Session 44PD, Recent SOA Health Research Projects

Moderator/Presenter:
Steven C. Siegel, ASA, MAAA

Presenters:
James M. Dolstad, ASA, MAAA
Adam R. Singleton, FSA, MAAA
Julie M. Witt, FSA, MAAA, FCA

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SOA Presentation Disclaimer
Recent SOA Health Research - Introduction

STEVEN SIEGEL, SOA RESEARCH ACTUARY

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List of Available SOA Health Research Reports
www.soa.org/research/topics/health-res-report-list/

Examining Predictive Modeling-Based Approaches to Characterizing Health Care Fraud provides a systematic evaluation of the modeling methodologies and data samples used to characterize health care fraud.

Model of Long-Term Health Care Trends in Canada is a resource model that provides long-run forecasts of health care spending in Canada.

Provider Networks – Actuarial Perspective on Performance in and out of Exchanges describes aspects of provider network performance in health care settings with particular focus on experiences with Exchanges.

Actuarial Review of Insurer Insolvencies, Future Preventions looks at causes of insolvency and decisions made by management, regulators, and policyholders over the life cycle of the insolvency.

Insurance Risk and Its Impact on Provider Shared Risk Payment Models examines the risk associated with the unpredictable variation in utilization and cost of services.

Analysis of Individual Disability Income Tables analyzes industry Individual Disability Income (IDI) claim incidence and termination experience trends relative to the 2013 IDI Valuation Table base incidence and termination rates.

Medicaid Managed Care Organizations: Considerations in Calculating Margin in Rate Setting describes the components of margin for calculating capitation rates in a Medicaid context along with a description of practical issues that may be encountered by MCOs.

Opioid Overdose Deaths in the United States is an article describing the demographics and geography of the increasing number of opioid deaths in the United States.

A Case Study of Risk Adjustment for Texas Medicaid examines the impact on risk scores in risk adjustment models when there are timing differences for model updates of pharmacy data and risk factor mappings. The case study used the CDPS risk adjustment model.

Accuracy of Claims-Based Risk Scoring Models presents the results of a study comparing health risk scoring models, building on prior SOA studies.

An Examination of Relative Risk in the ACA Individual Market is an observational study that examines the CCIIO document on individual and small group ACA markets in 2015.

Massachusetts Health Insurance Reform describes and analyzes healthcare reform in Massachusetts between 2006 and the passage of the ACA in 2010.

Risk Scoring in Health Insurance: A Primer provides a detailed explanation of the first stage of a risk adjustment program: the risk score model, also referred to as “risk scoring.” Included in the report is a discussion of the history and considerations related to risk scoring beyond its application in the ACA context.
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Prescription Drug Use in an Individual Exchange Population examines the pharmaceutical use by enrollees in individual ACA plans in Kansas during 2014.

A Practical Approach to Assigning Credibility to Group Medical Insurance Pricing focuses on credibility when used in the underwriting and pricing of group medical insurance.

Provider Payment Arrangements, Provider Risks, and their Relationship with the Cost of Health Care provides a thorough educational resource that can be used by health actuaries and others to explain various types of provider payment and risk arrangements.

Indications of Pent-Up Demand examines the use of services that are likely to be deferred or avoided due to financial constraints as a result of lack of health insurance in the context of ACA.

Evaluating Approaches for Adoption of Medical Technologies evaluates medical technologies from an actuarial perspective and includes a tool that allows actuaries to evaluate evidence related to the use of medical technologies provided through health plans.

Evaluating ACO Efficiency: Risk Adjustment within Episodes explores cost efficiency within an Accountable Care Organization.

Actuarial Model for Wellness explores the current wellness environment in a three phase project: a literature search, a survey of the actuarial and vendor community, and interviews with researchers in the field.

Group Long-Term Disability Benefit Offset Study-2012 is an update to a research report on the offset of benefits for group long-term disability plans.

Health Care Costs—From Birth to Death provides analysis and graphical representation of the changes in health care costs as individuals age.

Cost of the Newly Insured Under the Affordable Care Act examines the health care cost impact to the individual market as a result of the Affordable Care Act.

Risks and Mitigation for Health Insurance Companies gathers feedback from health carriers on the major risks they encounter and approaches for mitigation.

Measurement of Health Care Quality and Efficiency: Resources for Health Care Professionals is a comprehensive review of programs and published sources related to this topic. It includes updated materials to reflect PPACA and other environment changes.

Economic Consequences of Medical Errors estimates the direct and indirect costs of medical errors to the system itself and the overall U.S. economy.

Modeling Long-Term Health Care Cost Trends projects per-person health care cost expenditures and growth rates through 2099.

Statistical Methods for Health Actuaries – IBNR Estimates: An Introduction is the first in a series of guides on the use of statistical techniques that are geared toward the work of a practicing health actuary.

Evaluating the Results of Care Management Interventions: Comparative Analysis of Different Outcomes Measures Claims is a series of papers assessing the methodologies and application of care management interventions.
Health Section Research – Get involved!

- Send us an idea
- Read our reports and listen to our podcasts
- Participate on a project oversight group (POG)
- Respond to an RFP
- Serve on the Health Section Research Committee
Today’s Presentations

Two recent projects for today’s session

• Provider Networks – Actuarial Perspective on Performance in and out of Exchanges (Recently Completed) – Adam Singleton

• Impact of MACRA on Various Health Entities (In Process) – Julie Witt, Jim Dolstad
Contact Information

For more information about SOA research:

Steve Siegel
Phone 1-847-706-3578
ssiegel@soa.org
2018 SOA Health Meeting

ADAM R. SINGLETON, FSA, MAAA

Session 44, Recent SOA Health Research Projects

Provider Networks – Actuarial Perspective on Performance in and outside of Exchanges

June 25, 2018
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For Today

- Overview of the Project
- Key Results
  Higher Performing Networks
  Network Pricing
  Case Studies
- Q&A
Purpose of the Research Project

• Create a resource for multiple audiences who are interested in:

  • Provider Networks in Individual Exchanges
    • Types of Networks – Alternative, Narrow, Broad, Higher Performance
    • Premium & Member Contributions – Six Case Studies

  • Network Development (in or outside of Exchanges)
    • Network development process
    • Provider contract pricing model

  • How to improve financial performance
    • Key elements done by Higher Performing Networks
    • Example of best practices for Higher Performing Networks

  • Impact of Individual Exchanges on Buyers & Providers
    • Buyers: Individuals, Carriers, and State Regulators
    • Providers: Hospitals and Physicians
What Does the Report Offer the Reader?

• It is a comprehensive resource for people interested in:
  • Becoming more deeply educated about networks and foundational concepts about basic structure and behaviors of well-integrated networks that are currently in the market place.
    • Basic activities and process to develop provider networks and best practices to enable performance improvement.
    • A framework for understanding how to distinguish differences in provider networks that yield better performance with respect to providing health care services more efficiently.
    • The many complexities associated with developing networks, some of the analytics involved, and the organizational structure and talent required to achieve the “triple aims”.
What Does the Report Offer the Reader?

• It is a comprehensive resource for people interested in (cont.):
  • Learning about the multiple perspectives of the various stakeholders who are involved in the health care system and Individual Exchanges.
    • These are individuals (patients and insureds), buyers of health care (carriers, employers, governments, etc.), state regulators, and providers (hospitals and doctors).
    • Perspectives include how are their incentives to participate within the health care system and Exchanges aligned and misaligned. Particularly, it gives a better understanding of the provider perspective. The last two sections highlight key perceptions of hospitals and physicians.
What Does the Report Offer the Reader

• It is comprehensive resource for people interested in (cont.):
  • Seeing real facts from the Exchanges, through six case studies, that help to reinforce that the topics discussed in the report. The case studies show actual results such as networks and premiums.

  • Acquiring enough basic information and analytical tools/models to educate themselves well enough to be able to confidently proceed with activities related to networks. The information in the report can be used for many types of populations and products.

  • The report may be found at the link below:

What Does the Report Offer the Reader?

• The report outlines the range of practice across the industry with respect to alternative networks for Exchanges. It starts with a basic overview and then moves through ways to drive higher performance based on the authors’ experiences and research. It is primarily focused on carriers and their efforts to develop networks. However, it also presents the financial perspectives of the individual buyers, hospitals and physicians and state management of Exchanges. There is also various other background material in the other appendices. The report with the case studies is long (over 160+ pages) and it is not intended to be a document that most readers would read straight through from beginning to end. It is intended to be used as a reference resource that readers can use over time to educate themselves about the material.

• After the executive summary and the initial sections to describe the reports purpose, the basic research approach and data, the report’s main body is split into four sections and a summary of our key observations. The four sections cover the key healthcare service buyers, networks, providers and case study highlights.

• The main body is followed by the references, appendix, and case studies. We stress that the appendix has very useful content for someone who wants a deeper understanding of the material or who wants to see the framework and key calculations and data for network pricing models that rely on an organization’s internal claims data and/or data that is available externally (e.g., publicly available Medicare data).
Structure of the Report

• Executive summary, purpose of the report, and the research approach and data

• Main body
  • Section I – Buyers: Individuals, state regulators and health programs, and carriers
  • Section II – Networks: An overview of networks, high performing networks and network development, provider network strategy and feasibility, higher performing networks (HPNs) and network performance assessments with priorities for HPNs
  • Section III – Providers: Hospitals and physicians
  • Section IV – Case study highlights
  • Major Observations

• References

• Appendix
  • A1: Key Terms Used in the Report
  • A2: Data Sources
  • A3: Lessons from Higher Performing Networks
  • A4: Major Provider-Based Initiatives
  • A5: Reduction of Wasted Services - Examples
  • A6: Quality Metrics
  • A7: Pricing Alternative Networks – Evaluating Alternative Network Cost Savings and A Savings Model for “Alternative” Hospital Networks

• Case Studies
Research Approach and Data

• The authors performed most of the research
  • Greger Vigen, FSA, MBA – independent consultant with an extensive provider background, especially with higher performance networks.
  • Adam R. Singleton, FSA, MAAA – consulting actuary who specializes in analyzing and benchmarking provider networks and who had extensive experience with alternative provider network development and pricing both pre- and post-ACA.

• Research support staff
  • Actuarial analysts and interns collected provider network information, premium data, and other product information from CMS and state Exchange websites, as well as from links to carriers’ provider network directory websites.
  • Actuarial analysts and the researchers collected additional data and information from several sources and developed calculations and exhibits to compare carrier premiums and key provider network metrics for six case studies.
Research Approach and Data

• POG
  • The project oversight group consisted of multiple, experienced actuaries who held actuarial leadership positions with large carriers or had extensive consulting backgrounds.
  • Their collective expertise with carrier-provider interactions, premium rating, and networks helped us define the scope of the research. They also provided constructive feedback for important and/or sensitive topics and they reviewed key research materials and results.

• SOA Research staff (last but not least)
  • The SOA research staff provided valuable input similar to the POG as well as pointed the researchers to useful data sources.
  • The research staff also provided extensive review of the draft reports and performed editing for the final version of the report.
Research Approach and Data

• The research included reviewing many articles, research reports about ACA Exchanges and data about Exchanges that was published by other organizations. We also performed case studies in six markets that compared different types of carriers and their hospital networks, premiums, and membership characteristics in ACA Exchanges.

• The report includes many examples, exhibits, and tables to illustrate concepts, calculations, and metrics. The authors’ past experiences contributed to many of the examples.

• The examples use either theoretical data or modified data to help communicate key ideas or the impact of important activities. We compared the results from the theoretical and modified data to other recent data/information for reasonability.
Research Approach and Data

• Sections related to higher performance networks used sources outside of Exchanges since much of the public material for this topic is not focused on Exchanges.

• The section about the provider network development process can apply to networks for Exchanges or outside of Exchanges and it was based mostly on the extensive experience and observations of the authors.

• The pricing model in the appendix of the report is intended to be a supplement to the provider network development process section. Although it focuses on pricing calculations and variables for modeling the financial impact of common contractual reimbursement terms between payers and providers for inpatient hospital services, the key concepts and calculations can be adapted to other types of healthcare services.
Research Approach and Data

• Six case studies
  • The case study research started by collecting and studying data about the Individual Exchange carriers and their provider networks in multiple cities across every state in the U.S. We also studied research reports about the types of Exchanges (federally managed or state managed) and data about the populations covered on the Exchanges in each state.

• Next, we selected a set of possible case study markets that would help us to study specific types of carrier-provider interactions on Individual Exchanges, such as the existence of competition between carriers and between hospitals. As a result, the case studies did not provide a comprehensive view of all Exchanges markets. Instead the case studies demonstrate Exchanges where carriers and hospitals competed for membership and patients in different ways.
Research Approach and Data

• **Six case studies (cont.)**
  - After the initial research and our national review of the data, we also evaluated the number of hospitals, the types of hospitals, and the hospitals’ ownership in our set of possible case study markets. For example, were there many independent hospitals or were there only one or two large hospitals systems. Afterwards, we finalized a preliminary list of potential case study markets.

• Consulting with the POG and the SOA research team, we defined the key case study research topics and selected the six case study markets (defined by ACA rating area).

• Key criteria included the mix of carrier types (e.g., national, Medicaid, provider-owned, or healthcare cooperatives), the existence of competition between hospitals, urban versus rural areas, Exchange type, and regional differences.
Research Approach and Data

• Six case studies (cont.)
  • Data was collected on carrier products, premiums, market share, network composition, service areas, benefit designs, enrollment, and population characteristics (e.g., demographics and income relative to the federal-poverty level).

  • Material came from many sources that were collected at different times and in varying formats—public data at the state and federal level, rate filings, industry research, and news articles.

  • For consistency, we also used various Medicare sources for financial information on hospitals such as market share and their revenues from different types of payers.
Key Results

• Provider Networks

Some networks produce higher financial performance. Many are struggling.

• "Network" is used in a broad sense of the word and includes carrier-based networks, provider-based programs like ACO, PCMH, and bundles, and hospital-owned insurers.

• “Broad” Networks include most providers in an area and are typically what insured people have been using for many years.

• “Alternative” Networks are networks that may include different types of payment arrangements and usually offer few providers than broad networks. A “Narrow” network is an example.

• “Higher Performing Networks” are talked about on the next slides.
Key Results

A Core concept for HPN’s

A critical mass of responsible providers with the right support, authority, and aligned financial incentives will perform significantly better than the typical health program.

These experts take actions that health plans, employers, and members cannot.
Key Results

• Higher Performing Network (HPN) Characteristics
  • Depth and variety of actions and initiatives
  • Care coordination (early support for future at-risk members)
  • Management commitment and deep use of providers
  • Infrastructure (right information at right time)
  • Payment arrangements with buyers and the underlying health system
  • Carrier-based and provider-based HPNs have very different strengths. Strong HPNs use the best of both.
  • Twelve key elements are listed in the session hand-out:

  “Lessons from Higher Performing Networks”

KEY ELEMENTS FOR FINANCIAL PERFORMANCE
Key Results

• Network Pricing
  • In addition to showing the typical network development process and financial decisions that carriers make when developing a network, the report shows examples of the financial impact of the ACA Exchanges to hospitals (also somewhat applicable to physicians). It includes a discussion about how, in some ways, the Exchanges aligned carrier and provider financial incentives.

• The aligned incentives of moving previously uninsured, non-paying patients to insurance products results in providers being paid for services that were previously unpaid by the patient.
Key Results

• Network Pricing
  • When evaluating potential hospital partners for alternative networks, carriers must assess the cost levels required to achieve premium savings goals. This involves assessing contractual payment terms offered by hospitals, which requires significant analysis and complicated calculations.
  
  • The report presents the typical steps that a carrier follows from start to finish.
Key Results

• Network Pricing
  • Two pricing models are presented to communicate key concepts and point readers to potential data sources that they could use under similar circumstances.
  • Both models rely on claims data and proposed hospital reimbursement rates and payment terms to achieve targeted “unit costs”.
  • The internal data model relies on a carrier’s historical utilization and claims data for a hospital(s), or it uses “adjusted” data, where another similar hospital’s data is used with adjustments for the service mix and “billed charge-masters”.
  • The external data model relies on claims data from Medicare and/or Medicare hospital-cost-report data to establish benchmark metrics that can be relied upon to calibrate proposed hospital reimbursement terms to proposed contractual rates.
Key Results

• **Six Case Studies**
  - Six ACA Rating Areas: 2 – Southeast, 2 – Northeast, 1 – West, 1 – California

  • Each market was different, but there were several consistent findings across all case studies.

  • Hospital systems in many locations voluntarily aligned with specific carriers. There was a wide range of hospital coverage in each market.

  • Many alternative networks had lower premiums. Broad network premiums were higher than average and sometimes were the most expensive products.
Key Results

• Case Studies
  • Depending on the market and specific organizations involved, each type of insurer (National, Regional, Medicaid, provider-owned, and Co-op) had products with below average premium and higher enrollment.

  • Slight differences in premiums (and the resulting net member contributions) did not have much effect on member product selection.

  • With similar premiums, a member does not have a compelling reason to choose an alternative network instead of a broad network. This was demonstrated in Case Studies #5 and #6, where many members selected broad networks, although alternative networks were available.
Key Results

• Case Studies
  • When alternative networks had much lower premiums, the network generally had a large membership and market share.
  
  • Case Study #1 only alternative networks were offered.
  
  • Case Study #2 had more than 80% of Exchange members in alternative networks.
  
  • Case Studies #3 and #4 have most of their enrollment in smaller hospital networks.
  
  • Lower premiums offset smaller hospital coverage.
Key Results

• Case Studies
  • The charts on the next page show two of the six case study locations.
    • Market 1 shows results in a western state. It only has alternative networks, there are no broad networks. Premiums are low and most of the enrollment is with the least expensive HMO products.

    • Market 3 shows a wide variation in premiums and programs in a northeastern state. Again, products with low premiums and narrow networks have the largest enrollment. However, in this state, the EPO products have more enrollment than HMO products.

    • Each chart shows annual premium on the left, hospital coverage across the bottom. Market share is the size of the bubble, and the color of the bubbles indicates product design.
Comparison of Results for Two Case Studies
Lessons from Higher Performing Networks

KEY ELEMENTS FOR FINANCIAL PERFORMANCE

GREGER VIGEN, FSA MBA AND EMMA HOO

Many essential elements of provider-based care are already well known in the industry. Executive leadership, quality improvement, as well as actions to reduce readmissions and support for members with chronic diseases are widespread. However, financial performance for employers requires additional actions that often work behind-the-scenes. As we examined what Higher Performing Networks did differently, the following twelve elements stood out:

Pilots and Initiatives
1. Implement multiple initiatives aimed at financial results (supported by new payment systems).
   Initiatives extend beyond quality improvement and are targeted to the line of business (such as Medicare, Medicaid, employer, or individual).

Care Coordination & Quality Measurement
2. Improve care coordination and member engagement.
3. Manage future high-risk members - not past illnesses.
4. Use outcomes-focused and value-differentiating measures.

Alternative Payment Models
5. Develop strong ongoing financial agreements on overall costs (with purchasers).
6. Implement selective “aligned incentives” over time (with individual providers).

Management, Roles and Responsibilities
7. Use the full resources and unique capabilities of responsible, informed providers – from the executives to individual providers.
8. Reduce waste and related internal operating expenses across the system – demonstrated by multiple initiatives and a responsible executive.
9. Communicate with allies in deep blunt discussions (cost drivers, responsibilities, duplicate tasks, etc.).

Infrastructure
10. Use multiple data sources to create useful reports to prioritize, create initiatives, and support the individual taking action.
11. Develop infrastructure to support informed action at the right time by the right individual.
12. Monitor economies of scale – particularly for smaller organizations (as they buy, rent, collaborate with other providers, or use allies).

Each of these elements is very important and reinforce each other. Initiatives (1) must be done by responsible providers (7). Misaligned incentives (6) inhibit efforts to reduce waste (8). And, so on.
CORE CONCEPT

A critical mass of responsible providers with the right support, authority, and aligned financial incentives will perform significantly better than the typical health program.

These experts take actions that health plans, employers, and members cannot.