TABLE OF CONTENTS

VOLUME 1

ABSTRACT PRESENTATION

A Visual Analytics Antiobogram Dashboard As Part of a Comprehensive Approach to Perioperative Antibiotic Administration .............................................................. 1
Luis M. Ahumada, Allan F. Simpao, Jorge A. Galvez, Mohamed A. Behman, Jeffrey S. Gerber, John Martin, Beatriz Larru, Kaede Ota, Talene A. Metijian, Bimal Desai

Associations between Use of Electronic Health Record Features and Health Care Quality in Ambulatory Care .......................................................... 2
Jessica S. Ancker, Lisa M. Kern, Alison Edwards, Sarah C. Nosal, Daniel Stein, Diane Hausser, Rainu Kaushal

Physicians’ Use of Electronic Health Records (EHRs) as a Communication Tool in Primary Care Visits .......................................................... 3
Omar Asan

Multiple Perspectives on Clinical Decision Support: A Qualitative Study of Fifteen Clinical and Vendor Organizations .................................................. 4
Joan S. Ash, Dean F. Sittig, Carmit K. McMullen, Adam Wright, Arwen Bunce, Vishnu Mohan, Deborah J. Cohen, Blackford Middleton

An Interactive Web-based Interview to Improve Family Medical History Documentation .......................................................... 6
Adarsha S. Bujacharya, Bradley H. Crotty, Hollis B. Koweloff, Slack Y. Warner, Charles Safran

Earlier Switching from Intravenous to Oral Antibiotics Due to eReminders ................................................................................. 8
Patrick E. Beeler, Stefan P. Kuster, Emmanuel Eschmann, Rainer Weber, Jürg Blaser

Cardiorespiratory Physiological Data As an Indicator of Morphine Pharmacokinetics and Pharmacodynamics in Critically Ill Newborns .......... 9
Nadja Bressan, Carolyn McGregor, Andrew James

Evolving Collaboration Patterns in Medical Research ............................................................. 11
Jason Cory Brunson, Xianyuan Wang, Reinhard Laubenbacher

Assessment of Vital Sign Data Accuracy and Timeliness as Recorded in an EHR .................................................. 12
Lorraine R. Buis, Lisa A. Galler, Melissa Poulge

Matthew M. Burton, David W. Larson, Jenna K. Lovely, Tim Miksch, Steve G. Peters, Timothy Larson, John T. Wald, Bruce A. Evans

PheWAS and Genetics Define Subphenotypes in Drug Response ............................................................................. 15
Robert J. Carroll, Jeremy L. Warner, Anne E. Eyler, Charles Moore, Jayanth Doss, Katherine P. Liao, Robert M. Plenge, Joshua C. Denny

Hispanic Patients’ Role Preferences in Primary Care Treatment Decision Making .................................................. 17
Kenneth Cato, Suzanne Bakken

Next-Generation Terminology Requirements for Interprofessional Care Planning .................................................. 18
Sarah Collins, Kira Tsivkin, Stephanie Klinkenberg-Ramirez, Dina Ishakova, Hari K. Nandigam, Perry L. Mar, Roberto A. Rocha

Not Just For The Millennials: A Cross-Sectional Analysis Of Secure Messaging Use Among Elders, Families, And Physicians .................................................. 20
B. H. Crotty, Jacqueline O’Brien, Meghan Dierks, Xiaoning Lu, Henry J. Feldman, Charles Safran

Engaging Providers, Patients, and Institutional Stakeholders in Developing a Patient-centered Microblog .................................................. 22
Amy K. Dalal, Patricia C. Dykes, Kelly McNally, Dianna L. Stade, Kamiko Ohashi, Sarah Collins, David W. Bates, Jeffrey L. Sch¨unpiger

A Smart Suite for the Evaluation of Data Generated by a Smartphone Application for Nutritional Triage in Oncological Outpatients .................................................. 24
Jersen S. De Bruin, Christian Schuh, Eva Lugger, Michaela Gall, Karin Schindler

HARVEST, A Holistic Patient Record Summarizer at the Point of Care .................................................. 26
Noemie Elbadad, Sharon Lipshy Gorman, Jamie S. Hirsch, Connie Liu, David Fawcrey, Marc Sturm

Designing Specific Alerts for Potassium-Increasing Drug-Drug Interactions .................................................. 28
Emmanuel Eschmann, Patrick E. Beeler, Jürg Blaser

Automated Detection of Early Physiological Deterioration in Hospitalized Patients .................................................. 29
R. Scott Evans, Kathryn G. Kutler, Kathy J. Simpson, Stephen Howe, Peter F. Crossno, Kyle V. Johnson, Misty N. Schreiner, Jim Lloyd, William H. Tettelbach, Roger K. Keddington, Aiden B. Tanner, Chehli Wilde, Terry P. Clemmer

RexMart: An Open Source Tool for Exploring and Sharing Research Data without Compromising Data Integrity .................................................. 31
Frank J. Farach, Owen McGrotrick, Charles H. Tyrrell, Clark Evans, Alejandro Mesa, Leon Rosenblit

First Feasibility of a Surveillance Platform Combining Community-Submitted Symptoms and Specimens for Molecular Diagnostic Testing .................................................. 33
Jennifer Geff, Aaron A. Rowe, Rumi Chumara

Translating EHR-Based Diabetes Decision Support Tools Into the Safety Net .................................................. 35

Automating Performance Measures and Clinical Practice Guidelines: Differences and Complementarities .................................................. 37
Mary K. Goldstein, Samson W. Tu, Susanna B. Martini, Connie Oshiro, Kaeli Yuen, Tammy S. Huang, Dan Y. Wang, Amy Furman, Michael Ashcroft, Paul Heidenreich

Federating Air Quality Data with Clinical Data .................................................................................. 39
Ramkrishn Gouripeddi, Naresh Sundar Rajan, Randy K. Madsen, Phillip B. Warner, Julio Facelli
Patient Web-Portals: Can Internet Access Explain Differences in Use Among Patients with Chronic Conditions ................................................. 41

Refining a Patient Risk Assessment using Adjusted Clinical Groups (ACG) with Outpatient Lab Results ................................................................. 42

Kimberly Gudzune, Klaus Lemke, Hadi Kharrazi, Jonathan Weiner

Perspectives on Care Coordination and Meaningful Use in the Emergency Department Setting .............................................................. 44

Saira N. Hauque, Debbie Travers, Samue T. Rosenblloom, Jonathan S. Wald

Enhancing the TURF Framework with a Workflow Ontology ................................................................................................................................. 46

Craig Harrington, Cui Tao, Keith A. Butler, Juijie Zhang

Automatically Enhancing Discharge Instructions with Pictographs to Improve Patient Recall and Satisfaction .................................................. 48

Brent Hill, Seneca I. Perri, Jinqui Kuang, Rebecca Morris, Katherine Dayon, Bruce E. Bray, Qing T. Zeng-Treadler

A Web-Based Resource for Medication Management of the Community-Dwelling Older Adult .............................................................. 50

Kay Jansen, Amy Coenen, Jeeyae Choi

Evaluation Studies of the Librarian Informobutton Tailoring Environment (LITE): An Open Access Online

Knowledge Capture, Management, and Configuration Tool for OpenInformButton ....................................................................................... 51

Xia Jieg, James J. Cimino, Guillerme Del Fioli

Using PhenotypePortal for Checking Clinical Guideline Recommendation Compliance ................................................................. 53

Lara Johnstun, Danielle L. Groat, Amol Bhalla, Kevin Peterson, Jyotishman Pahak, Adela Grando

Generating Problem Lists Using Medication Reconciliation .......................................................................................................................... 55

Joshua W. Joseph, David T. Chiu, Larry A. Nathanson, Steven Horng

Evaluation of Stage 3 Care Coordination ‘Meaningful Use’ (MU) Objectives Among Eligible Hospitals .......................................................... 57

Hadi Kharrazi

Extracting Drug-Drug Interactions from Literature Using a Rich Feature-Based Linear Kernel Approach .................................................. 59

San Kim, Haibin Liu, Lana Yegamova, W. J. Wilbur

Evaluation of an Early Prototype of a Patient-Centered Decision Aid to Improve Accuracy of Breast Cancer Risk Perception .............................................................................. 61

Rita Kukafka, Katherine Crew, Haesung Yi, Tong Xiao, Alejandra Aguirre, Parajatham Sivasubramanian

Identifying Barriers to Using eHealth Data for Individualized Clinical Performance Feedback in Malawi : A Case Study .............................................. 62

Zach Landis-Levis, Ronald Manjomo, Oliver Gadabu, Bertha Simwaka, Susan Zickmunk, Gerald P. Douglas, Rebecca S. Jacobson

A Curvilinear Path Towards Interoperability: A Curvilinear Path Towards Interoperability: Homogeneity and Disparity in Models of Health Information Exchange ................................................................................................. 64

James R. Longaberger II, Tiffany Champagne

Combining Heterogeneous Databases to Detect Adverse Drug Reaction ........................................................................................................... 66

Ying Li, Santiago Vilar, Ying Wei, Carol Friedman

Detecting Epilepsy Diagnosis in Clinical Notes: A Comparison of Traditional Text Classification Methods .......................................................... 68

Todd Lingren, Pawel Matykevicius, Yizhuo Ni, Shannon M. Sandridge, Katherine D. Holland, Imre Solti, Tracey A. Glaser, John Pexton

ED Noise & Cognition Intuitions: Do We Have a Jackhammer in the Cockpit? ................................................................................................. 70

Mary L. Little, Osman R. Sayan, Edward H. Suh, Vimala L. Patel

A Hybrid Electronic Surveillance Design Pattern for Public and Population Health ....................................................................................... 71

John W. Loosk, Hadi Kharrazi, Jonathan Weiner

Crowdsourcing ICD-11 Sanctioning Rules ........................................................................................................................................... 73

Vincent Lou, Samson W. Tu, Csongor Nyulas, Tania Tudorache, Robert J. Chalmers, Mark A. Masen

Quantifying Information Redundancy in Common Laboratory Tests ................................................................................................................... 75

Yuan Luo, Jason Baran, Peter Szolovits, Anand Dighe

Evaluate the Effectiveness of Mobile Health Intervention Program for the Senior Population Suffering from Hypertension and Hypercholesterolemia in Taiwan .................................................................................................................. 77

Wu M. P, Polun Chang, Chien-Hsien Lee

Semantic Loss in Consolidated CDA Exports for Meaningful Use Stage 2 ......................................................................................... 79

Joshua C. Mandel, John D’Amore, David Kreda

Patient-initiated Secure Messaging: Effects on Chronic Care Process and Clinical Outcomes in a Natural Experiment .................................................. 81

Sean McClellan, Laura Panattoni, Ming Tai-Seale

Analyzing and Comparing Clinical Work Systems with Cognitive Work Analysis: Lessons Learned ................................................................. 82

James L. McCormack, Paul N. Gorman

Application of Behavioral Economics to Design of Decision Support and Performance Feedback: A Comparative

Randomized Controlled Trial ........................................................................................................................................... 83

Daniella Meeker, Jeffrey A. Linder, Mark W. Friedberg, Stephen D. Persell, Noah J. Goldstein, Craig R. Fox, Alan Rothfeld, Jason Doctor, Tara K. Knight

Alerts for Low Creatinine Clearance: Design Strategies to Reduce Prescribing Errors .................................................................................. 85

Brittany L. Melton, Alan J. Zillich, Michael Weiner, M. Sue McManns, Jeffrey R. Spin, Alixa Russ

Congestive Heart Failure Information Extraction Framework (CHIEF) Evaluation ....................................................................................... 86

Stephane M. Meyssire, Youngjun Kim, Andrew M. Redd, Jennifer H. Garvin

Patients Screening for Clinical Trials Using EHR Representation Similarities ................................................................................................. 87

Riccardo Mezzo, Chaohuan Weng

Applying Active Learning to Word Sense Disambiguation in a Real-Time Setting ................................................................................................. 89

Sungrim Moon, Yukun Chen, Jingqi Wang, Joshua C. Denny, Hua Xu

Informatics for Integrating Biology and the Bedside (I2b2) Clinical Trials (CT) Patient Ascertainment Suite ........................................................................... 91

Shawn Murphy, Nich Wattanasin, Susanne Churchill, Isaac S. Kohane, Vivian Gainer
Patient-Generated Health Data in Practice — Learning from the Early Experiences of Innovators ..........................................................226


How Safe Are Users of Consumer Health Informatics? ..........................................................................................................................229

Thomas Wetter, Mary Czerwinski, George Demiris, Robert Hsiung, Holly B. Jimison

PAPER

The Impact of HIT on Cost and Quality in Patient-Centered Medical Home Practices .............................................................................232

Julia Adler-Milstein, Genna B. Cohen, Amanda Markovitz, Michael Paustian

Capture of Osteoporosis and Fracture Information in an Electronic Medical Record Database from Primary Care ..................................240

Sonya Allin, Sarah Munce, Sasan Jazagul, Debra Butt, Jacqueline Young, Karen Tu

Development of an Alert System to Detect Drug Interactions with Herbal Supplements using Medical Record Data ..................................249

Melissa Archer, Joshua Proud, Laura Shone-McWhorter, Bruce E. Bray, Qing T. Zeng-Treitler

Factors Contributing to CPOE Opiate Allergy Alert Overrides .............................................................................................................256

Deborah Arosto

Application of Bayesian Logistic Regression to Mining Biomedical Data .................................................................................................266

Viji R. Avili, Gregory F. Cooper, Vanathi Gopalakrishnan

Cognitive Design of a Digital Desk for the Emergency Room Setting ..................................................................................................274

Magnus Bang, Erik Prytz, Jonas Rybing, Toomas Timpka

Learning to Identify Treatment Relations in Clinical Text .......................................................................................................................282

Cosmin A. Bejan, Joshua C. Denny

An Exploration of the Potential Reach of Smartphones in Diabetes .......................................................................................................289

Katherine S Blondon, Paul L. Hebert, James Ralston

Analyzing U.S. Prescription Lists with RxNorm and the ATC/DDD Index ...............................................................................................297

Olivier Bodenreider, Laritza M. Rodriguez

Data Quality and Interoperability Challenges for eHealth Exchange Participants: Observations from the VA

Virtual Lifetime Electronic Record Health Pilot Phase ............................................................................................................................307

Nathan Botts, Omar Bouhaddou, Jamie Bennett, Eric C. Pan, Colene Byrne, Lauren Mercincavage, Lois Olinger, Elaine Hunolt, Theresa Cullen

Health Information Technology: Use it Well, Or Don’t! Findings from the Use of a Decision Support System for Breast Cancer Management ................................................................................................................315

Jacques Bouaud, Brigitte Blasscha-Jaulerry, Laurent Zelek, Jean-Philippe Spuno, Jean-Pierre Lefranç, Isabelle Cojean-Zelek, Axel Darieus, Christophe Toussignant, Alexandre Rozeaux, Brigitte Sérouss

The Challenges of Creating a Gold Standard for De-identification Research ..........................................................................................353

Allen C. Browne, Mehmet Kayaalp, Zeyno A. Dodd, Pamela Sagan, Clement J. McDonald

Adoption of Clinical Data Exchange in Community Settings: A Comparison of Two Approaches ..........................................................359

Thomas R. Campion Jr., Joshua R. Vest, Lisa M. Kern, Raina Kaushal

Examining the Use, Contents, and Quality of Free-Text Tobacco Use Documentation in the Electronic Health Record ..................................................................................................................366

Yukan Chen, Jesse Wrenn, Hua Xu, Spickard Anderson, Ralf Habermann, James Powers, Joshua C. Denny

Expanding the Use Patterns of a Mobile Health Application for Alcohol Addiction Before the Initial Lapse After Detoxification .................................................................................................................................385

Ming-Yuan Chih

Online Deviation Detection for Medical Processes .................................................................................................................................395

Seyhan C. Christo, George S. Arvanis, Lori A. Clarke

Adapting a Clinical Data Repository to ICD-10-CM through the use of a Terminology Repository ..........................................................405

James J. Cimino, Lyuba Remennick

Clinical Workflow Observations to Identify Opportunities for Nurse, Physicians and Patients to Share a Patient-centered Plan of Care ..................................................................................................................414


Development and Implementation of a Real-Time 30-Day Readmission Predictive Model ............................................................................424

Patrick R. Cronin, Jeffrey Greensfeld, Gwen Crevensten, Henry Chueh, Adrian Zai

A Semantic-based Approach for Exploring Consumer Health Questions Using UMLS ..................................................................................432

Licong Cui, Shiqiang Tao, Gao-Qiang Zhang

Semantic Processing to Identify Adverse Drug Event Information from Black Box Warnings ..................................................................442

Adam Culbertson, Marcello Fitzman, Dongwook Shin, Thomas Rindflesch

Information Requirements for Health Information Exchange Supported Communication between Emergency Departments and Poison Control Centers ..........................................................................................449

Melodie R. Cummins, Barbara J. Crouce, Guilherme Del Fiol, Brenda Mateos, Anusha Muthukutty, Anastasia Wyckoff
Enabling Locally-Developed Content For Access Through the Infobutton By Means of Automated Concept Annotation .......................................................................................................................... 700

Jie Long, Xiaoxin Xu, Cui Tao

Disease Progression Subtype Discovery from Longitudinal EMR Data with a Majority of Missing Values and Unknown Initial Time Points .................................................................................................................. 709

Jie Long, Jeong-II Kim, Richard V. Mandl

Piloting a Deceased Subject Integrated Data Repository and Protecting Privacy of Relatives ........................................................................................................................................... 719

Yosef Hauser, Mehmet Kayalp, Zeyno Dodd, James J. Cimino

TextHunter – A User Friendly Tool for Extracting Generic Concepts from Free Text in Clinical Research .......................................................................................................................... 729

Richard Jackson, Michael Bull, Rashmi Patel, Richard D. Hayes, Richard J. Dobson, Robert Stewart

Analysis of Online Information Searching for Cardiovascular Disease on a Consumer Health Information Portal ............................................................................................................................ 739

Ashutosh Jadhav, Amit Sheeth, Jyotishman Pathak

Characterization of a Handoff Documentation Tool Through Usage Log Data .................................................................................................................................................. 749

Silis Y. Jiang, Alexandrea Murphy, David Vavdrey, R. Stanley Ham, Lena Mamykina

An Automated Approach for Ranking Journals to Help in Clinician Decision Support ........................................................................................................................................... 757


A Framework for Incorporating Patient Preferences to Deliver Participatory Medicine via Interdisciplinary Healthcare Teams .................................................................................................................. 835

Karen O'Connor, Azadeh Nikfarjam, Rachel Ginn, Pranoti Pimpalkhute, Karen Smith, Graciela Gonzalez

Medical Alert Management: A Real-Time Adaptive Decision Support Tool to Reduce Alert Fatigue ........................................................................................................................................... 845

Eva K. Lee, Tsung-Lin Wu, Tal Sense, James Jone

COPD Hospitalization Risk Increased with Distinct Patterns of Multiple Systems Comorbidities Unveiled by Network Modeling ............................................................................................................... 855

Kerry J. Lee, Andrew D. Boyd, Jianrong Li, Vincent R. Gardewell, Colleen Kenost, Donald R. Saner, Haiquan Li, Ivo L. Abraham, Jerry A. Krishnan, Yves A. Lucetter

Automatic Detection of Dilated Cardiomyopathy in Cardiac Ultrasound Videos .................................................................................................................................................. 865

Razziauddin Mahmood, Taweerat Suesa-Mahmood

p-medicine: A Medical Informatics Platform for Integrated Large Scale Heterogeneous Patient Data ........................................................................................................................................... 872

J. Marés, Lev Shamardin, Gabriele Weiler, Alberto Anguita, Stelios Sfakianakis, Elias Neri, Stefan J. Zasada, Norbert Graf, Peter V. Coveney

U-path: An Undirected Path-based Measure of Semantic Similarity .................................................................................................................................................. 882

Bridge T. McIons, Ted Pedersen, Ying Liu, Genevieve B. Melton, Serguei V. Pakhomov

First-Order Logic Theory for Manipulating Clinical Practice Guidelines Applied to Comorbid Patients: A Case Study ........................................................................................................................................... 892

Martin Michalowski, Szymon Wilk, Xing Tan, Wojtek Michalowski

An Empirically Derived Taxonomy of Errors in SNOMED CT .................................................................................................................................................. 899

Jonathan M. Mortensen, Mark A. Maun, Natasha Noy

Development and Validation of an Electronic Phenotyping Algorithm for Chronic Kidney Disease ........................................................................................................................................... 907

Geirish N. Nadkarni, Olmer Gottesman, James Linneman, Herbert Chase, Richard Berg, Samaa Farouk, Vaneet Lotay, Stephen B. Ellis, George Hrynczuk, Peggy L. Pettsig, Chunchun Weng, Rajiv Nadshku, Erwin Bottinger

Using TURF to Understand the Functions of Interruptions .................................................................................................................................................. 917

Vickie Nguyen, Nnaemeka Okapo, Jiajie Zhang, Amy Franklin

Pharmacovigilance on Twitter? Mining Tweets for Adverse Drug Reactions ........................................................................................................................................... 924

Karen O'Connor, Azadeh Nikfarjam, Rachel Ginn, Pranoti Pimpalkhute, Karen Smith, Graciela González

Computerization of Mental Health Integration Complexity Scores at Intermountain Healthcare .......................................................................................................................... 934


A Template for Authoring and Adapting Genomic Medicine Content in the eMERGE Infobutton Project ........................................................................................................................................... 944


Examining the Multi-level Fit between Work and Technology in a Secure Messaging Implementation ........................................................................................................................................... 954

Mustafa Ozekanyak, Sharon A. Johnson, Stephanie L. Shimada, Beth Ann Petrakius, Bengtsiu Tulu, Ciona Archambault, Erin Schwartz, Susan Woods
Visualization of Patient Prescription History Data in Emergency Care.............................................................963
Locating Relevant Patient Information in Electronic Health Record Data Using Representations of Clinical Concepts and Database Structures ...................................................................................................................................................................................1160
Does Query Expansion Limit Our Learning? A Comparison of Social-Based Expansion to Content-Based Expansion for Medical Queries on the Internet..................................................................................................................................................976
ARX - A Comprehensive Tool for Anonymizing Biomedical Data .........................................................................................984
Extending the HL7/LOINC Document Ontology Settings of Care ..............................................................................................994
Comparing the Value of Mammographic Features and Genetic Variants in Breast Cancer Risk Prediction

Desiderata for an Authoritative Representation of MeSH in RDF

Using String Metrics to Identify Patient Journeys through Care Pathways

Exploring Joint Disease Risk Prediction

Clinical Risk Prediction by Exploring High-Order Feature Correlations

Adverse Drug Event-based Stratification of Tumor Mutations: A Case Study of Breast Cancer Patients Receiving

Confidence and Information Access in Clinical Decision-Making: An Examination of the Cognitive Processes that affect the Information-seeking Behavior of Physicians

An Integrated Billing Application to Streamline Clinician Workflow .......................................................................................1141

Mining Consumer Health Vocabulary from Community-Generated Text .......................................................................................1150

Adverse Drug Event-based Stratification of Tumor Mutations: A Case Study of Breast Cancer Patients Receiving Aromatase Inhibitors

Clinical Risk Prediction by Exploring High-Order Feature Correlations

Exploring Joint Disease Risk Prediction

Clinical Decision Support for Whole Genome Sequence Information Leveraging a Service-Oriented Architecture: A Prototype ........................................................................................................................................1188

Stochastic Gradient Descent and the Prediction of MeSH for PubMed Records ........................................................................1198

Using String Metrics to Identify Patient Journeys through Care Pathways ..................................................................................1208

Desiderata for an Authoritative Representation of MeSH in RDF ..............................................................................................1218

Comparing the Value of Mammographic Features and Genetic Variants in Breast Cancer Risk Prediction .................................................................................................................................1228
Information is in the Eye of the Beholder: Seeking Information on the MMR Vaccine Through an Internet Search
Engine .................................................................................................................................................. 1238

Elizabeth M. Borycki, Andre W. Kushniruk, Judith Dexheimer

MEDCIS: Multi-Modality Epilepsy Data Capture and Integration System ........................................ 1248
Guo-Qiang Zhang, Lichong Cui, Samden D. Lhatoo, Satya S. Sahoo

Towards Drug Repositioning: A Unified Computational Framework for Integrating Multiple Aspects of Drug
Similarity and Disease Similarity ........................................................................................................ 1258
Peng Zhang, Fei Wang, Juanjing Hu

Using Language Models to Identify Relevant New Information in Inpatient Clinical Notes ................. 1268
Bui Zhang, Serguei V. Pakhomov, Janet Lee, Genevieve B. Melan

Developing an Analytical Inspection Criteria for Health IT Personnel with Minimum Training in Cognitive
Ergonomics: A Practical Solution to Improving EHR Usability ......................................................... 1277
Zhen Zhang, Amy Franklin, Muhammad F. Walji, Jiajie Zhang, Yang Gong

Automatically Detecting Acute Myocardial Infarction Events from EHR Text: A Preliminary Study ........ 1286
Jiapeng Zheng, Jorge Tarzehski, Balaji Poleppalli Ramesh, Robert Goldberg, Hong Yu

A Comparison of Data Driven-based Measures of Adherence to Oral Hypoglycemic Agents in Medicaid Patients .......................................................... 1294
Vivienne J. Zhu, Wenchu Yu, Marc Rosenman, Marc Overhage

POSTER

Building a Treebank of Hospital Discharge Summaries .................................................................... 1302
Yang Huang, Jung-Wei Fan, Elly W. Yang, Hua Xu, Min Jiang

The Pareto Principle in the ICU: A Model for Knowledge Resource Health Information Technologies .... 1303
Christopher A. Aakre, Marc Ellsworth, Brian W. Pickering, Vitaly Herasevich

Electronic Dental Record Research: Descriptive Review of Current Status ...................................... 1304
Renata Abramovicz-Finkelzeizen, Claudia G. Barssottini, Heimar D. Marin

Model Selection for EHR Laboratory Variables: How Physiology and the Health Care Process Can Influence EHR Laboratory Data and Their Model Representations ........................................ 1305
David Albers, Rimma Pisovarova, Noemie Elhadad, George Hripcsak

Health Information Technology Adoption in Home Health ... Research in Progress ............................ 1306
Dari Alhawai, Gunis Koru, Ahmad Aliaid, Dr. Anthony Norcio, Maxim Topaz

Dental Information Needs – A Survey of the Medical Health Providers ........................................... 1307
Marica C. Almeida, Amit Acharya, Alamirro C. Pereira, Andre Correia

A Qualitative Study Exploring The Vulnerabilities Of Computerized Physician Order Entry Systems in the U.S. and Canada ........................................................................................................ 1308
Mary G. Amato, Sarah P. Sligh, Tewodros Egduale, Andrew C. Seger, Diana L. Whitney, David W. Bates, Gordon Schiff

Public Perceptions of Privacy and Healthcare Quality Effects of Electronic Health Records ................ 1309
Jessica S. Ancker, Samantha K. Brenner, Michael Silver, Joshua E. Richardson

Emergency Department Information System Selection: A Structured Approach ............................... 1310
Christine K. Anderson

Pediatric Dose Range Checking with Hierarchical Rules to Provide Value Added Alerts ...................... 1311
Charles H. Andrews, Kevin O’Bryan, Patrick Feldman, S. P. Hmiel, Feliciano Yu, Phillip Asaro

Implementing a Wireless-Distributed EMR for a Traveling Student-run Global Health Clinic ................ 1312
Emeka C. Anyanwu, Cheryl Thompson, John T. Gale

Protecting Patient Data and Maintaining Site Autonomy: Managing Project Access in a Multi-Site i2b2 Database ................................................................................................................................... 1313
Nate C. Apethy, Abu S. Mosa, Kelly J. Ko

Experimental Protocol to Assess Comprehension and Perceived Ease of Comprehension of Tailored Health Infographics Compared to Text Alone ........................................................................... 1314
Adriania Ariaia, Suzanne Bakken

Finding Different Types of Medical Conditions: From Data Generation to Automatic Classification ................................................................................................................... 1315
Nathan Arzt, Jinho Choi, Stephen Doogan

Linking Provider Documentation to Handoff – The Status View ....................................................... 1316
Philip Asaro, Charles H Andrews, Kevin O’Bryan, Feliciano Yu

Reducing Complexity of Breast Cancer Treatment Regimen Representation in Tumor Registries ........ 1317
Ravi V. Atrya, Mia A. Levy

Picking a Proxy on the Web: Interactive Patient Interview Module for Health Care Proxy Documentation .................................................................................................................. 1318
Adarsh S. Bajracharya, Bradley H. Crotty, Hollis B. Kowaloff, Slack Y. Warner, Charles Sefran

Value Transparency in Health Information Exchange as a Mechanism to Enrich Patient Participation .................................................................................................................. 1319
Gina B. Baker, Sidney N. Thornton, Shan He, Darren K. Mann, Jason Gagner, Pallavi Ranade-Kharkar

Implementing SNOMED CT in Laboratory Specimen and Source Tables – If the Shoe Fits ................... 1320
Pamela Banning, Elva Knight

Analysis and Evaluation of Methods of Similarity in Nutritional Recommendations .......................... 1321
Haroldo G. Barroso, Maricls Ito

A Proposed Protocol for Meaningful Use Audit Documentation .......................................................... 1322
Robert C. Bell, Fengzhe Zhou, Debora J. Simmons, Adol Esquivel

A New Approach to Evaluating Mobile Applications in the Emergency Department: Extending Usability Testing and Clinical Simulation ..................................................................................................... 1323
Elizabeth M. Borycki, Andre W. Kushniruk, Judith Dexheimer
Crowdsourcing and Development of Health-related Pictographs for Minority Groups by Gaming - A Focus Group Study ................................................. 1349

Stage 3 Meaningful Use and Patient-Generated Health Data (PGHD): Outpatient Stakeholder Perspectives on How to Make PGHD Meaningful ...................................................................................................................... 1350

Problem-Oriented Views Provide Cognitive Support to Decrease Drug Errors ................................................. 1351

Understanding Primary Care Clinics’ Information Needs about their Clinic Visit ......................................................... 1352

Integrating Neighborhood Food Environment Data with a Comprehensive Community-based Survey Data to Support Population Health ........................................................................................................... 1353

Electronic Health Record Systems (EHRS) Give Healthcare Providers a False Impression of Compliance with the Privacy and Security Meaningful Use Measure ........................................................................................................ 1354

Clinical Informatics Program and Strategy to Support a Large-Scale EHR Implementation ........................................... 1355

Rapid NLP Development with Leo .......................................................................................................................... 1356

The Texas Advanced Computing Center: A Complete Scientific Discovery Environment for Biomedical Informatics and Health Science Research ........................................................................ 1357

Elders & Families Rely On Social Networks For Aging-Related Information: Implications For Informaticians .......................................................... 1358

Override of Age-related Alerts in Older Inpatients: Evaluation of a Clinical Decision Support System ..................... 1359

What Women Want? Expressing Women’s Voice on Contraception ........................................................................ 1360

Piloting a Network of CTS2 Terminology Service Nodes for Value Sets .................................................................. 1361

Automatic Content Extraction for Designing a French Clinical Corpus ......................................................................... 1362

Data Transformation of Alzheimer’s Data .................................................................................................................. 1363

A Semantically Enhanced Clinical Rules Management Repository Prototype ............................................................... 1364

v3NLP Marshallers: Providing NLP Workflow Interoperability .................................................................................... 1365

Assessing the Feasibility of Using Electronic Health Records for Community Health Assessments ............................. 1366

Pain Assessment Screening Tool and Outcomes Registry (PASTOR) .............................................................................. 1367

Gathering Information for Situation Models of Syndrome Identification ................................................................. 1368

Individualizing Information Presented in Quality Dashboards: Preliminary Study .......................................................... 1369

Using Laboratory Data for Prediction of 30-Day Hospital Readmission of Pediatric Seizure Patients ..................... 1370

Data for Patient-Centered Outcomes Research on Care Processes, Transitions, and Coordination ............................ 1371

Check it with CheX: A Validation Tool for Iterative NLP Development ....................................................................... 1372

Informational Needs During Intensive Care Unit Handovers: A Multicenter Study ...................................................... 1373

Pilot Assessment of a Caregiver Decision Support Mobile Health (mHealth) Application for Food Allergy & Anaphylaxis in the School Environment ........................................................................ 1374

The Need for a Nimble Decision Support Tool for Implementing Clinical Pathways in Oncology .............................. 1375

eHealth Strategy Transforming Health Care Delivery in Tanzania ............................................................................. 1376

Point-of-Care Knowledge-Based Resource Needs of Clinicians: A Survey from a Large Academic Medical Center ........................................................................................................................ 1377
Development of an Efficient, General Purpose TCP/IP Daster in Perl to Capture HL7 Data for Real-Time
Clinical Decision Support .................................................................................................................. 1378
Richard H. Epstein, Michael Perino, Jerry Magrana
Process Improvements from Implementing an Electronic Checklist and Rounds Choreography to the Intensive
Care Unit .............................................................................................................................................. 1379
De-duplicating Distributed Research Cohorts using Health Information Exchange Identity Services ......................................................................................................................... 1380
Jon-David Edlington, Shan He, Jerry M. Westberg, Darren K. Mann, Sidney N. Thornton
Virtual Learning Environment: A Proposal for Teaching Emergency Care for Nursing Students through WebQuest ........................................................................................................................................... 1381
Yolanda Dora M. Évora, Marta Cristiana Alves Pereira, Andrea Bernardes, Carmen Silvia Gabriel
iDECIDE: A Mobile Application for Pre-Meal Insulin Dosing Using an Evidence Based Equation to Account for Patient Preferences .................................................................................................. 1382
Abram Farhadi, Buffy Lloyd, Danielle Gross, Jelena Mirkovic, Curtis Cook, Adela Grando
Exploring the Use of SemRep Predications to Help Identify Secondary Drug Targets for Personalized Cancer Therapy .................................................................................................................................. 1383
Safa Fathiamini, Amber M. Johnson, Vijayakumar Holla, Ann M. Basley, Jia Zeng, Lauren Brusco, Funda Merci-Bernstam, Elmer V. Bernstam, Trevor Cohen
Effect of Informatics Intervention on Compliance with Surgical Quality Metric ................................................................................................................. 1384
Vitali Fedosov, Ing Tiong, Brian W. Pickering, Vitaly Herasevich
GeneAnswers: Integrated Translational Interpretation of Genes ...................................................................................................................................................................... 1385
Robert Gale
Using Electronic Health Record Access to Infer Physician Follow-up After Handoffs ..................................................................................................................... 1386
Stephanie Feudjio Foepe, Robert El-Kareh
Understanding the Dispensary Workflow at the Birmingham Free Clinic: Responding to Challenges with Informatics Interventions ................................................................................................ 1387
Arielle Fisher, Gerald Douglas
Using HIE Data to Calculate Quality Measures for Public Health Surveillance ......................................................................................................................... 1388
ELaine Fontaine, Jonathan Levis
Do Consensus Abstracts Agree with Meta-Analyses or Systematic Reviews? ........................................................................................................................................ 1389
Paul Fontelo, Raymond Francis Sarmento, Raymonde Charles Y. Uy, Fang Liu
Using Mental Models To Teach Public Health Informatics Evaluation In An Applied Training Fellowship .................................................................................. 1390
Laura Franzke, Herman Tolentino, Sridhar R. Papagari Sangareddy
Building the Clinical Personalized Pragmatic Predictions of Outcomes (Clinical3PO) Pipeline Within U.S. Department of Veterans Affairs (VA) .................................................................................................................. 1391
Purav B. Gandhi, Amarinder Sidhu
A Layered Context Model: a Basis for Customized Treatment – A GDM Patient Case Study .................................................................................................................. 1392
Adi Fux, Mor Peleg, Pinna Soffer, Mercedes Rigla
Configuring Health Information Exchange Identity and Consent Services for Operational Use in a Changing HIE Landscape .................................................................................................................................................. 1393
Jason Gagner, Shan He, Darren K. Mann, Sidney N. Thornton, Greg E. Gurr, Neil Web
The Development of the Medication Image Library (MIL) ................................................................ 1394
Robert Gale
System for ‘Intent-to-Treat’ Analysis in a Real-world Setting ................................................................ 1395
Purav B. Gandhi, Amarinder Sidhu
Development of a Community Care Information System: A Case Study in Singapore .............................................................................................................. 1396
Alex Gavino, Na Liu, Deepa Rengarajan, Krhole John Rebada, Liming Bai, Eugene Shum, Alfred Wu
Machine Learning Made Easy with Sherlock .................................................................................. 1397
Thomas Ginter, Olga V. Patterson, Ryan Cornia, Scott L. Duvall
Impact Of Implementation Efforts on AWARE Checklist Compliance ............................................................................................................................................... 1398
J. Gire, John C. Ohoro, Ronaldo A Sevilla Berrios, Maria Resner, Fedosov Vitali, Vitaly Herasevich, Ognjen Gagic, Brian W. Pickering
Data Driven Approach to Vital Sign Parameters at Lucille Packard Children's Hospital Stanford ......................................................................................................................... 1399
Venita V. Goel, Sarah Poole, Terry Pletcher, Christopher A. Longhurst, Paul Sharkey, Jonathan P. Palma
A Qualitative Analysis of Patients’ Behavior in an Online Health Community: Dynamics of Self-regulated Health Goal Achievement ........................................................................................................ 1400
Nudee R. Goonawarde, Sharon S. Tan
Longitudinal Tracking of Pain Phenotypes in Electronic Health Records Using an SVM ............................................................................................................................. 1401
Clare T. Grazzo, Anupam Joshi
Electronic Consentling Program ........................................................................................................ 1402
Richard H. Epstein, Michael Perino, Jerry Magrana
How to De-Identify a Large Clinical Corpus in 10 Days. .................................................................. 1403
C. Grouin, Louise Deleger, Jean-Baptiste Escudie, Gregory Groszy, Anne-Sophie Jannot, Bastien Rance, Xavier Tannier, Aurelie Neveu
An Informatics Approach to Building a Surgical Residents Log ................................................................ 1404
Michael J. Grove, Jeff Emch, Mark Engelsbach
Automation in Healthcare: Is Automation Bias a Side Effect? .......................................................... 1405
Anupama E. Gururaj, Dean F. Sittig
The Business Value of IT in Healthcare: The Case of Cleveland Clinic’s Online Second Opinion System.................................

Automatic Extraction of Electronic Health Record System Data to Assist Evaluation of a Status Epilepticus
Clinical Protocol.................................................................

Linking Adenomas Between Colonoscopy And Pathology Notes For PROSPR .................................................................

Older Adults Use of Online and Offline Sources of Health Information and Constructs of Reliance and Self-Efficacy for Medical Decision Making.................................................................

Coordination-Based Analysis of Inter-Unit Handoffs.................................................................

Connecting CCC to SNOMED CT and LOINC in a Terminology Server.................................................................

Development, Testing, and Refining the Severe Sepsis and Septic Shock Sniffer.................................................................

Therma: Simplifying Childhood Feversn with Mobile Decision Support.................................................................

Streamlining Health Information Exchange Workflows through Automated Disclosure Control Services.................................................................

A Qualitative Preliminary Study of Older Adults’ Personal Health Information Tracking Behaviors.................................................................

Admission Data Predict Risk As Well As Discharge Data in Patients with Pneumonia: A Readmission Risk-model Evaluation.................................................................

Design and Development of Team Builder – Matching Funding Opportunities to Research Profiles.................................................................

Use of an Iterative Search Strategy in Critical Care Informatics.................................................................

Patient Factors Associated With Provider Response to a Weight Management Best Practice Alert.................................................................

Design and Evaluation of a Glomerular Disease Ontology.................................................................

Pictogram-Based Tablet Application Enabling Patient Input of Emotions and Behaviors.................................................................

Point of Entry Notification of Shortages Using a Drug Auditing Program.................................................................

Efficient Translation of EHR Free-Text Data to Coded Data PRN.................................................................

Reporting the Results of Safety-Enhanced Design Evaluations for Meaningful Use Stage 2 Certification: Are they Comparable?.................................................................

A Modular Approach for Consolidating CCDs from Multiple Data Sources.................................................................

Evaluation of SNOMED CT Content Coverage for a Decision Support System.................................................................

Automated Notification of Primary Care Providers Upon Patient Admission: Pilot Results from a Randomized Controlled Trial.................................................................

Development and Evaluation of a Mobile Medication Patient Symptom Support (M2-PASS) System to Strengthen
Cancer Patients’ Transition from Hospital to Home.................................................................

Usability of a Novel Wearable Camera System to Inform Tailored Intervention with Dementia Family Caregivers.................................................................

Integrating a Diagnostic Decision Support Tool into an Electronic Health Record and Relevant Clinical Workflows
through Standards-Based Exchange.................................................................

Evaluating the Size of Deceased Patient EHR Research Data Sets: A Multi-year Trend Analysis.................................................................

Encoding Performance Measures For Automated Quality Assessment.................................................................

Smart Infusion Pump Limit Violations and High Alert Medications: The Role of the Single Step Titration Error
Prevention System.................................................................
Deploying Informatics Tools to Improve an Interactive Medical Education Experience ................................................................. 1435
Joshua L. King, Martina A. Clarke, Min Kim

A Systematic Review of eHealth Interventions to Improve Health Literacy .................................................................................. 1436
Timothy D. Imler, Jason Cadowallader

An Analysis of Mayo Clinic Search Query Logs for Cardiovascular Diseases ................................................................................. 1437
Ashutosh Jadhav, Ami Sheth, Jyotishman Pathak

Evaluation of the Health Level Seven Fast Health Interoperable Resources (FHIR) Standard as a Query Data Model for the Arden Syntax ...................................................................................................................... 1438
Robert A. Jenders

Exercise Intensity Adherence Improved by Remotely Controlled Cycle Ergometer ............................................................................. 1439
In Choed Jeong, Joseph Finkelstein

Social InfoButtons for Patient-Oriented Healthcare Knowledge Support ........................................................................................................ 1440
Xiang Ji, James Geller, Soon A. Chan

Personalizing Statistical Models for Asthma Prognosis and Therapeutics .............................................................................................. 1441
Hongying Jia, Patricia F. Brennan, Shiyu Zhou, Junbo Sun, Yu-Ting Hung

Readmission Leakage Risk Stratification with Associative Classification ............................................................................................... 1442
Yugang Jia, Lin Li, Usha N. Raghavan, Nathan Cohen

Lexical Term Standardization of ICD-11 Using Semantic Web Technologies .................................................................................. 1443
Gaoqian Jiang, Harold R. Sobol, Bedirhan Ustun, Christopher G. Chute

Impact of Barcode Design on the Medication Administration Process ................................................................................................. 1444
Junghee Jo, Jenna L. Marquard, Lori A. Clarke, Philip L. Henneman

Online Quiz Taking: Does Allowing Repeated Tries Without Penalty for Incorrect Responses Increase Guessing? .......................... 1445
Josette F. Jones, Maryam Zohoori, Sama Bankohede, Katherine Schilling, Lakshmi R. Ponnapala, Michelle Lenox

An Institutional Strategy to Support Clinical Research with Centrally Managed Custom Data Repositories .............................................. 1446
Stephen B. Johnson, Thomas R. Campion, Nonie E. Peguerko, Leon Bezenhilit, Charles H. Terrell, Curtis Cole

Semi-Automated Method to Extract Semantic Information from EHR Flowsheet Data for Pressure Ulcer Research .......................... 1447
Steven Johnson, Jung In Park, Matthew Byrne, Beverly Christie, Lisaian Prunilis, Suzannes G. Sherman, Bonnie L. Westra

The Extent to which U.S. Hospitals Promote Their Patient Engagement Activities and Outcomes: Preliminary Research ..................... 1448
Josette F. Jones, Maryam Zohoori, Sama Bankohede, Katherine Schilling, Lakshmi R. Ponnapala, Michelle Lenox

Results of Quantitative Content Analysis Research .............................................................................................................................. 1449
Julie S. Jones-Diette, Michael Brown, Gemma Housley, Jim Hatton, Dominic Shaw

Tissue-Experiment Inventory: A System to Enable Cataloguing of Experimental Results in Association with Tissue and Participant Information ........................................................................................................ 1450
Norman P. Joseph, Leonid Kvecher, Brenda Deysarmin, Lori Sturst, Frank Cammarata, Caroline Larson, Craig D. Shriver, Richard J. Murad, Hai Hu

A Statistical Study of Words Used in Chinese Clinical Documents ......................................................................................................... 1451
Meizhi Ju, Haojun Li, Huiqiong Duan

NLP Enhances Quality Care Measures in Heart Failure .......................................................................................................................... 1452
K. E. Ravikumar, K. B. Wagholikar, H. Liu

Methods for Early Stakeholder Engagement for Implementation of Health Information Technology .................................................. 1453
Megha Kalsy, Natalie Kelly, Jennifer H. Garvin, Mary K. Goldstein

Benefits and Challenges of a Height Sensing Approach for In-Home Gait Speed Detection ............................................................ 1454
Arusha Kaidyanaruman, Blaine Beeder, Kamin Whitehouse

Patient Characteristics Associated with Reshospitalization in Older Adults with Heart Failure Receiving Telehomecare .................. 1455
Youjeong Kang

Automated Detection of Transient Lower Esophageal Sphincter Relaxations .................................................................................... 1456
Martin Karpefors, Magnus Ruth

A Knowledge-Based Collaborative Clinical Case Mining Framework ......................................................................................................... 1457
Ramakanth Kavuluru, Anthony Rios, Brandon Kalengowski, Patrick McNamara

The Role of Big Data in Community-wide Population Healthcare Delivery and Research ................................................................. 1458
Hadi Kharrazi

Creating, Maintaining and Publishing Value Sets in the VSAC .............................................................................................................. 1459
Emir Khatipov, Maureen M. Madden, Pishing Chiang, Philip Chuang, Duc Nguyen, Ivor D’Souza, Rainer Winneburg, Olivier Bodenreider, Julia Shapik, Robert C. McClure, Steven Emrick

A Direct Query Mechanism for Exchanging Quality and Performance Measures: A Proof of Concept with California Health Plans and Physician Organizations ................................................................. 1460
Katherine K. Kim, Brian Goodness, Holly C. Logan, David A. Minch, Dolores Yanagihara

Medication Prescription Status Classification in Clinical Narrative Documents .................................................................................. 1461
Youngjun Kim, Jennifer H. Garvin, Julia Heavirland, Jennifer Williams, Stephane Meystre

Automated Phenotype Detection Facilitates Data Warehouse Analysis: An Example Using Structure Query Language and Exudative Pleural Effusion ......................................................................................... 1462
John Kimbrough, Yojtech Heser, James J. Cimino

Identification of Inflammatory Bowel Disease Patients with Steroid-induced Diabetes Mellitus Using an Electronic Health Record .................. 1463
Sivan Kimberg, Lyudmila Esa, Herbert Chase, Carol Friedman

User Experiences of Speech Recognition Technology (SRT) by Physicians: A Cross-Sectional Survey Study ................................. 1464
Joshua L. King, Martina A. Clarke, Min Kim
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabling Patient-Centric Comparative Effectiveness Research in 12b2</td>
<td>1465</td>
</tr>
<tr>
<td>Electronic Pharmacovigilance: Calling for Earlier Detection of Adverse Reactions (CEDAR)</td>
<td>1466</td>
</tr>
<tr>
<td>Relating Health Concerns and Goals in Interprofessional Care Planning</td>
<td>1467</td>
</tr>
<tr>
<td>Barriers and Benefits to CHT Use in Overweight and Obese Adolescents</td>
<td>1468</td>
</tr>
<tr>
<td>Designing Clinical Models of EHR (Electronic Health Records) for Long-Term Care Providers to Elderly Persons</td>
<td>1469</td>
</tr>
<tr>
<td>A General Propensity Matching Algorithm to Control for Potential Confounders in Observational Studies using Outcomes Miner</td>
<td>1470</td>
</tr>
<tr>
<td>Development of a Cirrhosis-Associated Symptom/Finding Detection Tool</td>
<td>1471</td>
</tr>
<tr>
<td>Getting Past 10%: Employing a Successful Bar Code Environment for Patient Safety</td>
<td>1472</td>
</tr>
<tr>
<td>An Agent-based Reasoning Scheme for Prioritizing Evidence Obtained from Multiple Pharmacovigilance Signal Detection Methods</td>
<td>1473</td>
</tr>
<tr>
<td>Development of an Interactive, Spatial, Web-Based Tool for Physician Workforce Planning, Recruitment, and Research</td>
<td>1474</td>
</tr>
<tr>
<td>Exploring the Content and Ranking of Diagnosis-Based Medical Problem Lists</td>
<td>1475</td>
</tr>
<tr>
<td>Exactly What Kind of Patient Data Do They Use in Research?: Analysis of Clinical Data Requests for Research</td>
<td>1476</td>
</tr>
<tr>
<td>Learning from Social Media Patient Platforms: A Framework for Exploring Mechanisms Used to Engage Patients</td>
<td>1477</td>
</tr>
<tr>
<td>Challenges Faced When Designing and Conducting Time Motion Studies in Health Care Environments</td>
<td>1478</td>
</tr>
<tr>
<td>Meaningful Use in Medication Reconciliation &amp; Patient Medication Information Management Requires Patient &amp; Healthcare Team Partnership, Community Collaboration, and Standardization: The Veterans Health Administration Story</td>
<td>1479</td>
</tr>
<tr>
<td>Considerations in Implementing Informatics Studies in Dementia Care Units</td>
<td>1480</td>
</tr>
<tr>
<td>Development of a Web-based Patient-Centered Discharge Checklist Toolkit</td>
<td>1481</td>
</tr>
<tr>
<td>A Case Study on Integrating a Genealogy Database into a Consumer-Facing Family Health History Tool</td>
<td>1482</td>
</tr>
<tr>
<td>The Development of a Mobile Nurse Shift Reporting Application based on Human-Computer Interaction Design</td>
<td>1483</td>
</tr>
<tr>
<td>Patient Safety Education Using an Electronic Error Reporting System</td>
<td>1484</td>
</tr>
<tr>
<td>The Readability of Diabetes Patient Education Materials on the World Wide Web based on LSA and SVM technique</td>
<td>1485</td>
</tr>
<tr>
<td>The Association Between Numeracy Component of Health Literacy and Online Health Information Seeking Behavior</td>
<td>1486</td>
</tr>
<tr>
<td>Interstate Exchange Implications for Multiple Health Information Networks</td>
<td>1487</td>
</tr>
<tr>
<td>Using Natural Language Processing for Autism Trigger Extraction</td>
<td>1488</td>
</tr>
<tr>
<td>Automating Identification of Multiple Chronic Conditions in Clinical Practice Guidelines</td>
<td>1489</td>
</tr>
<tr>
<td>The Challenges of Disparate Data Formats: Analysis and Visualization in the SLIDES Project</td>
<td>1490</td>
</tr>
<tr>
<td>Reducing the Screening Burden of Systematic Review with a Multiple-level Relevance Ranking System</td>
<td>1491</td>
</tr>
<tr>
<td>Alerting System for Patients with Advanced Multiple Sclerosis</td>
<td>1492</td>
</tr>
<tr>
<td>Yihua Li, Esteban J. Pino, Pablo Aqueveque, Dorothy W. Curtis</td>
<td>1493</td>
</tr>
</tbody>
</table>
Identification of Common Concepts for Clinical Decision Support and Mapping to the Health Level 7 Virtual Medical Record Data Model.............................................................1494
Yanhui Lin, Brandon M. Welch, Tyler J. Tippett, Polina Kukhareva, David E. Shields, Catherine J. Stues, Vijayabhaskar R. Chandola, Bruce E. Bray, Kensaku Kawamoto

Iterative Participatory Design of Health Information Technology for Underserved Populations..........................................................................................................................1495
Elizabeth A. Linton, Tina Kurtz, Kim M. Unertl

Developing Clinical Decision Support for Direct Use by Patients: Challenges and Lessons Learned from Symptom Management in Cancer Patients ..........................................................................................................................1496
David F. Lobach, Janet L. Abraham, Nana Brown, Manan Nayak, Mary E. Cooley

Towards a Representation Format for Shareable Self-Monitoring Data .................................................................................................................................1497
Guillermo H. Lopez-Campos, Manal Almalki, Fernando J. Martin-Sanchez

Physician Satisfaction With Computerized Order Entry ..........................................................................................................................1498
Paul G. Loubner, Val Hooper

Using Element Words to Generate (Multi)words for the SPECIALIST Lexicon ..........................................................................................................................1499
Chris J. Lin, Destine Tormey, Lynn McCready, Allen C. Browne

De-Identified Clinical Research Data Warehouse in a Korean Tertiary Hospital ..........................................................................................................................1500
Yong-Man Lyu, Soo-Yong Shin, Yongdon Shin, Hyojung Choi, Jiyun Park, Eun-Ae Kang, Woo-Sung Kim, Chang-Min Choi, Yu Bang Park, Jaeho Lee

Use of Natural Language Processing in Terminology Coverage Analysis ..........................................................................................................................1501
Sina Madani, Dean P. Sittig, Michaela Riban

Workflow-Based Modeling of Cancer Care Trial Protocols ..........................................................................................................................1502
Aisan Maghsoudi, Anca Bucur, Paul De Bra, Norbert Graf

A Usability Analysis of a Fuzzy Match Search Engine for Physician Directories ..........................................................................................................................1503
Andrea Muhinke, Kate Baker, Tim Krane, Courtney Christian, Katy Hale, Karissa Kautz, Elizabeth Mueller, Bastegar-Mojarrad Majid, Stuart Waltonen, Sarah Kortenkamp, Simon Lin

An Evaluation of Computerized Medication Alert Override Behavior in Ambulatory Care ..........................................................................................................................1504
Nivethitha Maniam, Sarah P. Slaght, Diane L. Seger, Mary G. Amato, Julie M. Fiskio, Dustin McEvoy, Karen C. Nanni, Patricia C. Dykes, David W. Bates

Analysis of Content Coverage for Informed Consent Concepts ..........................................................................................................................1505
Frank J. Manion, Elizabeth R. Eisenhauer, Allie Karnovsky, Yongguan He, Yu Lin, Marcelline R. Harris

Systems Informatics and Information Modeling in Healthcare ..........................................................................................................................1506
Perry L. Mar, Oliver D. James, Sarah Collins, Margarita Sordo, Saverio M. Maviglia, Li Zhou, Priyaranjan Tokachchhu, Hari K. Nandigam, Howard S. Goldberg, Roberto A. Rocha

Comparing Accuracy, Efficiency, and User Satisfaction of Two EMR Interfaces ..........................................................................................................................1507
David T. Marc, Chaurat Thongprayoon, Andrew M. Harrison, John C. O’Horo, Ronaldo A Sevilla Berrios, Kathleen Harder, Brian W. Pickering, Vitaly Herasevich

A New Visual Navigation System for Exploring Biomedical Patents ..........................................................................................................................1508
Christopher Markson, Songhua Xu

From Computer Scientists to Research Practitioners: Lessons Learned When Implementing of Mobile Devices in a Cancer Research Setting ..........................................................................................................................1509
Stephanie L. March, Karen Basen-Engquist, Wendy Demark-Wahnefried, Alexander V. Prokhorov, Kevin Patrick, Eileen H. Shinn, Emilia Farca, Chaitan Baru, Ingolf Krieger, Kai Lin, Phil Riss, Yan Yan, Yiswanath Nandigam, Susan K. Peterson

Point of Care Intake Tool and Clinical Decision Support to Achieve Meaningful Use ..........................................................................................................................1510
Maryanne E. Mathiosvetz, Jennifer L. Horn, Samantha E. Epps, Paul J. Johnsen, Pedro J. Caraballo

Using REDCap to Evaluate Clinical Decision Support Alert Appropriateness ..........................................................................................................................1511
Allison B. McCoy, Eric J. Thomas, Marie Krousel-Wood, Dean P. Sittig

Identifying Strategies to Promote Adoption of a Web-based Patient-Centered Communication Tool by Providers in the Acute Care Setting ..........................................................................................................................1512
Kelly McNally, Dianna L. Stade, Patricia C. Dykes, David W. Bates, Anuj K Dalal

Computerized Clinical Decision-Support for The Evaluation of Suspected Pulmonary Embolism In The Emergency Department ..........................................................................................................................1513
Amit M. Mehta, Ryan P. Radecki, Nnaemeka G. Ohafor, Susanna Spence, Hoang Nguyen

Assessment of the Quality of Computerized Physician Order Entry (CPOE)-Related Medication Error Reports in a Large Medication Error Database ..........................................................................................................................1514
M. G. Amato, Andrew C. Seger, Adam Wright, Russ Koppel, Ali Rashidine, Robert Elson, Diana L. Whitney, Thu-Trang Thach, David W. Bates, Gordon Schiff

Application of Pediatric Dosing Rules Across a Diverse Health Care System ..........................................................................................................................1515
Paul E. Milligan, Nicholas Hampton, Chandana S. Anigbou, Kevin M. Heard, Melissa Heigham, S. P. Hmiel, Keith F. Woeltje

Identifying eHealth Literacy Demands of Health Information Seeking Tasks ..........................................................................................................................1516
Jelena Joksimovic, Maria Sims, David Kaufman

Methods for Patient Matching in Patient-Centered Outcomes Research ..........................................................................................................................1517
Adil Moudiuddin, Prashilla Dullabh, Michael Latterner, Samantha Zentze, Michael Davern

A Study of Synonym Extraction from Clinical Texts Using Semantic Vector Models ..........................................................................................................................1518
Sangrim Moon, Trevor Cohen, Huaying Xu

Vocabulary Density Method for Customized Indexing of MEDLINE Journals ..........................................................................................................................1519
James G. Mork, Dina Demner-Fushman, Susan C. Schmidt, Alan R. Aronson

Engaging Patient and Family Advisory Councils in Developing Innovative Patient-Centered Care Interventions to Enhance Patient Experience ..........................................................................................................................1520
Conney Morrison, Maureen B. Fagan, Priscilla Gazarian, Orly Tamir, Jacques Donzé, Patricia C. Dykes, Dianna L. Stade, David Bates, Ronen Reznobum
User Preferences Influencing the Design of a Tailored Virtual Patient Educator in a Latina Farm Worker Community ................................................................. 1521
An Informatics Framework for Clinical and Translational Research: The Mizzou Approach ................................................................. 1522
Developing a Knowledge Base for Detecting Carotid Stenosis with pyConText ................................................................. 1523
A New Alternative for Accessing Medicare Claims Data: The Virtual Research Data Center ................................................................. 1524
Facilitating Visual Exploration of System-Generated Reasoning Pathways Underlying Drug-Side Effect Relations ......................................................... 1525
Prevalence of a Standardized Storage Format and Next Steps for Clinicians ................................................................. 1526
Achieving a Better Readability of Instructional Notes in the ICD-10-CM Tabular XML Files ................................................................. 1527
The Can (theCan.apphb.com): A Repository of Decision Support Rules Relating to Laboratory Tests ................................................................. 1528
RxClass - Navigating between Drug Classes and RxNorm Drugs ........................................................................................................... 1529
Patients and Providers Using Secure Messages on the Patient Portal for Home Telemonitoring: What Are the Informatics Challenges and How Can They Be Managed? ........................................................................................................... 1530
Attitudes Towards Electronic Medical Records in Intensive Care ........................................................................................................... 1531
Temporal Patterns of Alerts Generated by a Medication Order-Auditing Program ................................................................. 1532
An Exploratory Factor Analysis of Socio-demographic and Contextual Factors Associated with Dominican Women Concerned About HIV/AIDS ........................................................................................................... 1533
Clarifying Requirements Chronological Visualization of Medical Data by Investigating Medical Journal Articles ........................................................................................................... 1534
Perceptions of Health Care Quality in an Emergency Department During a Planned Electronic Health Record Downtime ........................................................................................................... 1535
Decomposition of Quality Requirements to Evaluate Electronic Health Records Systems ........................................................................................................... 1536
Employment of Penalized Models to Predict Cognitive Domain Performance Using Proteomics ........................................................................................................... 1537
Digitization of the Multidisciplinary Medical Intensive Care Unit Rounding Checklist ........................................................................................................... 1538
Differences in Occurrence and Recorded Times of Care Delivery Events as Documented in Electronic Health Records ........................................................................................................... 1539
Automating Extraction and Calculation of Daily Dose and Duration for Medications in EHRs ........................................................................................................... 1540
Problem-Solving Methods for Public Health Informatics Practice and Training: Insights from Technical Assistance Projects ........................................................................................................... 1541
Network Analysis of Common Eligibility Criteria in Cancer Clinical Trials ........................................................................................................... 1542
Clinical Data Modeling EHR Data for Understanding Factors Related to Hospital-acquired Catheter-Associated Urinary Tract Infection (CAUTI) ........................................................................................................... 1543
Automatic Engine for Mapping Mycobacteriology Reports to SNOMED-CT ........................................................................................................... 1544
Kidney Transplantation Web Portal for the Citizens in Brazil ........................................................................................................... 1545
Toward a Conceptual Understanding of Social Network Analysis in Public Health Derived from Published Literature ........................................................................................................... 1546
Categorizing RxNorm Concepts by Treatment Intent ........................................................................................................... 1547
Meaningful Use & EHR Scope ........................................................................................................................................................................... 1548
Temporal Mandibular Disorder Adherence Improved By A Mobile SMS-Based Intervention ........................................................................................................................................................................... 1549
Data Mining Methodologies to Discover Best Practices for Diabetic Patients with Health Disparities ........................................................................................................................................................................... 1550

Pascal B. Pfiffner, Joshua Mandel, Kenneth Mandl

Meaningful Use & EHR Scope


Temporal Mandibular Disorder Adherence Improved By A Mobile SMS-Based Intervention

Cristina S. Prud'homme, Frederico M. Coelho, Cristina Lúcia F. Ortolani, Evandro E. Ruiz, Ivan T. Pisa

Data Mining Methodologies to Discover Best practices for Diabetic Patients with Health Disparities

Lisiane Prunelli, Sanjyo Dey, György J. Simon, Pranjal Yadav, Andrew Hangsleben, Katherine Hauwiler, Vipin Kumar, Connie W. Delaney, Michael Steinbach, Bonnie L. Westra
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using EHR Data to Automate Colorectal Cancer Screening at Community Health Centers: Opportunities and Barriers</td>
<td>1551</td>
</tr>
<tr>
<td>Examining the Potential for CPOE System Design and Functionality to Contribute to Medication Errors</td>
<td>1552</td>
</tr>
<tr>
<td>With Whom Will I Share? A Quantitative Data Analysis of the Special Project of National Significance Survey for Persons Living with HIV/AIDS</td>
<td>1553</td>
</tr>
<tr>
<td>Evaluation of Existing Phenotype Authoring Tools for Clinical Research</td>
<td>1554</td>
</tr>
<tr>
<td>Using EHR Timestamps for Analyzing Ophthalmology Clinic Workflows</td>
<td>1555</td>
</tr>
<tr>
<td>Effect of Pre-annotation on Annotation Time</td>
<td>1556</td>
</tr>
<tr>
<td>Visualizing Technology Types for Gait Speed Detection in Older Adults</td>
<td>1557</td>
</tr>
<tr>
<td>Incorporating an Electronic Ventilator-Associated Event (VAE) Tool Within a Hospital's Internal Electronic Surveillance System</td>
<td>1558</td>
</tr>
<tr>
<td>The UCDHS Tethered Meta Registry: A Tool for Patient Health and Organizational Quality Improvement</td>
<td>1559</td>
</tr>
<tr>
<td>Error Propagation in EHRs via Copy/Paste: An Analysis of Relative Dates</td>
<td>1560</td>
</tr>
<tr>
<td>The Importance of Mental Models in the Design of Integrated PHRs</td>
<td>1562</td>
</tr>
<tr>
<td>Automatic Coding of Free-Text Medication Data Recorded by Research Coordinators</td>
<td>1563</td>
</tr>
<tr>
<td>Implementation of a Mobile Communication Application to Enable Secure Electronic Access and Exchange of Patient Health Information</td>
<td>1564</td>
</tr>
<tr>
<td>Lessons Learned Bringing Public Health into the Primary Care Clinic through an EHR-based Application</td>
<td>1565</td>
</tr>
<tr>
<td>The Use of Multiple Emergency Department Reports Per Visit for Improving the Accuracy of Influenza Case Detection</td>
<td>1566</td>
</tr>
<tr>
<td>Use of a Smart Stop to Improve Venous Thromboembolism (VTE) Prophylaxis Compliance and Order Set Use in an Inpatient Electronic Medical Record</td>
<td>1567</td>
</tr>
<tr>
<td>Feasibility of the SBAR Discharge Summary Format</td>
<td>1568</td>
</tr>
<tr>
<td>The Establishment of Health Informatics Laboratory for Specialized Wireless Remote Monitoring Training and R&amp;D</td>
<td>1569</td>
</tr>
<tr>
<td>The Role of HMG-CoA Reductase Inhibitors in the Management of Sepsis in a Cohort Study of Adult Intensive Care Unit Patients</td>
<td>1570</td>
</tr>
<tr>
<td>Customized Reference Ranges for Laboratory Values Decrease False Positive Alerts in Intensive Care Unit Patients</td>
<td>1571</td>
</tr>
<tr>
<td>Reproducibility of Health Care Datasets</td>
<td>1572</td>
</tr>
<tr>
<td>A Literature Review of Electronic Health Record Redesign for Optimization</td>
<td>1573</td>
</tr>
<tr>
<td>Visualization Design Trends by Mapping the Alzheimer’s Disease Trial Space</td>
<td>1574</td>
</tr>
<tr>
<td>A Review of Clinical Decision Support Products in Dentistry</td>
<td>1575</td>
</tr>
<tr>
<td>Automated Clinical Status and Treatment Prognosis tracking in Cancer Patients</td>
<td>1576</td>
</tr>
<tr>
<td>The Role of HMG-CoA Reductase Inhibitors in the Management of Sepsis in a Cohort Study of Adult Intensive Care Unit Patients</td>
<td>1577</td>
</tr>
</tbody>
</table>
Informatics Suite

- Evaluation of the OpenCDS Value Set Manager
- Reimbursement
- Mobile Education: Reaching Homeless PTSD Veterans
- The State HIE Program Evaluation: A Typology of State HIE Approaches
- Does Size Matter? A Comparison of a Large Web Corpus and a Smaller Focused Corpus for Medical Term Extraction.
- Disease/Disorder Semantic Template Filling – Information Extraction Challenge in the ShARE/CLEF eHealth Evaluation Lab 2014
- Development of a Unified Computable Problem-Medication Knowledge Base
- Extending tranSMART for Meta-Analysis of Genomic Data Across Trials
- Extract and Analyze Useful Information from a Noised DNA Chip Image
- Analysis of Patient Portal Use in Underserved Populations and Settings
- SimProtocols – A Software Prototype for In Silico Comparison and Evaluation of Computer-based IV Insulin Infusion Protocols
- Engaging Patients with Advanced Directives Using an Experiential Information Visualization Approach
- Analysis of Patient Portal Use in Underserved Populations and Settings
- Clustering Analysis of the Gene Chip Data for Two Types of Leukemia
- Extract and Analyze Useful Information from a Noised DNA Chip Image
- Extending tranSMART for Meta-Analysis of Genomic Data Across Trials
- Challenges in Quantifying Narcotic Use from Drug Dispensing Records
- Implementation of a Computer-Based Documentation System Improves Workflow Efficiency: A Case Report
- What Tasks Are Clinical Teams Tracking in Daily Practice? Usage of a Web-based Care Management Tool in Eight Veterans Affair Medical Centers

Jianji Yang, Judy McConnachie, Chun J. Sun, Lisa Winterbottom
Design of Vendor-neutral Platform for Fast Prototype Model Verification and Deployment ................................. 1638

Using Narrative Storyboards to Inform Design Improvement of Hands-free Communication Devices .................. 1639

Visualization of Publication Timelines using 4K Monitors .............................................................................. 1640

A New Corpus for Structured Microbiology Results ..................................................................................... 1641

Application of Data Mining Techniques to Predict Physical Activity ............................................................... 1642

M-health for Individuals with Dexterity Impairments: The Needs & Challenges ................................................ 1643


Informational Support Exchanges in Online Health Communities ...................................................................... 1645

Human-Centered Design in Wound Care Guidelines .................................................................................... 1646

Placeholder Registration Addresses in a Regional Health Information Organization ...................................... 1647

A Quest for HIE Success - Agency Theory and Technology Mutual Adaptation Framework .............................. 1648

An Extensible Integration Framework for CDS Applications ........................................................................... 1650

iGenetics: An Individualized Genetic Test Recommendation System Based on EHRs ...................................... 1651

Transforming NHANES Database to the OMOP Common Data Model ............................................................ 1652

Patient-Centered Decision Support for Pediatric Asthma Signs and Symptoms: Development of a Web-Based User Interface for Parents ........................................................................................................ 1653

STUDENT DESIGN CHALLENGE

Online Patient Center: Expanding Patient Portals by Integrating Patient-Generated Data Directly into a Primary Care Provider's EHR Workflow ............................................................................................................. 1654

On the SamePage: Supporting Communication and Informed Decision Making Through a Surgical Portal Extension ..................................................................................................................................................... 1659

Sintesi: Making Health Information Meaningful ............................................................................................ 1664

Beyond Patient Portals: Engaging Patients with their Healthcare Providers: “HealthUp”: An Active Patient Portal Beyond Sickness........................................................................................................................... 1669

UHealth for Your Health: Enhancing Utilization of Patient Portals and Its Experience ..................................... 1675

A Patient Portal for Clinical Trials: Towards Increasing Patient Enrollment .................................................. 1680

Drawn Together: Enhancing Patient Engagement and Improving Diagnostic Tools through Electronic Draw-and-Tell Conversation ........................................................................................................ 1685

The Use of a Gamified Platform To Empower And Increase Patient Engagement In Diabetes Mellitus Adolescents ........................................................................................................................................ 1690

STUDENT PAPER

Sharing My Health Data: A Survey of Data Sharing Preferences of Healthy Individuals ................................... 1699

Automated Extraction of Family History Information from Clinical Notes ....................................................... 1709

The EHR's Roles in Collaboration Between Providers: A Qualitative Study ..................................................... 1718

MedMinify: An Advice-giving System for Simplifying the Schedules of Daily Home Medication Regimens Used to Treat Chronic Conditions .............................................................................................. 1728
Could Patient Self-reported Health Data Complement EHR for Phenotyping? .......................................................... 1738
Daniel Fort, Adam Wilcox, Chanhua Weng
Risk Prediction for Acute Hypotensive Patients by Using Gap Constrained Sequential Contrast Patterns ......................... 1748
Shameek Ghosh, Mengling Feng, Hung Nguyen, Junyi Li
A Novel Method to Assess Incompleteness of Mammography Reports ........................................................................ 1758
Francisco J. Jimenez, Yirong Wu, Elizabeth S. Burns, Daniel Rubin
Ze He, Jenna Marquard, Philip L. Hennenman
A Method for Analyzing Commonalities in Clinical Trial Target Populations ................................................................. 1777
Zhe He, Simona Curini, Tianyong Hao, Ida Sim, Chanhua Weng
Predicting Discharge Mortality after Acute Ischemic Stroke Using Balanced Data ................................................................. 1787
King Chung Ho, William Speier, Sazie M. El-Saden, David S. Liebeskind, Jeffrey L. Saver, Alex A. Bui, Corey W. Arnold
A Service Oriented Architecture Approach to Achieve Interoperability between Immunization Information Systems in Iran ........................................................................................................................................... 1797
Masoud Hosseini, Maryam Ahmadi, Brian E. Dixon
Syndromic Surveillance in an ICD-10 World .......................................................................................................................... 1806
Achala Jayatilleke, Jeffrey M. Kristensen, Lisa Bastin, Umed Ajani, Peter Hicks
Divisive Hierarchical Clustering towards Identifying Clinically Significant Pre-Diabetes Subpopulations .............................. 1815
Era Kim, Wonsuk Oh, David PJ Maciejewicz, M. Regina Castro, Pedro J. Caraballos, Gyorgy Simon
Extracting Patient Demographics and Personal Medical Information from Online Health Forums ............................................. 1825
Yang Liu, Songhui Xu, Hong-Jun Yoon, Georgia Tzouras
Data Model for Personalized Patient Health Guidelines: An Exploratory Study ................................................................. 1835
Mary McNamara, Karthik Sarma, Denise Auberle, Alex A. Bui, Corey W. Arnold
Identification and Management of Information Problems by Emergency Department Staff ................................................... 1845
Alison R. Murphy, Madhu C. Reddy
An Evaluation of Two Methods for Generating Synthetic HL7 Segments Reflecting Real-World Health Information Exchange Transactions ........................................................................................................................................ 1855
Thomas S. Mvogo, Paul G. Biondich, Shaun Ganninis
Scalable and High-Throughput Execution of Clinical Quality Measures from Electronic Health Records using MapReduce and the JBoss® Drools Engine ........................................................................................................ 1864
Kevin J. Peterson, Jyotishman Pathak
Knowledge Crystallization and Clinical Priorities: Evaluating How Physicians Collect and Synthesize Patient-Related Data .............................................................................................................................................. 1874
Ari H Pollack, Carolyn G. Tweedy, Katherine Blondon, Wanda Pratt
Providing Hospital Patients with Access to Their Medical Records ................................................................................... 1884
Jennifer E. Prey, Susan Restaino, David Tavvrey
Improving Clinical Data Integrity by using Data Adjudication Techniques for Data Received through a Health Information Exchange (HIE) .................................................................................................................. 1894
Pallavi Ranadkebhar, Susan E. Pollock, Darren K. Mann, Sidney N. Thornton
Development and Evaluation of Reference Standards for Image-based Telemedicine Diagnosis and Clinical Research Studies in Ophthalmology .................................................................................................................................. 1902
Michael C. Ryan, Susan Ostmo, Karyn Jonas, Audina Berrocal, Kimberly Dresser, Jason Horowitz, Thomas C. Lee, Charles Simmons, Maria-Ana Martinez-Castelanos, R. V. P. Chan, Michael F. Chiang
Developing a Formal Representation for Medication Appropriateness Criteria ........................................................................ 1911
Hojjat Salmasian, Tran Tran, Carol Friedman
Design Considerations for Post-Acute Care mHealth: Patient Perspectives ................................................................. 1920
Patrick Sanger, Andrea L. Hartzer, William Lober, Heather L. Evans, Wanda Pratt
Motivating the Additional Use of External Validity: Examining Transportability in a Model of Glioblastoma Multiforme .................................................................................................................................................... 1930
Kyle W. Singleton, William Speier, Alex A. Bui, William Hsu
Machine Learning for Risk Prediction of Acute Coronary Syndrome .................................................................................. 1940
Jacob P. Fanhouten, John Starmer, Nancy Lorenzo, David J. Maron, Thomas A. Lasko
Enabling Claims-based Decision Support Through Non-interruptive Capture of Admission Diagnoses and Provider Billing Codes ......................................................................................................................... 1950
Colin G. Walsh, David Tavvrey, Peter Stetson, Matthew R. Fred, George Hripcsak
A Mobile/Web App for Long Distance Caregivers of Older Adults: Functional Requirements and Design Implications from a User Centered Design Process ........................................................................ 1960
Steven S. Williamson, Paul N. Gorman, Holly B. Jimson
Does Sustained Participation in an Online Health Community Affect Sentiment? ................................................................. 1970
Shaoqian Zhang, Erin Bantum, Jason Owen, Noemie Elhadad
On Learning and Visualizing Practice-based Clinical Pathways for Chronic Kidney Disease ............................................... 1980
Yife Zhang, Rena Padman, Larry Wasserman
PubMedMiner: Mining and Visualizing MeSH-based Associations in PubMed ................................................................. 1990
Yuecan Zhang, Indra N. Sarkar, Elizabeth Chen
SYSTEMS DEMONSTRATION

Patient-Centered Case Management System (P-CMS) ................................................................. 2000
  Keith Butler, Andrew Berry, Amy Walker, Nikki Pete, Yi-Chen Sung, Craig Harrington, Jodie Haselkorn, Walter P. Nichol, Mark Oberle, Mark Haselkorn, Lucas McCarthy

Pajekto3DStereo: Enabling Generation and Interaction with 3D Stereo Networks .................................................. 2002
  Bryant Dang, Suresh K. Bhavnani

Big Data for Critical Care with Cloud-based In-Memory Database ...................................................... 2003
  Mengling Feng, Mohammad Ghassemi, Thomas Brennan, John Ellenberger, Ishrar Hussain, Roger Mark

Narrative Event and Temporal Relation Visualization Tool ............................................................. 2004
  Sean P. Finan, Piet C. De Groen, Guergana Savova

Using Electronic Medical Record Time and Quality Metrics to Identify Provider-Specific Training Opportunities .................................................. 2005
  Anupam Goel, Bonnie Dean, Harlen Hays

Demonstrating A Public Health Terrain Data Visualization System ........................................... 2006
  Jeremy Keiper, Shiqi Feng, Mathew Palakal, Yumi Xia, Sam Bloomquist, Shaun Grannis, Weizhi Li, Thanh M. Nguyen, Anand Krishnan

Implementation of a Population Health Record in Montreal, Canada .................................................. 2007
  Maxime Lavigne, Lam Dang-Duy, Catherine Ghassemian, Alexis Hamel, Anna Okhmatovskaya, Mojtaba Peyvandy, Arash Shaban-Nejad, David Buckeridge

SMART on FHIR® ............................................................................................................................. 2008
  David McCallie, Joshua Mandel, Stanley M. Huff, Kenneth D. Mundl, Isaac S. Kohane

The HealthITxChange: A Community Infrastructure for Clinicians, Educators, Researchers, and Health IT Professionals focused on Ambulatory EHR Implementation and Use .................................................. 2009
  Helga E. Rippen, Christoph U. Lehmann, Ejim Mark

An Electronic Health Record for Google Glass: A System Demonstration ........................................... 2010
  Karandeep Singh

An EMR Designed for Teaching and Educational Research Based on Regenstrief Institute's Gopher System .................................................. 2011
  Blaine Y. Takesue, John Finnell, Jon Duke

Doxy.me-A Simple, Free, and Secure Telemedicine Solution for Health Care and Research Participation .................................................. 2012
  Brandon M. Welch

Author Index