NATIONAL FORUM ON DATA & ANALYTICS

AUGUST 1 - 2, 2013 WASHINGTON DC









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Overview of 2013 National Forum on Data & Analytics

On August 1st and 2nd, eHealth Initiative (eHI) hosted its second annual National Forum on Data & Analytics in Washington DC, where more than 460 attendees came from across the healthcare industry convened for the event. The Forum featured a series of case studies and multi-stakeholder panels on a variety of topics that are summarized below.

Day One

Jennifer Covich Bordenick, CEO of eHI, opened the conference with an overview of the evolving landscape of health IT and a sneak peek of <u>key findings</u> from a national survey of Chief Information Officers and their use of data and analytics.

Keynote

Farzad Mostashari, MD, ScM, National Coordinator for Health Information Technology, Office of the National Coordinator for Health Information Technology (ONC), reviewed the progress achieved thus far since the passage of the HITECH Act. Hospital electronic health record (EHR) adoption has increased five-fold since 2009, and mentioned the importance of big data in improving and transforming healthcare. Emphasizing the importance of the patient's voice to communicate with the provider both inside and outside of the office setting, Dr. Mostashari underscored that higher quality of care and patient satisfaction ratings are distinguished and defined by allowing the patient the opportunity to

communicate – even for just 30 seconds – with the provider. During the keynote speech, Dr. Mostashari urged providers to make use of Stage 2 Meaningful Use (MU) and leverage health data without jeopardizing privacy and security. He encouraged providers to "polish the stone to a high sheen" before seeking more data, as more data does not necessarily generate better results or solve the problem. He encouraged providers to think about the business case and the policy intent of quality care from a consumer's perspective. His closing words were to bring the speed of technology to healthcare, engage patients in their care to achieve the Triple Aim, and turn insight into action.

"We are failing to do what's right...not because clinicians and hospitals and vendors don't care...but because we don't have systems to help ordinary people do extraordinary things."

Farzad Mostashari, National Coordinator for HIT ONC

Panel One: Achieving Quality Improvement through Data & Analytics

The first panel brought together stakeholders across the healthcare industry to present case studies and provide their perspectives on leveraging data and analytics to improve quality and reduce costs. This panel was moderated by Mahesh Naphade, AVP and Global Data Science Practice Lead of Technosoft Corporation, and featured four panelists:

- Sara Galantowicz, MPH, Senior Associate, Abt Associates
 - Developing an ICU Readmissions Quality Measure: a Case Study in Risk Adjusting with EHR Data
- Marj Bogaert RN, MSN, Senior Principal, Accenture
 - o Data and Analytics Drive Successful Readmission Initiatives with Results



- <u>Luis Ahumada, MSCS, PhD,</u> Candidate Principal Information Scientist, The Children's Hospital of Philadelphia
 - o CHOP's Analytics Roadmap and Perioperative Transfusion Analysis Case Study
- Vincent Bufalino, MD, FAHA, Senior Vice President, Advocate Cardiovascular Institute
 Senior Medical Director of Cardiology, Advocate Medical Group
 - Making a Difference with Population Management, Health Data and Evidence-Based Guidelines

Sara Galantowicz identified potential covariates and patient level characteristics as strong indicators for readmission, noting that targeting these contributing factors is essential to improving quality. Marj Bogaert focused on challenges for reducing readmissions including lack of data, inability to understand current data and incomplete discharge summaries. Bogaert concluded that real time data can create predictive readmissions scores on a case-by-case basis for patients and the utilization of this could vastly improve quality. Luis Ahumada's presentation discussed the transformation from data to information to knowledge. Ahumada demonstrated how change in practice and use of data can improve patient outcomes and reduce costs. Vincent Bufalino discussed the importance of evidence-based guidelines in the context of cardiac care and how health IT can support the development and adherence to standards. Overall, this panel urged providers to utilize data to prevent foreseeable events that lower quality of care.

Panel Two: Leveraging Analytics to Facilitate Accountable Care

In this panel, stakeholders across the healthcare industry and continuum of care provided their perspectives on leveraging data and analytics to facilitate accountable care. Charles Jarvis, Vice President for Health Reform and Government Initiatives at NextGen Healthcare, moderated the panel with the following speakers:

- Curt Sellke, Vice President of Analytics, Indiana Health Information Exchange (IHIE)
 - Using ADTs as a Starting Point for Valuable Insights into Accountable Care Delivery
- Jamie Moxham, MSPH, Director of Program Analytics, Lone Star Circle of Care
- Dr. James Walton, DO, MBA, CEO, Genesis Physician Network
 - The Anatomy of a Leading ACO
- Angie Jellish, Operations Director, Xerox
 - Using Data Analytics to Identify Appropriate Health Home Target Populations
- Michael Croghan, Vice President Technology, Care Management Technologies
 - Behavioral Healthcare Population Management and Six Sigma Quality Improvement

Jamie Moxham discussed how ACO dashboards can create interoperability among systems, allow providers to see information on a clinic to clinic basis, and identify and share best practices. James Walton likened the healthcare market to that of any other industry, noting that the challenge of integration is universal. As new players are entering the healthcare system with the implementation of the Affordable Care Act, it is important to monitor how the healthcare landscape is changing. In discussing a pilot program that Xerox has implemented, Angie Jellish outlined the challenges of targeted interventions and the difference between identifying populations in need of care versus populations most susceptible to interventions. Michael Croghan followed up by discussing how non-compliant



patients could be stratified to forecast readmissions or additional complications by tracking progress from week to week, identifying useful interventions, and allocating resources appropriately. Overall, this panel explored how targeted interventions and predictive analytics can help to facilitate accountable care by improving quality and reducing cost.

Featured Speaker:

George Lazenby, the CEO of Emdeon, was one of the featured speakers at the forum. Lazenby spoke about Emdeon and the importance of connecting payers, providers, and pharmacies to more patient data. In the United States, 70% of payers have more than three administrative systems collecting data, resulting in a number of information silos. Lazenby emphasized the need to leverage traditional and existing points of data and break down silos to achieve better care. For example, when it comes to readmissions, hospitals do not always know which patients are at risk for readmissions when they enter the hospital because their data is in multiple locations. Aggregating the data from multiple points will paint a more complete picture of the patient that will allow providers to determine their probability of readmission. Real-time access to data can determine whether or not a patient is complying with prescribed treatments, and prioritize follow-up for high-risk patients. Lazenby concluded that solutions to these problems do exist, and by leveraging data, removing silos, and providing relevant treatment data, providers can effectively address these issues.

Panel Three: For Big Data to Realize its Promise, Industry Collaboration Will be Key

This panel discussed what it takes to form a collaborative effort among health organizations to determine standards of how health information is gathered and what can be used for outcomes research and sharing protocols. Dan Garrett, Principal and Leader of Healthcare IT Practice at PwC, moderated a panel of speakers including:

- Sam Ho, MD, Chief Medical Officer, UnitedHealthcare Member of eHealth Initiative Board of Directors
- <u>Stephan Deutsch MD</u>, Chief Medical Officer, CenterLight Healthcare
- <u>Neal Sanger</u>, Regional Chief Information Officer, Mayo Clinic Health System

Dr. Deutsch argued that in order to have collaborations among multiple stakeholders, there must be communication between all organizations

"We can't forget why analytics is important – better care and lower healthcare costs. It's time to put the word 'affordability' back into the Patient Protection and Affordability Care Act."

Sam Ho
 Chief Medical Officer
 United Healthcare

and participants. The inability to communicate and understand populations is hindering the advancement of big data. For example, there are 90 million illiterate Americans and without the ability to read, medical adherence and compliance becomes extremely difficult. For big data to realize its promise, patients must be involved in their care and must be targeted and communicated with appropriately. Dr. Ho discussed the importance of eliminating gaps in care to achieve the triple aim. Behavior change depends upon a collaborative effort between pharmacies, providers, and patients to achieve the highest quality of care. As these changes occur, it is necessary to benchmark and incentivize appropriate use of big data to ensure that it is actionable. Dr. Ho also noted that all other aspects of the economy are consumer-focused, and that we must make the health system work for consumers in a



similar fashion. Neal Sanger focused on four collaborative efforts that could improve the community including the creation of an analytics registry, connection to a consortium, a genomics research space and the aggregation of big data. Sanger emphasized the need to define big data and target executive leadership to successfully transition to true collaboration. The culture of big data must also change, and the industry must identify innovative leaders to address new questions including legal issues, patient consent and data access.

Featured Speaker:

John Glaser, PhD, CEO of Health Services at Siemens Healthcare, presented on "The Evolution of Data and Analytics." Dr. Glaser highlighted five changes within the health system that will shape the evolution of healthcare: 1) changes in provider reimbursement mechanisms and associated business and clinical models, 2) continued adoption of interoperable electronic health records, 3) maturation of organizational analytics intent, 4) shift in nature of analytics, and 5) advances in information technology and methods. Dr. Glaser noted that although adoption of EHRs has increased fivefold, the trend does not necessarily correlate with their full functionality or use. The nature of analytics is changing, which will allow data and analytics to accomplish new goals, provide new insight, and deliver new services - but technology must be fully (and correctly) implemented to realize its promise.

Panel 4: Predictive Analytics for Genomics and Personalized Medicine

The fourth panel focused on how predictive analytics for genomics and personalized medicine can improve patient care and enhance research. The panel was moderated by <u>Michael Palmer</u>, Head of Innovation, Aetna, and featured three panelists:

- Tuan Dinh, PhD, Vice President, Healthcare Analytics and Modeling, Archimedes Inc
- Sanjay Joshi, MBiomedE, CTO, Life Sciences, EMC, Isilon Storage Division
- Mark Lim, Program Manager, Medical Research Innovation, Faster Cures

Dr. Tuan Dinh presented on "Model-Based Medicine: Leveraging Data and Analytics to Drive Medical Decision Making." Dr. Dinh discussed how IndiGo technology can be used as a personalized decision support tool for calculating risk and patient adherence, and recommending targeted interventions. During his presentation on "Patient Involvement in Personalized Medicine," Mark Lim noted the limitations of genomic data discussed how it is single or periodic data, and must be supplemented with other sources to paint a full picture. Although genomic data may sometimes be adequate to stand alone, data collected from other settings can help to identify behavioral and environmental factors.

Featured Speaker:

Georges C. Benjamin, MD, FACP, FNAPA, FACEP (E), Hon FRSPH, Executive Director, American Public Health Associated presented on "Population Health: A Broad Approach for Health Improvement." After discussing the intersection between public and population health, Dr. Benjamin addressed how social media, electronic communication, and mobile devices can increase access to and exchange of critical health information. Looked through the lens of public health, data and analytics can play a more visible role in reducing health disparities and improving the outcomes and determinants of health among underserved populations through targeted interventions and policies. Accordingly, population health data must account for populations within and beyond formal clinical practices and should measure



multiple dimensions aside from clinical data, including genomics, environmental health, socioeconomic status, and individual behavior. Comprehensive data integration can be leveraged to produce effective intervention strategies and improve outcomes at a population level.

Panel Five: Health Insure Exchange Analytics

The purpose of this panel was to dive into the use of analytics in health insurance exchange operations. This panel was moderated by <u>Jeanette Thornton</u>, VP of Health IT Strategies at AHIP, and featured:

- <u>Jean Yang</u>, Executive Director, MA Health Connector
- Loren McCaghy, Senior Principal, Health Reform & Product Strategy, Accenture
 - Need for Consumer Analytics in Successful Public Marketplaces
- <u>Clint Fuhrman</u>, Senior Director, Business Development & Public Policy, <u>Lexis Nexis Risk</u>
 <u>Solutions</u>
 - Big Data & Identity Management -- A Prescription for Knowing Your HIX Customers
- Vijay Jagannathan, Informatics Lead Healthcare Payer, Dell Services
 - Big Data Solutions to Predict Membership Enabled by Health Insurance Exchanges
- Ann Mond Johnson, Chairman of the Board of Managers, ConnectedHealth

Health insurance exchange (HIX) analytics will put individual states in an optimal position to capture, store, and analyze longitudinal information to facilitate identity management, provide consumer transparency, and enable a competitive marketplace. Loren McCaghy highlighted the new challenges and demands presented by HIX, noting how it is now more essential than ever that consumer needs and values are taken into account as previously uninsured populations with poorly managed complex health conditions enroll in health insurance. Fuhrman focused on how to leverage the convergence of real-time data to manage and identify patients, improve contact information, utilize network analytics and help to prevent fraud. Jagannathan echoed McCaghy's concerns, noting that the demographics of the populations enrolling through HIX will differ greatly from the currently insured in health status, family size, product choices and language preferences. Taking on this new challenge, Johnson argues, will require a paradigm shift in the approach towards purchasing insurance that better mirrors the retail experience and understanding of the consumer.

Featured Speaker:

Rodney Cain, Vice President of HIE Product Strategy at Optum, discussed the geographic variation in cost, quality, and population health. Although the burden of chronic disease is increasing nationwide, there are large geographical disparities in the rate of growth; more worrisome perhaps, is that higher spending does not necessarily correlate with better quality of care in communities. In fact, there is no key factor that contributes to the success of community health, but rather a combination of incentive alignment, social capital, economic resources, integration, and technology and health behaviors. Rodney Cain outlined how new policy incentives and alignment need to focus on specific geographic areas to better target variations in spending and quality among commercially insured and Medicare populations.



Panel Six: Community Health Initiatives Enabled by Clinical Analytics

The sixth panel featured a community health case study presented by the following speakers:

Jon D. Morrow, MD, Senior Medical Leader, GE Healthcare

Andrew Hamilton, RN, BSN, MS, Chief Operating Officer and Director of Clinical Informatics, Alliance of
Chicago Community Health Services, L3C

Morrow and Hamilton jointly presented on a project that provided health IT infrastructure across four federally funded health centers in Chicago to improve population health. GE teamed up with the Alliance of Chicago with the goal to integrate clinical decision support and performance measurements into a commercial electronic medical record (EMR) in the southern Chicago health centers. The presenters displayed their progress to date including their personalized EMR and data visualization software. By exploring the efficacy of EMRs and working towards providing real-time health alerts for the health centers, the project displays the ability of clinical analytics to positively impact a community.



Day Two

Panel One: Driving Down Healthcare Costs Using Data and Analytics to Achieve Savings

This session focused on how data and analytics can be used to improve quality, reduce costs, and increase the affordability of healthcare. The panel was moderated by <u>Sam W. Ho, M.D.</u>, Chief Medical Officer and Executive Vice President of UnitedHealthcare and featured:

- Jonathan Niloff, MD, Chief Medical Officer, MedVentive
- Robert Rosati, Vice President of Clinical Informatics, Visiting Nurse Service of New York
- <u>Joseph Eberle</u>, Principal Consultant and Chief Solutions Architect for Data Analytics Solutions,
 CTG Health Solutions
 - Using Transformational Data Analytics to Improve Care Evaluation, Management and Outcomes of Chronic Kidney Disease Patients
- <u>Elliot Sloane, PhD, CCE, FHIMSS</u>, President, Center for Healthcare Information Research and Policy (CHIRP)
 - Achieving Interoperability: Integrating EMRs with mHealth and Medical Devices to Lower Cost and Improve Care
- David Schuette, Managing Partner & Chief Informationist, Knowledgent

Dr. Niloff spoke about lowering costs by targeting drug cost management, high cost imaging readmissions, ED frequent flyers, and incentive management. Dr. Rosati discussed how the Visiting Nurse Service of New York uses predictive risk scores based on patient diagnosis to reduce the cost burden of hospital readmissions. Joseph Eberle reviewed an innovative comparative effectiveness model that can be used to monitor medications and their ability to prevent the progression of risk factors and development of multiple serious medical conditions among stratified patient populations. Dr. Sloane argued for the importance of global harmonization and sharing of best practices in the integration of interoperability standards. David Schuette discussed how the closed loop method can be deployed to drive actionable insights into improving the quality of health and the lowering of cost.

Panel 2: Analytic Techniques for Community, Population Health Management and Surveillance
This panel focused on the critical topic of how data and analytics can improve population health. The
session was moderated by <u>Damon Davis</u>, Director of the Health Data Initiative of the US Department of
Health and Human Services and featured six panelists:

- Shakeel Khan, Population Health Management Product Manager, NextGen Healthcare
 - Electronic Surveillance and Outreach Automation Techniques Using NextGen PH to Meet
 Collaborative Care" a Population Health Perspective
- Jonathan Fuchs, FACHE, Chief Operating Officer, Arkansas Foundation for Medical Care
 - Analytics as a Basis for Organization Sustainability: Regional Extension Centers and Patient Centered Medical Homes
- Vincent Jarvis, MD, MPH, Chief Medical Officer, The New York Hotel Trades Council and The Hotel Association of New York City, Inc. Employee Benefit Funds
 - Smoking Cessation Program: A Case Study in Transforming Data into Intelligent Healthcare Population Management





- Cindy Munn, MHA, Executive Director, Louisiana Health Care Quality Forum
 - The Evolution of eHealth in Louisiana: Using an Analytics Solution to Address Systemic Healthcare Issues
- <u>Tony Cooper</u>, Analytical Consultant, SAS
 - In Collaboration with Sam Edgemon, SAS
 - Accumulation Analysis of Seasonal Illnesses: Case Study Using Google Flu
- Nancy McMillan, PhD, Research Leader, Data Analytics, Battelle Memorial Institute
 - Early Prediction of Infectious Disease Using WebMD Symptom Data

Shakeel Khan discussed some of the top challenges faced by healthcare delivery organizations, including: financial risk-sharing with payers, Meaningful Use attestation, rising operating costs, selecting and implementing EHR system, and/or optimizing accountable care. Jonathan Fuchs described Arkansas' experience with healthcare delivery system reform to improve care coordination among its largely rural and elderly population. Dr. Jarvis demonstrated how data could be transformed into healthcare intelligence for population management with a smoking cessation program that targeted multiple access points among patients. Dr. Jarvis attributed the high rates of intervention and improvement to the emphasis of smoking status as a vital sign in EMRs. Cindy Munn focused on the importance of understanding current trends to identify populations that define intervention opportunities and empower providers with data. Tony Cooper presented a case study of the Google Flu project, which tracked and monitored seasonal illness by developing a predictive model that correlated the frequency of illness symptoms with relevant online search terms. On a similar note, Dr. McMillan discussed how WebMD used symptom checker data from approximately 40-50 million website visitors during the 2009 and 2010 flu seasons to develop an early prediction model of infectious disease.

Featured Speaker:

Christopher Ross, the CIO of the Mayo Clinic, spoke about the challenge of linking genomics data with EHRs. As technology continues to evolve, the cost of genomics will be radically reduced to the extent that personalized medicine may eventually become a practical component of regular medical practice. Genomics, namely pharmacogenomics, will provide the unique opportunity to ensure the right drug and the right dose can be applied at the right time for all patients. However, the expanse of genomic data will be a challenge to integrate effectively with health information technology. Systems use for genomic data does not yet exist, but integration with EHRs will be critical to leverage advanced sequencing to improve the efficacy of individualized treatments.

Panel Three: Policy/Privacy Issues in the Era of Big Data and Analytics

The third panel focused on the privacy and security issues raised by the evolving field of data and analytics in healthcare. Moderated by **Gerry Hinkley**, a partner from Pillsbury Winthrop Shaw Pittman, the panel comprised of:

- Rance Cleaveland PhD, Professor and Executive & Scientific Director, Fraunhofer CESE / University of Maryland
 - Security and Privacy Issues in Home Care Medical Devices
- Alice Leiter, Policy Counsel, Center for Democracy & Technology
- Kenneth Mortensen, Chief Privacy Officer, CVS Caremark



The age of big data has raised new questions and challenges around privacy and security. Alice Leiter argued that privacy is an enabler, rather than an obstacle. While there are challenges in understanding how HIPAA relates to data and its uses, there is now an opportunity for policy changes to help to eliminate these barriers. Although data and software are already susceptible to hacking and misuse, Dr. Cleaveland noted how new security issues are arising as the healthcare industry evolves from first-generation information systems. For example, the rise of mobile and wireless devices has led to data now being readily available to not only caregivers, but also unauthorized users. Kenneth Mortensen talked about new uses of real-time data that scale information down to a personal level in diverse settings.

Panel Four: Care Transformation in Oregon and the Use of Data and Analytics

This panel discussed how data and analytics are being used to support health information exchange in Oregon, as well as its care transformation efforts with Medicaid Coordinated Care Organizations (CCOs). The panel featured:

- Gina Bianco, MPA, President and CEO, Advances in Management, Inc.
- Anne Alftine, MD, Alliance for Jefferson Health Information Exchange

Gina Bianco provided an overview of Oregon's sixteen CCOs that deliver care for 93% of the state's Medicaid beneficiary population. Each CCO adopts a patient-centered medical home model that must determine the best way to provide comprehensive health care for their patients to meet the goal of reducing Medicaid spending and improving on quality of care. A key point of success for Oregon CCOs is a state environment that values extensive data collection, reporting, and exchange to improve care coordination. Anne Alftine went into more detail on the Jefferson Health Information Exchange and their tiered plan to achieve public health reporting, data analytics, and population health management by 2015. In highlighting lessons learned as a national model for coordinated care efforts, Anne also highlighted the process of building a business case for HIE and a community approach for sustainability.

Panel Five: Integration of Big Data and EHR Systems

This panel highlighted important issues around integrating data and EHR systems. Moderated by **Tehseen Salimi**, VP of Global Evidence and Value Development at Sanofi-Aventis, the panel featured:

- John Haughton MD, MS, CMIO, Covisint
 - Lessons Learned Meaningfully Processing Millions of HL7 Transactions and CCDs Across
 Private and Public Exchanges
- Corinne Woods RPh, MPH, Research Pharmacist, Pharmaceutical Research Computing
 - Pharmaceutical Research Computing Discussion of Two Collaborations
- Steven J. Oostema MS, Healthcare Analyst, HealthInsight
 - Improving the Quality of Diabetes Treatment and Care Provided Across a Community:
 Data Analysis and Communication
- Kosta Makrodimitris PhD, CF-FDA, CP-EHR, Executive Director, Global Bio Health Tech Center
 - A Standards Based Approach to Integrate Data and EHR/PHR for Mobile Health
- Micky Tripathi, President and Chief Executive Officer, Massachusetts eHealth Collaborative
 Chair-Emeritus of eHealth Initiative Board of Directors
 - Creating a Sustainable Community Quality Data Warehouse



John Haughton presented on the lessons he learned while processing millions of transactions and Continuity of Care Documents (CCDs), such as that data volume does not equal sustainability – nor is interoperability simply concerned with the exchange of CCDs. Corinne Woods discussed a project that translated and integrated two large datasets on ICU stays and kidney disease to be used in EHR platforms for real-time feedback. Steven Oostema presented on the success of the Utah Beacon community to align data information and show quality improvement among a fragmented community with multiple EHR systems. Kosta Makrodimitris discussed the need for usability in mobile health technology among physicians, patients, and public health to provide health education and access to care for underserved populations. Finally, Micky Tripathi concluded with an overview of the

Panel Six: Building the Business Case for Data Analytics

Leaders from various segments of the healthcare industry provided insight into the range of benefits and opportunities resulting from data and analytics in this panel moderated by <u>Susan Quinn</u>, Chief of Business Development at the American College of Physician Executives. The speakers included:

- Steffani Burd, PhD, Founder, Ansec Group
 - o In Collaboration with Peter Aiken PhD, Founder & President, Data Blueprint
 - Data It Shouldn't Be This Hard: Lessons from the Trenches
- Anna Daly, MSN, RN, Director of Clinical Data Management, HCA
 - Learning What You Don't Know About Your Clinical Data Using Real-Time Analytics
- Henry Zheng, PhD, MBA, Administrative Director for Strategic Analytics, Ohio State University
 Wexner Medical Center
 - o Developing Strategic Analytics Capabilities in an Academic Medical Center
- <u>Parag Paranjpe</u>, Founder and CEO, <u>Health Level</u>, <u>Inc.</u>
 - Data & Analytics for Mass User Adoption and Routine Operational Use
- Reid Kiser, Director of Research & Measurement, CAQH
 - Why Healthcare is Tracking Progress and Cost Savings in the Shift to Electronic Administrative Transactions

Steffani Burd and Peter Aiken discussed the benefits of having a data-centric business flow and leveraging analysis of structured and unstructured data to identify value, take meaningful action, and achieve realistic goals. Anna Daly presented on the HCA method in building a vendor-agnostic Clinical Data Warehouse, complete with analytics for harvesting data. Dr. Zheng explained the imperative for leveraging analytics to support strategic and business objectives. Parang Paranjpe presented on a national telemedicine program that improved healthcare system performance through real-time analysis of data. Finally, Reid Kiser reviewed how standardized measurements of administrative transactions between payers and providers could improve cost-savings of hospitals.