Deloitte.

THIRD NATIONAL PREDICTIVE MODELING SUMMIT

Leveraging Predictive Analytics Results to Supplement Health Plan Enterprise Risk Management

Keynote Session III –

Monday September 14 - 2:45 to 3:30

Presented by:

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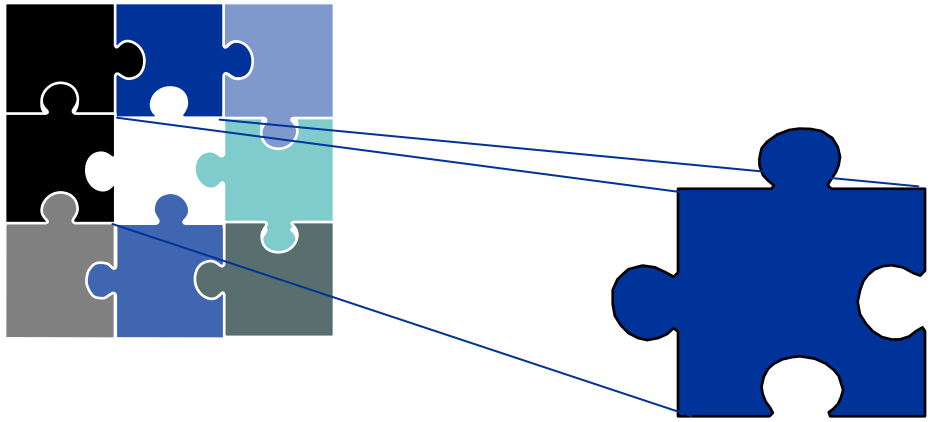
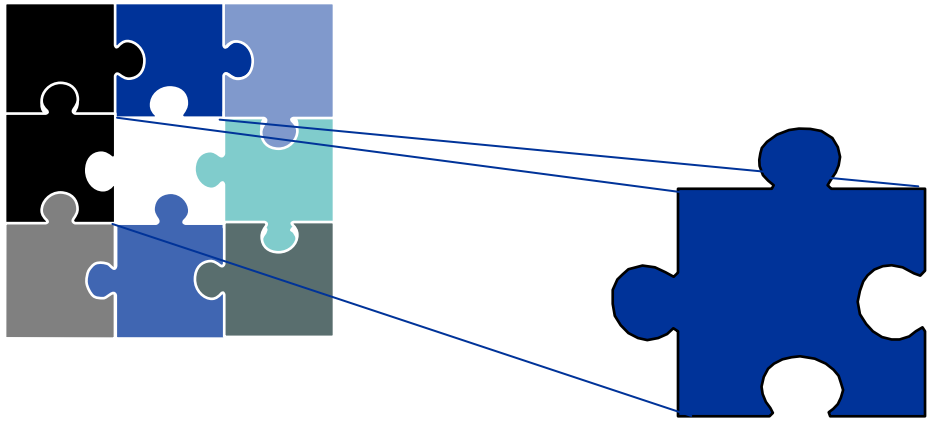
Discussion Topics

- Introductions and Session Objectives
- State of the Industry
- Predictive Modeling for the Healthcare Industry
- Introduction to Enterprise Risk Management
- Developing an Integrated Approach
- Question and Answers
- About the Speakers



Leveraging PM and ERM to solve the Health Care Puzzle

Introductions and Objectives



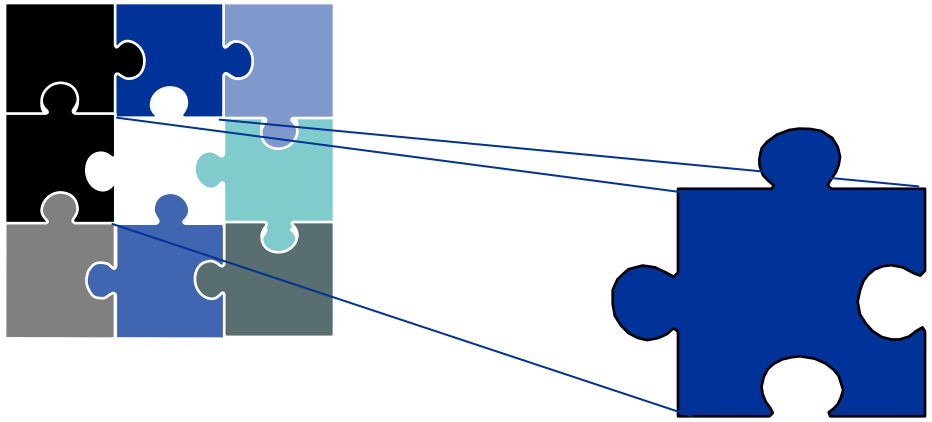
Leveraging PM and ERM to solve the Health Care Puzzle

Introduction and Objectives

Predictive Modeling (PM) and Enterprise Risk Management (ERM) are strategic applications used by many organizations across all insurance industries. In health insurance PM and ERM take on even greater significance because of rising medical costs, changing regulations, proposed reform and less than perfect data. Despite the importance of these applications for health insurance companies, they are seldom discussed in an integrated and holistic manner. In this session, we will discuss how health insurance companies can benefit from an integrated approach to PM and ERM. Discussion topics include:

- a review of current trends and outlook of the healthcare industry
- principles of predictive modeling for the healthcare industry
- principles of enterprise risk management for the healthcare industry
- a framework for integrating predictive modeling and enterprise risk management
- steps to implement an integrated PM and ERM framework
- business benefits to health plans

State of the Industry



Leveraging PM and ERM to solve the Health Care Puzzle

State of the Industry

While the debate continues to rage on in Washington over proposed healthcare reform, the healthcare industry continues to be faced with rising medical costs. Over years, the product du jour (Managed Care, PPO/EPO and CDH) have all been touted as a way to reverse the cost trend. Despite these efforts, the industry continues to see costs rise at an alarming rate. Perhaps improving the way the industry quantifies current and future risk exposure and acts to mitigate that risk is a way they can reverse the trend. In this section, we will examine the following topics:

- key issues, trends and statistics
- the impact of the current economic crisis
- implications for health insurance companies

State of the Industry

Key Issues and Challenges Facing the Healthcare Industry

Rising Costs and Afforadability of Health Insurance

Healthcare spending is projected to reach 3.1 trillion by 2012. The cost of employer sponsored health insurance continues to rise. Current economic conditions are forcing people to make tough healthcare choices

Proposed Healthcare Reform

Cost cutting pressures, universal health insurance or some derivative, public health plan will change the way health insurance companies compete

Changing Demographics

Aging of the US population, shift in demographics of the workforce, growing number of uninsured and the rise of consumerism will change the way health insurance companies view its members

Changing Regulation and Market Pressures

Shift in consumerism, the rise of info-mediaries and non-traditional competitors, health care reform and ICD-10 implementation will introduce new risks for health insurance companies

Innovative Applications of Predictive Modeling and Enterprise Risk Management can help:

- End-to-end segmentation through predictive modeling
- Predictive Modeling applications that go beyond high-cost high-risk member identification
- Implementing an ERM framework
- Integration results of predictive modeling applications across multiple member touch points with ERM to proactively manage and mitigate risk

The time is now for health insurance companies to take an enterprise view of predictive modeling and enterprise risk management

State of the Industry

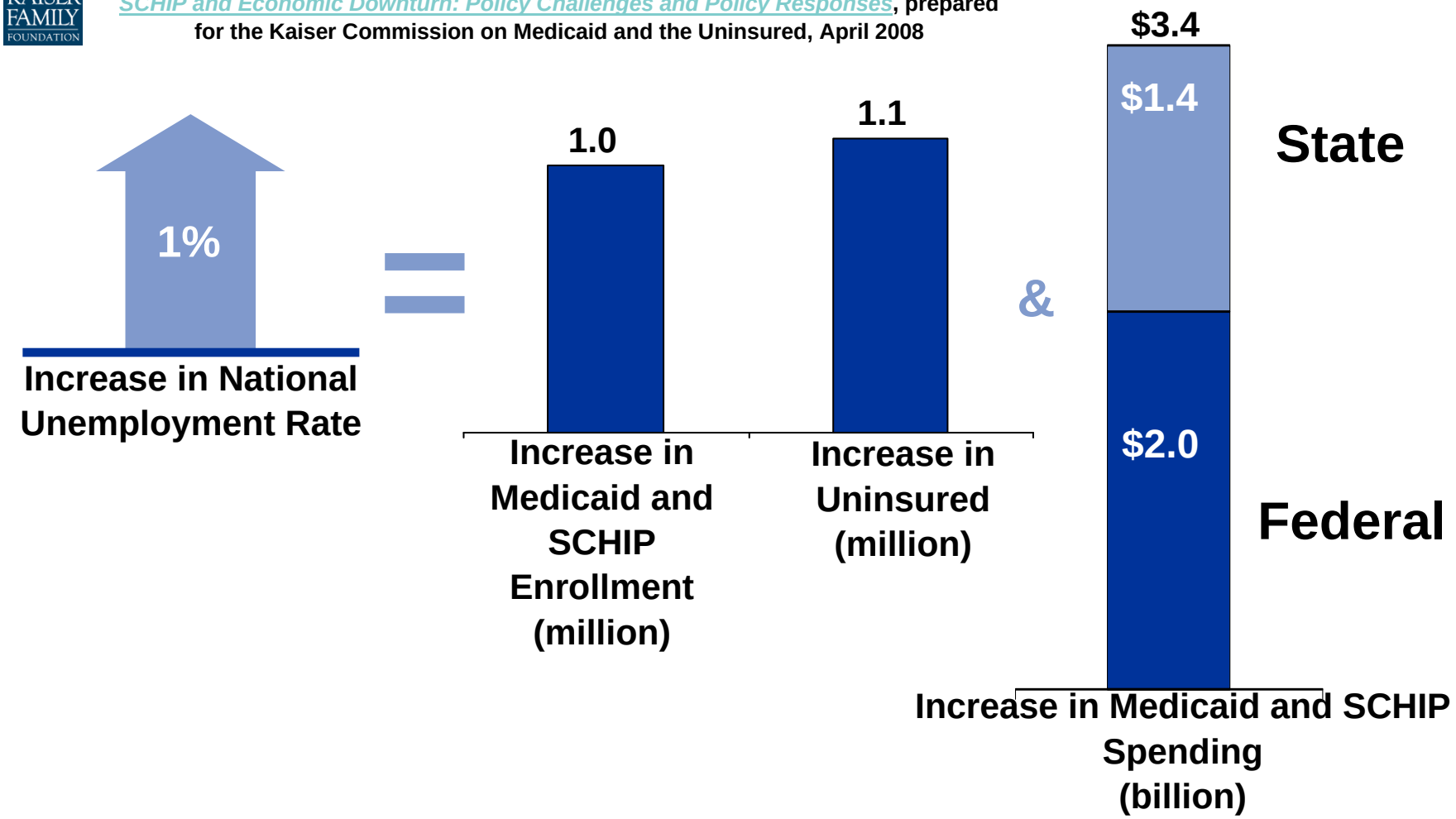
Industry Trends and Statistics

- In 2008, health care spending in the United States reached $2.4 trillion, and was projected to reach $3.1 trillion in 2012.1 Health care spending is projected to reach $4.3 trillion by 2016.
- Health care spending is 4.3 times the amount spent on national defense
- In 2008, the United States will spend 17 percent of its gross domestic product (GDP) on health care. It is projected that the percentage will reach 20 percent by 2017
- Although nearly 46 million Americans are uninsured, the United States spends more on health care than other industrialized nations, and those countries provide health insurance to all their citizens
- Health care spending accounted for 10.9 percent of the GDP in Switzerland, 10.7 percent in Germany, 9.7 percent in Canada and 9.5 percent in France, according to the Organization for Economic Cooperation and Development
- The consequences of the recent economic crisis are having an impact on the way Americans manage their health. A recent survey indicated that 35% of respondents relied on a home remedy instead of going to a doctor

State of the Industry

The Impact of the Current Economic Crisis

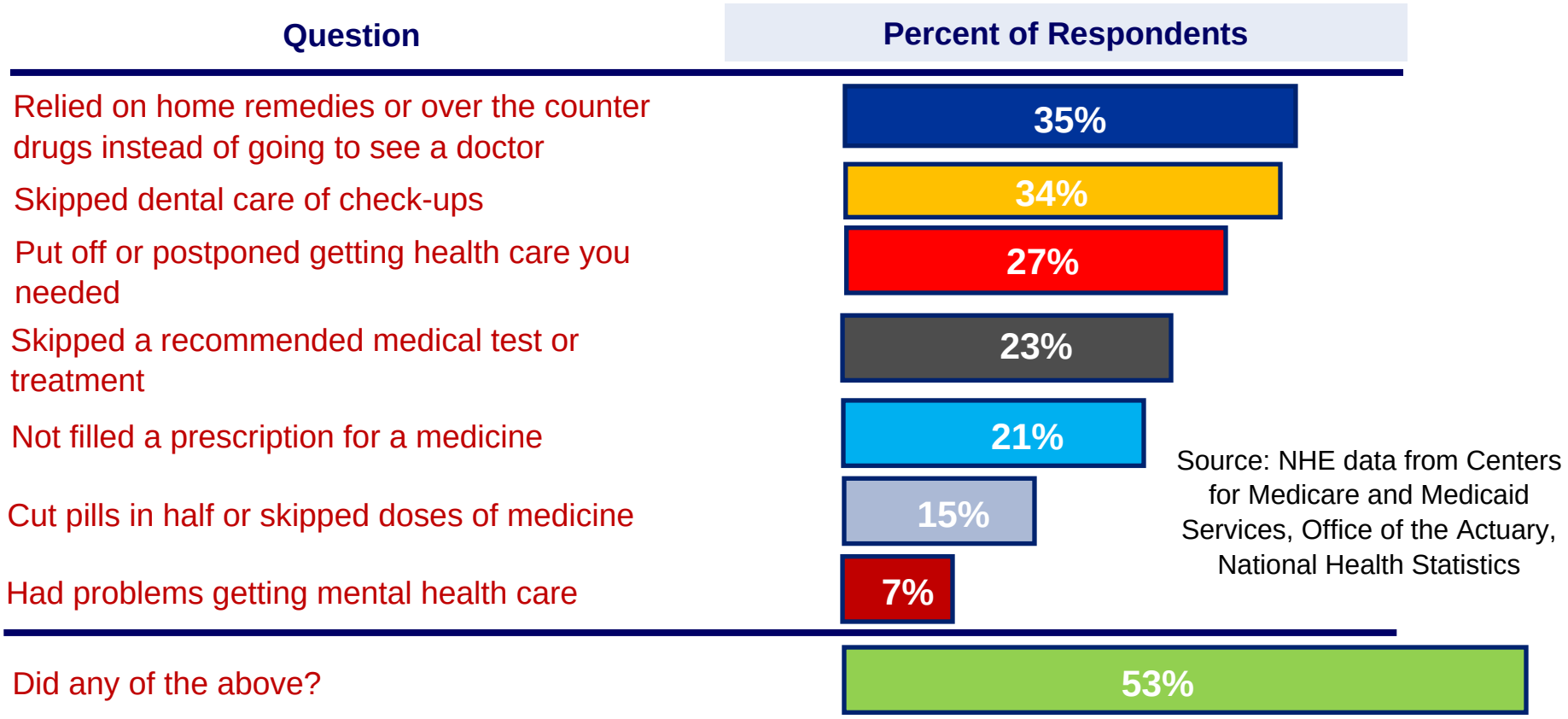
Source: Stan Dorn, Bowen Garrett, John Holahan, and Aimee Williams, *Medicaid, SCHIP and Economic Downturn: Policy Challenges and Policy Responses*, prepared for the Kaiser Commission on Medicaid and the Uninsured, April 2008



State of the Industry

The Impact of the Current Economic Crisis

In the past 12 months, have you or another family member living in your household done each of the following because of the cost, or not?



Source: NHE data from Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics

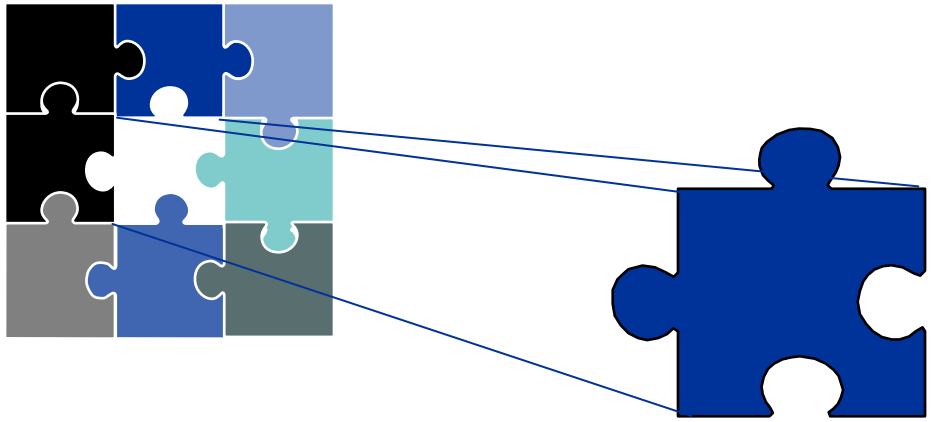
State of the Industry

Implications for Health Insurance Companies

Industry Issues and Trends

Issues	Predictive Modeling Implications	Enterprise Risk Mgmt Implications
Rising Costs	As medical costs continue to rise, predictive modeling applications must extend beyond traditional focus of disease state identification and be used to impact underwriting and pricing as well as medical management	Health plans will continue to be challenged with matching risk to exposure and must develop risk management strategies to assess, monitor and control pricing, medical cost and underwriting risk
Changing Demographics	Emerging predictive modeling applications to understand the needs and wants of individual customers and different demographic groups. Greater focus on marketing applications	Changing customer demographics and gaining a better understanding of the needs and wants of individual customers pose a strategic risk for health plans
Uninsured Population	With costs continuing to rise and the availability of affordable traditional health insurance products declining, health plans can use predictive modeling and lifestyle/demographic data to segment the uninsured population	Establish entry into new markets, further penetrate existing territories and expand existing lines of business Improve sales force effectiveness and increase hit ratio of new business submissions
Proposed Reform	Proposed healthcare reform could require health plans to compete with the lower cost public health plan option. Predictive Modeling can be used to help health plans drive down medical costs	Proposed healthcare reform can introduce several environment and strategic risks for health plans including compliance to new regulations and threat of new competition and changing environment of doing business
Changes in Regulation	Changes in regulation should always be monitored to assess the impact of existing predictive modeling applications (i.e. small group underwriting, ICD-10 change, etc.)	Changes in regulation pose environmental, operational and strategic risk that must be carefully assessed, monitored and controlled. Failure to do so could introduce reputational risk as well.

Predictive Modeling for the Healthcare Industry



Leveraging PM and ERM to solve the Health Care Puzzle

Predictive Modeling for the Healthcare Industry

Predictive Modeling in healthcare began to solve a widely known problem….that 20% of the population is responsible for 80% of the cost. However, with healthcare costs continuing to rise and a shift towards consumerism and proposed policy changes, the quest continues for innovative applications of predictive modeling for the healthcare industry. Advances in computing power and availability of external data sources have allowed market leaders to make predictive modeling a core business strategy to compete in the volatile insurance market. During this session, we will discuss the following..

- a brief introduction to predictive modeling
- traditional application of healthcare predictive modeling
- a framework for deploying predictive models across the enterprise
- Innovative business applications of health insurance predictive modeling
- benefits to health plans

Predictive Modeling for the Healthcare Industry

A Brief Introduction to Predictive Modeling

Predictive Modeling applies mathematical and statistical techniques to statistically predict future outcomes and improves the overall ability to segment a population on the basis of a future probability or outcome

Predictive Models

An Objective Approach to Analyze Risk

- Limits subjective reasoning from healthcare operations and risk assessment through use of mathematical and statistical techniques
- Leverages internal and external data to predict risk of individual members
- Creates opportunities to enhance traditional underwriting and rate setting for groups
- Improves insights into the needs and wants of individual members and patients

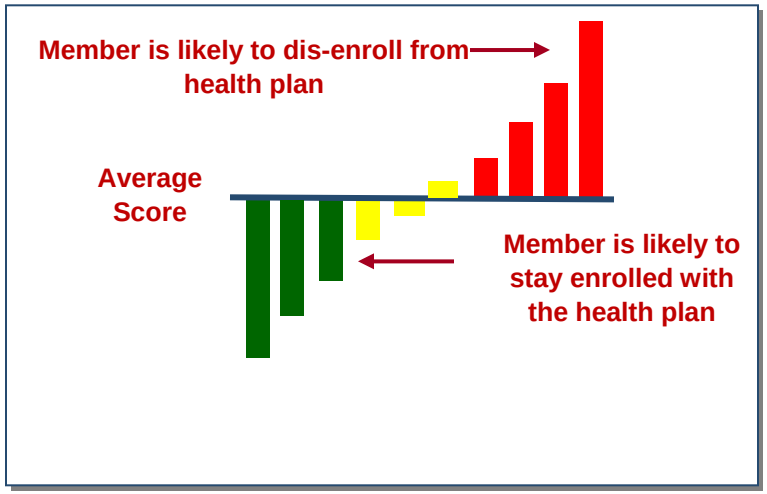
A Tool to Allow Increased Efficiency and to Gain Insight

- Can allow for increased amount of "no touch" and "low touch" members
- Provides objective guidance for more efficient and consistent medical management applications
- Opens the door for new insights into risk characteristics of members and patients

A Means to an End

- The predictive model itself only delivers the relative risk index for a member, patient or group
- The rest of the value to be obtained from the predictive model comes from careful implementation of model results into business processes and systems

Sample Lift Curve

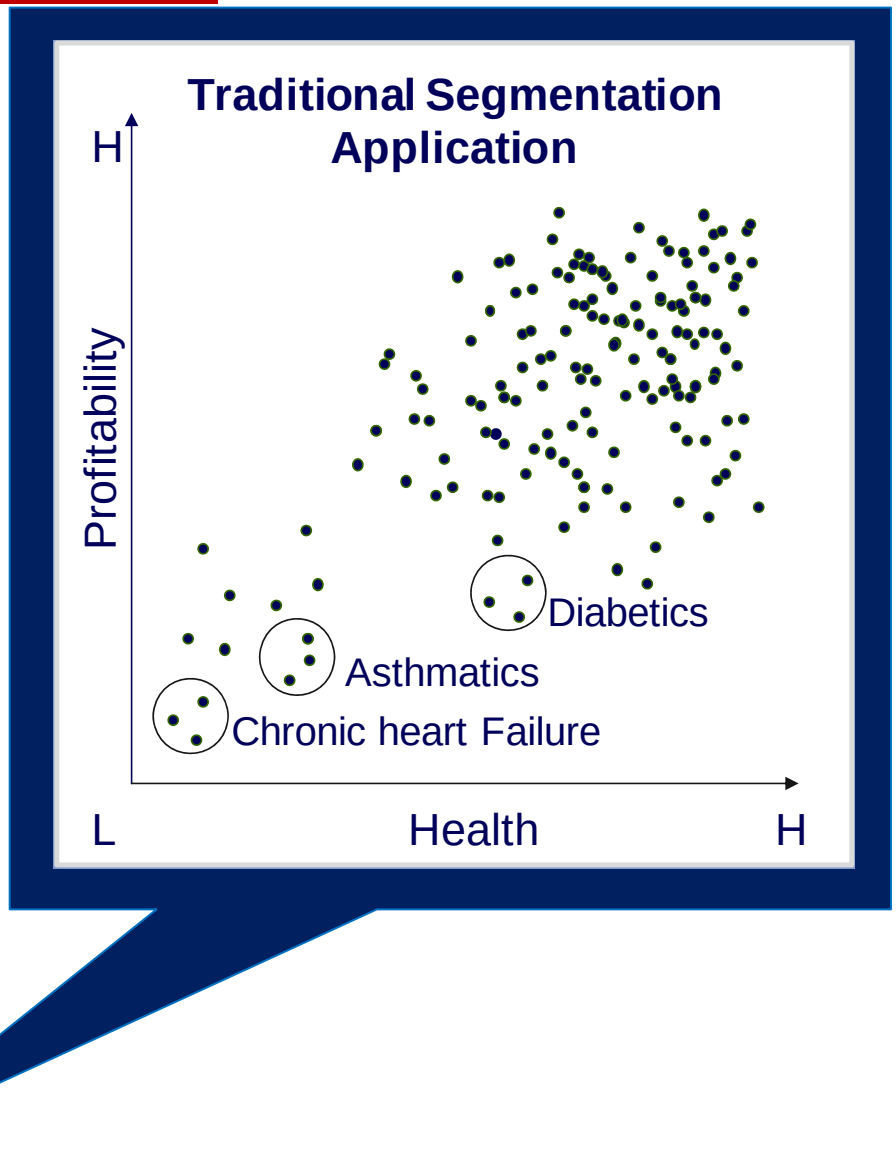


The model supports key business decisions and yields increased efficiency across the full spectrum of risk

Predictive Modeling for the Healthcare Industry

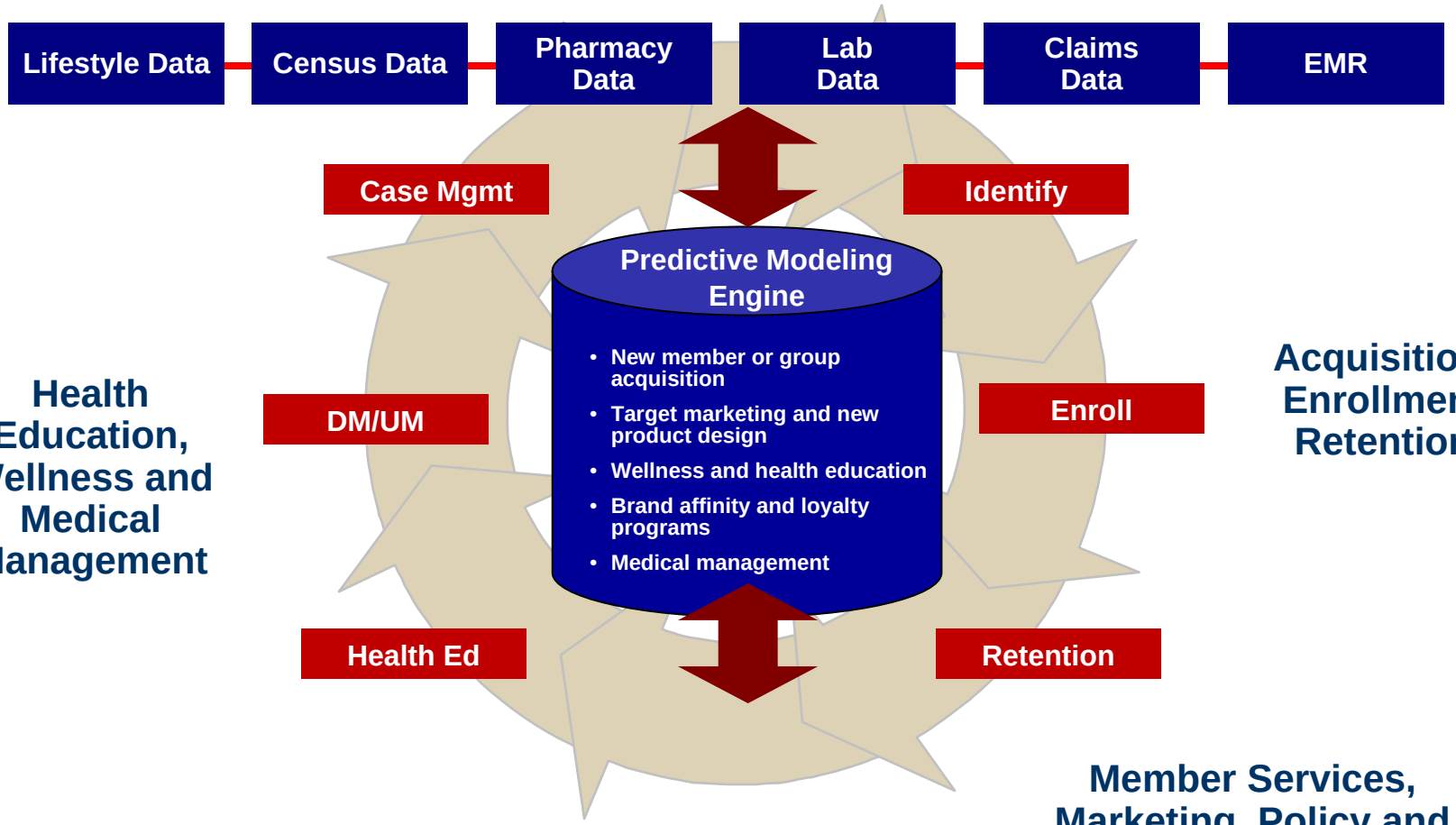
Traditional Application of Healthcare Predictive Modeling

- Predictive analytics in healthcare began to solve a widely known problem:
  - Small percentage of members account for a disproportionately large percentage of healthcare costs
- Cost triggers used to identify candidates for medical management
- Most predictive models heavily dependent on claims and authorization data
- Initial applications were disease specific but evolved to support patient centric approach
- Lack of utilization data made models ineffective
- Lack of integration with business rules engines to automated predictive analytics derived decision making (i.e. case management rules engines)



Predictive Modeling for the Healthcare Industry

A Framework for Enteprise Wide Predictive Modeling

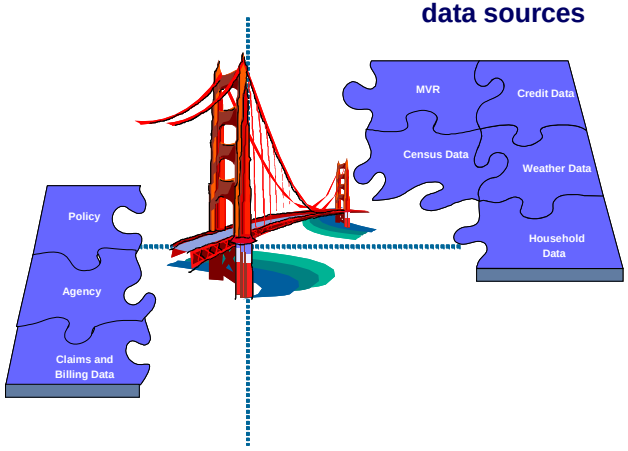


Predictive Modeling for the Healthcare Industry

A Framework for Enteprise Wide Predictive Modeling

Innovative Data Sources

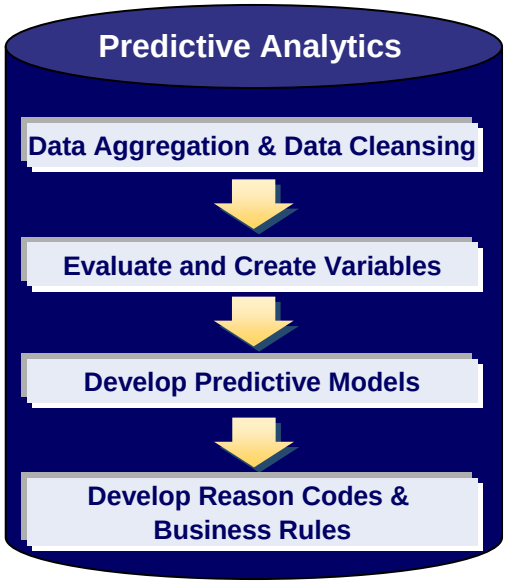
Non-traditional external data sources



Traditional internal data sources

Advanced Data Analanalytics

Deloitte Segmentation Analysis



Business Implementation

Resulting Programs:

- Underwriting
- Actuarial and Rate Setting
- Medical Management
- Target Marketing
- Health Education
- Sales Effectiveness
- Market Expansion and Product Design
- Provider Reimbursement
- Plan Assignment and Verification

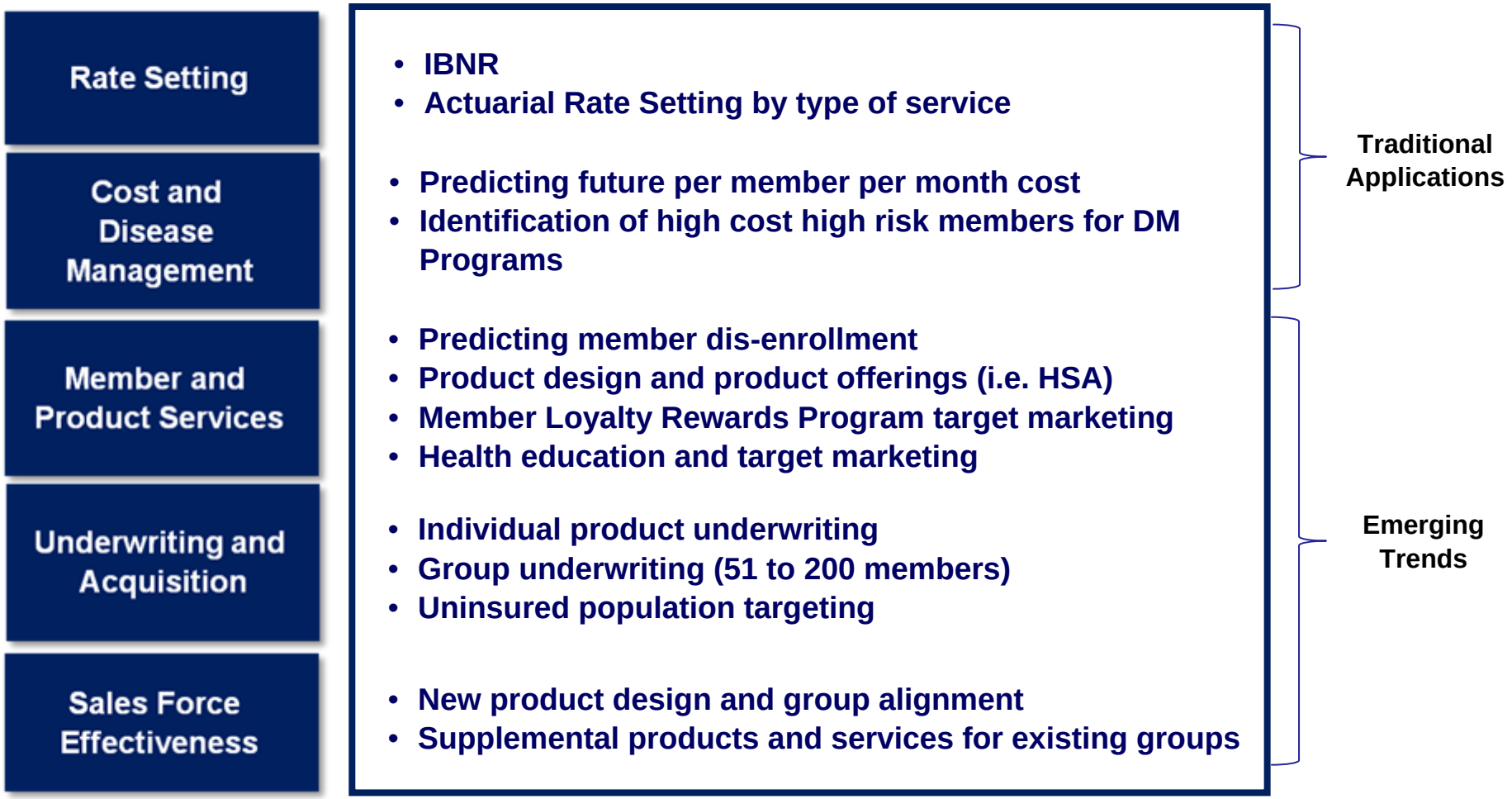
Non-traditional data sources unleash new risk characteristics into the predictive modeling process

Building and deploying predictive models requires a specialized combination of skills covering data management, data cleansing, data mart construction, actuarial and statistical analysis, data mining and modeling, and insurance operational and business processing and technology

Predictive modeling results are used to align underwriting, pricing, rate setting, medical management, sales effectiveness, marketing and provider reimbursement processes

Predictive Modeling for the Healthcare Industry

Innovative Applications of Health Insurance Predictive Modeling



Predictive Modeling for the Healthcare Industry

A Closer Look

Business Problem

Due to the rising costs of employer sponsored health insurance products, more and more profitable members are opting out of traditional healthcare products and into consumer driven healthcare products

Addressing the Problem through Predictive Modeling

Business Action

Develop targeted marketing and outreach campaigns that are focused on the segment of the population that are likely to respond positively to a marketing campaign or loyalty program. Gain additional insights into the needs and wants of profitable members by understanding their demographic and lifestyle characteristics

Predictive Modeling Application

Develop a predictive modeling solution that combines external consumer business, lifestyle and census data with internal claims and membership data to predict the likelihood that a profitable member will dis-enroll in the next X months. Act on this insight by marketing innovative products and loyalty programs aligned to individual needs and wants

Realizing Value

- **Lower dis-enrollment rates of profitable members resulting in higher premium retained**
- **Reduction in medical cost ratio through higher retention rates of profitable members**
- **Lower advertising spend and improved marketing campaign effectiveness**
- **Improved reputation in the marketplace through enhanced brand affinity resulting from loyalty programs**

Predictive Modeling for the Healthcare Industry

A Closer Look – Predictive Model Construction

The model produces a score of 1 – 100 that indicates the likelihood that a Medicaid recipient will dis-enroll in the next 6 months

~80 - 100 Variables

- Examples
  - Utilization Index
  - Co-morbidities
  - Age and Sex
  - Group Size
  - Hobbies
  - Net Worth
  - Family Size
  - Avg. income level
  - Providers per capita
  - Provider panel size
  - Provider specialty
  - Procedures performed
  - Duration with plan
  - Zip-code level demographic variables
  - Distance to doctors

Predictive Model Equation

$$A(DocDist)^B + C(PanelSize)^D + E(ProvSpec)^F + G(CaseMix)^H + I(AvgMemAge)^J + K(Prior\ Lapse)^L$$

Weights/ Coefficients

65

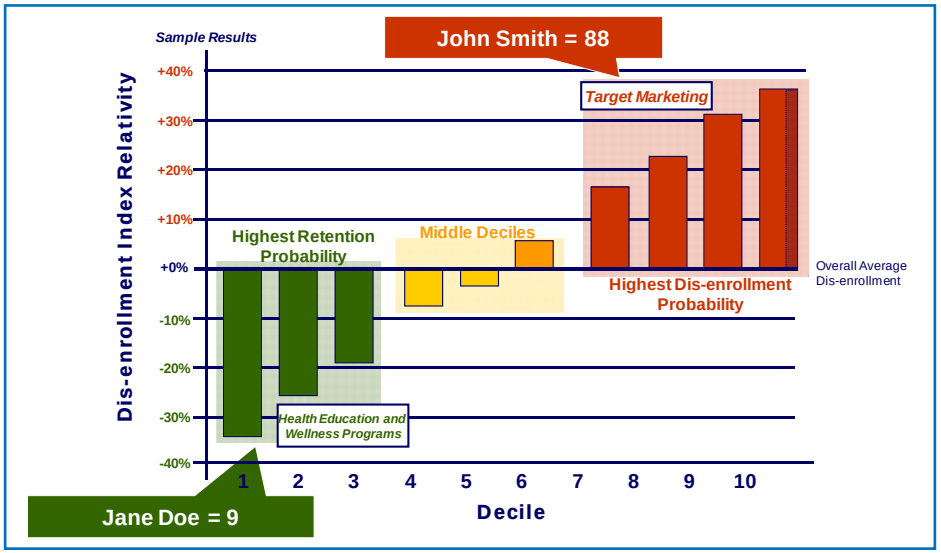
SCORE

= Relative Index that profitable member will dis-enroll in the next 12 months

Predictive Modeling for the Healthcare Industry

A Closer Look – Business Application

Segmentation of profitable members along the lift curve by decile and by decile groupings (green, yellow, red), can be used to develop strategies and tactics for loyalty and membership reward programs. Similarly, health plans can direct advertising spend to the segments of the population that are the greatest risk of dis-enrolling.



"Recent Graduate"

Health Status: Active Lifestyle, Low Risk

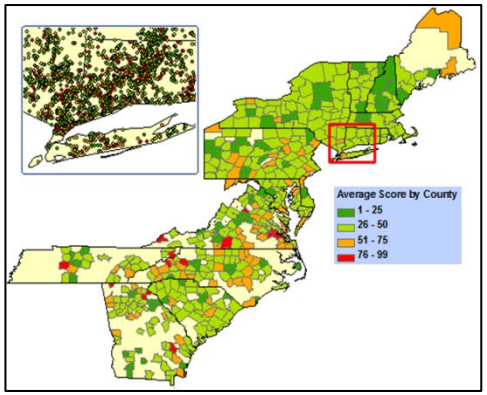
Characteristics: Highly educated, environmentally conscious

Targeted Marketing

Fitness Club Memberships and Discounts

Health Education and Wellness Programs

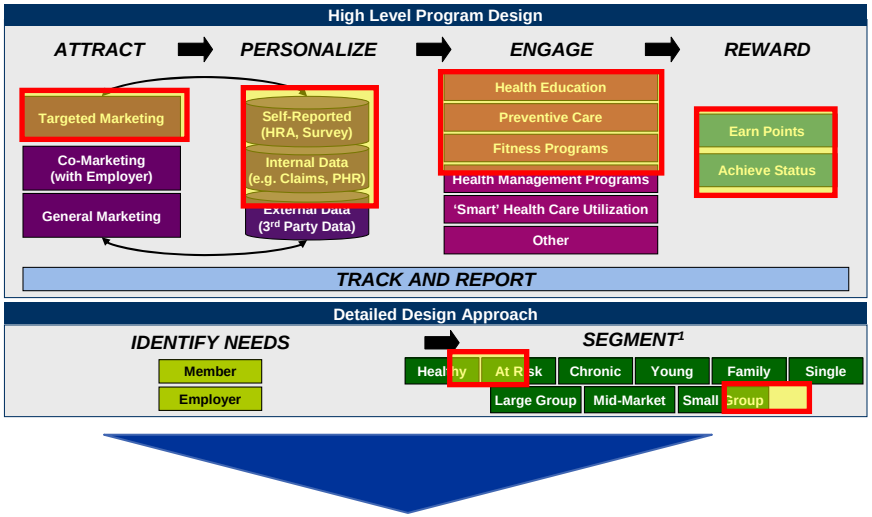
New Product Offerings



Predictive Modeling for the Healthcare Industry

A Closer Look – Business Benefits – Illustrative Example

By understanding the needs and wants of each individual member through predictive modeling, target marketing and loyalty/rewards programs can be developed to improve outcomes



"Recent Graduate"

Health Status: Active Lifestyle, Low Risk

Characteristics: Highly educated, environmentally conscious

Steps in Marketing Rewards Process

Attract:

- Received targeted, personalized email advertising free gym membership, personal trainer and fitness rewards

Personalize:

- Completed baseline assessment in order to track progress of improvements in health outcomes and accumulation of bonus points

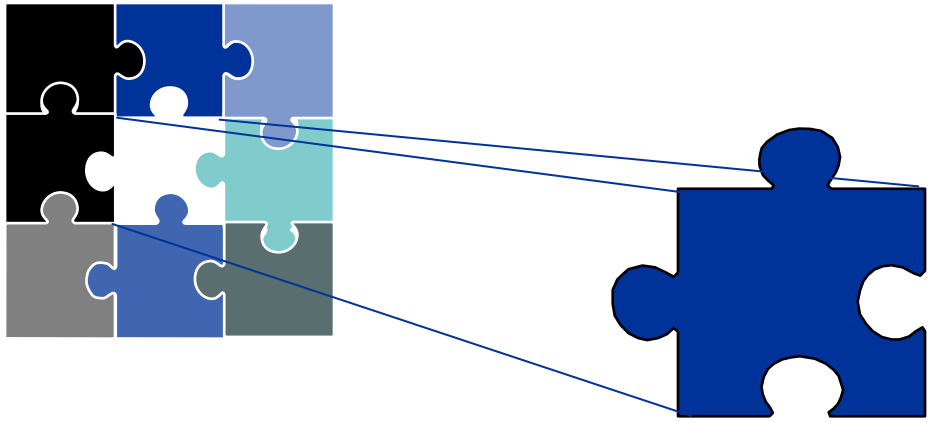
Engage:

- Member enrolled in various wellness programs including the discounted gym membership and saw a nutrition specialist
- Browsed health information online to select local OB/GYNs that spoke member's language and checked out recommended preventive care schedule
- Singed-up for email reminder for her regular check-ups and exams

Reward:

- In 24 months, member received Platinum status and exchanged points for an in home treadmill and a GNC Nutritional Store $200 gift card
- The Platinum status also allowed the member to receive a renewal membership coupon as a additional incentive to maximize continued enrollment with the plan

Introduction to Enterprise Risk Management



Leveraging PM and ERM to solve the Health Care Puzzle

Introduction to Enterprise Risk Management

Managing risk at the enterprise level is of vital importance to health insurance companies. ERM is the process by which an health insurance company assesses, controls, manages, monitors and mitigates risk across all organizational functions and the sources of risk. Given the dynamic nature of health insurance industry, the need for an enterprise approach to managing risk has taken on greater importance. In this section, we will discuss the following…

- a brief introduction to enterprise risk management
- risk management capability maturity model
- sources of enterprise risk
- building a risk intelligent enterprise

Introduction to Enterprise Risk Management

A Brief Introduction to Enterprise Risk Management

There are a different derivatives of the formal definition of enterprise risk management. We have chosen to use the one by COSO, which defines enterprise risk management as:

"process, effected by an entity's board of directors, management, and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives"

Introduction to Enterprise Risk Management

A Brief Introduction to Enterprise Risk Management

Five Key Risk Questions Management Should Be Able To Answer

1. What is our policy and our guidelines for assessing and managing risks?

2. What are our key risks and vulnerabilities and management plans to address them?

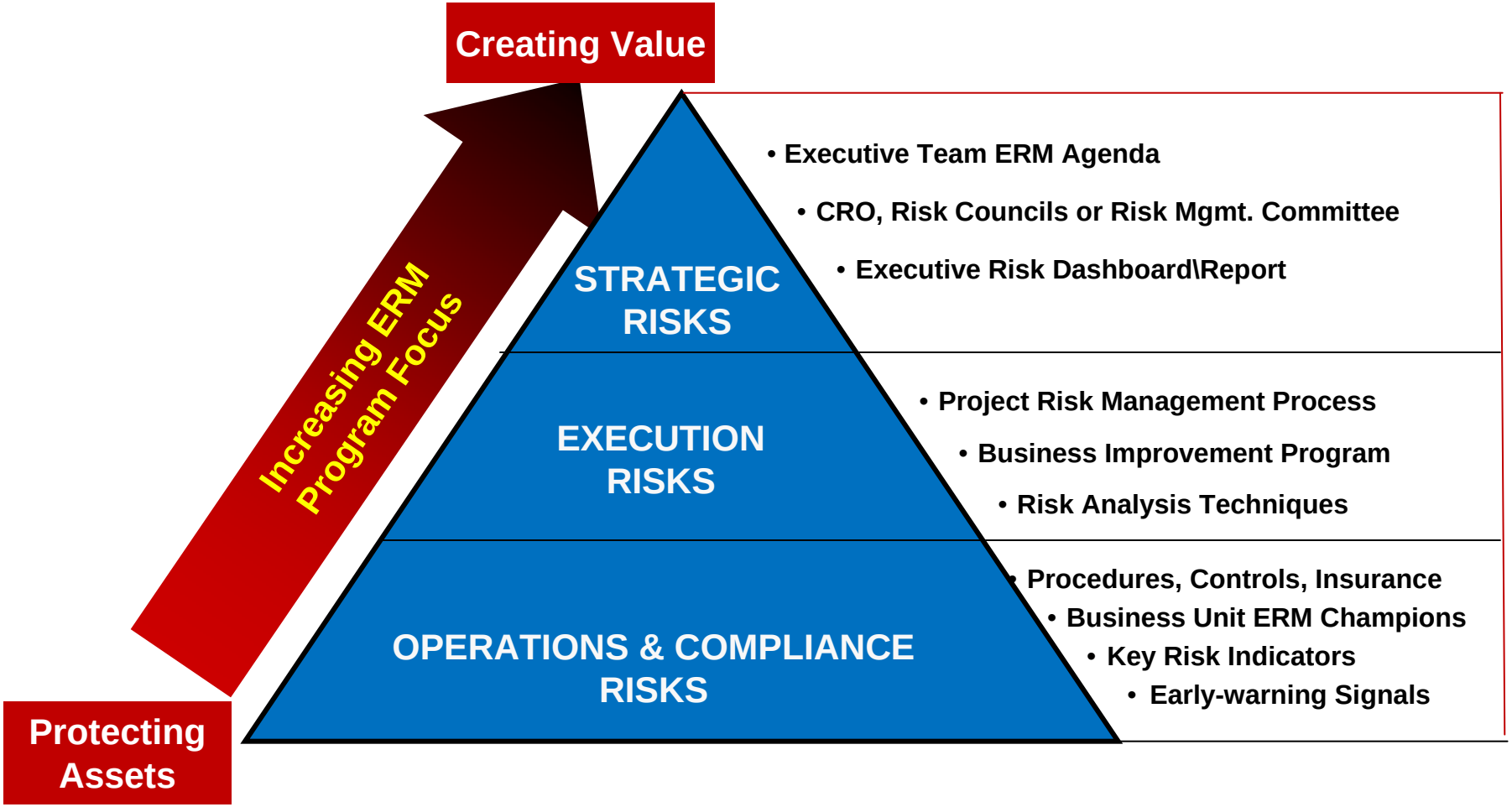
3. What is our risk appetite and how much risk have we taken on?

4. Who has the responsibility and authority to take risk on behalf of the enterprise?

5. What is our capability to manage risk on an integrated and sustainable basis?

Introduction to Enterprise Risk Management

A Brief Introduction to Enterprise Risk Management

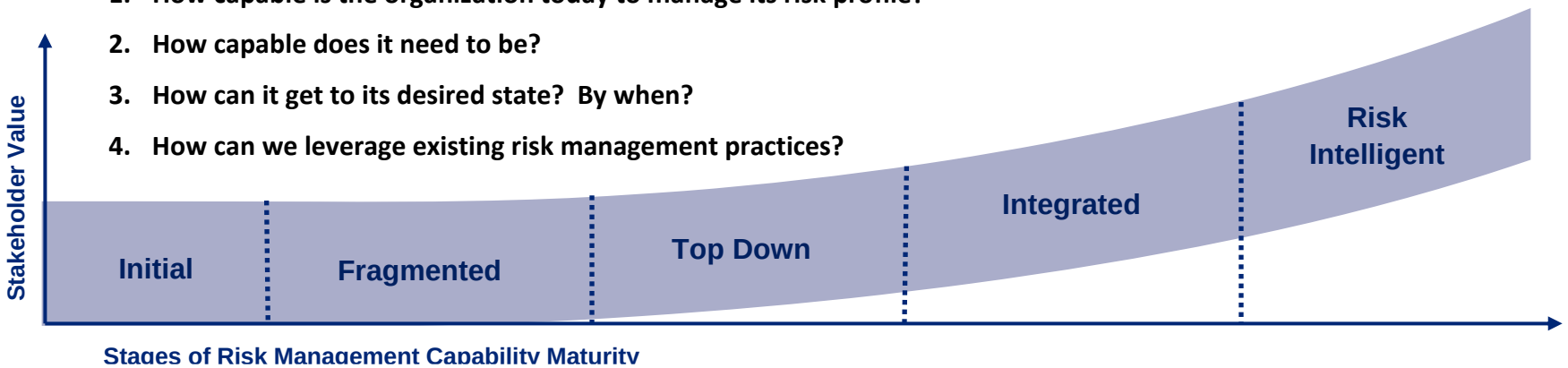


- The ERM program should help the organization maintain a balanced focus on value creation (rewarded risk taking) as well as value protection
- The program must be periodically assessed for effectiveness and continuously improved

Introduction to Enterprise Risk Management

Risk Management Capability Maturity Model

1. **How capable is the organization today to manage its risk profile?**
2. **How capable does it need to be?**
3. **How can it get to its desired state? By when?**
4. **How can we leverage existing risk management practices?**



Initial	Fragmented	Top Down	Integrated	Risk Intelligent
• Ad hoc/chaotic • Depends primarily on individual heroics, capabilities, and verbal wisdom	• Independent risk management activities • Limited focus on the linkage between risks • Limited alignment of risk to strategies • Disparate monitoring & reporting functions	• Common framework, program statement, policy • Routine risk assessments • Communication of top strategic risks to the Board • Executive/Steering Committee • Knowledge sharing across risk functions • Awareness activities • Formal risk consulting • Dedicated team	• Coordinated risk management activities across silos • Risk appetite is fully defined • Enterprise-wide risk monitoring, measuring, and reporting • Technology implementation • Contingency plans and escalation procedures • Risk management training	• Risk discussion is embedded in strategic planning, capital allocation, product development, etc. • Early warning risk indicators used • Linkage to performance measures and incentives • Risk modeling/scenarios • Industry benchmarking used regularly

Introduction to Enterprise Risk Management

Sources of Enterprise Risk

Environmental Risk	• New government administration and view towards universal health insurance could introduce new external environmental risks and competitive pressures
Financial Risk	• Current economic conditions are resulting in more employees being laid-off which could reduce the number of members actively enrolled in employer sponsored health insurance thereby potentially reducing revenue streams
Operational Risk	• Unless properly planned , the implementation of a new claims administration system introduces risks from a claims payment service level agreement perspective
Pricing Risk	• If traditional underwriting approaches are not re-examined or modified, the changing demographic shift in the workforce could affect the way insurance companies match rates to risk and exposure
Reputational Risk	• Monitoring customer complaints and conducting member satisfaction surveys and examining the results on an ongoing basis is one way to manage a plan's reputation in the marketplace
Strategic Risk	• With more and more consumers shifting to consumer driven healthcare products, health insurance plans could face the risk of non-traditional competitors entering the market

Introduction to Enterprise Risk Management

Sources of Enterprise Risk – Unique Risk for Health Insurance Companies

In the highly regulated and volatile health insurance industry, health plans face additional risk that must be monitored and managed at the enterprise risk level. Examples of unique risk characteristics facing health insurers include:

- less than perfect data in the underwriting and pricing process
- rising medical costs
- regulatory changes and reform
- claims management risk
- provider renewal and re-certification risk
- catastrophe risk
- capitated business risk
- quality of care reporting risk (i.e. HEDIS reporting)
- Ancillary produces and services risk

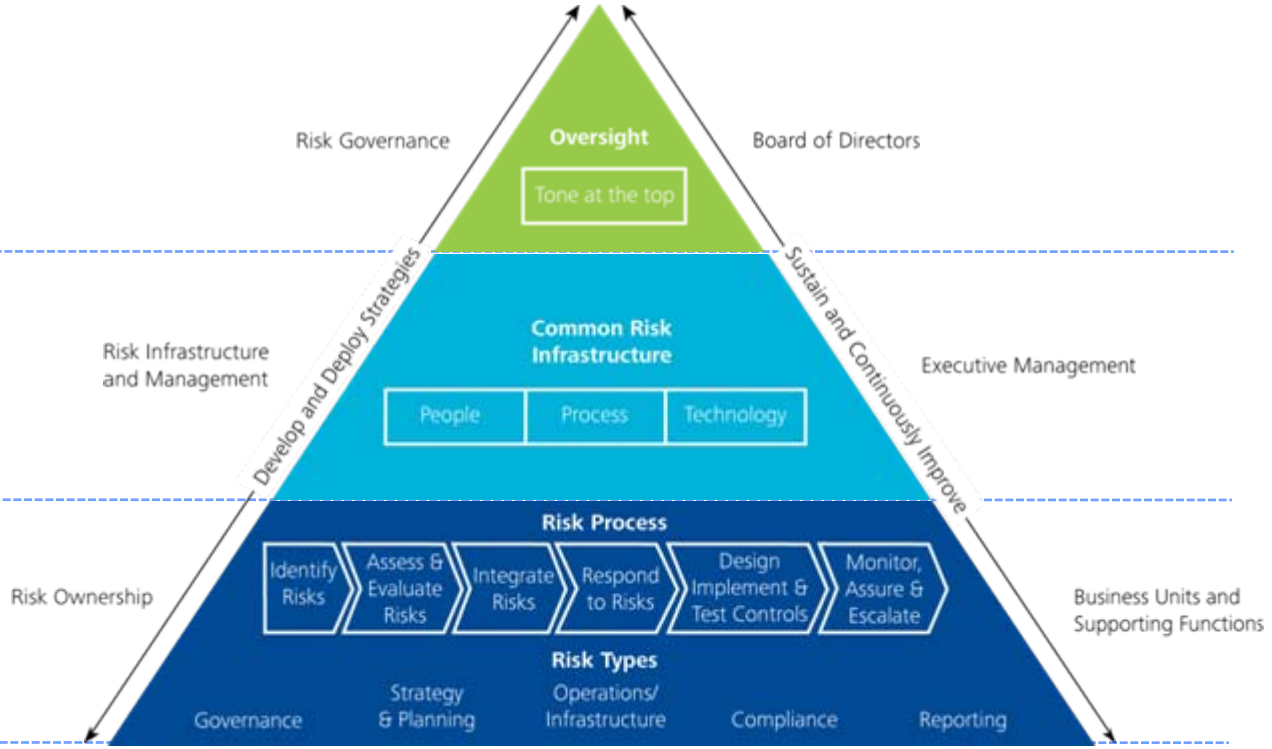
Introduction to Enterprise Risk Management

What are the nine principles for building a Risk Intelligent EnterpriseTM?

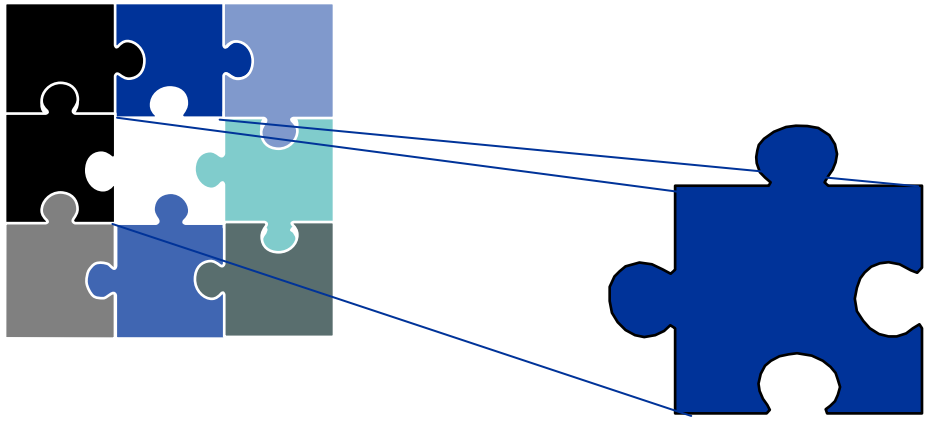
Nine Principles for Building a Risk Intelligent Enterprise

- Common Definition of Risk
- Common Risk Framework
- Roles & Responsibilities
- Transparency for Governing Bodies
- Common Risk Infrastructure
- Executive Management Responsibility
- Objective Assurance and Monitoring
- Business Unit Responsibility
- Support of Pervasive Functions

The Risk Intelligent Enterprise



Developing an Integrated Approach



Leveraging PM and ERM to solve the Health Care Puzzle

Developing an Integrated Approach

Enterprise Risk Management and Predictive Modeling are valuable strategic applications that health plans can use to manage risk, improve competitive position, enhance business outcomes and improve quality and delivery of care to its members. While they offer significant value individually, the opportunities for health plans to realize even greater value is enhanced when insights from predictive models are incorporated into a broader ERM strategy. During this section, we will discuss the following….

- why is it important to integrate PM and ERM
- ERM and PM integration framework
- illustrative example of integrating PM and ERM
- business benefits to health plans

Developing an Integrated Approach

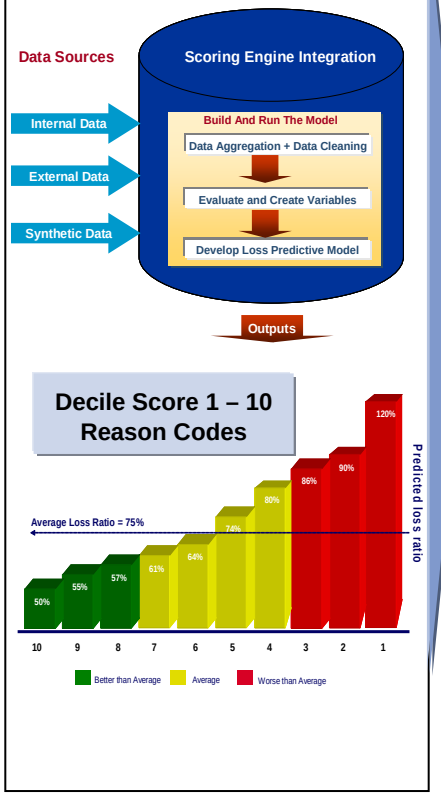
Why is it Important to Integrate PM and ERM

Before an health plan can effectively monitor and mitigate risk they must be able to accurately assess risk on a prospective basis. The output from predictive modeling applications provide health plan's with a look to the future of what potential risks they are facing. Integrating those insights into a broader ERM strategy will allow health plans with a greater likelihood to develop strategies and processes to mitigate those risks.

Developing an Integrated Approach

Integrated ERM and PM Framework

Predictive Modeling Framework



Predictive Modeling Business Applications

Medical Mgmt	Underwriting	Marketing	Product Design
Develop predictive modeling applications that predictive future costs at an individual member level using internal and external data	Develop predictive modeling applications used to improve pricing and underwriting precision for small groups	Leverage predictive modeling to improve target marketing and d loyalty /rewards campaigns for profitable members in order to improve affinity and retention of profitable members.	Develop new products and pricing to target to individual members and uninsured population. Predict likelihood that members will choose newly designed consumer driven healthcare products

Enterprise Risk Management Insights Gained

Prospective Insights from Predictive Modeling can Improve Risk Assessment

Financial	Financial	Reputational	Strategic
Predict costs of high-risk members to improve ability to forecast medical cost risk	Underwriting PM applications enhances ability to match risk to exposure	Improving retention of profitable members and building loyalty enhances market reputation	PM applications for consumer demand can be used to mitigate strategic risk of shifting consumer demand

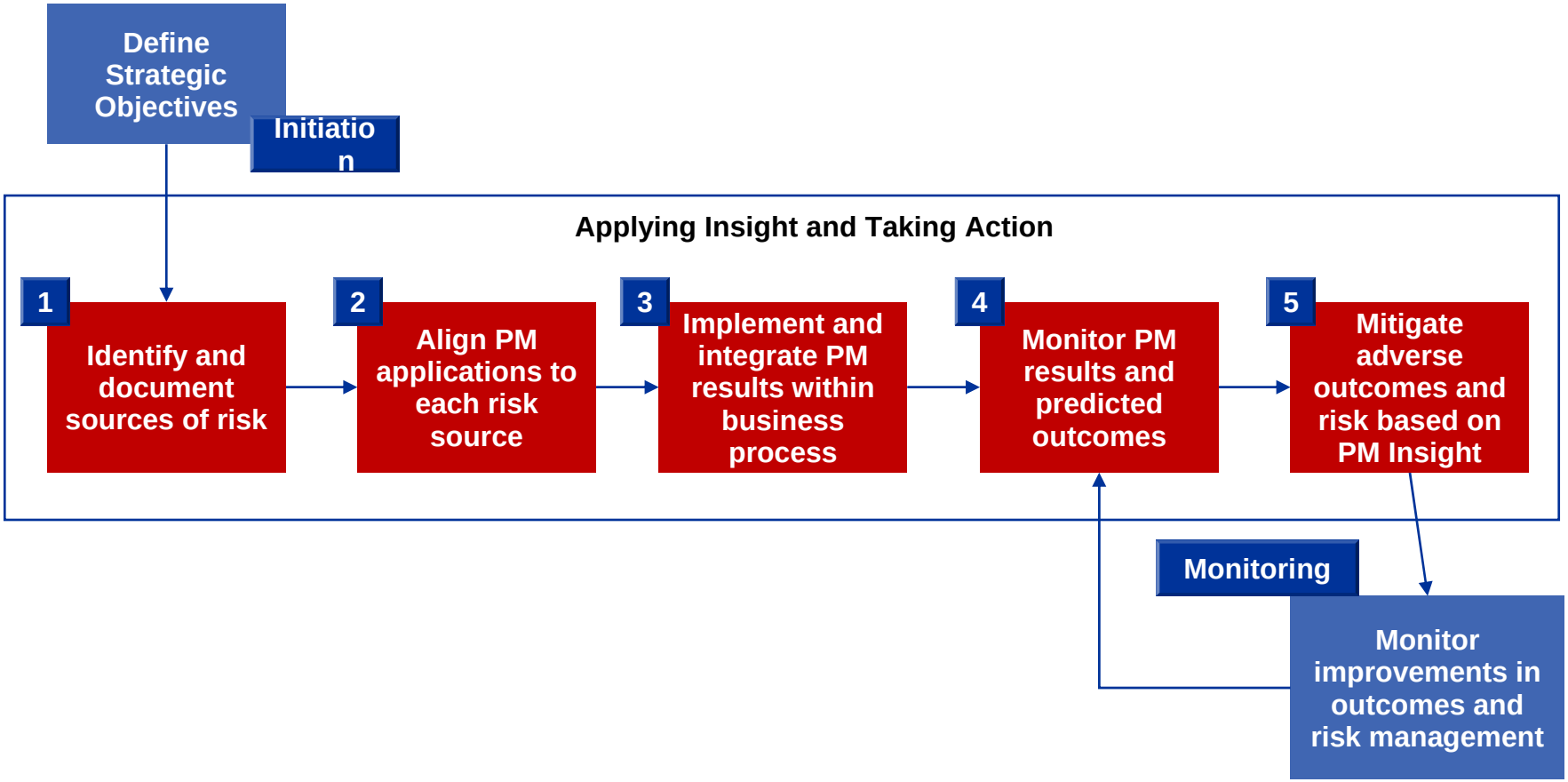
Based on insight develop strategies and process enhancements to mitigate risk

Monitoring Risk

- Loss Ratio
- Retention Rate
- Premium Growth
- Customer Service Complaints
- New Member Enrollment
- Revenue Growth
- Quality of Care Outcomes
- Cost Distribution

Developing an Integrated Approach

Steps to Implementing an Integrated ERM and PM Framework



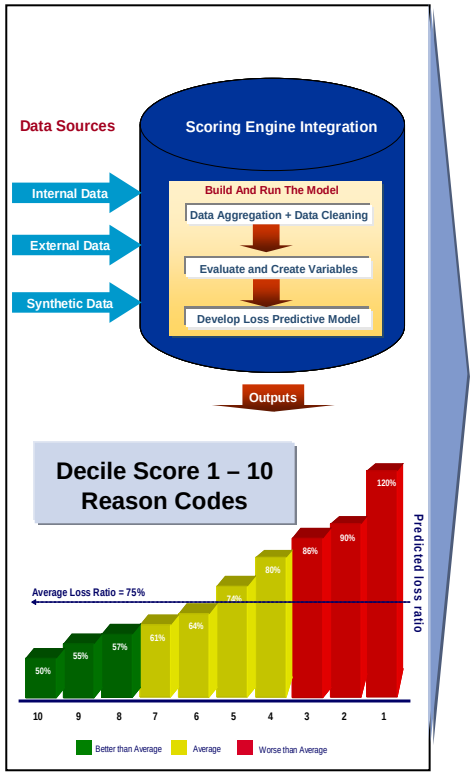
The process of assessing risk is not an exact science and contains a degree of variability when it comes to determining future risk. Predictive Modeling can increase the precision of predicting future risk which can be incorporated in ERM strategies.

Developing an Integrated Approach

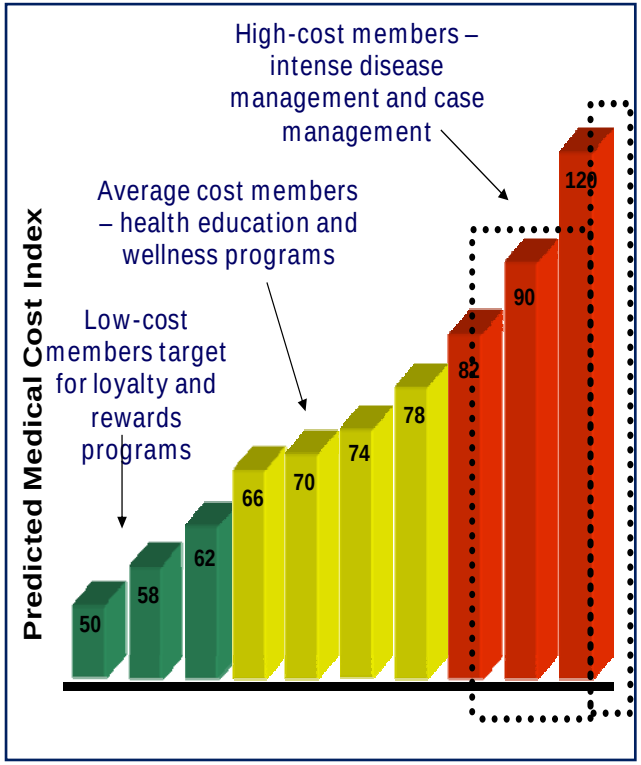
An Illustrative Example

ABC Health plan considers pricing risk one of its most important sources of risk. With medical costs continuing to rise at an accelerated rate, it is struggling to match risk with exposure and forecast future medical costs and its overall exposure.

Predictive Modeling Framework



Predictive Modeling Insight and Business Application and Implementation



Leveraging Insights in Enterprise Risk Management and developing plan to mitigate risk

- Members*: 1.2 million fully-insured members
- Medical Costs*: $2.8 billion
- Assumes typical cost distribution
- Hypothetical shift in member distribution:
  - After 1 year: 1% of members in each cost category shift over to a lower category

Typical Medical Costs Distribution

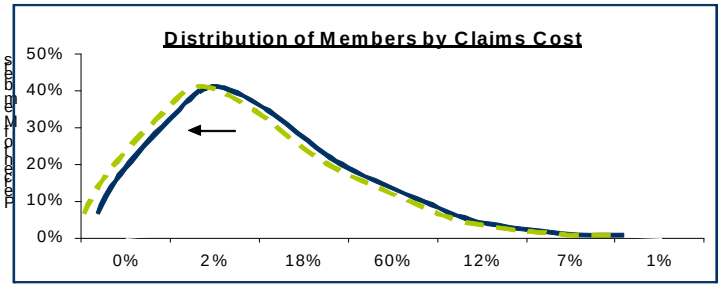
% of members	15	40	25	15	4	1	0.1

Hypothetical shift in Member Distribution

% of members	15.4	39.9	24.9	14.9	4.0	1.0	0.1

  - After 5 years: a total of 5% of members in each cost category shift over to a lower category

Monitor Outcomes and Risk Exposure



Medical Costs Distribution

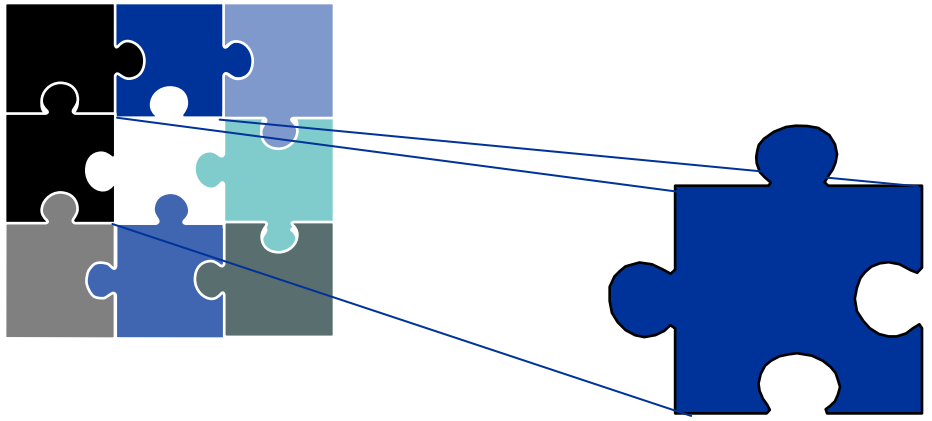
% of members	15%	40%	25%	15%	4%	1%	0.1%
% of cost	0%	2%	18%	60%	12%	7%	1%

Developing an Integrated Approach

Business Benefits to Health Plans

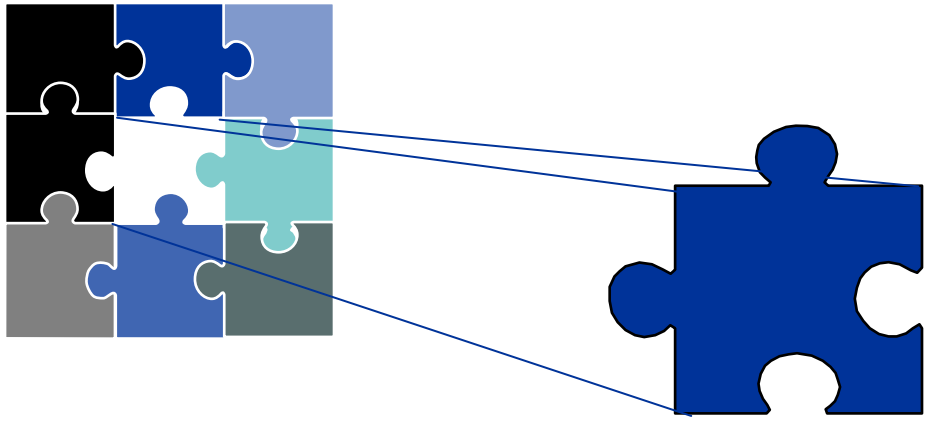
Improved Risk Assessment and Forecasting	• Improved precision in identifying sources of risk on a current and prospective basis • Minimizes the variability in forecasted and actual risk • Improved ability to assess risk across the entire enterprise • Improved management of members across the full spectrum of risk thereby impacting multiple sources of risk through single integrated strategy
Increased Resource Allocation Efficiency	• Increased efficiency of retention and outreach activities • Increased effectiveness of disease management and health education interventions through assessments of member "readiness to change" • Efficiency of customer service interactions • Consumer insight for new product development and marketing activities
Improved Outcomes	• First mover advantage in the marketplace • Significant reputational value – "We manage costs and know our Members" • Pre-cursor to personalized healthcare product development • Ability to improve clinical outcomes in a cost-effective manner • Ability to ensure compliance with applicable laws and regulation minimizing fines and adverse effects

Question and Answers



Leveraging PM and ERM to solve the Health Care Puzzle

About the Speakers



Leveraging PM and ERM to solve the Health Care Puzzle

About the Speakers

Mo Masud, Hartford, CT

A Senior Manager in Deloitte's Advanced Analytics and Modeling Practice, with over 13 years of health insurance, technology and predictive modeling experience. Areas of expertise include: healthcare predictive modeling for private and public sector insurance, healthcare regulatory reporting, clinical expert systems, business rules management applications and technical implementation and integration of predictive modeling applications. Mo has led numerous engagements of implementation of large scale predictive modeling and custom technical applications for public and private integrated healthcare delivery networks and insurers that helped improve quality and continuity of care. Prior to his tenure in the consulting field, he held several data analysis positions with Empire Blue Cross Blue Shield in New York City including the management of Empire's corporate wide Health Data Analysis and Reporting Group. Mr. Masud is a frequent speaker at industry trade conferences on the end-to-end development and deployment of predictive analytics.

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Patricia Moks, Boston, MA

Patricia Moks is a Senior Manager in Deloitte & Touche's AERS practice and has over 9 years of experience working in risk management, internal controls, and internal audit. She has assisted her clients in evaluating and developing strategies for improvement of their business, operational and IT risk management and control processes. Patricia has worked across several industries including technology, manufacturing, life sciences, and health care provider. She has practical experience in developing risk programs that effectively identify, measure, and report risk across the organizations as well as providing recommendations and leading practices on risk mitigation. Patricia's experiences include defining the risk universe, conducting facilitated interviews, leading risk prioritization sessions, mapping identified risks to strategic initiatives and business processes, and provide recommendations and leading practices on risk mitigation. Additionally, Patricia is a Certified Internal Auditor (CIA) and is actively involved in the development and delivery of risk assessment training seminars and has been a speaker at internal and external conferences.

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