Commonwealth of Massachusetts
Center for Health Information & Analysis (CHIA)
Non-Governmental Application for Case Mix Data

This form is required by all Applicants, except Government Agencies as defined in 957 CMR 5.02. All Applicants must also complete the Data Management Plan, attached to this Application. The Application and the Data Management Plan must be signed by an authorized signatory of the organization. This Application and the Data Management Plan will be used by CHIA to determine if your organization may receive CHIA data. Please be sure the documents are completed fully and accurately. You may wish to consult the Evaluation Guide that CHIA will use to review your documents. Prior to receiving CHIA Data, the organization must execute the Data Use Agreement. You may wish to review that document as you complete these forms.

NOTE: In order for your application to be processed, you must submit the required application fee. Please consult the fee schedule for the appropriate fee amount. A remittance form with instructions for submitting the application fee is available on the CHIA website.

All attachments must be uploaded to IRBNet with your Application. All applications documents can be found on the CHIA website in Word and/or PDF format.

I. GENERAL INFORMATION

APPLICANT INFORMATION	
Applicant Name:	Katherine Blumhardt
Title:	Content Coordinator
Organization:	Truven Health Analytics an IBM Company
Project Title:	Truven and MA Healthcare Analytics
IRBNet ID:	908858-1
Mailing Address:	100 Phoenix Drive Ann Arbor, MI 48108
Telephone Number:	734-913-3583
Email Address:	katherine.blumhardt@truvenhealth.com
Names of Co-Investigators:	
Email Addresses of Co-Investigators:	
Original Data Request Submission Date:	
Dates Data Request Revised:	
Project Objectives (240 character limit):	To allow our clients (hospitals, health networks, government agencies, and other healthcare providers, payers, consultants, and vendors) to have access to actionable planning, and operational and quality improvement data at their fingertips so they can make better decisions faster.
Project Research Questions (if applicable) Business Use Case(s):	1. 2. 3.

II. PUBLIC INTERST & PROJECT SUMMARY

1. Briefly explain why completing your project is in the public interest.

Truven Health Analytics licenses discharge level data, which are processed, standardized, and distributed to clients through our proprietary decision tools, benchmark databases, research, custom studies, and other associated products.

2. Has an Institutional Review Board (IRB) reviewed your project?

- ☐ Yes, a copy of the approval letter and protocol must be **attached** to this Application
- ☒ No, this project is not human subject research and does not require IRB review.

3. If your project has not been reviewed by an IRB, please **attach** a brief (1-2 page) description of your project including the methodology, objectives, and research questions.

III. DATA FILES REQUESTED [*Applicants seeking 2015 data only should skip to Question 2*]

1. *FY 2004 – 2014 Data*: Please indicate the Case Mix files from which you seek data, the Level(s), the year(s) of data requested, and your justification for requesting *each* file. Please refer to the Case Mix Data Specifications for details of the file contents.

CASE MIX FILES	Levels 1 – 6	Years Available 2004 - 2014
Inpatient Discharge	☐Level 1 – 3 Digit Zip Code ☐Level 2 – Unique Physician Number (UPN) + 5 Digit Zip Code ☐Level 3 – Unique Health Information Number (UHIN) ☐Level 4 – UHIN and UPN ☐Level 5 – Date(s) of Admission; Discharge; Significant Procedures ☐Level 6 – Date of Birth; Medical Record Number; Billing Number **PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL:**	**Year(s) of Data Requested:**
Outpatient Observation	☐Level 1 – 3 Digit Zip Code ☐Level 2 – Unique Physician Number (UPN) ☐Level 3 – Unique Health Information Number (UHIN) ☐Level 4 – UHIN and UPN ☐Level 5 – Date(s) of Admission; Discharge; Significant Procedures ☐Level 6 – Date of Birth; Medical Record Number; Billing Number **PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL:**	**Year(s) of Data Requested:**

Emergency Department	☐ Level 1 – 3 Digit Zip Code ☐ Level 2 – Unique Physician Number (UPN) ☐ Level 3 – Unique Health Information Number (UHIN) ☐ Level 4 – UHIN and UPN ☐ Level 5 – Date(s) of Admission; Discharge; Significant Procedures ☐ Level 6 – Date of Birth; Medical Record Number; Billing Number **PLEASE PROVIDE JUSTIFICATION BELOW FOR REQUESTING THE CHOSEN LEVEL:**	**Year(s) of Data Requested:**

2. *FY 2015 Data*: Beginning *with ficsal year 2015, Massachusetts Acute Care Hospital and Case Mix and Charge Data (collectively Case Mix Data) are released in* ***Limited Data Set (LDS) files***. Please refer to the Case Mix Data Specifications for details of the file contents.

Please indicate the Case Mix files from which you seek data, the year(s) of data requested, and your justification for requesting *each* file.

CASE MIX LIMITED DATA SET FILES	Year(s) Of Data Requested Current Yrs. Available ☐ 2015
■ **Inpatient Discharge**	**Please describe how your research objectives require Inpatient Discharge data:** Although the data delivery mechanisms differ, the following describes some of the typical analyses performed and results achieved when accessing state data: • Identifying areas of concern in the healthcare industry by providing appropriate detail to understand and address hospital and pharmacy utilization, service demand, care patterns, market share, and charge relationships; • Analyzing the relationships between hospital market share, charges, length of stay, mortality, and product line, by DRG or ICD-9-CM codes, at physician, hospital, market, state, regional, and national levels; • Viewing severity adjusted data to examine risk-adjusted indicators such as charges, length of stay, mortality, and complications of care; • Assisting in the development of guidelines for utilization review, and treatment planning and monitoring. The information can help accurately create occupancy projections, service demand, and delivery costs. Downstream, the data can also assist in resource allocation and in evaluating benefit plans.
☐ **Outpatient Observation**	**Please describe how your research objectives require Outpatient Observation data:**
☐ **Emergency Department**	**Please describe how your research objectives require Emergency Department data:**

Sections IV-IX must be completed by all Applicants requesting 2015 data. Applications that only include requests for prior years of data can skip to Section X.

IV. GEOGRAPHIC DETAIL

Please choose *one* of the following geographic options for MA residents:

☐ 3 Digit Zip Code (Standard)	☐ 3 Digit Zip Code & City/Municipality ***	■ 5 Digit Zip Code ***	☐ 5 Digit Zip Code & City/Municipality ***

*****Please provide justification for the chosen level of geographic detail if requesting something other than 3-Digit Zip Code only. Refer to specifics in your methodology:**

Zip Code data fields are essential to detecting local variations in practice pattern.

V. DEMOGRAPHIC DETAIL

Please choose *one* of the following demographic options:

☐ Not Requested (Standard)	■ Race & Ethnicity***

***** If requested please, provide justification for requesting Race and Ethnicity. Refer to specifics in your methodology:**

These are used in calculating difference in incidence rates by race and ethnicity.

VI. DATE DETAIL

Please choose *one* option from the following options for dates:

☐ Year (YYYY)(Standard)	☐ Month (YYYYMM) ***	■ Day (YYYYMMDD)***

*****Please provide justification for the chosen level of date detail if requesting Month or Day. Refer to specifics in your methodology:**

Due to our studies, accurate admit and discharge date information is essential to identify LOS.

VII. PHYSICIAN IDENTIFICATION NUMBERS (UPN)

Please choose *one* of the following options for Provider Identifier(s):

■ Not Requested (Standard)	☐ Hashed ID ***	☐ Board of Registration in Medicine # (BORIM) ***

*****If requested please, provide justification for requesting Hashed ID or BORIM #. Refer to specifics in your methodology:**

VIII. HASHED UNIQUE HEALTH IDENTIFICATION NUMBER (UHIN)

Please choose *one* of the following:

■ Not Requested (Standard)	☐ UHIN Requested ***
*** If requested please, provide justification for requesting UHIN. Refer to specifics in your methodology:	

IX. HASHED MOTHER'S SOCIAL SECURITY NUMBER

Please choose *one* of the following:

■ Not Requested (Standard)	☐ Hashed Mother's SSN Requested ***
*** If requested please, provide justification for requesting Hashed Mother's SSN. Refer to specifics in your methodology:	

X. DATA LINKAGE AND FURTHER DATA ABSTRACTION

Note: Data linkage involves combining CHIA Data with other databases to create one extensive database for analysis. Data linkage is typically used to link multiple events or characteristics that refer to a single person in CHIA Data within one database.

1. Do you intend to link or merge CHIA Data to other datasets?
   - ■ Yes
   - ☐ No linkage or merger with any other database will occur

2. If yes, please indicate below the types of database to which CHIA Data be linked. [Check all that apply]
   - ☐ Individual Patient Level Data (e.g. disease registries, death data)
   - ☐ Individual Provider Level Data (e.g., American Medical Association Physician Masterfile)
   - ■ Individual Facility Level Data level (e.g., American Hospital Association data)
   - ☐ Aggregate Data (e.g., Census data)
   - ☐ Other (please describe):

3. If yes, describe the data base(s) to which the CHIA Data will be linked, which CHIA data elements will be linked; and the purpose for the linkage(s):

AHA Annual Survey - Truven Health Analytics adds hospital characteristics, such as facility name, bed size, teaching status, etc.
Nielsen-Claritas - Truven Health Analytics combines with demographics data.

4. If yes, for each proposed linkage above, please describe your method or selected algorithm (e.g., deterministic or probabilistic) for linking each dataset. If you intend to develop a unique algorithm, please describe how it will link each dataset.

Truven Health Analytics merges the data with other facility identifying information by AHA hospital ID to add bed size and region and other general hospital characteristics. No actual algorithms are used. For aggregate data, we merge with demographic data at a summary level to create aggregate utilization.

5. If yes, please identify the specific steps you will take to prevent the identification of individual patients in the linked dataset.

Truven Health Analytics does not preserve any full patient identifying information, nor does Truven add any additional identifying information to our internal databases. Because Truven Health Analytics merges the data with publicly available information, there are no real privacy concerns on behalf of our vendors.

XI. PUBLICATION / DISSEMINATION / RE-RELEASE

1. Describe your plans to publish or otherwise disclose CHIA Data, or any data derived or extracted from such CHIA Data, in any paper, report, website, statistical tabulation, seminar, conference, or other setting. All publication of CHIA Data must comply with CHIA's cell size suppression policy, as set forth in the Data Use Agreement. Please explain how you will ensure that any publications will not display a cell less than 11, and no percentages or other mathematical fomulas will be used if they result in the display of a cell less than 11.

Truven Health Analytics makes processed discharge data available in our software products and in consulting engagements. Clients who license with us are able to run queries on the data to perform their own analyses. Truven Health Analytics is committed to protecting and maintaining the privacy and confidentiality of our acquired data in accordance with our business agreements and applicable laws, including the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"). The Truven Health Analytics Content Governance team ensures product and services compliance with the obligations and restrictions in our data vendor agreements. All requests to utilize the data are vetted by Content Governance before access to the data can be granted.

2. Do you anticipate that the results of your analysis will be published and/or publically available to any interested party? Please describe how an interested party will obtain your analysis and, if applicable, the amount of the fee, that the third party must pay.

Organizations interested in accessing the results, reports, or data can license access to Truven Health Analytics products and services. Fees are adjusted based on organization size and intended use.

3. Will you use CHIA Data for consulting purposes?
   - ■ Yes
   - ☐ No

4. Will you be selling standard report products using CHIA Data?
   - ■ Yes
   - ☐ No

5. Will you be selling a software product using CHIA Data?
   - ■ Yes
   - ☐ No

6. Will you be reselling CHIA Data in any format?
   - ■ Yes
   - ☐ No

If yes, in what format will you be reselling CHIA Data (e.g., as a standalone product, incorporated with a software product, with a subscription, etc.)?

After the data is stripped of major identifying elements like patient name, address, SNN, the processed and standardized data would be incorporated into a software product as well as available for use in consulting engagements.

7. If you have answered "yes" to questions 4, 5 or 6, please describe the types of products, services or studies.

Truven Health Analytics creates decision tools, benchmark databases, research, and custom studies that incorporate proprietary models based on many different types of data and statistical analyses, including consumer information.

8. If you have answered "yes" to questions 4, 5, or 6, what is the fee you will charge for such products, services or studies?

Organizations interested in accessing the results, reports, or data can license to Truven Health Analytics products and services. Fees are adjusted based on organization size and intended use.

XII. APPLICANT QUALIFICATIONS

1. Describe your qualifications (and the qualifications of your co-investigators) to perform the research described.

Truven Health Analytics has decades of experience working with both state identifiable inpatient data, CMS LImited Data sets, as well as being the North Carolina state data vendor. Truven Health employs PhD and Masters-level statisticians, probabilists, demographers, and other data analysts to create our reports, products, and insights.

2. **Attach** résumés or curricula vitae of the Applicant/principal investigator, and co-investigators. (These attachments will not be posted on the internet.)

XIII. USE OF AGENTS AND/OR CONTRACTORS

Please note: by signing this Application, the Organization assumes all responsibility for the use, security and maintenance of the CHIA Data by its agents, including but not limited to contractors.

Third-Party Vendors. Provide the following information for all agents and contractors who will work with the CHIA Data.

Company Name:	N/A
Contact Person:	
Title:	
Address:	
Telephone Number:	
E-mail Address:	
Organization Website:	

1. Will the agent have access to the CHIA Data at a location other than your location, your off-site server and/or your database?

☐ Yes, a separate Data Management Plan must be completed by each agent who will store CHIA Data
☐ No

2. Describe the tasks and products assigned to this agent for this project; their qualifications for completing the tasks; and the Organization's oversight of the agent, including how the Organization will ensure the security of the CHIA Data to which the agent has access.

Are you requesting a fee waiver?

☐ Yes

☑ No

If yes, please refer to the Application Fee Remittance Form and submit a letter stating the basis for your request (if required). Please refer to the fee schedule for qualifications for receiving a fee waiver. If you are requesting a waiver based on the financial hardship provision, please provide documentation of your financial situation. Please note that non-profit status alone isn't sufficient to qualify for a fee waiver.

By submitting this Application, the Data Applicant attests that it is aware of its data use, privacy and security obligations imposed by state and federal law *and* is compliant with such use, privacy and security standards. The Data Applicant further agrees and understands that it is solely responsible for any breaches or unauthorized access, disclosure or use of any CHIA Data provided in connection with an approved Application, including, but not limited to, any breach or unauthorized access, disclosure or use by its agents.

Applicants requesting data from CHIA will be provided with data following the execution of a Data Use Agreement that requires the Data Applicant to adhere to processes and procedures aimed at preventing unauthorized access, disclosure or use of data.

By my signature below, I attest to: (1) the accuracy of the information provided herein; (2) that the requested data is the minimum necessary to accomplish the purposes described herein; (3) the Data Applicant will meet the data privacy and security requirements describe in this Application and supporting documents, and will ensure that any third party with access to the data meets the data use, privacy and security requirements; and (4) my authority to bind the organization seeking CHIA Data for the purposes described herein.

Signature: (Authorized Agent)	Katherine Blumhardt
Printed Name :	Katherine Blumhardt
Title:	Content Coordinator
Applicant's Signature:	Katherine Blumhardt
Name:	
Title:	
Original Data Request Submission Date:	6/27/2016
Dates Data Request Revised:	

Attachments. Please indicate below which documents have been attached to the Application and uploaded to IRBNet:

☐ 1. IRB approval letter or summary of project (if applicable)

☑ 2. Resumes of Applicant and co-investigators

☑ 3. Data Management Plan (for each institution that will store CHIA Data)

Inpatient Demand Estimates predicts the total volume of annual acute care admissions and patient days by ZIP Code, age group, sex, payer, and DRG/ICD-9 for every market in the United States. To construct population-based use rates, Truven Health Analytics used all-payer state discharge data for 24 states and Medicare (MEDPAR) data. Then, these rates were applied to demographic projections by ZIP Code to estimate inpatient utilization for 2014 through 2024.

Inpatient Demand Estimates are created by combining various rates, adjustments and trends using the appropriate linkages, and then multiplying by the population. The components are:

- National Rate
- Local Adjustment
- HCR Adjustment
- DRG/ICD Trend
- Population

All-payer state discharge data is warehoused in the Projected Inpatient Data Base (PIDB), and is projected to national discharge totals via hospital attributes. Population by Zip, Age Group, Sex and Payer is warehoused in Insurance Coverage Estimates (ICE).

Example of estimate calculations:

- Current Discharges (2014) = ICE (2014) * National Rate (Discharges) * Base Year Trend Adjustment * Local Adjustment * HCR Adjustment (2014) / 100000
- Current Days (2014) = ICE (2014) * National Rate (Days) * Base Year Trend Adjustment * Local Adjustment * HCR Adjustment (2014) / 100000
- Forecast Discharges (2024) = ICE (2024) * National Rate (Discharges) * Base Year Trend Adjustment * Local Adjustment * HCR Adjustment (2024) * Trend Adjustment (2024) / 100000
- Forecast Days (2024) = ICE (2024) * National Rate (Days) * Base Year Trend Adjustment * Local Adjustment * HCR Adjustment (2024) * Trend Adjustment (2024) / 100000

National rates for Discharges and Days are calculated for DRG/ICD using four consecutive quarters of PIDB combined with 2014 ICE, and then modified by MEDPAR and SAF data for the Age 65+ estimates, and finally demographically adjusted from the PIDB/MEDPAR year of 2012 to the ICE year of 2014.

National Rate = National Discharge Totals (PIDB, MEDPAR) / Population (ICE) by DRG/ICD, Age Group, Sex, Payer

Local Adjustment is calculated as the total discharges in 2012 all-payer state discharge data for 24 states by DRG/ICD, county and collapsed Age Group (<18, 18-64, 65+) divided by the National Discharge Totals by DRG/ICD and collapsed Age Group.

HCR Adjustment by DRG/ICD is an adjustment for CMS readmission penalties starting in fiscal year 2013 and increasing in 2015.

DRG/ICD Trends are calculated by examining 7 years of National Discharge Totals (PIDB) / Population (ICE), fitting a trend curve through the 7 years of data, and extending the trend curve to 2024. Base Year Trend Adjustment is the adjustment from 2012 to 2014, while Trend Adjustment (2024) is the adjustment from 2014 to 2024.

Byron Scott, MD, MBA

Medical Director, National Clinical Medical Leader

Truven Health Analytics Commercial Division

Areas of Focus

Healthcare Analytics

Healthcare Quality and Outcomes

Evidence-based Medicine

Healthcare Technology

Contact Information

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Bio-Sketch

Dr. Byron Scott is the medical director and national clinical medical leader for Truven Health Analytics.

Dr. Scott supports the Commercial Division which includes Providers, Health Plans, Employers, and Life Sciences to improve overall healthcare, clinical performance, quality, and leadership initiatives using health analytics. Prior to Truven Health, he worked for EmCare, a hospital-based physician practice management company for over 20 years in various director roles, and most recently as executive vice president where he managed the client services teams for 140 hospital contracts, responsible for both financial and clinical quality initiatives. He previously worked as medical director of the ED at Methodist Richardson Medical Center where he has practiced for over 19 years. At Methodist Richardson, he served as past chief of staff where he also chaired and participated on multiple hospital committees. He is also a past trustee of the Richardson Hospital Authority Board where he participated on several committees.

Dr. Scott received his degree in psychobiology from the University of California, Los Angeles and his medical degree from the University of California, San Diego. He received his Masters of

Business Administration from the University of Massachusetts, Amherst. He completed his Emergency Medicine Residency where he was chief resident and an administrative fellowship at Orlando Regional Medical Center where he also served for 2 years as a faculty attending physician supervising residents and medical students.

He is a certified physician executive by the Certifying Commission in Medical Management, board certified in Healthcare Quality Management, and board certified by the American Board of Emergency Medicine. He is also a fellow of the American College of Physician Executives, American College of Emergency Physicians, and Fellow of the American Board of Quality Assurance and Utilization Review Physicians. Dr. Scott has authored and lectured on various topics in academic emergency medicine, healthcare quality, and management over his career.

Michael Taylor, MD, FACP

Chief Medical Officer

Truven Health Analytics

Areas of Focus

Healthcare Analytics

Healthcare Quality and Outcomes

Evidence-based Medicine

Healthcare Technology

Contact Information

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Bio-Sketch

Dr. Michael Taylor is the Chief Medical Officer for Truven Health Analytics.

Dr. Taylor is responsible for developing, evaluating, and maintaining health and wellness efforts as well as thought leadership, strategy, and expertise in innovation and product development across the healthcare spectrum. Dr. Taylor joined the company in 2011 as vice president and national business medical leader within the employer market. Previously, he served as the medical director for health promotion and disease management for Caterpillar Inc.

Dr. Taylor graduated from the University of Illinois College of Medicine and completed an Internal Medicine residency at the University of Illinois College of Medicine in Peoria. He is a fellow in the American College of Physicians and a member of the American College of Occupational and Environmental Medicine.

David Foster, PhD, MPH

Lead Scientist

Provider Analytics

Areas of Focus

Healthcare Analytics

Healthcare Quality

Clinical and Hospital Epidemiology

Contact Information

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Bio-Sketch

Dr. David Foster is a Lead Scientist for Provider Analytics at Truven Health Analytics.

Dr. Foster is an epidemiologist with 25 years of experience in hospital and clinical epidemiology, study design, advanced analytics, and predictive modeling. He leads the development of risk-adjustment methodologies for assessing outcomes such as mortality, complications, and readmissions, as well as more general methodologies for evaluating quality of care and other measures of hospital performance. As the chief methodologist for the 100 Top Hospitals® program, Dr. Foster is responsible for the design and development of predictive models for study measures, consultant on provider custom research involving complex methodologies, data resources, and analytics, and innovator of new methodologies to evaluate alignment, develop composite measures, measure rates of improvement, and create enhanced reporting capabilities. Dr. Foster has extensive epidemiologic experience with WHO, CDC, University of Michigan, Michigan State Health Department, and other organizations.

Dr. Foster received his PhD in epidemiologic science from the University of Michigan, an MPH from the University of Hawaii, and a BA in medical technology from the University of Northern Colorado.

David Ellsworth, MS

Research Scientist

Provider Analytics

Areas of Focus

Healthcare Analytics

Applied Statistics

Healthcare Quality

Contact Information

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Bio-Sketch

David Ellsworth is a Research Scientist for Provider Analytics at Truven Health Analytics.

Mr. Ellsworth has 20 years of experience with various healthcare databases and is an expert SAS programmer and is responsible for developing predictive analytics and efficient production systems for many hospital based products.

Mr. Ellsworth received a MS in engineering sciences and applied mathematics from Northwestern University and a BS in mathematics from Mankato State University.

David Koepke, PhD

Lead Scientist

Provider Analytics

Areas of Focus

Healthcare Analytics

Applied Statistics

Operational Improvement

Financial Analysis

Reimbursement Benchmarking

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Bio-Sketch

Dr. David Koepke is a Lead Scientist for Provider Analytics at Truven Health Analytics.

Dr. Koepke focuses on issues of healthcare finance and operational improvement. Before joining Truven Health, he analyzed trends in disease prevalence, healthcare utilization, and expense at Quintiles Informatics and Verispan LLC using hospital and provider administrative and claims data. Previous healthcare analytics experience include positions at the Chapin Hall Center at the University of Chicago, the Illinois Foundation for Quality Healthcare, the University of Illinois School of Public Health, and the Illinois Institute for Developmental Disabilities. In a second area of specialization, Dr. Koepke developed statistical software packages at SYSTAT and SPSS.

Dr. Koepke received a PhD in statistics and methods in psychology from the University of Illinois and a BA in mathematics from DePaul University.

Dennis Dunn, PhD, MA

Lead Scientist

Provider Analytics

Areas of Focus

Healthcare Analytics

Health Reform Impact

Strategic Planning

Disease Incidence and Utilization Models

Contact Information

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Bio-Sketch

Dr. Dunn is a Lead Scientist at Truven Health Analytics.

Dr. Dunn leads research efforts on the local impact of health reform. He was a founding member of The Sachs Group, now a part of Truven Health Analytics. He focuses on the analysis of clinical databases, health outcomes and the creation of clinical forecasting models. He was the chief architect of the Truven Outpatient Database, Ambulatory Surgery Database, Health Profiles Cancer Database, Insurance Coverage Estimates, Market Impact Modeler, Market Share Profiles and the Hospital Drug Database projections. He has constructed detailed local prevalence models by cancer site and stage, incorporating multiple staging methodologies and has worked with national cancer providers in tracking cancer prevalence trends. He has built time series models of the effect of economic changes on local trends in hospital utilization.

Before joining Solucient and Truven Health, Dr. Dunn was a faculty member in the statistics departments of Drexel University and the University of Pennsylvania, and the sociology department of the University of Pennsylvania. He has published articles in the areas of geographical statistics, women's health and the use of administrative data in evidence based medicine.

Dr. Dunn received a PhD in statistics from the University of Pennsylvania, and MA in sociology from the University of Pennsylvania, a BA in history from Columbia University.

Peter Bouman, PhD

Lead Scientist

Truven Health Analytics

Areas of Focus

Healthcare Analytics

Business Strategy

Data Science

Contact Information

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Bio-Sketch

Dr. Peter Bouman is a Lead Scientist at Truven Health Analytics.

Dr. Bouman focuses on developing algorithms for claims data for comparative analysis.

Dr. Bouman received a PhD in statistics from the University of Chicago and a BA in English and mathematics from the University of Colorado.

David Lewandowski, MBA

Research Scientist

Provider Analytics

Areas of Focus

Healthcare Analytics

Operational Improvement

Contact Information

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Bio-Sketch

David Lewandowski is a Research Scientist for Provider Analytics at Truven Health Analytics.

Mr. Lewandowski focuses on creating data-driven models and abstracting information on clinical, performance, and quality measures for the healthcare industry.

Mr. Lewandowski is current a candidate for a PhD in health services at the University of Washington. He received his MBA, and BA in economics from the University of Chicago.

George Popa, MHSA, MS

Research Scientist

Provider Analytics

Areas of Focus

Healthcare Analytics

Consumer Research

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Bio-Sketch

Mr. Popa is a Research Scientist for Provider Analytics at Truven Health Analytics.

Mr. Popa focuses on the collection of and analysis of consumer health research to predict demand for healthcare services, evaluate the health status of populations, and to identify populations for promotions or interventions.

Mr. Popa received a MHSA in hospital administration from the University of Michigan, a MS in occupational health from Wayne State University and a BA in biology from Lafayette College.