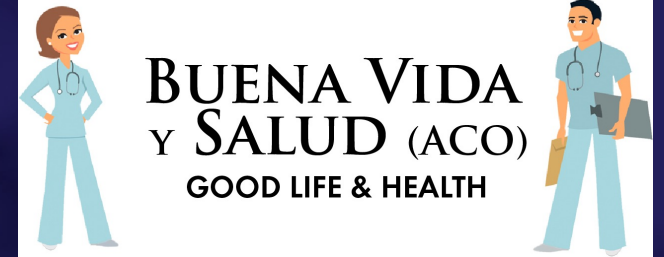




HEALTH  
DATA ANALYTICS  
INSTITUTE



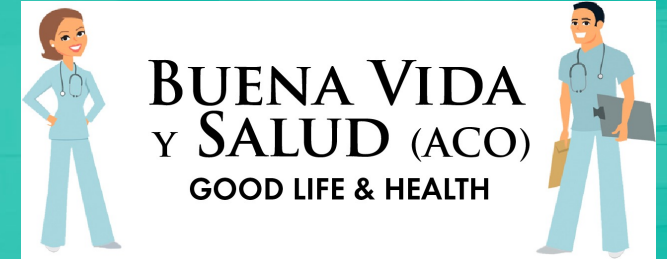
# HOW BUENA VIDA Y SALUD ACO USES PREDICTIVE TARGETING TO HELP KEEP PATIENTS HEALTHY AT HOME

APRIL 25, 2024

VBCExhibitHall  
.com   
*Educational Webinar Series*



**HEALTH DATA  
ANALYTICS INSTITUTE**



## AGENDA

WELCOME & INTRODUCTIONS

BUENA VIDA Y SALUD ACO BACKGROUND

CHALLENGES FACED & THE DISCOVERY OF AN INNOVATIVE SOLUTION

THE PRACTICAL APPLICATION OF PREDICTIVE ANALYTICS

RESULTS & LOOKING FORWARD

HDAI APPROACH

DISCUSSION & CLOSING

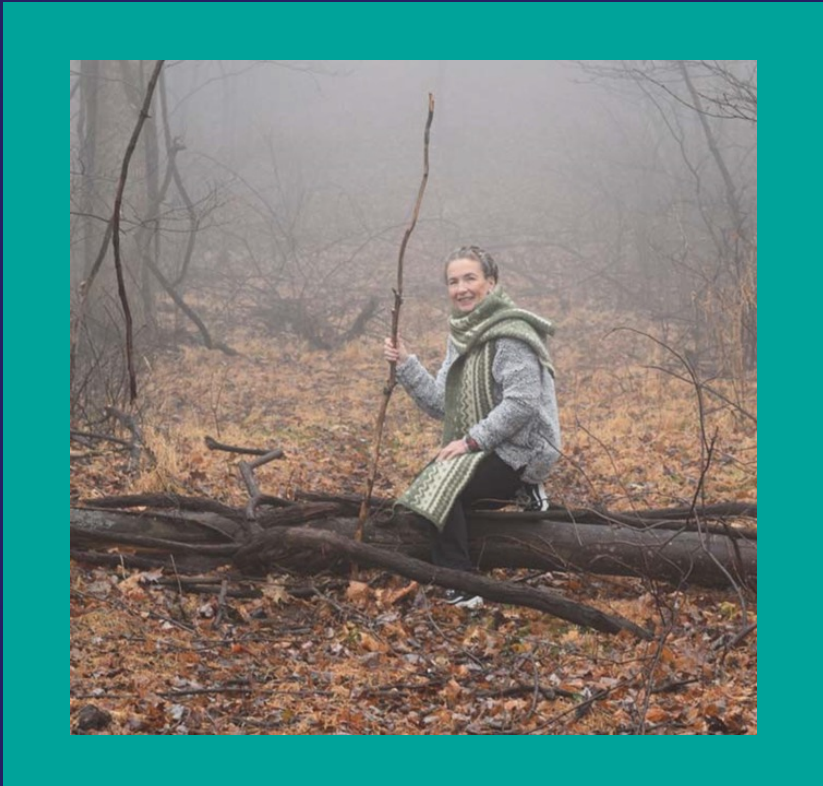
**VBCExhibitHall**  
.com



*Educational Webinar Series*



**HEALTH  
DATA ANALYTICS  
INSTITUTE**



Sheila Magoon, MD

Executive Director, Buena Vida y Salud ACO



Romanus Joseph, MBA, MSN, RN, PhD Candidate

Director, Care Management Advisory Services,  
HDAI

# Buena Vida y Salud ACO

## BACKGROUND

- Services Texas, rural & urban
- 86 providers, no hospitals
- ACO roughly ~2k beneficiaries

## The guiding vision is *to connect the dots*

- The system is focused on navigating complexities of rising costs and utilization of their aging patient population
- Right data / right place / right time
- Point of care
- Connecting = EMRs / HIE / referral platforms / telehealth / data sources
- Preserving doctor-patient relationship

*Change is a constant up-hill battle!*

*Persistence is necessary*



# Buena Vida y Salud ACO

STRUCTURE, STRATEGY, & GOALS



## Structure: Independently Practicing Physicians

- Programs initiated
  - Peer-to-peer recommendations

## Strategy:

- Keep it simple
  - Keep physicians focused on direct patient care
- Delegate to staff as appropriate
  - Goal is top of license
- Break process down to more manageable process and size
- Clinical workflows
  - Keep as efficient and consistent as possible

## Goals:

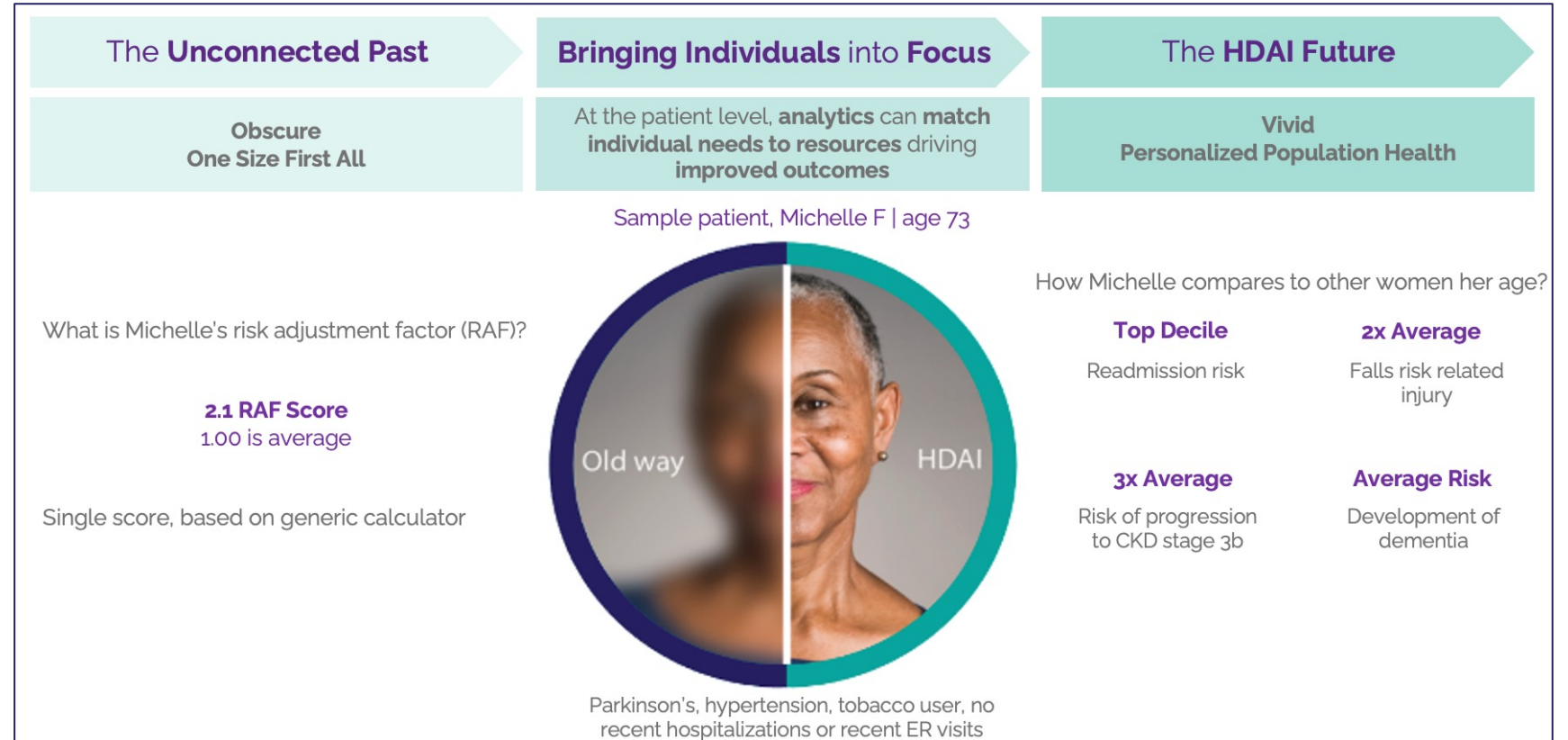
- Reducing Potentially Preventable Hospitalization
- Reducing Potentially Preventable ER visits
- Reduce Readmissions
- Address Home Health Repetitive Recertification
- Improve Quality Metrics

*Maximize capabilities of a limited workforce*

# Challenges faced

## REDUCING HOSPITALIZATIONS & ED VISITS IN MEDICARE ACO PATIENTS

- High-Risk Patient Management
  - Heart failure
  - Prioritizing patients at risk for unplanned admissions
- Outcome Monitoring
  - Keeping track of patient outcomes effectively
- Maximizing Contracts
  - Benefiting from shared savings agreements
- BvYS needed a strategy that would maintain their high-quality care while also controlling expenses



# Audience Poll

A blurred, teal-tinted photograph of a large crowd of people walking through a modern, brightly lit interior space, likely a mall or a public building. The people are out of focus, creating a sense of movement and a busy atmosphere. The architecture features large glass windows and a clean, minimalist design.

# HDAI adverse event prediction

THE KEY TO REDUCING ADMISSIONS



Patients need to be seen by provider once per month for six months (including televisits)

Also consider utilizing:

- CCM
- Nurse visits
- Community paramedic visits

Patient Name	DOB	Sex	PCP	Subscriber No	Unplanned Admission Classification	AE Fall-related injuries Classification	AE Heart Failure Classification	AE Pneumonia Classification
		male			High Risk		High Risk	High Risk
		male			High Risk			High Risk
		female			High Risk	High Risk	High Risk	High Risk
		female			High Risk	High Risk	High Risk	High Risk
		female			High Risk	High Risk	High Risk	High Risk
		female			High Risk	High Risk		
		female			High Risk	High Risk	High Risk	High Risk
		female			High Risk	High Risk		High Risk
		male			High Risk		High Risk	High Risk
		female			High Risk			
		male			High Risk			
		female			High Risk	High Risk		
		female				High Risk		
		female					High Risk	
		female						High Risk

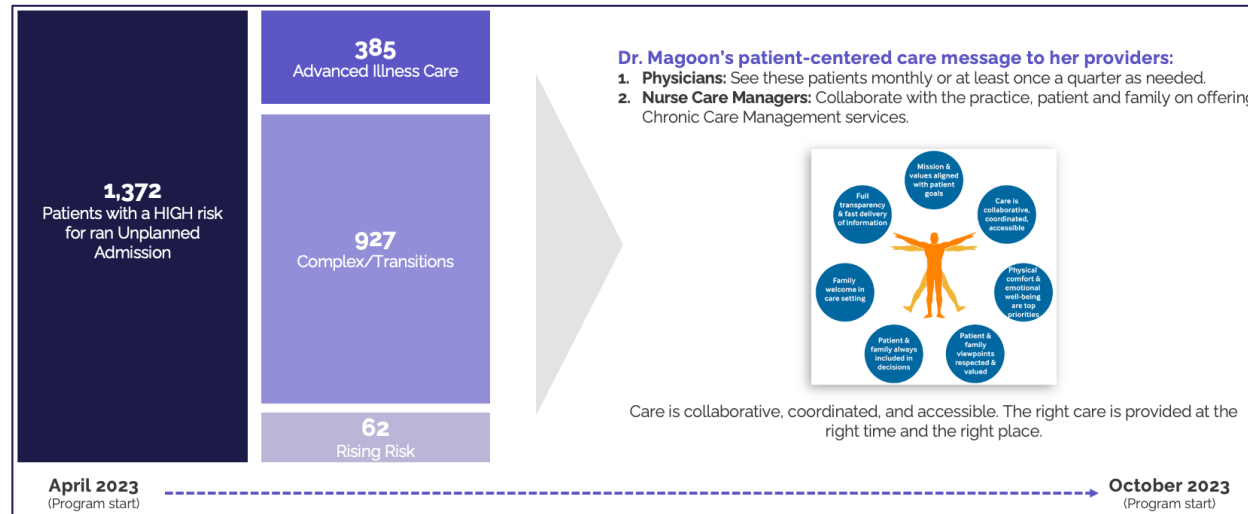


# The discovery of an innovative solution

## SUB-POPULATION IDENTIFICATION AT THE CORE OF THE APPROACH

- **Advanced Illness Care (AIC)** – patients at the **top 5th** percentile at risk for mortality or likelihood of entering hospice
- **Complex Care** – patients at the **top 25th** percentile at risk for an unplanned admission
- **Rising Risk** – patients at the **top 25th to 50th** percentile at risk for an unplanned admission

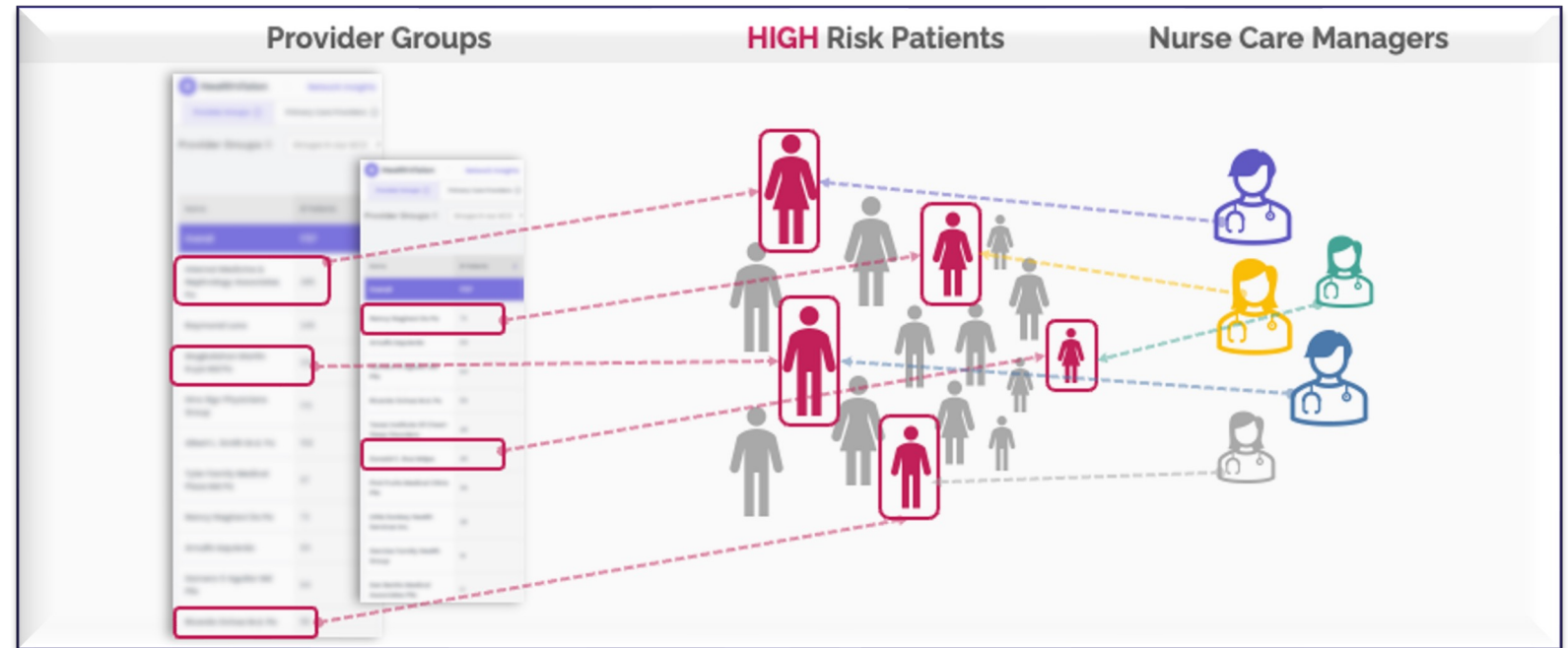
- Approach entailed pinpointing specific sub-populations based on predicted future risks of utilization, complication, and developing chronic diseases
  - Deploying tailored interventions
- Supporting intelligent decisions to improve patient outcomes
- HDAI collaborated with BVyS to enhance their platform, focusing on tracking key value-based metrics critical for assessing quality and outcomes
- HealthVision™ is a predictive analytics tool tailored to identify high-risk patients for unplanned admissions, highlighting the key factors that drive the risk score
  - Assessing the impact of HealthVision within primary care



# Practical application of predictive analytics and patient targeting

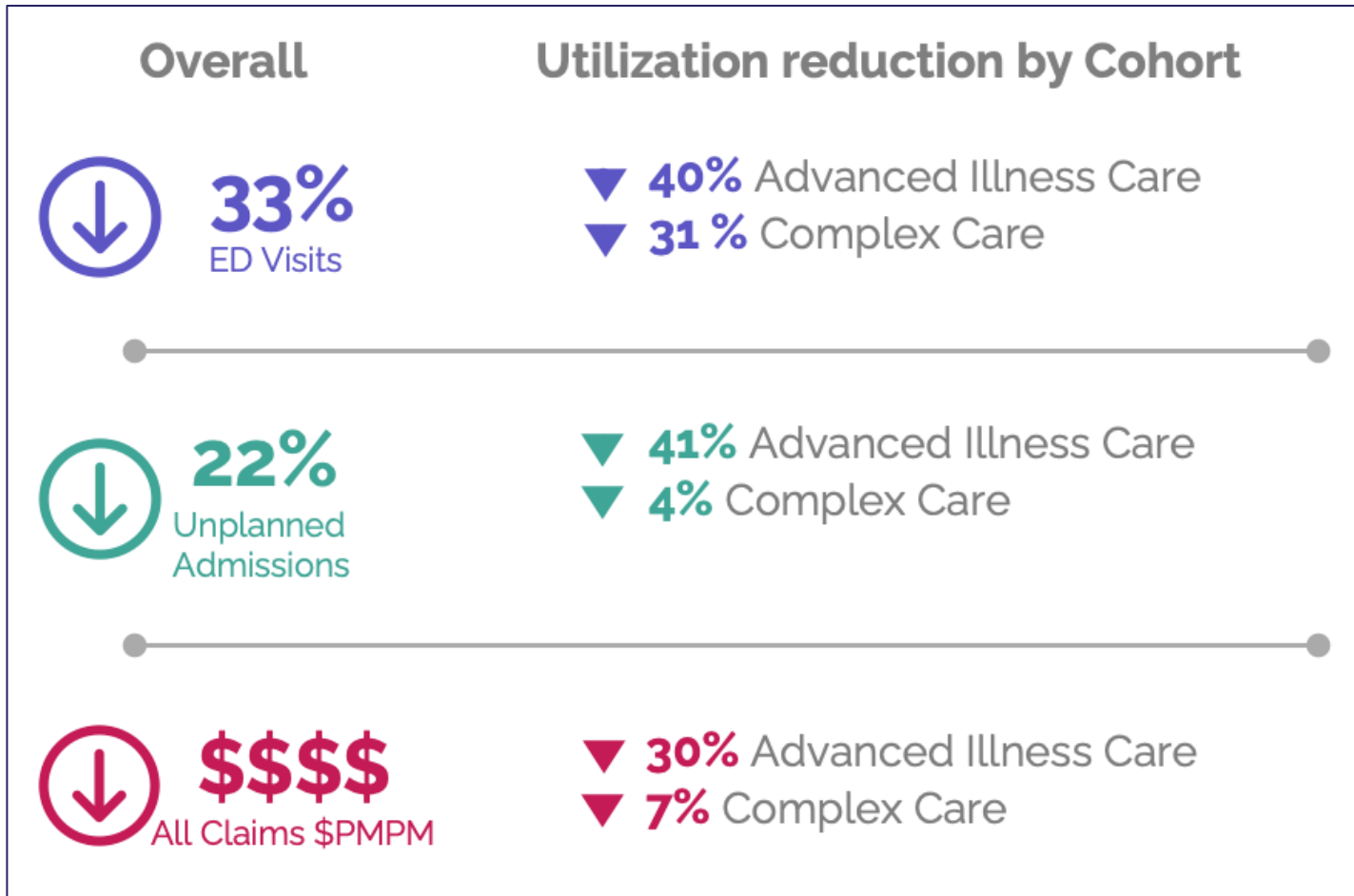
BEING MINDFUL OF CHANGE TO CLINICAL WORKFLOW

- PCP Targeted List
  - BVyS coordinated distribution of the lists and encouraged physicians and office staff to act on the identified patient population and engaging care coordination
  - Surfacing contributing factors to predicted risks
  - Understand processes for identification and separation of individuals within subpopulations, based on their risk of experiencing negative health events or high healthcare usage
- Potential Adverse Event Report
- Workflow triggers into:
  - Transitional Care Management
  - Chronic Care Management
  - Remote Patient Management



# Results

IMPRESSIVE IMPROVEMENT TO CRITICAL METRICS



- 6 months post implementation, the predictions and targeting provided by HealthVision were found instrumental in care coordination efforts
- Significant decline in Unplanned Admissions and Emergency Department (ED) Visits
- Notable reduction in Inpatient costs as well

# Looking forward

## EXPANDING PROGRAMS

- Continuing to drive analytics for patient targeting and program development
- **Healthy@Home:** Designed to improve the health of older seniors by working with patients in their homes and in their communities to manage health problems
- Exploring Principal Illness Navigation (PIN) Services and Community Health Integration (CHI) Services



# Audience Poll



## WHO ARE WE?

**HDAI is a provider enablement and care optimization company powered by access to Medicare's full dataset, machine learning, generative AI, predictive analytics, and point of care technology.**

---

## WHAT DO WE DO?

**We help healthcare organizations understand every dimension of cost, utilization, and outcomes performance so that beneficial actions can be made, measured, and scaled.**

---

## HOW DO WE DO IT?

**HDAI's proprietary digital platform, HealthVision™ is an enterprise solution that leverages foundational models and digital twinning to deliver enterprise-wide insights and actions at the organization, provider, and patient level.**

The engine that powers HDAI's HealthVision platform is fueled by privileged access to the country's largest and best longitudinal data set

## Big Data

~\$2T in US Healthcare spending

140+ million patients

500+ billion encounters

25 years longitudinal data

## HDAI's Foundational Models

Hundreds of predictive models for outcomes, utilization measures, and cost

Our digital twinning methodology delivers the highest value actionable insights about performance

Open access Original research

**BMJ Open** Elucidating the association between regional variation in diagnostic frequency with risk-adjusted mortality through analysis of claims data of medicare inpatients: a cross-sectional study

Linyan Li,<sup>1,2</sup> George F Chamoun,<sup>3</sup> Nassib G Chamoun,<sup>2</sup> Daniel I Sessler<sup>4</sup>

JAMA Network Open

Original Investigation | Oncology

**Association Between First-Line Immune Checkpoint Inhibition and Survival for Medicare-Insured Patients With Advanced Non-Small Cell Lung Cancer**

Samuel L. Scott, MD, MPH, Scott Greenwald, PhD, Nassib G. Chamoun, MS, Paul J. Manberg, PhD, Deborah Schrag, MD

PERIOPERATIVE MEDICINE

**ANESTHESIOLOGY**

**Extended-age Out-of-sample Validation of Risk Stratification Index 3.0 Models Using Commercial All-payer Claims**

Scott Greenwald, Ph.D., George F. Chamoun, B.S., Nassib G. Chamoun, M.S., David Clain, B.S., Zhengyong Wang, M.S., Richard J. Anderson, Ph.D., Paul J. Manberg, Ph.D., Kamal Maheshwari, M.D., Daniel I. Sessler, M.D.

Anesthesiology 2022; 132:264-73

Commentary by Daniel G. Tisdell, MD, is linked to the online version of this article.

**Surgical Treatment of Single-Level Lumbar Stenosis Is Associated with Lower 2-Year Mortality and Total Cost Compared with Nonsurgical Treatment**

A Risk-Adjusted, Paired Analysis

Raymond W. Hwang, MD, MSc, MBA, Catherine M. Briggs, MD, Scott D. Greenwald, PhD, Prof. I. Hershberg, PhD, Nassib G. Chamoun, MS, and Scott G. Zuckerman, MD, MBA, PhD

**ANESTHESIOLOGY**

Trusted Evidence. Discovery to Practice.

Models for Predicting Adverse Events during and after Hospital Admission

RESEARCH ARTICLE

**Covid-19 and excess mortality in medicare beneficiaries**

Scott D. Greenwald<sup>1,2,\*</sup>, Nassib G. Chamoun<sup>1,2,\*</sup>, Paul J. Manberg<sup>1,2,\*</sup>, Josh Gray<sup>1,2,\*</sup>, David Clain<sup>1,2,\*</sup>, Kamal Maheshwari<sup>2,3,4,5</sup>, Daniel I. Sessler<sup>2,6</sup>

PERIOPERATIVE MEDICINE

Anesthesiology 2020; 113:1028-37

Copyright © 2020, the American Society of Anesthesiologists, Inc. Lippincott Williams & Wilkins

**Broadly Applicable Risk Stratification System for Predicting Duration of Hospitalization and Mortality**

Daniel I. Sessler, M.D.,\* Jeffrey C. Sigl, Ph.D.,† Paul J. Manberg, Ph.D.,‡ Scott D. Keller, Amin Schubert, M.D., M.B.A.,|| Nassib G. Chamoun, M.S.#

**Validation and Calibration of the Risk Stratification Index**

George F. Chamoun, Linyan Li, M.S., Nassib G. Chamoun, M.S., Vikas Saini, M.D., Daniel I. Sessler, M.D.

**Validation of a Risk Stratification Index and Risk Quantification Index for Predicting Patient Outcomes**

*In-hospital Mortality, 30-day Mortality, 1-year Mortality, and Length-of-stay*

Matthew J. G. Sigakis, M.D.,\* Edward A. Bittner, M.D., Ph.D.,† Jonathan P. Wanderer, M.D., M. Phil.‡

PERIOPERATIVE MEDICINE

**ANESTHESIOLOGY**

**Risk Stratification Index 3.0, a Broad Set of Models for Predicting Adverse Events during and after Hospital Admission**

Scott Greenwald, Ph.D., George F. Chamoun, B.S., Nassib G. Chamoun, M.S., David Clain, B.S., Zhengyong Wang, M.S., Richard J. Anderson, Ph.D., Paul J. Manberg, Ph.D., Kamal Maheshwari, M.D., Daniel I. Sessler, M.D.

Anesthesiology 2022; 132:673-86

**Anesthesiology**

Improving Comparisons among Hospitals

• Create New Stratification: Risk Stratification and Mortality Risk Index (RSI) 3.0  
• Update and Validate: Risk Stratification and Mortality Risk Index (RSI) 3.0  
• Create and Validate: Risk Stratification and Mortality Risk Index (RSI) 3.0  
• Create and Validate: Risk Stratification and Mortality Risk Index (RSI) 3.0

**Comparison of an Updated Risk Stratification Index Hierarchical Condition Categories**

George F. Chamoun, B.S., Linyan Li, Sc.D., Nassib G. Chamoun, M.S., Vikas Saini, M.D., Daniel I. Sessler, M.D.

PERIOPERATIVE MEDICINE

**Development and Validation of a Deep Neural Network Model for Prediction of Postoperative In-hospital Mortality**

Christine K. Lee, M.S., Ph.D., Ira Hofer, M.D., Elon Gabel, M.D., Pierre Baldi, Ph.D., Maxime Connesson, M.D., Ph.D.

**Impact of Present-on-admission Indicators on Risk-adjusted Hospital Mortality Measurement**

Jarrod E. Dalton, Ph.D.,\* Laurent G. Glance, M.D.,† Edward J. Mascha, Ph.D.,‡ John Ehringer, Ph.D.,§ Nassib Chamoun, M.S.,|| Daniel I. Sessler, M.D.#

# Foundational Models

## Peer reviewed and published

### AI/ML for robust predictive insights

#### Transparent, explainable and traceable







A teal-tinted photograph of a female doctor in a white lab coat with a stethoscope around her neck, smiling warmly at an elderly female patient. The patient is also smiling and looking up at the doctor. The background is a solid teal color with faint, large, light-colored abstract shapes. The text "What questions can I answer?" is overlaid in white, bold, sans-serif font.

**What questions can I  
answer?**

# Stop by our VBCExhibitHall.com Virtual Booth



# Thank you

Sheila Magoon, MD, [drmagoon@bizrgv.rr.com](mailto:drmagoon@bizrgv.rr.com)

Romanus Joseph, RN, [romanus.joseph@HDA-Institute.com](mailto:romanus.joseph@HDA-Institute.com)

Holli White, MPS, [holli.white@HDA-Institute.com](mailto:holli.white@HDA-Institute.com)