

## CONCURRENT SESSION 1A: Data Management and Dissemination Protocols

### **Myron Hepner, Michigan Data Collaborative**

Combining Clinical and Claims Data in a Multi-Payer Database – Lessons Learned

**Authors:** Myron Hepner, Ellen Bunting, Christopher Reid – Michigan Data Collaborative

#### **Objective**

The objective of this presentation is to share our experience incorporating clinical/EMR data into an existing Multi-Payer Claims Database and provide advice for other organizations considering the same.

#### **Background**

The Michigan Data Collaborative (MDC) is a data management and provisioning organization that provides data support and a Multi-Payer Claims Database to physician organizations (POs) throughout the state of Michigan participating in the Michigan Primary Care Transformation (MiPCT) Demonstration Project. MiPCT was formed in November 2010 after Michigan was selected by the Center for Medicare and Medicaid Services (CMS) as one of eight states to participate in the CMS Multi-Payer Advanced Primary Care Practice Demonstration project. MiPCT has a focus on reforming primary care payment models and expanding the capabilities of patient-centered medical homes (PCMH) throughout the state. MDC is working toward evolving the MiPCT Dashboard into a broader APCD for the state.

#### **Methods/Findings**

At the MiPCT project’s inception, the initial measures for the dashboard were based solely on claims data. In an effort to present the most complete patient health record possible, the MiPCT project made the decision to include EMR data in the measurement. The inclusion of the EMR data helps provide a more complete picture by adding test results data, which shows whether a patient’s health is actually improving or declining, to the claims data, which demonstrates only that a patient had a test. MDC was able to obtain PO support for this project through the MiPCT incentive program that provides monetary incentives to improve the technical capacity of POs and practices to utilize their registries, transmit registry data, and interpret registry results. During the phased approach to add clinical data, MDC defined specifications for registry data using an existing Payer electronic layout already in use by POs, received, tested, and reviewed test data files from participating POs, modified the data specifications, and defined the production schedules for each PO.

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### **Kristy Thornton, Center for Health Care Transparency**

A Consensus-based Approach to a Nationally Standard Claims Data Submission Guide

**Authors:** Harriett Wall, Network for Regional Healthcare Improvement & the Center for Healthcare Transparency; Kristy Thornton, Pacific Business Group on Health & the Center for Healthcare Transparency

#### **Body**

The objective of this project was to develop a more efficient and standardized process for accessing claims data. Claims data suppliers, all-payer and multi-payer claims databases (MPCD, APCD) have desired a standard claims data submission standard for many years. The APCD Council made a breakthrough step to this end by publishing a proposed set of core data elements for medical and eligibility claims data submission, as well as partnering with the National Council for Prescription Drug on requirements for pharmacy claims data submission, in October 2011. Since then, regional data center have worked with their data suppliers and other stakeholders to implement the APCD Council standard and determined that additional, detailed guidelines and information were required. In response to this need, the Center for Healthcare Transparency (CHT) formed a claims data workgroup, comprised of claims data experts in several regions. This group leveraged existing regional resources to create and revise a standard CHT Claims Data Submission Guide. The guide includes global dataset parameters, standard definitions of the data elements, reference code sets, and a standard layout with standard formatting, fixed field type,

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length, and start and stop position. All of the APCD Council medical claims (86) and eligibility data elements (43) are included, as well as standard data elements for the pharmacy and provider files. Reference code sets for Insurance Type/Product Code, Relationship, Race, Ethnicity, Admission Source, Discharge status, Type of Bill, Place of Service and Claims status are also included. The guide has the ability to help MPCD and APCDs realize the following benefits: (1) Greater clarity into overall data submission expectations; (2) Common, consistent understanding of data elements definitions; (3) Enhanced data quality through consistency across sources; (4) Faster, more efficient data auditing process, with reduce mapping error (5) Reduce claims data submission burden for national data suppliers, (6) Reduced vendor claims data intake difficulty and scope. The CHT Claims Data Submission Guide is focused on the necessary level of standardization to realize the aforementioned benefits while allowing for necessary regional adjustments. Importantly, data element may be left blank in the submission if unavailable without damaging the uniformity of the layout. Additionally, advice for documenting and understanding global parameters such as filing periods and exclusions is offered without a prescriptive approach. The CHT Claims Data Submission Guide is a practical and much needed tool. If adopted widely, it has the opportunity to significantly bring more MCPD and APCDs online sooner, as well as improve the claims data intake process for suppliers and aggregators nationwide.

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### **Theresa Mendoza, Dallas Fort Worth Hospital Council**

#### **Scott Mullins, DataBay Resources**

A Consensus-based Approach to a Nationally Standard Claims Data Submission Guide

**Authors:** Scott Mullins – Executive Director for DataBay Resources and Theresa Mendoza – Director of Quality, Business Intelligence, and Data Services for DFWHC Foundation.

#### **Body**

Managing large amounts of data can be very challenging. Adding data cleansing/validation and managing rapidly changing healthcare reform submission mandates all while maintaining compliance with HIPAA and FISMA increases this challenge significantly. Like most healthcare entities today, the Dallas Fort Worth Hospital Council (DFWHC) Education and Research Foundation also faced these challenges. After managing the data in-house as well as utilizing previous vendors, the DFWHC Foundation identified that they needed more in a data management partner to be successful in their endeavors and issued a request for proposal.

The DFWHC Foundation, comprised of nearly 90 hospitals in the north Texas region, has managed data from its members for 15 years. While the hospital members are committed to becoming the community resource to create knowledge, insight, and wisdom for the continuous improvement of healthcare, the DFWHC Foundation was looking to elevate its data acquisition, validation, and submission processes. Managing good, clean data is vital to their success in making more accurate analyses and providing evidence-based support to regional health partnerships, community programs, and various public health committees. This knowledge can then result in greater operational efficiencies, cost reduction, and reduced risk in healthcare.

Successfully finding that a vendor who could provide the tools, experience, and expertise to face their challenges head on, the DFWHC Foundation partnered with DataBay Resources. Leveraging CheckNet, a web-based software tool provided by DataBay Resources, the DFWHC Foundation was able to not only overcome previous obstacles, but reach milestones in their data cleaning, data management, and data submission requirements.

This session will include sharing some of the challenges faced and how the DFWHC Foundation and DataBay Resources partnership overcame these challenges to reach success.

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**Herbert Fillmore, 3M Health Information Systems**

The consistency of patient perceptions of primary care physician relationships compared to claims based measures of continuity and the relationship of both types of measures to cost and utilization of care

**Authors:** Herb Fillmore, Laura Soloway 3M-Health Information Systems

**Abstract:**

The Iowa Medicaid program began using the Dartmouth "How's Your Health Survey" (HYH) with Medicaid enrollees in 2014. The survey is completed electronically annually and collects a comprehensive set of enrollee's experience questions which are shared with the enrollee's primary care provider. The survey is part of a program designed to engage enrollee's and assist primary care providers in "patient activation." Among the questions asked by HYH are a number of items that are associated with the strength of the enrollee/PCP relationship, enrollee perceptions of "usual provider of care" and enrollee perceptions of someone being "in charge" of their care... all elements associated with good continuity and coordination of care. In addition to the HYH program, Iowa Medicaid also introduced a value based incentive program for the primary care physicians, using a set of metrics derived from claims data. One of these metrics measures continuity of care, the Continuity of Care Index (COCI), developed by Bice in 1977 and used throughout the world in the decades hence to measure continuity of care.

It is important to understand the relationship of claims based measures of continuity compared to enrollee perceptions to determine if similar or different phenomena are being tracked and how the measures can be used together or separately to monitor and improve the practice of health care.

The relation of the COCI to various outcomes like cost of care and utilization of services has been researched and an inverse relationship between higher continuity and lower cost/utilization demonstration in a number of populations. The relationship of the COCI (a claims based measure) to patient perceptions of continuity has also been researched in select populations. However, we are not aware of research that has examined the relationship of COCI to patient perceptions of continuity and coordination in a Medicaid population, nor of any research that compares the relative strength of the relationships of either patient perceptions of continuity or claims based assessments of continuity to cost/utilization.

This presentation will present evidence from about 20,000 HYH surveys linked to Medicaid claims data for non-dual adult Medicaid enrollees in Iowa Medicaid. The relationship of the following HYH questions to COCI will be presented (with covariates of age, gender, morbidity accounted for):

- Physician awareness and response to enrollee identified social support issues.
- Physician awareness and response to enrollee identified physical fitness issues.
- Physician awareness and response to enrollee identified issues with activities of daily living limitations.
- Physician awareness and response to enrollee identified emotional issues.
- Physician awareness and response to enrollee identified pain issues.
- Physician awareness and response to enrollee identified social activity issues.
- Enrollee identification of a usual source of care.
- Enrollee identification of a physician "in charge" of their care.

The overall null hypothesis for this investigation is that higher COCI scores (i.e., better continuity) will not be associated with greater physician awareness.

The second investigation to be presented will be relationship of the above items and COCI with total cost of care and individual "preventable" utilization measures, readmissions and ambulatory care sensitive admissions and emergency room visits.

This research and presentation has been authorized by the Iowa Medicaid department.

## CONCURRENT SESSION 2A: Data Analysis and Applications

### Manuela Staneva, Mississippi State Department of Health

The Demographic and Comorbidity Profile of Opioid-Related Hospitalizations in Mississippi: A Call for State Surveillance

#### Authors:

Manuela Staneva, MPH, Epidemiologist; Mississippi State Department of Health

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#### Background and Objectives:

Opioid substance abuse is a fast growing and difficult to control epidemic, imposing an urgent need for building surveillance systems at a state level. As an integral part of such monitoring systems, administrative data sources can be utilized for the risk-identification and risk-stratification of patients and populations abusing opioid substances.

The purpose of this study was to use hospital discharge data for identifying at-risk populations for opioid-related hospitalizations in Mississippi and for describing their demographics and comorbidity profiles. In particular, we evaluated the relation between opioid misuse and several clinical conditions known to be risk factors for opioid over-prescription and misuse.

**Methods:** Mississippi hospital inpatient discharge data for 2010-2011 were analyzed with SAS 9.3. We compared proportions of categorical variables with chi-square tests. The unit of analysis was a hospital discharge and we used primary and secondary diagnoses to identify discharges with opioid-related diagnostic codes.

**Results:** There were a total of 9,781 opioid-related hospitalizations during 2010-11. The proportion of patients with a diagnosis of opioid substance misuse was highest for Caucasians (83%), females (54%), rural residents (51%), and Medicare beneficiaries (31%). Compared to patients hospitalized for all other causes, however, Caucasians (83% vs. 59%,  $p < 0.001$ ), males (46% vs. 40%,  $p < 0.001$ ), urban residents (49% vs. 44%,  $p < 0.001$ ), and the uninsured (17% vs. 7%,  $p < 0.001$ ) were more likely to be hospitalized with a diagnosis indicating opioid misuse. The state’s two-year average was 15 opioid-related hospitalizations per 10,000 residents and the Southeast Public Health District had the highest hospitalization rate (27 per 10,000 persons).

The bivariate analyses revealed that 71% of all patients with an opioid-related diagnosis and 24% of all other patients had a co-existing mental health disorder (excluding other types of substance abuse). Compared to all other hospitalizations, patients hospitalized with a diagnosis of opioid abuse were more likely to have a co-existing diagnosis of chronic non-cancer-related pain (19% vs. 2%,  $p < 0.001$ ), lower back pain (12% vs. 2%,  $p < 0.001$ ), and myalgia (3% vs. 1%,  $p < 0.001$ ); however, these patients were less likely to have a co-existing cancer diagnosis (2% vs. 6%,  $p < 0.001$ ). Rheumatoid arthritis was a co-existing diagnosis in the same percentage of patients with or without an opioid-related diagnosis (1%).

#### Conclusion and Implications:

A disproportionate number of patients with an opioid-related diagnosis were Caucasians, lived in the state’s southeastern region and had mental disorders. These patients also had a high prevalence of various non-cancer-related pain diagnoses. In addition to allocating resources to the populations at-risk, these data and findings can help public health programs and health care systems in their evaluation of the risk/benefit ratio of prescribing opioid substances.

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**Susan Nezda, MPA Healthcare Solutions**

Comparative Effectiveness of Hospital Outcomes in Medicare Inpatient Elective Laparoscopic Cholecystectomy (ELC)

**Authors:**

**Donald E. Fry**, M.D., F.A.C.S., Adjunct Professor of Surgery Department of Surgery Northwestern University Feinberg School of Medicine Chicago, Illinois

**Susan Nedza**, M.D., M.B.A., F.A.C.E.P, Adjunct Assistant Professor of Emergency Medicine, Feinberg School of Medicine, Northwestern University Chicago, Illinois

**Michael Pine**, M.D., M.B.A., President, MPA, Inc.

**Purpose:** There is a lack of knowledge about the surgical outcomes across the continuum of care from admission to the hospital and through the post-discharge period. This study compares the risk-adjusted adverse outcomes by hospital for inpatient ELCs in Medicare patients to define the differences in performance and the opportunity for care improvement.

**Methods:** ELC patients that met procedural and diagnostic coding requirements in the Medicare Inpatient LDS Dataset from 2010-2012 were employed to develop logistic prediction models for the Adverse Outcomes (AOs) of Inpatient Deaths, 3-sigma Prolonged Length-of-Stay outliers (prLOS) among live discharges, 90-Day Post-Discharge Readmissions (with scheduled, trauma, and cancer readmissions excluded), and 90-Day Post-discharge Deaths without Readmission (PD-Deaths). The observed (O) *minus* predicted (P) AOs from the logistic models were computed for each hospital with over 50 qualifying cases and Z-scores were calculated for comparison of performance.

**Results:** There were 635 hospitals with 51,311 ELCs. There were 281 inpatient deaths; 3,879 prLOS, 7,372 patient readmissions; and 694 PD-Deaths. Among readmission patients, another 513 died. The c-statistic for models was 0.75 for inpatient mortality, 0.68 for prLOS, 0.67 for readmission, and 0.84 for PD-Deaths. A total of 22 hospitals had AOs that were 2 standard deviations less than predicted, and 35 were 2 standard deviations greater than predicted. The risk-adjusted AO rate (O x O/P) was 10.5% for the aggregated top quartile of hospitals and was 35.3% for the bottom quartile of performers (P<0.001).

**Conclusions:** Including the inpatient and 90-day post-discharge events, there is a 25% difference in the overall rates of AOs for inpatient ELCs in the Medicare population. Risk-adjusted, comparative effectiveness metrics can provide clear evidence that substantial improvement in outcomes and reductions in excess costs of care can be achieved for ELCs.

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**Theresa Mendoza, Dallas Fort Worth Hospital Council**

Performing Meaningful Data Analysis Utilizing ED Administrative Claims

**Authors:** Theresa Mendoza / DFWHC Education and Research Foundation

**Abstract:**

In recent years, increasing healthcare cost has been the most common topic of economic, political, and medical discussion. The excessive and sometimes inappropriate use of emergency room (ER) services has become a common problem leading to overcrowding and financial burden. In past few years, socio-economic, demographic, cultural and environmental disparities have been reported as determinant of excessive use of ER. Through the North Texas Healthcare Information and Quality Collaborative the region owns a unique patient data warehouse created by more than 80 hospitals and securely hosted by Dallas-Fort Worth Hospital Council Foundation (DFWHC Foundation), which has capabilities to provide information regarding the ER usage, cost and underlying disparities. The strength of this research is our comprehensive data warehouse of administrative health data which allowed us to perform spatial analysis with GIS mapping down to the patient level to identify the underlying causes associated with their frequent visits to the emergency room. The Foundation first did a one year data pull of ER data encounters that included their unique patient ID generated by the Quadramed Smart I/X software.

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The Quadramed system applies probabilistic and deterministic matching algorithms to create the patient’s unique ID. This creates our Regional Enterprise Master Patient Index (REMPI) and we call the patient’s unique ID their REMPI ID. The data not only included the patient’s zip code, but also the street address. We then organized the data by zip code and street addresses. We imported the data into a geo-mapping tool called ArcGIS and mapped the data first looking for the zip codes with the highest utilization. After we identified two to three key zip codes, we then created a second map that took utilization down to the “hot blocks” within those zip codes.

Through this data analysis we were able to identify top diagnosis, payers, demographics, co-morbidities, and the acuity/severity of their ED visit. This analysis provided a way for us to help make the data actionable and through community and provider assistance, set up special community meetings within these zip codes to find ways to provide more resources.

The administrative data allowed health care efforts and resources be more efficiently targeted and focused from zip code to blocks to the patient level for prevention and management of identified health conditions and disparities contributing towards the high ER usage. These results help guide hospitals in North Texas region for developing their future strategies to improve quality of care.

### Objectives:

- 1) Show how administrative data can be used for population health analysis with appropriate methodologies.
  - 2) Present the statistical, demographic and charges details of emergency room visitors (adults and Pediatric) in North Texas Counties
  - 3) Show how we used the frequent flyer analysis of two highest ER usage counties including analysis based on zip codes, “hot blocks” and the most “frequent flyer patients” to inform collaborative.
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### Pacific Business Group on Health (PBGH)

Public Reporting at the Physician Level: A California Case Study

**Authors:** Ariel Klein, Pete Sikora, Kristy Thompson, Rachel Brodie, William H Rogers (Pacific Business Group on Health (PBGH) and the California Healthcare Performance Information System (CHPI)) and Jake Linenthal (Milliman, Inc.)

**Proposed Presenter:** Kristy Thornton

**Biosketch of Presenter(s):** Kristy Thornton is Senior Manager for the Center for Healthcare Transparency (CHT) and previously managed the California Healthcare Performance Information System (CHPI). CHT’s purpose is to make meaningful and reliable provider cost information readily available for 50% of the US by 2020. Kristy’s work includes overseeing innovations pilot projects to test novel methodological approaches to making high value performance information available to the public. Kristy has a nearly a decade of experience in healthcare transparency with expertise in claims data, ambulatory performance measurement and non-profit governance. Kristy also serves as the PBGH representative to the Integrated Healthcare Association Technical Measurement Committee.

**Theme:** Data Analysis & Applications

**Background:** CHPI is a multi-stakeholder non-profit entity that builds on a history of prior physician performance measurement programs to produce clinical quality ratings of providers through its claims database. CHPI is governed by an independent board of stakeholder representatives from health plans, providers, purchasers, and consumers, including a physician advisory group (PAG) which informs the measures selection, ratings methodology, and how information is publicly reported.

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**Objective:** In 2016, CHPI will report physician and practice site clinical quality ratings to the public including outreach to large employers in California to help employees use public reports to shop for a physician.

**Methods:** CHPI administers California’s Multi-Payer Claims Database (MPCD) consisting of claims from the state’s three largest health plans as well as the Medicare fee-for-service (FFS) program. CHPI is designated by the Centers for Medicare & Medicaid Services (CMS) Medicare Data Sharing Program as a Qualified Entity (QE). In all, the MCPD consists of about 12 million lives representing about 60% of statewide commercial non-Kaiser enrollment.

Although medical groups and health insurance plans commonly profile physicians, this is the first time that physician quality measures will be presented directly to the public. To assure the highest possible program validity, CHPI only considered about 20 National Quality Forum-endorsed clinical quality measures; initial, non-published results were based on care received in 2012 and based on eligibility assessed in 2011-2012. Measures also had to be approved by the PAG and individual results had to meet a 0.70 reliability threshold. CHPI’s first public report will feature results for measurement years 2012 and 2014.

**Findings:** In spring 2016, CHPI will publicly report on approximately 15,000 physicians and 6,000 practice sites, across several specialties including family practice, internal medicine, pediatrics, obstetrics and gynecology, and cardiology. CHPI will report ratings for roughly 35% of physicians in these specialties, distributed across all major markets of California. Results show variation by geographic market and the number of patients being treated. CHPI will also provide an overview of its public reporting website.

**Significance:** CHPI’s website will be the first to publicly report physician-level clinical quality information in the nation. CHPI’s multi-stakeholder composition will allow it to collaborate with employers to disseminate physician ratings to their employees.

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## CONCURRENT SESSION 3A: New Technologies to Drive System Transformation

### Jonathan Mathieu, Center for Improving Value in Health Care

Applications Related to Bundled Payments and Episodes of Care

**Abstract:** Applications related to bundled payments and episodes of care - We are implementing many of the original Prometheus 3.6 episodes in the Aver Informatics analytic platform. Much of this work is being funded by our state Medicaid agency and a local foundation. By June, we will have 12 (mostly) acute care episodes built and delivered to the Medicaid agency. We will talk about challenges, opportunities and how CO Medicaid is using this information and plans for future application.

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### Amy Kinner, Onpoint Health Data

#### Pat Jones, Green Mountain Care Board

Integrating Performance Measurement for Vermont’s Multi-Payer Advance Primary Care and ACO Shared Savings Programs

#### Authors:

Pat Jones, Health Care Project Director, Green Mountain Care Board

Karl Finison, Director of Analytic Development, Onpoint Health Data



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**Introduction:** Vermont has developed and implemented a number of innovative healthcare reform models encompassing alternative payment strategies that promote a more effective and efficient delivery system. The two most significant efforts are the state’s Multi-payer Advanced Primary Care Practice (MAPCP) initiative – the Vermont Blueprint for Health – and three Accountable Care Organizations (ACOs) participating in Medicare, Medicaid and/or Commercial Shared Savings Programs (SSPs). The ACO SSPs consider the care transformation initiatives being undertaken by the Blueprint to be foundational in achieving long-term quality improvement and cost savings. As a result, public and private sector leaders are supporting coordination of the Blueprint and the ACO SSPs in order to achieve alignment of goals, efficient resource use, convergence in performance measurement, and an overall acceleration of improvement efforts. Alignment of performance measurement and reporting are key contributors to this coordination strategy.

**Objective:** Over the past several years, there has been an increasing use of statewide data resources in Vermont to guide and measure the impact of healthcare improvement initiatives. The Blueprint is among the primary users of the state’s all-payer claims database (APCD) and primary care practice clinical registry, generating outcome-based community- and practice-level profiles that compare an individual setting to its peers through performance measures on utilization, expenditure, and quality. Similarly, each of Vermont’s ACO SSPs is guiding quality and efficiency improvement initiatives by studying results for key performance measures across communities. This presentation will discuss the opportunity that exists for collaboration between the Blueprint and the state’s ACOs, with particular focus on the unification of the programs’ performance measurement and reporting activities.

**Methods:** Payers, Blueprint, and ACO leaders are working together to jointly produce performance dashboards focusing on ACO measure results, as well as other analytics important to support care delivery transformation. Since 2014, commercial, Medicaid, and Medicare data from Vermont’s APCD have been linked with clinical data from the state’s clinical registry, enabling the generation of over 21 different ACO measures at the statewide, community, and practice level. These measures are reported at the population level and are stratified by major payer type (commercial, Medicaid, Medicare). Community-level reporting is now publicly available on the Blueprint’s website. This presentation will describe the two reform efforts, the selection of Medicare and non-Medicare ACO SSP measures in Vermont, the linkage of claims and clinical data sources, and the resulting population-based analytic measurement and reporting.

**Discussion:** Unifying performance measurement across an entire population through the intersection of Vermont’s two critical healthcare reform initiatives – the Blueprint and the ACO SSPs – will assist the state in achieving its healthcare reform goals. Co-reporting of key measure results that are of common interest across all parties, and the formation of unified community collaboratives to focus on these measures, will effectively advance Vermont’s progress towards a learning health system and care delivery transformation.

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### Claudia Schur, Social and Scientific Systems

The Impact of Maryland’s Assignment of Benefits (AOB) Legislation on Patients, Payers, and Providers

**Authors:** Lan Zhao, Claudia Schur, Niranjana Kowlessar, Srinivas Sridhara, and Linda Bartnyska

**Affiliations:** Social and Scientific Systems, Center for Analysis and Information Systems

**Objectives:** Many states are grappling with impacts of balance billing for out-of-network (OON) services delivered in hospitals and are considering or have implemented related legislation. In response to reports of exceptionally high out-of-pocket (OOP) spending for patients, Maryland law (2011) changed reimbursement rules for non-HMO plans to non-participating, hospital-based or on-call physicians. The law intended to reduce the financial burden on patients by discouraging reliance on balance billing, without reducing payments to OON physicians. This analysis examines the impact of the legislation from the perspective of the different stakeholders affected by the legislation—patients, payers, and providers.

**Design:** We conducted a pre-post study using privately insured medical claims for PPO and POS plans for 2010 and 2013.



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**Population:** Privately insured patients, payers, and hospital-based and on-call physicians in Maryland

**Findings:** Patients experienced an overall decline in financial burden, with the proportion of patients with at least one out-of-network service declining from 20% to 10%. The percentage of users with more than half of all payments going toward OON services declined from 9% to 4% and the percentage with all services OON fell from 2 to 1%. Among those patients with at least some OON service use, the overall out-of-pocket share of total spending fell from 34 to 30%.

For those physician groups affected by the legislation, the proportion of physicians participating in at least one private payer network showed no consistent pattern. Overall, the out-of-network share of total payments declined from 21% in 2010 to 11% in 2013. The vast majority of non-participating providers accepted AOB, accounting for 65-82% of OON spending for hospital-based and on-call specialists. There was a related decline in balance billing as a share of out-of-network payments, from 21% to less than 10%.

The OON share of total services and total payments declined from 2010-2013, with variation by type of service and site of care. For OON share of services, the smallest decline was 19 percent for critical care services and the largest was a 65 percent drop for anesthesia services. For OON share of total reimbursement, there were substantial declines for both emergency room and anesthesia. For 2013, the vast majority of hospital-based OON payments were AOB across all specialty/site of service categories. While network participation showed no evidence of decline overall, effects varied by payer with networks expanding for some and contracting for others.

**Conclusions:** The analysis indicates that the legislation achieved its purpose, by reducing the financial burden on patients from OON use. The majority of non-participating providers affected by the legislation accepted AOB, and income uncertainty for those providers was likely reduced due to less reliance on balance billing. While impacts varied by payer, we found no evidence that provider participation rates in commercial networks systematically declined.

**Implications:** This legislation and the analysis of its impact may offer lessons for other states where patients are experiencing financial burden from unanticipated out-of-network charges.

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### Remy Szykier, Aegis

Health Information Analytics – Addressing Health Disparities and Saving Babies

**Authors:** Aegis Health Security

**Summary:** The rate of infant mortality (IMR) is the best-known indicator of a community’s health status. IMR in an urban community often dictates long-term educational achievements and opportunity to overcome barriers to economic security.

**The IMR in the District of Columbia is 7.4 infant deaths per 1,000 live births**, as compared to the national average of 6.2. Within DC’s Black population, the IMR is 11.6 infant deaths per 1,000 live births. This means 69 babies in Washington, D.C. died before reaching their first birthday in the last calendar year reported (2011).

In partnership with Aegis Health Security - the Clinton Global Initiative (CGI) Healthy Babies Healthy City sponsor - the Executive Office of the Mayor for the District of Columbia is striving to save the lives of these babies, and prevent the family and community trauma caused by this loss of life. The mission of the Clinton Global Initiative (CGI) is to turn ideas into action. Established in 2005 by President Bill Clinton, the Clinton Global Initiative (CGI), an initiative of the Clinton Foundation, convenes global leaders to create and implement innovative solutions to the world's most pressing challenges.

The purpose of this Aegis-CGI Public Private Partnership (PPP) is to:

- Identify specific drivers of the IMR rate in the District
- Develop an innovative program in response to those drivers

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- Implement the program, track the outcomes, and expand the model across urban communities.

To this end, the Aegis-CGI PPP identified access barriers to quality health care, innovative “best practices”, and systems integration approaches rooted in the social determinates of Health, to successfully reduce the IMR in the identified high risk populations within the District. We have collectively identified key stakeholders to join together to share the knowledge and tools to save infant lives and improve prenatal care. It is our belief that through these strategically targeted partnerships, we will produce an enhanced continuum of care Provider to Resident Spectrum Model within a 1st World urban environment, which tragically suffers a 3rd World public health crisis.

Based on an in-depth analysis of the causes of Infant Mortality in D.C., the stakeholders with the leadership of Aegis Health Security and the Department of Health will devise a 5 point initiative aimed at reducing infant deaths substantially in the next several years.

Technology plays a central role in the sustained success of the commitment to reduce infant mortality and eradicate health disparities. The initiative is a demonstration of how the healthcare system can come together more efficiently and effectively to improve population health. The initiative depends on systematic collection; storing and analyzing of data to enable decision support by health system stakeholders committed to improving patient outcomes and controlling healthcare spend. Health IT will support measuring the outcomes of the initiative and continuous quality assurance. Health IT for this initiative provides the foundation to expand the capabilities to include other public health priority areas.

### **Key Takeaways from Our Findings:**

- Utilizing predictive and prescriptive analytics, we produced a scorecard that graded each hospital in D.C. based on their “predicted” infant mortality rate versus their “actual” infant mortality rate. The results were astonishing – and the District of Columbia is looking to implement our scorecard and create a “best practices” approach to prevent health disparities within the health care system.
  - Determined that a pregnant mother who goes from eleven cigarettes per day to twelve cigarettes per day increases the chance of infant mortality by nearly 40%. Our findings connected the dots between heavy smoking and infant deaths; and as a result of our findings, The Centers for Disease Control & Prevention (CDC) are now looking deeper into our analysis and findings.
  - Reduction in total lifetime cost due to premature birth is approximately \$22 million, of which two thirds are captured in the 1st year of life (DC would see a \$22 million cost savings in the first year alone by implementing our program)
-