R. Jacobs ; James M. Chamberlain ; Aric S. Campling ; Shilpa J. Patel</i>	
Social Media Use for Drug Repurposing: Understanding the Consumer Perspective	1647
<i>Majid Rastegar-Mojarad ; Hongfang Liu ; Priya Nambisan</i>	
Web-based Patient-centered Toolkit: Demographics of Enrollment	1648
<i>Sucheta S. Ravindran ; Anuj K. Dalal ; Constance Morrison ; Julie M. Fiskio ; John R. Hanna ; Dianna L. Stade ; Kelly McNally ; Eli Maiver ; Patricia C. Dykes</i>	

Gaussian Processes for Interpreting Multiple Prostate Specific Antigen measurements for Prostate Cancer Prediction	1649
<i>Narges Razavian ; Saul Blecker ; David Sontag</i>	
Identification of Variables that Predict Visit Times for Analyzing Ophthalmology Clinic Workflows	1650
<i>Sarah Read-Brown ; Michelle R. Hribar ; Grant Aaker ; Leah G. Reznick ; Thomas R. Yackel ; Michael F. Chiang</i>	
Novel Template Identification from VA Text Integration Utility Notes	1651
<i>Andrew M. Redd ; Guy Divita ; Adi V. Gundlapalli ; Le-Thuy T. Tran ; Matthew Samore</i>	
Preserving Semantic Content of Narrative Clinical Information in the OMOP Common Data Model Format	1652
<i>Grant Reed ; Carol Friedman</i>	
Adapting a Mobility Monitoring Protocol for Sensor Studies with Functionally Vulnerable Older Adults	1653
<i>Blaine Reeder ; Angela A. Richard ; Jason Falvey ; Roger J. Paxton ; Jennifer Stevens-Lapsley</i>	
Identifying Patterns Indicative of Copying/Pasting Behavior in Patient Generated Online Content	1654
<i>Tera L. Reynolds ; V. G. Vinod Vydiswaran ; Yuting Wu ; Qiaozhu Mei ; David A. Hanauer ; Kai Zheng</i>	
An Analytics Approach for Adverse Drug Event Discovery	1655
<i>Mohammadreza Rezaie ; Kenji Yoshigoe ; Umit Topaloglu</i>	
Visualizing High Dimensional Clinical and Tumor Genotyping Data	1656
<i>Matthew J. Rieth ; Jeremy L. Warner</i>	
Automated Prediction of Human Mobility Patterns in International Humanitarian Response	1657
<i>Nicholas Robison ; Anne M. Turner</i>	
The CDS Collaborative: Goals, Deliverables, and Future Directions	1658
<i>Salvador Rodriguez ; Emory Fry ; Tadesse Sefer ; Phillip B. Warner ; Claude Nanjo ; Jerry Goodnough ; David E. Shields ; Steven Elliott ; Esteban Aliveri ; Kensaku Kawamoto</i>	
A Case Study on the Effectiveness of an In-house Physician Rating Tool in Outpatient Clinics	1659
<i>Liu Ruijue ; Junhui Jiang ; Nadee Goonawardene ; Sharon S. Tan</i>	
Use of Diagnosis Related Groups to Predict All-Cause Pediatric Hospital Readmission Within 30 days	1660
<i>Victor M. Ruiz ; Amie J. Draper ; Ye Ye ; Andrew H. Urbach ; Rich Tsui</i>	
Representation of Genetic Variants in Genomic Sequencing Reports	1661
<i>Evelyn Rustia ; Chunhua Weng ; Carol Friedman</i>	
An Exploratory Analysis of Inpatient Satisfaction and Usage Pattern of Personalized Bedside Station	1662
<i>Borim Ryu ; Seok Kim ; Kee-Hyuck Lee ; Hee Hwang ; Sooyoung Yoo</i>	
Demographic Predictors for Completion of an Interactive Voice Response System Survey Coupled with a Real Time Transfer to a Pharmacist	1663
<i>Alejandra Salazar ; Elissa V. Klinger ; Jeffrey Medoff ; Mary G. Amato ; Patricia C. Dykes ; Jennifer Haas ; David W. Bates ; Gordon Schiff</i>	
A Multi-Dimensional Consumer-Oriented Approach to Evaluate Patient Portals	1664
<i>Mandana Salimi ; Adriana Stanley ; Vickie Nguyen ; Sahiti Myneni</i>	
Changing Physician Changeover: How Adopting a Tool in the EMR Impacts the Perception of Paper Handoff Tools	1665
<i>Jonathan D. Salisbury ; Emily C. Webber</i>	
MAC Annotator: An Interactive Tool for Translating Medication Appropriateness Criteria Into Structured Form	1666
<i>Hojat Salmasian ; Carol Friedman</i>	
Integrative Informatics and Predictive Modeling Support for Population Health	1667
<i>Mary M. Saltz ; Joel Saltz ; Janos Hajagos ; Andrew White ; Charles M. Boicey ; Jim Murry ; Ivan Crnosija ; Tahsin Kurt ; Erich Bremer ; Jonas S. Almeida</i>	
Predicting Acute Kidney Injury in Critically Ill Children Using Electronic Health Record Data – A Comparison of Four Statistical Learning Models	1668
<i>L. Nelson Sanchez-Pinto ; Robinder G. Khemani</i>	
Canary – A Graphic User Interface to a Heuristic NLP Engine	1669
<i>Nicolae L. Sandor ; Stephen Skentzos ; Alexander Turchin</i>	
Meta-Analysis: Impact of Health Information Technology on Patient Engagement and Health Behavior Change	1670
<i>Suhila Sawesi ; Kanitha Phalakornkule ; Joscette F. Jones</i>	
Automating Risk Score Calculations and Care Recommendations by an EMR Agnostic Solution and Potential Time Saving for Providers	1671
<i>Marianne Scheitel ; Hongfang Liu ; Jane L. Shellum ; Ronald Hankey ; Steve G. Peters ; Rajeev Chaudhry</i>	
Statistically Bolstered Opportunities Assessment in Measure Analytics	1672
<i>Elisabeth Lee Scheufele ; Julianna Kohler ; Gerardo Soto-Campos</i>	
Clinical Relevance of the Doctor's Dilemma Question Set	1673
<i>Daniel R. Schlegel ; Sashank Kaushik ; Peter L. Elkin</i>	
Use of mHealth Technology for Supporting Symptom Management in Underserved Persons Living with HIV (PLWH)	1674
<i>Rebecca Schnall ; Haomiao Jia ; Susan Olander ; Suzanne Bakken</i>	
Computerized Provider Order Entry Rates and Length of Stay Are Inversely Correlated	1675
<i>Richard Schreiber ; Steven H. Shaha</i>	
Drug Allergy Interaction Alert Overrides in the Inpatient Setting	1676
<i>Diane L. Seger ; Sarah P. Slight ; Patrick E. Beeler ; Olivia Dalleur ; Mary G. Amato ; Tewodros Eguale ; Karen C. Nanji ; Patricia C. Dykes ; Michael Swerdluff ; Julie M. Fiskio ; David W. Bates</i>	
Fine Phenotyping in Lung Cancer Using Radiomics and Clinical Data	1677
<i>Luis E. Selva ; Saiju Pyarajan</i>	
Cluster Analysis Algorithm For Cohort Comparison	1678
<i>Sunny Shahdadpuri ; Aditya Sane ; Purav Gandhi</i>	

A Framework for Assessing Clinical Data Suitability for Observational Study	1679
<i>Ning Shang ; Chunhua Weng ; George Hripcak</i>	
Drug Database Refinement Using Machine Learning and Text Analysis.....	1680
<i>Reza Sharifi Sede ; Xianshu Zhu ; Yugang Jia ; Joey Liu ; Oladimeji Farri ; Daniel Elgort</i>	
Registries in Accountable Care: Essential Data Management in New Models of Care.....	1681
<i>John W. Sharp</i>	
MedBus: A Service-oriented Architecture for Enabling the Research Data Economy.....	1682
<i>Amitava Shee ; James Estill ; John S. Brussolo</i>	
Data Mining to Predict Healthcare Utilization in Managed Care Patients	1683
<i>Lincoln Sheets ; Michael A. Phinney ; Sean Lander ; Jerry C. Parker ; Chi-Ren Shyu</i>	
A Continuous Markov Model Approach Using Individual Patient Data to Estimate Mean Sojourn Time of Lung Cancer	1684
<i>Shiwen Shen ; Simon X. Han ; Panayiotis Petousis ; Frank Meng ; William Hsu ; Alex A. Bui</i>	
Identifying Population Characteristics Tables in Full Text Articles	1685
<i>Gerrick Sherman ; Catherine Blake ; Jooho Lee</i>	
Performance Comparison of Running Clinical Rules in Drools and Plain Java Implementation	1686
<i>Jian Shi ; Erik Smith ; Thomas Van Gilder</i>	
Implementation of a Mobile Electronic Medical Record System that Uses a Problem-oriented Contiguous Timeline View.....	1687
<i>Akiko Shibuya ; Keisuke Ogawa ; Kazunori Matsumoto ; Masayuki Hashimoto ; Yukihiro Maeda ; Yoshiaki Kondo</i>	
Improving Failure Mode and Effects Analysis through Electronic Health Record-Assisted Team Identification	1688
<i>Gayle Shier Kricke ; Matthew Carson ; Young Ji Lee ; Nicholas Soulakis</i>	
An Enterprise Clinical Data Pipeline for a Cancer Center	1689
<i>Emily Silgard ; Tony Galuhn ; Kathryn Egan ; Adam Rauch ; Paul Fearn</i>	
Electronic Medical Records System Support of Patient Centered Medical Home Requirements for National Committee for Quality Assurance Recognition.....	1690
<i>Elizabeth R. Silvers ; Amanda Von Taube ; Catherine L. Liang ; Lynn A. Volk</i>	
A New, Touch-screen Sensitive Display for Management of Diuretic Therapy of Heart Failure Patients in Critical Care Setting.....	1691
<i>Jiri Sklenar ; Jay Parikh ; James O. Mudd</i>	
Alternative Information Display of Clinical Research to Support Clinical Decision Making: A Formative Evaluation.....	1692
<i>Stacey L. Slager ; Charlene Weir ; Heejun Kim ; Javed Mostafa ; Guilherme Del Fiol</i>	
A Novel Anatomical Semantic Ontology for Identification of Anatomically Proximate CTs Using LOINC Codes.....	1693
<i>Benjamin H. Slovis ; Tina Lowry ; Bradley Delman ; Anton O. Beitia ; Gilad Kuperman ; Charles Dimaggio ; Jason S. Shapiro</i>	
Leveraging Genetic Findings to Identify High-Risk Chronic Kidney Disease in the Electronic Medical Record	1694
<i>Craig Smail</i>	
A Platform for Generating and Validating Breast Risk Models from Clinical Data: Towards Patient-Centered Risk Stratified Screening	1695
<i>Nova F. Smedley ; Ngan Chau ; Antonia Petrusse ; Alex A. Bui ; Arash Naeim ; William Hsu</i>	
Systemic Risk Analysis for Use Cases for Safety-Related Usability of EHRs.....	1696
<i>Michael W. Smith ; Daniel R. Murphy ; Dean F. Sittig ; Elise Russo ; Hardeep Singh</i>	
Prediction of Colorectal Surgical Site Infections Using Risk Factors	1697
<i>Sunghwan Sohn ; Majid Rastegar-Mojarrad ; James M. Naessens ; Elizabeth B. Habermann ; David W. Larson ; Hongfang Liu</i>	
Representing and Validating Cancer Study Metadata Standard Using RDF Shapes Expression Language	1698
<i>Harold R. Solbrig ; Eric Prud'Hommeaux ; Christopher Chute ; Guoqian Jiang</i>	
PubMed 'Early Alerts': A Pilot Study to Support Prospective Detection of Emerging Adverse Drug Events	1699
<i>Alfred Sorbello ; Anna Ripple ; Olivier Bodenreider</i>	
Annotating ADLs and IADLs in Veterans Affairs Clinical Documents	1700
<i>Brett R South ; Danielle Mowery ; Lee Christensen ; Adi V. Gundlapalli ; Melissa Tharp ; Marzieh Vali ; Marjorie E. Carter ; Mike Conway ; Salomeh Keyhani ; Wendy Chapman</i>	
Inexpensive Radio Communications System for Wheelchair Users	1701
<i>James R. Sprague ; Dorothy W. Curtis</i>	
Machine-to-Machine (M2M) Communication in Home-care.....	1702
<i>Basile P. Spyropoulos ; Aris Tzavaras ; Maria Botsvala</i>	
Bringing Context to Data Analytics: A Hybrid Approach to Understanding Clinical Workflow	1703
<i>Bryan Steitz ; Kim M. Unertl</i>	
Using the Consolidated Framework for Implementation Research (CFIR) to Evaluate EHR Population Health Management Tools	1704
<i>Christina L. Stephan ; Lori L. Popejoy ; David R. Mehr ; Esmaeel Rahmani ; Katie Wilkinson ; Eduardo Simoes</i>	
Matrix Completion Methods and Imputation for EMR-Based Prediction.....	1705
<i>Erika Strandberg ; Mohsen Bayati</i>	
Clinical Efficacy of Virtual Reality Rehabilitation Intervention for Patients with Low-back Pain: A Randomized Controlled Trial	1706
<i>Wu-Chen Su ; Shih-Ching Yeh ; Si-Huei Lee ; Hsiang-Chun Huang</i>	
Comparison of Patient Portal Usage between Employees and Non-Employees	1707
<i>Lina Suleiman ; Dara Eckerle Mize ; Daniel Fabbri ; Trent Rosenbloom</i>	
Personal Health Information Management Strategies: Experiences of Patients in the US and China	1708
<i>Si Sun ; Nicholas J. Belkin</i>	

Data-driven Knowledge Base Evaluation: Translating an Adult CDS Tool for Use in Pediatric Care	1709
Katherine A. Sward ; Christopher J. Newth ; Robinder G. Khemani ; J. Michael Dean	
Understanding Why Providers Override Computerized Medication Alerts in the Inpatient and Outpatient Setting	1710
Michael Swerdluff ; Diane Seger ; Mary G. Amato ; Nivethitha Maniam ; Olivia Dalleur ; Julie M. Fiskio ; Quoa L. Her ; Sarah P. Slight ; Patrick E. Beeler ; Tewodros Eguale ; Patricia C. Dykes ; David W. Bates	
Leveraging a Clinical Data Warehouse to Improve Quality of Data in the French DRG-based System (PMSI)	1711
Emmanuelle Sylvestre ; Christine Riou ; Guillaume Bouzillé ; Marc Cuggia	
Lost in the Fog: Information Needs in the Care of Patients with Delirium	1712
Teresa Taft ; Scott D. Nelson ; Stacey Slager ; Charlene Weir	
Developing an Enhanced Electronic Referral Management System	1713
Amanda V. Taube ; Pamela M. Neri ; David Kiernan ; Inna Natanel ; Harley Z. Ramelson	
Mapping APACHE IV “Reason for Intensive Care Admission” Classification to SNOWMED CT	1714
Charat Thongprayoon ; Amelia K. Barwise ; Andrew M. Harrison ; Brian W. Pickering ; Vitaly Herasevich	
Platform for Engaging Everyone Responsibly (PEER) Validation Study Plan	1715
Sheri R. Tibbs ; Cynthia Kluchar ; Sharon F. Terry ; Eric Eisenstein	
A Systems-Based Framework for Informatics Workforce Development to Support Health System Transformation	1716
Herman Tolentino ; Laura H. Franzke ; Sridhar R. Papagari Sangareddy	
Lack of Unique Healthcare Identifier in Healthcare Information Exchanges: A Field Study	1717
Monica C. Tremblay ; Gloria J. Deckard ; Peng Zhang	
Integrating an Externally Developed Clinical Decision Support (CDS) System with an Existing Electronic Health Record (EHR) System at VA	1719
Samson W. Tu ; Kaeli Yuen ; Connie Oshiro ; Susana B. Martins ; Ignacio Valdes ; George O. Welch ; Paul Heidenreich ; Mary K. Goldstein	
Smart Coach: A Problem-Solving Mobile App to Support Weight Loss Management	1720
Bengisu Tulu ; Emmanuel Agu ; Stephenie Lemon ; Jessica Oleski ; Martinus Evans ; Sherry Pagoto	
Researcher Needs for a Patient-Centered Outcomes Research (PCOR) Data Infrastructure	1721
Petry S. Ubri ; Prashila Dullabh ; Tyne Alexander ; Alison Rein ; Erin Holve ; Abigail Schachter	
Hospital Participation in Meaningful Use and Rehospitalization of Medicare Beneficiaries	1722
Mark Aaron Unruh ; Joshua R. Vest ; Hye-Young Jung ; Rainu Kaushal	
Automating Personal Health Record Mammography Messages to Improve Mammography Screening Rates	1723
Vaibhav Goyal ; Peter J Greco ; David C Kaelber	
Development of a Concept-based Template Report Editor for Radiological Information System	1724
Carolina Valencia ; Andrés Arbeláez ; Sebastián Velez-Zuluaga ; Hugo Chvatal ; Andrés F. Zapata ; Lorena Tamayo ; Ana C. Londoño ; José F. Florez-Arango	
iDECIDE Smartphone App for Personalized Messages for Nutrition and Fitness Goals	1725
Irene Van Woerden ; Lauren Spano ; Pedro Neto ; Danielle L. Groat ; Maria A. Grando	
Evaluation of a Statewide Online HIV-HCV-STD Clinical Education Program – Characterization of Healthcare Providers’ Professional Background, Self-Reported Knowledge Increase, and Intention to Change Clinical Practice	1726
Dongwen Wang ; Amneris E. Luque ; Terry Doll ; Monica Barbosu ; Matthew Bernhardt	
Exploring Healthcare Mobility in the US to Improve Quality of Care: Preliminary Results	1727
Karen H. Wang ; Constance Carroll ; Brenda Fenton ; Samah J. Fodeh ; Joseph Erdos ; Marcella Nunez-Smith ; Amy C. Justice ; Cynthia Brandt	
Automatically Screening Possible Chemoresistance Genes of Bladder Cancer Drugs	1728
Liwei Wang ; Jingde Zhu ; Qian Zhu	
Building and Evaluating Predictive Models for Postoperative Ileus Prior to Colorectal Surgery	1729
Xuya Wang ; Raul Caso Caso ; Yindalon Aphinyanaphongs	
Integrating Analytics and Business Intelligence (BI) into a Health Informatics Curriculum: Pros, Cons and Opportunities	1730
Victoria Wangia-Anderson	
Pediatric Venous Thrombus Embolus (VTE) Screening Tool: the Design, Implementation and Continuous Improvement of a Complex Clinical Decision Support Tool	1731
Emily C. Webber ; Michele Saysana ; Cara Willey ; Arash Mahajerin	
A Method to Automatically Create Titles of Clinical Notes in Electronic Medical Records	1732
Alan Weiss ; Mehdi Rais ; Rehal Bhojani ; Dean F. Sittig	
Engaging Patients & Families in Contributing Patient-Reported Outcomes to a Pediatric Disease Registry for Comparative Effectiveness Research	1733
Elissa R. Weitzman ; Parissa K. Salimian ; Karen L. Olson ; Kenneth Mandl ; Marc Natter	
Transition of Care from an Academic Cancer Center to Community Providers and Survivorship Care: Would a Patient Care Team Portal Help?	1734
Philip E. Whalen ; Marina Oktapodas ; Carmelo Gaudioso	
Increasing Patient Enrollment in Clinical Trials Using a Web Based Recruitment Application	1735
Nancy N. Whipple ; Harley Ramelson ; Inna Natanel	
Augmenting Psychiatric Care: A Participatory Mobile Framework	1736
Kandace M. Whiting ; James Rosser ; Kenneth Wells ; Armen Arevian	
A Centralized Data Collection and Management Tool in the VA: REDCap	1737
Erika Whittier ; Denise M. Hynes ; Peter Watson	
Routine Collection of Patient-Reported Data in Electronic Form in Clinical Settings: An Analysis of Available Technologies	1738
Adam B. Wilcox ; Susan D. Tew ; Justin Poll	

Using Informatics Tools to Standardize the Request, Adjudication and Monitoring of Non Formulary Agents at a VA Facility.....	1739
<i>Lisa Winterbottom ; Judy McConnachie ; Thomas M. Brenk ; Jianji Yang ; Brian M. Wilcox</i>	
A BI Tool to Monitor the Intervention Efficiency of Antibiotic Therapy in Leukemia Patients	1740
<i>Cai Wu</i>	
Visualizing Clinical Workflow using Time and Motion Data.....	1741
<i>Danny T. Y. Wu ; Nikolas Smart ; Sang-Jung Han ; Maria Majeed ; Jing Han ; Suinan Li ; Fan Zhang ; Kai Zheng</i>	
Use of an Electronic Health Record as a Research Tool: Frequency of Exposure to Targeted Medical Conditions and Health Care Providers' Clinical Proficiency.....	1742
<i>Tim Wysocki ; James Crutchfield ; Maria Carmen G. Diaz ; James Franciosi</i>	
PheWAS Network Analysis and Visualization.....	1743
<i>Yaojin Xu ; Todd Edwards ; Lisa Bastarache ; Rebecca N. Jerome ; Shilin Zho ; Eric Torstenson ; Wei-Qi Wei ; Jana Shirey-Rice ; Erica A. Bowton ; Yu Shyr ; Jill Pulley ; Joshua C. Denny</i>	
Simplified Spectrographic Display for Bedside Electrographic Seizure Detection in the ICU	1744
<i>Peter Z. Yan ; Zachary M. Grinspan</i>	
GeoHealth Informatics: Applying Geographic Information Science (GIS) to Support Heart Failure Self-Care	1745
<i>Nan Ye ; Daniel Johnson ; Richard J. Holden</i>	
Intelligence in Usability Survey Research (iUSuR): An Online Usability Question Bank for Usability Survey Research	1746
<i>Po-Yin Yen ; Nima Esmaili Mokaram ; Gina M. Torelli ; Alissa Schultz ; Xiaonan Ji</i>	
Annotating Recommendation Sentences in Radiology Reports	1747
<i>Meliha Yetisgen ; Prescott Klassen ; Lucas McCarthy ; Thomas Payne ; Martin L. Gunn</i>	
Anchor Time Extraction for Building Timeline from Korean Clinical Narratives	1748
<i>Wangjin Yi ; Seongkeun Park ; Jinwook Choi</i>	
Annotation of Disease Characteristics for Cancer Liver Stage Prediction.....	1749
<i>Wen-Wai Yim ; Sharon W. Kwan ; Guy Johnson ; Meliha Yetisgen</i>	
Predicting Autonomy for Physical Activity using Data Mining Techniques	1750
<i>Sunmoo Yoon ; Niurka M. Suero-Tejeda ; Suzanne Bakken</i>	
Using TURF Framework to Improve EHR-CPOE Medication Dosing in Renal Impaired Elderly.....	1751
<i>Rafeek A. Yusuf ; Mandana Salimi ; Min Zhu</i>	
A Preliminary Study on EHR-Associated Extra Workload Among Physicians.....	1752
<i>Jing Zhang ; Kellie Avery ; Yunan Chen ; Shazia Ashfaq ; Steven R. Rick ; Kai Zheng ; Nайдр Weibel ; Harry Hochheiser ; Charlene Weir ; Kristin Bell ; Mark Gabuzda ; Neil Farber ; Braj Pandey ; Alan Calvitti ; Lin Liu ; Richard Street ; Zia Agha</i>	
Predicting Future Anxiety and Depression Diagnoses Among College Students Utilizing Electronic Health Data	1753
<i>Jinghe Zhang ; Hao Wu ; James Turner ; Adrienne Keller ; Laura Barnes</i>	
Evaluating Efficient Clinician Utilization of Electronic Health Records	1754
<i>Yongkang Zhang ; Marie Krousel-Wood ; Richard V. Milani ; Allison B. McCoy</i>	
Social Media and Autism Support: Health Information Seeking in Facebook by Autism Patients and Caregivers	1755
<i>Yuehua Zhao ; Priya Nambisan</i>	
Understanding the Use of Adverse Events Criteria in Radiation Therapy: A Literature Mining Approach	1756
<i>Yi Zhen ; Yuliang Jiang ; Q. Jackie Wu ; Lulin Yuan ; Yaorong Ge</i>	
Medication Adherence to Oral Hypoglycemic Agents and Hospitalization Cost in Medicaid Patients with Type 2 Diabetes.....	1757
<i>Vivienne Zhu ; Wanzhu Tu ; Marc Rosenman ; J. Marc Overhage</i>	
Facebook and Depression: How People with Depression Use Facebook to Manage Their Depression.....	1758
<i>Maryam Zolnoori ; Priya Nambisan ; Timothy B. Patrick</i>	
Using a Web-based Clinical Pathway and Computerized Order Set to Improve Efficiency of Care for Asthma in a Pediatric Emergency Department	1759
<i>Joseph J. Zorc ; Ruth Abaya ; Eva Delgado ; Richard Scarfone</i>	

STUDENT DESIGN CHALLENGE

KaryoViz: Designing A Karyotype Visualization Platform for Clinical Decision Support	1760
<i>Zachary B. Abrams ; Satyajeet Raje</i>	
The EH Tracker: Using Dynamic Environmental Health Data for Improved Personal Health Decision-Making.....	1765
<i>Juandalyn L. Burke ; Ryan C. James ; Dae Hyun Lee</i>	
Improving User Engagement and Insight Through Contextualized Quantified Self	1784
<i>Tiffany J. Callahan ; Tal Lorberbaum ; Alexandre Yahi</i>	
Take a Breather: Empowering Adherence & Patient Centered Research Through Interactive Data Visualization, Social Engagement, & Gamification in Patients with Sleep Apnea	1789
<i>Ashley Choi ; Benjamin Cordier ; Preerna Das ; Jason J. Li</i>	
I-SMILE: Similarity Based Just-in-time Recommendation System for Public Health	1796
<i>Edward Choi ; Jina J. Dcruz ; Sizhe Lin ; Kelly Ryder ; Aashu B. Singh ; Hang Su</i>	
Learning from the Data: Exploring a Hepatocellular Carcinoma Registry Using Visual Analytics to Improve Multidisciplinary Clinical Decision-Making	1801
<i>Michelle Hribar ; Deborah V. Woodcock ; Lazaro N. Sanchez-Pinto ; Kate Fultz Hollis ; Gene Ren</i>	
Accelerating Biomedical Informatics Research with Interactive Multidimensional Data Fusion Platforms	1806
<i>Satyajeet Raje</i>	

STUDENT PAPER

Three-Dimensional Content-Based Cardiac Image Retrieval Using Global and Local Descriptors	1811
<i>Leila C. C. Bergamasco ; Fátima L. Nunes</i>	
Analyzing Self-Help Forums with Ontology-Based Text Mining: An Exploration in Kidney Space	1821
<i>Philipp Burckhardt ; Rema Padman</i>	
Dynamic Estimation of the Probability of Patient Readmission to the ICU using Electronic Medical Records	1831
<i>Karla Caballero ; Ram Akella</i>	
Modelling Risk of Cardio-Respiratory Instability as a Heterogeneous Process.....	1841
<i>Lujie Chen ; Artur Dubrawski ; Marilyn Hravnak ; Gilles Clermont ; Michael Pinsky</i>	
Combing Human Disease Genetics and Mouse Model Phenotypes Towards Drug Repositioning for Parkinson's Disease.....	1851
<i>Yang Chen ; Xiaoshu Cai ; Rong Xu</i>	
Automated Classification of Consumer Health Information Needs in Patient Portal Messages.....	1861
<i>Robert M. Cronin ; Daniel Fabbri ; Joshua C. Denny ; Gretchen P. Jackson</i>	
Health Literacy, Education Levels, and Patient Portal Usage During Hospitalizations	1871
<i>Sharon E. Davis ; Chandra Y. Osborn ; Sunil Kripalani ; Kathryn Goggins ; Gretchen P. Jackson</i>	
Using High-Fidelity Simulation and Eye Tracking to Characterize Workflow Patterns among Hospital Physicians	1881
<i>Julie W. Doberne ; Ze He ; Vishnu Mohan ; Jeffrey A. Gold ; Jenna Marquard ; Michael F. Chiang</i>	
Learning a Severity Score for Sepsis: A Novel Approach based on Clinical Comparisons	1890
<i>Kirill Dyagilev ; Suchi Saria</i>	
Automated Grading of Gliomas Using Deep Learning in Digital Pathology Images: A Modular Approach with Ensemble of Convolutional Neural Networks	1899
<i>Mehmet Günhan Ertosun ; Daniel Rubin</i>	
Secondary Use of EHR Timestamp Data: Validation and Application for Workflow Optimization	1909
<i>Michelle R. Hribar ; Sarah Read-Brown ; Leah G. Reznick ; Lorinna Lombardi ; Mansi Parikh ; Thomas R. Yackel ; Michael F. Chiang</i>	
Longitudinal Analysis of Computerized Alerts for Laboratory Monitoring of Post-liver Transplant Immunosuppressive Care	1918
<i>Jason Jacobs ; Scott P. Narus ; Scott Evans ; Catherine J. Staes</i>	
Examining the Distribution, Modularity, and Community Structure in Article Networks for Systematic Reviews.....	1927
<i>Xiaonan Ji ; Raghu Machiraju ; Alan Ritter ; Po-Yin Yen</i>	
A Data Quality Ontology for the Secondary Use of EHR Data	1937
<i>Steven G. Johnson ; Stuart Speedie ; Gyorgy Simon ; Vipin Kumar ; Bonnie L. Westra</i>	
Evaluating Consumer m-Health Services for Promoting Healthy Eating: A Randomized Field Experiment	1947
<i>Yi-Chin Kato-Lin ; Rema Padman ; Julie Downs ; Vibhanshu Abhishek</i>	
Making Background Work Visible: Opportunities to Address Patient Information Needs in the Hospital	1957
<i>Logan Kendall ; Sonali R. Mishra ; Ari Pollack ; Barry Aaronson ; Wanda Pratt</i>	
Development and Preliminary Evaluation of a Prototype of a Learning Electronic Medical Record System	1967
<i>Andrew J. King ; Gregory F. Cooper ; Harry Hochheiser ; Gilles Clermont ; Shyam Visweswaran</i>	
A Multidimensional Data Warehouse for Community Health Centers	1976
<i>Kislaya Kunjan ; Tammy Toscos ; Ayten Turkcan ; Bradley N. Doebling</i>	
Creating Shareable Clinical Decision Support Rules for a Pharmacogenomics Clinical Guideline Using Structured Knowledge Representation	1985
<i>Margaret K. Linan ; Davide Sottara ; Robert R. Freimuth</i>	
Analyses of Merging Clinical and Viral Genetic Data for Influenza Surveillance.....	1995
<i>Daniel Magee ; Rachel Beard ; Matthew Scotch</i>	
Exploration of Temporal ICD Coding Bias Related to Acute Diabetic Conditions	2005
<i>Mollie McKillop ; Fernanda Polubriaginof ; Chunhua Weng</i>	
Classification of Clinically Useful Sentences in MEDLINE.....	2015
<i>Mohammad Amin Morid ; Siddhartha R. Jonnalagadda ; Marcelo Fiszman ; Kalpana Raja ; Guilherme Del Fiol</i>	
Desiderata for Major Eligibility Criteria in Breast Cancer Clinical Trials.....	2025
<i>Matthew L. Paulson ; Chunhua Weng</i>	
An Assessment of Family History Information Captured in an Electronic Health Record	2035
<i>Fernanda Polubriaginof ; Nicholas P. Tatonetti ; David Vawdrey</i>	
Computational Methods for Unraveling Temporal Brain Connectivity Data.....	2043
<i>Bisakha Ray ; Constantine Aliferis ; Alexander Statnikov</i>	
Variability in Electronic Health Record Usage and Perceptions among Specialty vs. Primary Care Physicians	2053
<i>Travis K. Redd ; Julie W. Doberne ; Daniel Lattin ; Thomas R. Yackel ; Carl O. Eriksson ; Vishnu Mohan ; Jeffrey A. Gold ; Joan S. Ash ; Michael F. Chiang</i>	
Predicting Health Care Utilization After Behavioral Health Referral Using Natural Language Processing and Machine Learning	2063
<i>Nathaniel Roysden ; Adam Wright</i>	
Translational Meta-analytical Methods to Localize the Regulatory Patterns of Neurological Disorders in the Human Brain.....	2073
<i>Vanessa Sochat ; Maude David ; Dennis Wall</i>	
Automated Detection of Benzodiazepine Dosage in ICU Patients through a Computational Analysis of Electrocardiographic Data	2083
<i>Maxwell T. Spadafore ; Zeeshan Syed ; Ilan Rubinfeld</i>	

COBE: A Conjunctive Ontology Browser and Explorer for Visualizing SNOMED CT Fragments.....	2092
<i>Mengmeng Sun ; Wei Zhu ; Shiqiang Tao ; Licong Cui ; Guo-Qiang Zhang</i>	
Improving Guideline Concordance in Multidisciplinary Teams: Preliminary Results of a Cluster-randomized Trial Evaluating the Effect of a Web-based Audit and Feedback Intervention with Outreach Visits	2101
<i>Mariette M. Van Engen-Verheul ; Wouter Gude ; Sabine Van Der Veer ; Hareld Kemps ; Monique Jaspers ; Nicolette F. De Keizer ; Niels Peek</i>	
Biological Model Development as an Opportunity to Provide Content Auditing for the Foundational Model of Anatomy Ontology.....	2111
<i>Lucy L. Wang ; Eli Grunblatt ; Hyunggu Jung ; Ira Kallet ; Mark Whipple</i>	
Automated Extraction of Substance Use Information from Clinical Texts	2121
<i>Yan Wang ; Elizabeth S. Chen ; Serguei V. Pakhomov ; Elliot G. Arsoniadis ; Elizabeth W. Carter ; Elizabeth Lindemann ; Indra N. Sarkar ; Genevieve B. Melton</i>	

SYSTEMS DEMONSTRATION

Conversational Agents for Automated Inpatient and Outpatient Health Counseling	2131
<i>Timothy Bickmore</i>	
Navigating between Drug Classes and RxNorm Drugs with RxClass	2132
<i>Olivier Bodenreider ; Lee Peters ; Thang Nguyen</i>	
SEMCARE - Semantic Data Platform for Healthcare	2133
<i>Philipp Daumke ; Claudia Riede ; Thomas Fassbender ; Angel Honrado ; Markus Kreuzthaler ; Pablo López-García ; Stefan Schulz ; Erik M. Van Mulligen ; Herman Van Haagen ; Jan Kors ; Hanney Gonna ; Xinkai Wang ; Elijah Behr</i>	
Leveraging Health Information Exchange to Create Neighborhood Health Records for Public Health Agencies.....	2134
<i>Brian E. Dixon ; P. Joseph Gibson ; Karen F. Comer ; Jian Zou ; Jennifer L. Williams ; Marc Rosenman</i>	
OHDSI: An Open-Source Platform for Observational Data Analytics and Collaborative Research.....	2135
<i>Jon D. Duke ; Frank Defalco ; Chris Knoll ; Vojtech Huser ; Richard D. Boyce ; Patrick B. Ryan</i>	
Towards an Open EHR Platform: Porting a Complex Application using SMART on FHIR	2136
<i>Alistair Erskine ; Marcy Stoots ; David McCallie</i>	
RapTAT: A Tool for Assisted Annotation and Reviewer Training via Online Machine Learning	2137
<i>Glenn T. Gobbel ; Ruth M. Reeves ; Brett R South ; Wendy Chapman ; Jay Jarman ; Steven Lay ; Michael E. Matheny</i>	
The Scalable Collaborative Infrastructure for a Learning Health System: Facilitating Agile Comparative Effectiveness Research	2138
<i>Jeffrey G. Klann ; Marc Natter ; Douglas Macfadden ; Sarah R. Weiler ; Kenneth Mandl ; Shawn N. Murphy</i>	
Electronic Health Management Platform (eHMP): The Next Phase of VA's EHR	2139
<i>Jonathan R. Nebeker ; Walter P. Nichol ; Shane McNamee ; Jessica Murphy ; James L. Hellewell ; Reese Omizo ; Kristian Johnson ; Margaret McDonald ; Kensaku Kawamoto ; Guilherme Del Fiol ; Emory Fry ; Elaine Hunolt ; Theresa Cullen ; Scott D. Wood ; Jennifer Herout ; Charlene Weir</i>	
PhEMA: Phenotype Modeling, Sharing and Execution Architecture	2140
<i>Jyotishman Pathak ; Joshua C. Denny ; William K. Thompson ; Luke Rasmussen</i>	
ePAD: Leveraging Image Data in Learning Healthcare Systems	2141
<i>Daniel L. Rubin ; Dev Gude, Cavit Altindag ; Hakan Bulu ; Debra Willrett</i>	
The SDIDS System for Integrating Global Health Surveillance Data: An Example Application to Malaria Surveillance in Uganda	2142
<i>Kate Zinszer ; Anya Okhmatovskaya ; Arash Shaban-Nejad ; Lauren N. Carroll ; Neil F. Abernethy ; David Buckeridge</i>	
Author Index	