Predictive Analytics for Use in Enabling Population Health Management

8th National Predictive Modeling Summit

November 2014

LexisNexis® | Health Care

Today's Topic – Predictive Analytics for Population Health Management

The Challenge

What factors are driving the need for Predictive Analytics

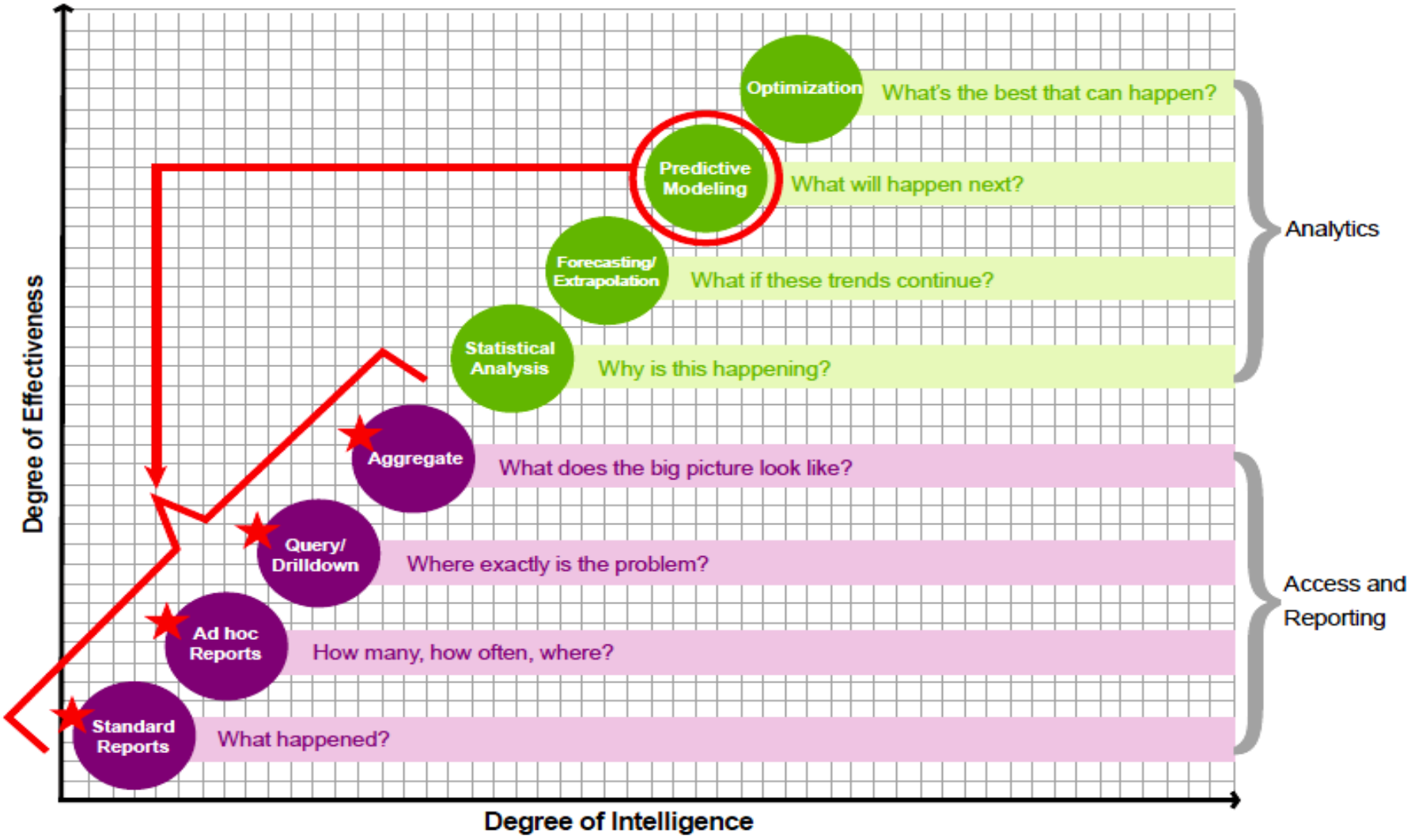
The Opportunity

Why Predictive Analytics are the Answer

The Impact

How Predictive Analytics improve Population Health Management

Increasing Effectiveness with Analytics

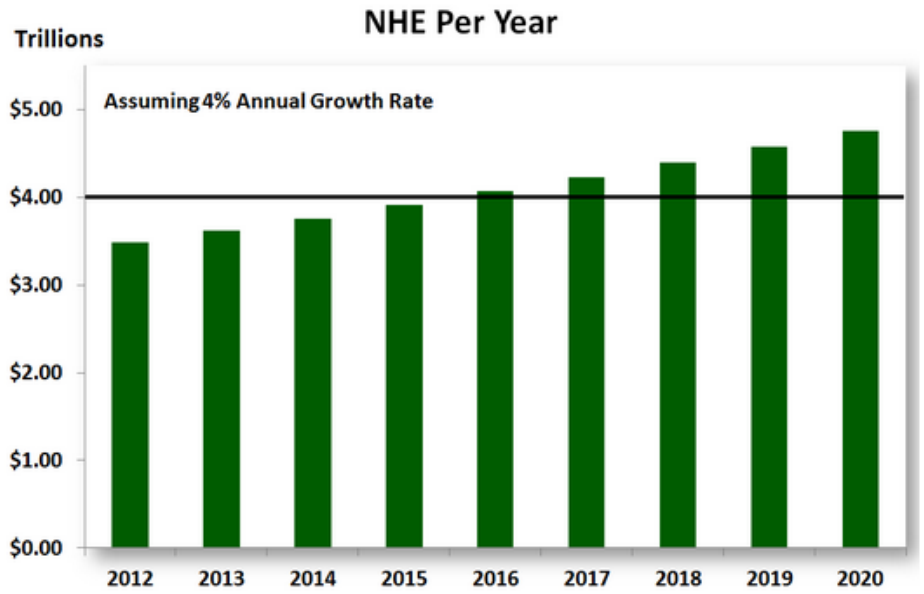


Source: LexisNexis eBook: "How Market-Leading Health Care Organizations Are Using Analytics to Drive A Competitive Edge"

The Challenge

Increasing Costs Are Causing All Payers to Seek Cost-saving Measures That Do Not Compromise Care

National health expenditures are increasing, forcing all parties to seek cost saving measures that do not compromise care.



Source: Deloitte Center for Health Solutions

Did you know…
just a <u>few</u> areas can lead to billions in savings?

- ☑ Decreased Costs of Episodes of Care - **$53 Billion**
- ☑ Prevent Avoidable Hospital Admissions - **$48 Billion**
- ☑ Improve Targeting of Costly Services - **$20 Billion**
- ☑ Prevent Avoidable Hospital *Readmissions* - **$20 Billion**
- ☑ Increase Shared Decision-Making - **$9 Billion**

Source: Institute of Medicine
"The Healthcare Imperative Report"

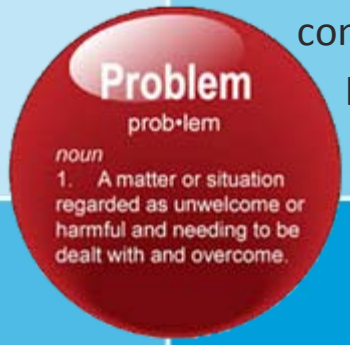
We Seem to Agree on the Problems

Excessive number of members with chronic conditions

- We wish to target "actionable" high risk, high cost members
- Difficult to identify actionable members using only "Past Utilization" models

Coordination/Collaboration in Patient Care

- Numerous and varied patient "touch points"
- Lack of a consolidated view and complete medical record for patient care



Critical Cost Drivers that are Challenging to "Tease Out"

- Provider Performance
- Member Action / Inaction

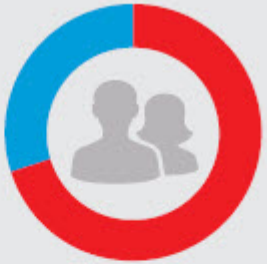
Risk Management in Shifting to Value Based Reimbursement Models

- Providers struggling to understand how to address new risk burden
- Challenging to create and implement effective ROI-delivering programs

Common Problems Contributing to High Costs/Risks

45%
of Americans have at least 1 chronic disease

50%
of Americans with chronic disease aren't getting recommended care

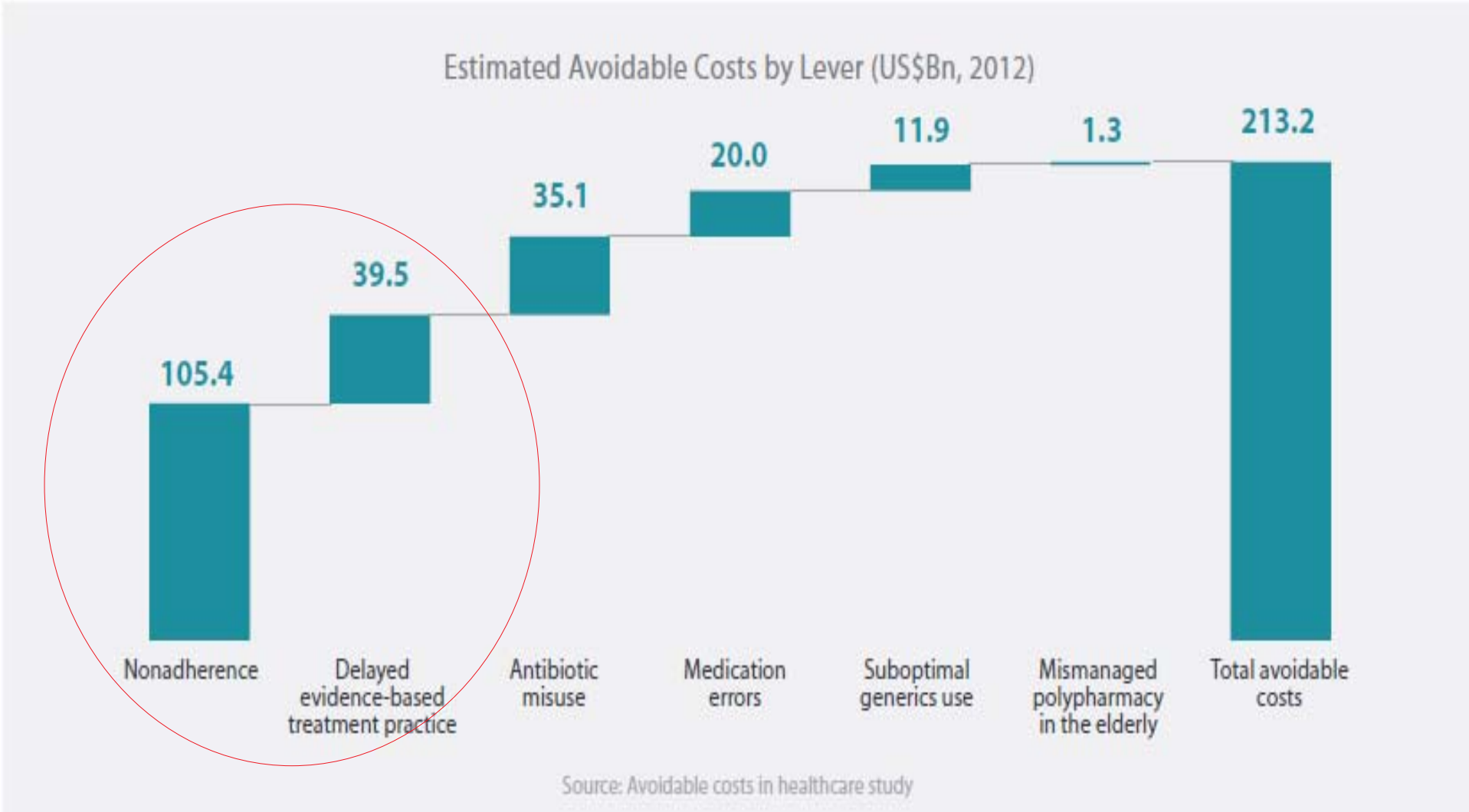


70%
of deaths are caused by chronic diseases

Chronic disease accounts for **$3** of every **$4**, or **75%** of national health care spending

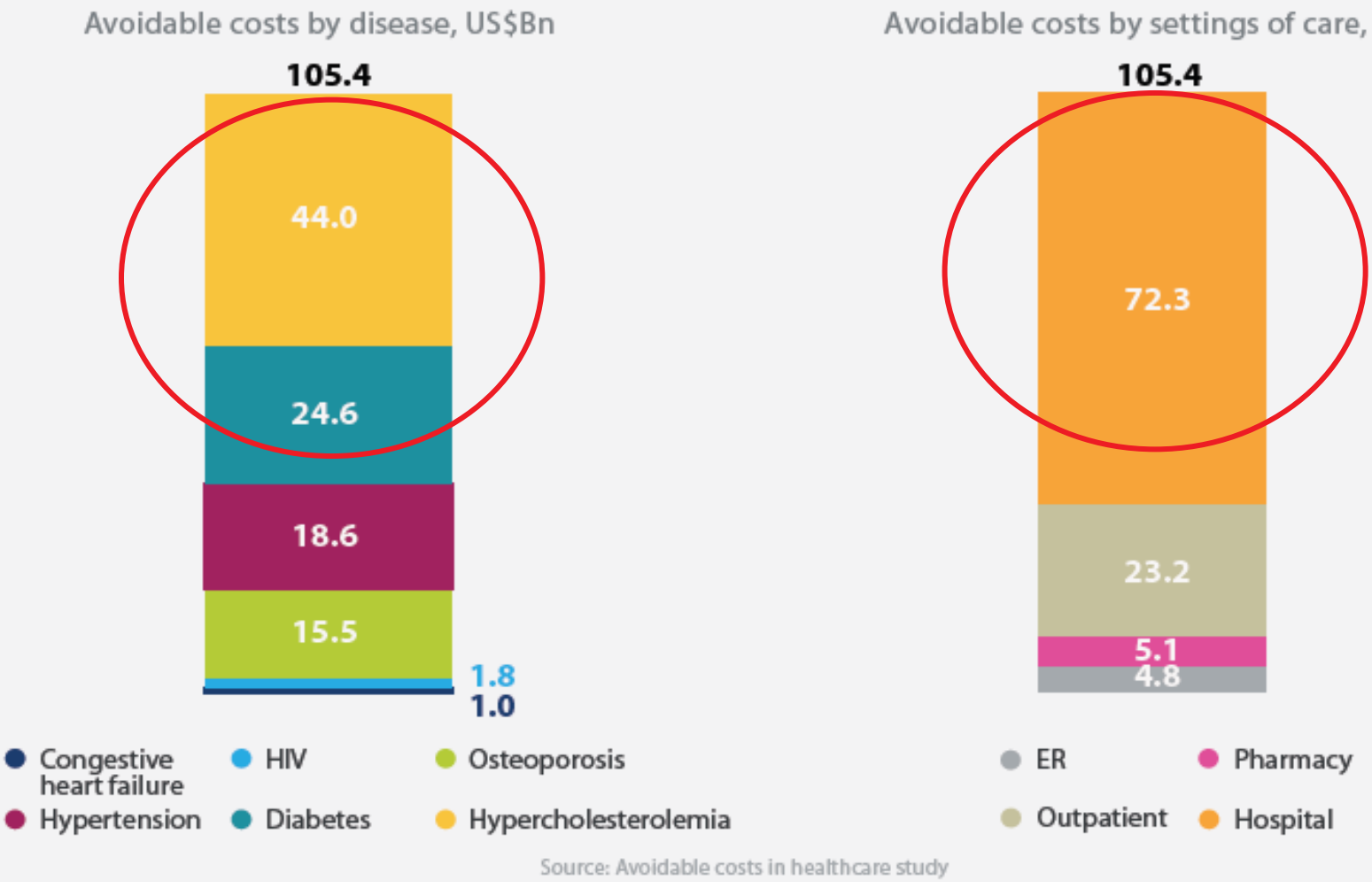
Source: LexisNexis, http://www.forahealthieramerica.com/. "Population health management," Ernst & Young, 2014, http://www.ey.com/. "Managing Manifest Diseases, but Not Health Risks, Saved PepsiCo Money Over Seven Years," Health Affairs, v. 33, no.1, Jan. 2014, p.124-131. Improving Quality and Patient Experience: The State of Health Care Quality 2013. National Committee for Quality Assurance (NCQA). October 2013. www.ncqa.org.

Avoidable Health Care Costs



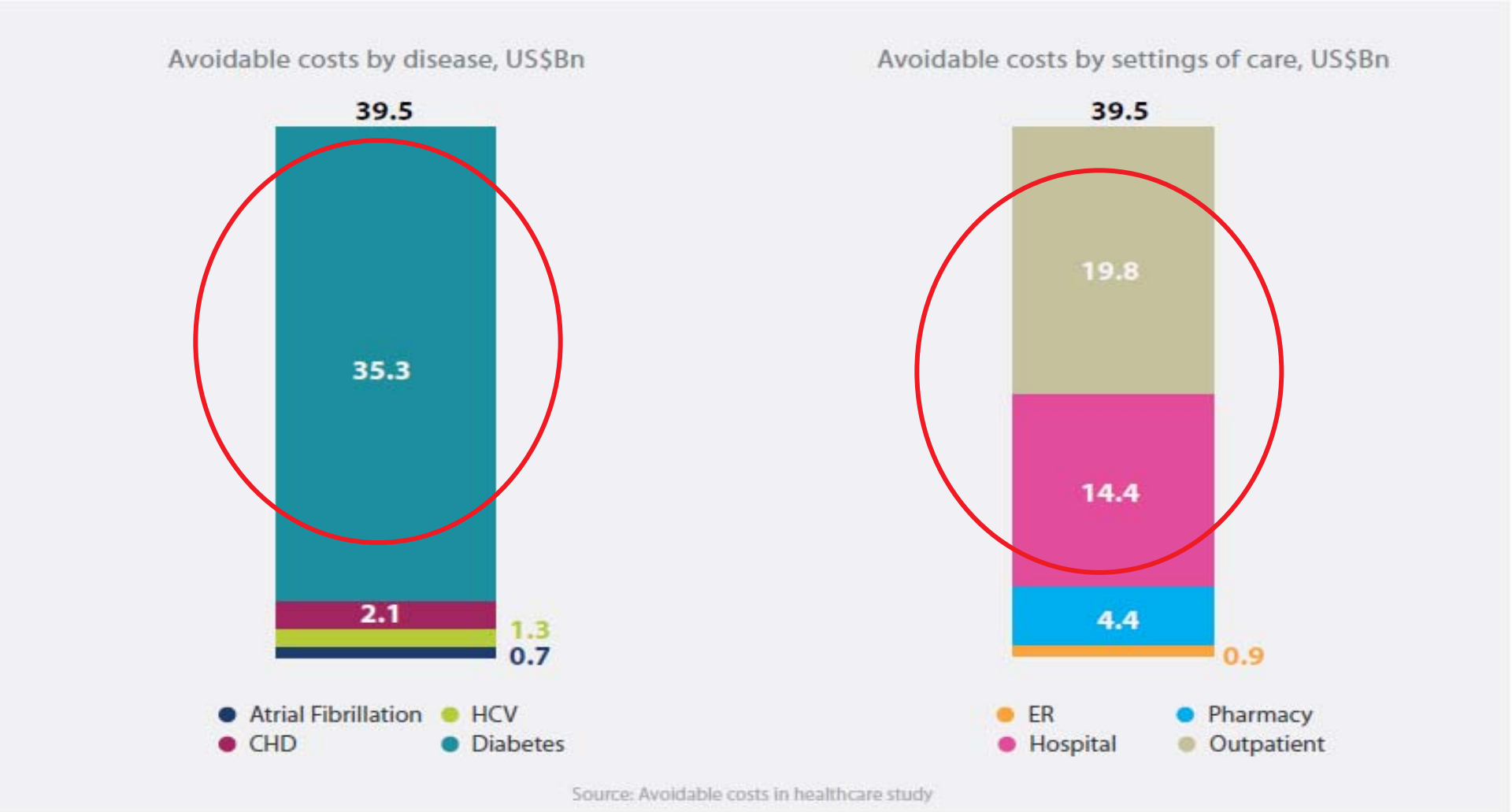
Source: IMS Institute for Healthcare Analytics, Avoidable costs in healthcare study, June 2013

Avoidable Costs Due to Medication Non-adherence



Source: IMS Institute for Healthcare Analytics, Avoidable costs in healthcare study, June 2013

Delayed Compliance to Measures Impacts Avoidable Costs



Source: IMS Institute for Healthcare Analytics, Avoidable costs in healthcare study, June 2013

The Opportunity

Key Opportunities for Predictive Analytics

Manage Risks

- Everyone is not equal
- Risks drive benefits & reimbursements

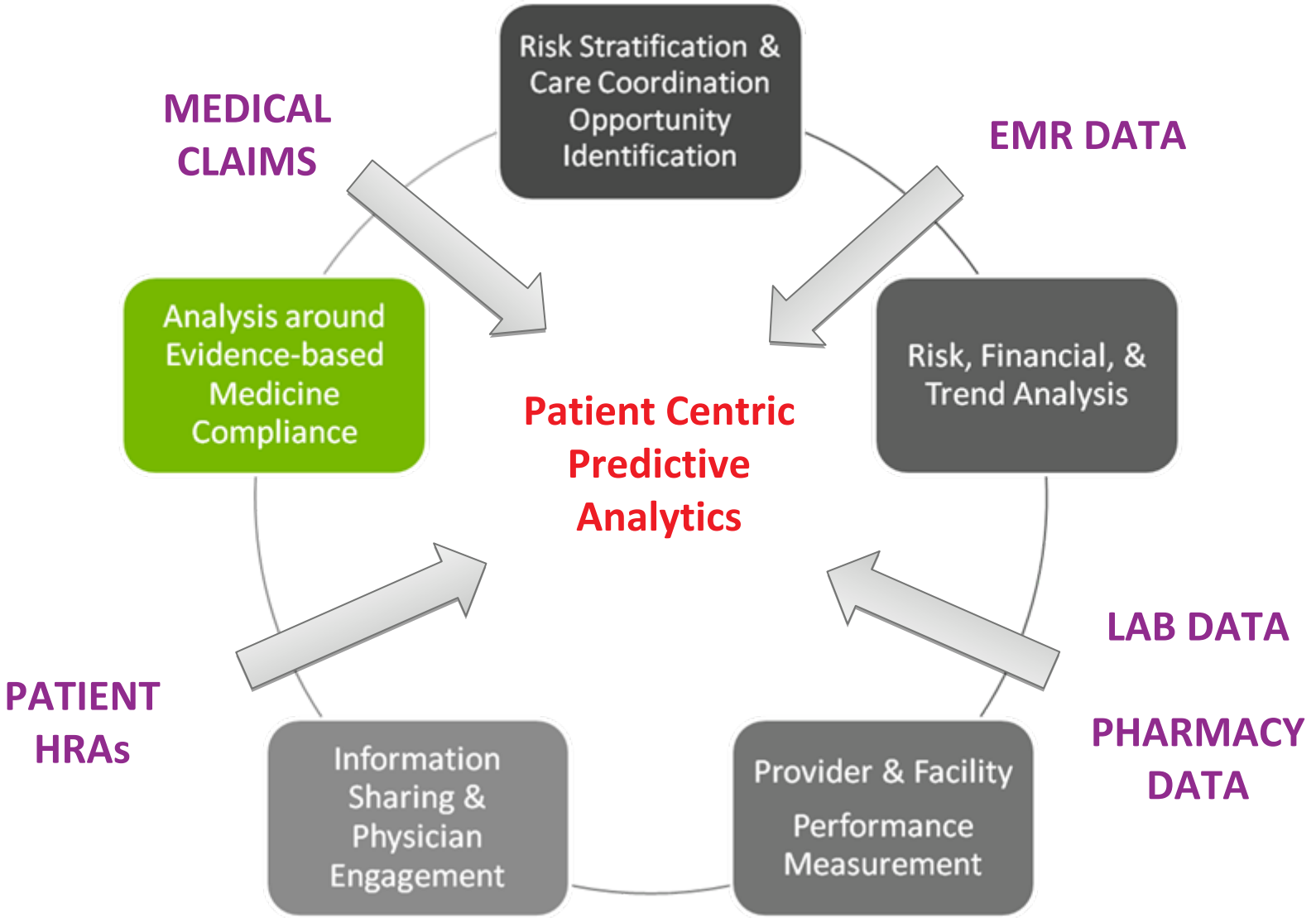
Distribution of Risk

- Average costs, average risk mean less than where risk is distributed
- Expert stratification = true risk distribution

Predict Future Risk

- Average costs, average risk are not as meaningful as future risk
- Decisions driven by future risk

Multiple Sources and Uses of Data



Forecasted Cost (Index, Percentile Rank and Category)

"What is the level of risk and the related forecasted cost of care for this patient (or population) for the next 12 months?"

Impact Action:

- Use to understand the movement of risk and cost.
- Use to quantify an opportunity.
- Use to prioritize.

Predict Inpatient Hospitalizations & ER Visits

"What is the <u>overall</u> risk for admissions and/or ER visits for this patient or population, and what will it cost for this patient?"

Impact Action:

- Use to identify a list of patients at risk for these high cost events.
- Combine with patient's Risk Drivers to create care/action plan.

Predict Risk Based on Non-compliance to Chronic Care Guidelines/Rx

"How much of the patient's or the population's risk is driven by gaps in evidence-based care protocols?"

Impact Action:

Use in combination with Risk Drivers and Gaps in Care measures to prioritize and close the gaps.

- Improve health
- Reduce financial risk

Predict Patient Engagement

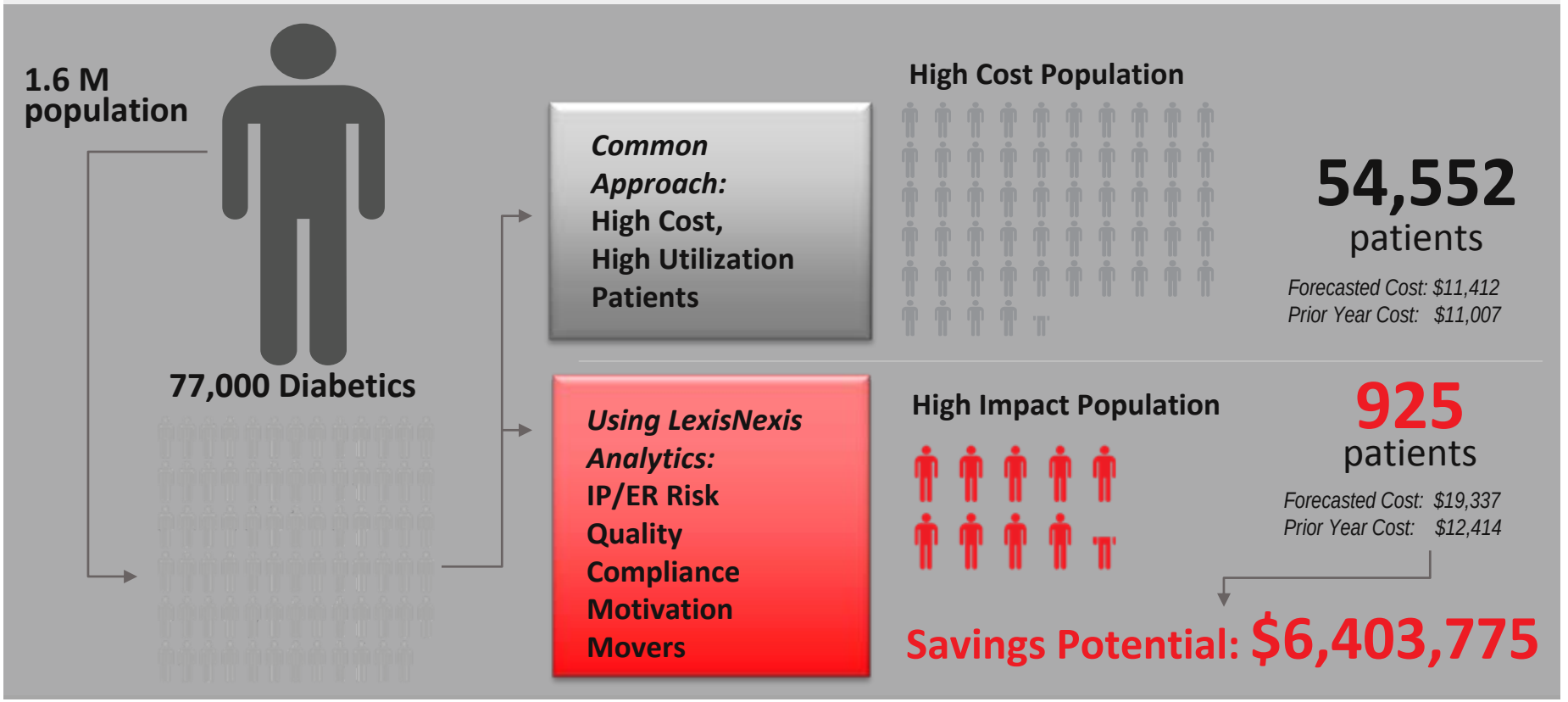
"How motivated does this patient or population appear to be in self-managing their health care?"

Impact Action:

Use to identify patients that are most likely to engage in programs & conversations regarding health improvement.

Putting the Predictions to Work

- We identify those patients who are the most actionable and will benefit most from intervention.
- We apply additional risk predictions: risk of acute event, those not receiving appropriate services
- We can incorporate patient motivation: Will they follow the care manager recommendations?



Once the Population Is Identified, Inform Individual Plans with Patient-specific Underlying Drivers of Risk and Costs

Ruth
50 years old
Diabetes and hypertension
Forecasted Annual Cost of Care: $15,245
- 3 inpatient days
- 1 ER visit
- $1,528 for medications

Maria
50 years old
Diabetes and hypertension
Forecasted Annual Cost of Care: $14,993
- 3 inpatient days
- 1 ER visit
- $1,568 for medications

Risk

Post operative infection	Other
Uncontrolled diabetes	Catastrophic disease
Renal failure	**Stroke**
Peripheral neuropathy	**Peripheral arterial disease**
Cellulitis	**AMI**

Post operative infection	Other
Uncontrolled diabetes	Catastrophic disease
Renal failure	Stroke
Peripheral neuropathy	Peripheral arterial disease
Cellulitis	AMI

Treatment Plan

1. Blood pressure control
2. Anti-platelets
3. Smoking cessation
4. Blood lipid control
5. Exercise/weight loss
6. HbA1c measurement

1. Nephropathy preventions
2. Improved glycemic control
3. HbA1c measurement
4. Foot care
5. Medical nutrition therapy
6. Blood pressure control

Change patients' future health with care plans based on clinical measures, not just costs

The Impact

Using Predictions in Population Health Management

KNOW

•Identify and stratify patients by condition and risk

UNDERSTAND

•Identify drivers of risk and cost for the future

FOCUS

•Identify patients who are most impacted by intervention

IMPROVE

•Reduce unnecessary utilization and cost

•Identify gaps in care for chronic conditions, preventive services and maintenance medications

COMMUNICATE

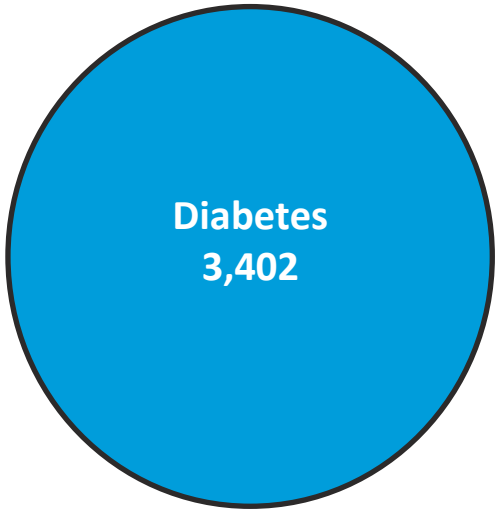
•Demonstrate value to stakeholders

Case Study 1: Finding Most Actionable Patients with Analytics

UTILIZATION DRIVEN STRATIFICATION

Looking at past risk

Condition Driven, High Dollars

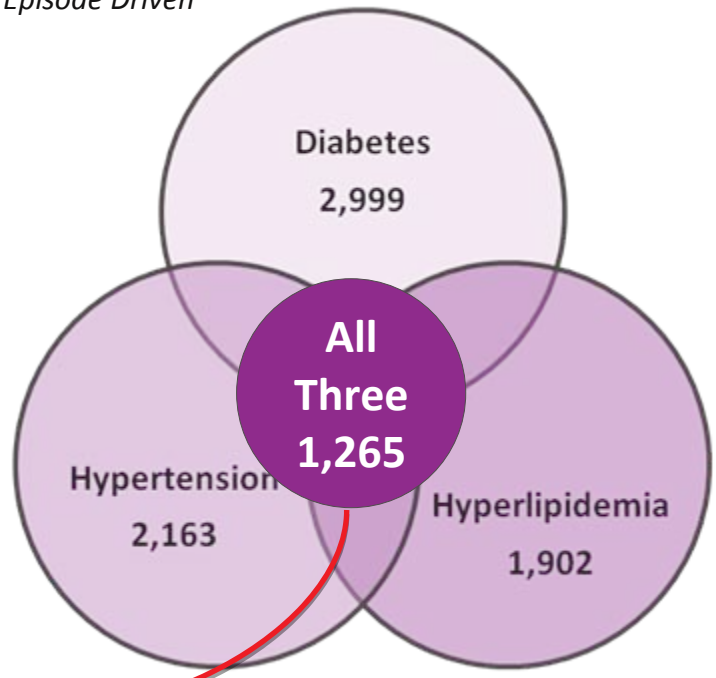


VS.

ANALYTICS DRIVEN STRATIFICATION

Looking at future risk

Episode Driven



Analytics Driven Stratification Results

TriMorbid Population (1265)

(Diabetic, Hypertensive, Hyperlipidemia)

- Highly Motivated (326)
- Risk Driver – Heart Disease (410)
- Risk Driver – Kidney Disease (312)

Case Study 2: Analysis of Highly Engaged Members

How is the projected overall **22.3%** increase in cost distributed across the highly motivated members?

Risk Category	# Highly Motivated Members	Avg Total Cost	Avg Forecasted Cost	% Change
Risk Category 5 (High)	290	$40,956	$39,338	-4.1%
Risk Category 4	632	$8,719	$13,022	33.0%
Risk Category 3	589	$3,389	$7,478	54.7%
Risk Category 2	312	$1,787	$4,796	62.7%
Risk Category 1 (Low)	137	$1,296	$2,512	48.4%
ALL HIGHLY MOTIVATED	**1,960**	**$10,265**	**$13,206**	**22.3%**

Case Study 2: Where to Start – Analyzing Level 2 Risk, Highly Engaged

Participation in Programs – **Risk Level 2**

Program	# Highly Motivated Members	# Members when Excluding Malignancies & Renal Failure
Complex Case Management	0	0
Disease Management	40	39
Wellness with Coach	94	94
Wellness without Coach	48	48
No Participation	130	130
TOTAL	312	311

Case Study 3: LexisNexis Analytics Helped Improve Care Coordination, Leading to Measurable Results (First Year Using Predictive Analytics)

Large comprehensive health-care network that provides health-care services.

- *~300,000 members*
- *Consistently recognized for quality*
- *First year was a focus on transition to Population Health Management*

CREATED A PROVIDER AND HEALTH PLAN PARTNERSHIP TO:

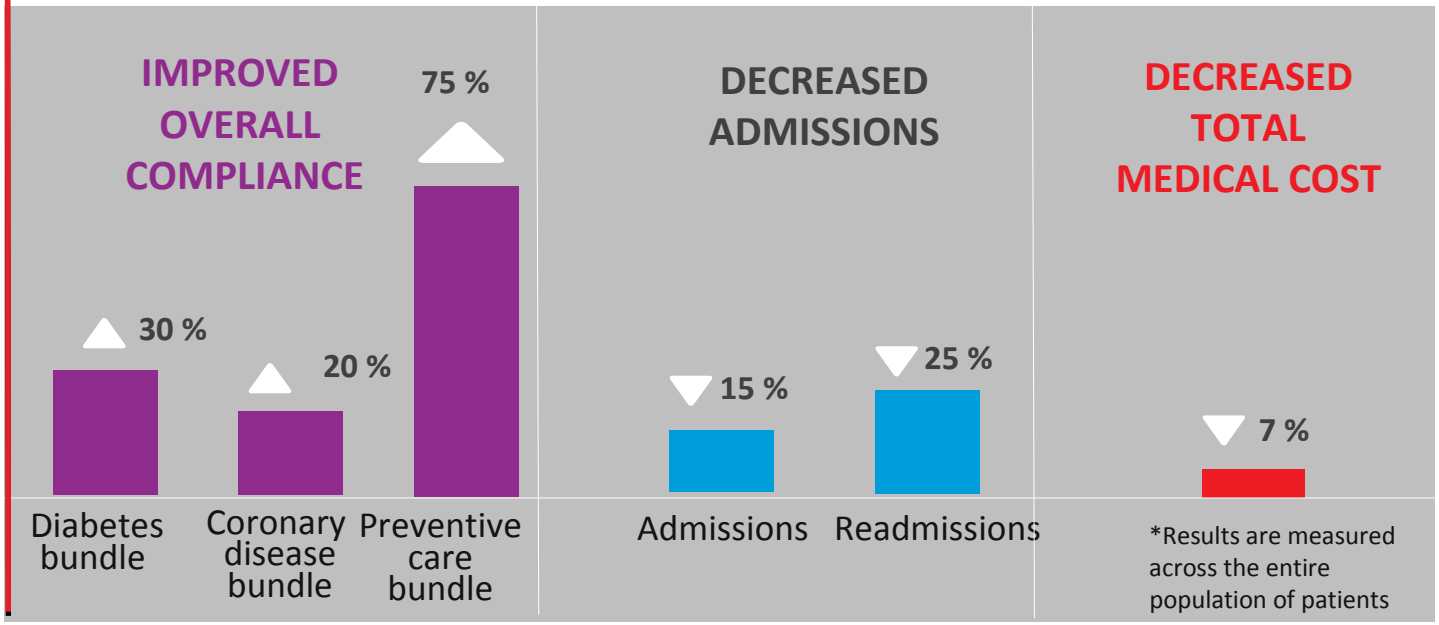
- Improve care processes and outcomes for the individuals and the population
- Improve the quality and efficiency of care

DEVELOPED "DISEASE BUNDLES" TO MEASURE PROGRESS

Example: Preventive care bundle that includes diseases such as cancer, lipid, diabetes and chlamydia screening and immunization

IDENTIFIED CASES USING PREDICTIVE ANALYTICS AND POST-DISCHARGE INFORMATION

Uses risk ranking and mover identification



Conclusion

Using Predictions to Drive Improvements in Population Health Management

The past does not equal the future for a patient or a population.

- Study the historical services to understand and to be able to articulate what has happened, but…
- If you want to create clinical impact and drive results (clinical, financial, etc.), then you must focus on the future.

You need to always be asking yourself:
"So what can I do about it?"

- You need Clinical Analytics elements that are specifically designed to show you things that you **CAN DO** to make an impact. (Avoiding "needle in the haystack")

Goals with Analytics

Challenge

Data Sources, Costs, Engaging Patients

- Stratification, based on Risk Drivers
- Identify immediate interventions
- Improve health of populations

Opportunity

Data Sources, Action, Focus

- Enhance analytics with new data sources
- Improve care coordination & health coaching
- Communication & feedback to physicians

Impact

Enhance Patient Engagement

Enable Risk Sharing with Physicians

- Reimbursement tied to patient care & outcomes
- Assist in population health management

Thank You!

LexisNexis applies distinctive capabilities to help payers reduce costs of care and improve efficiency while improving patient outcomes through population health management

Reduce costs of care and improve patient health with an accurate understanding of patient-specific risk and motivation drivers

Empower staff to work efficiently and productively with integrated, easy-to-use data and analytics tools

Support value based payment models through severity adjusted physician performance evaluation

Contact Information

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