GE Healthcare IT

From treating illness to managing health

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Imagination at work.

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HEALTHCARE PROFESSIONALS ARE RESPONSIBLE FOR MAKING INDEPENDENT CLINICAL DECISIONS AND APPROPRIATELY BILLING, CODING AND DOCUMENTATION THEIR SERVICES. This example is not intended to interfere with a health care professional’s independent clinical decision making. Other important considerations should be taken into account when making purchasing decisions, including clinical value. The health care provider has the responsibility, when billing to government and other payers (including patients), to submit claims or invoices for payment only for procedures which are appropriate and medically necessary and in accordance with applicable laws. You should consult with your reimbursement manager or healthcare consultant, as well as experienced legal counsel, prior to any expansion of service.

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Healthcare is under pressure

Chronic Diseases[1,2,3,4]

# of Physicians/ Specialists[5,6,7,8]

Medical Errors[10]

Variability in Treatment[9]

Patient Care Experience

Results: Raising costs, waste, and inefficiencies

1 Baseline year 2006 - http://www.who.int/mediacentre/news/releases/2003/pr27/en/
2 Baseline year 2006 - http://icds.uoregon.edu/wp-content/uploads/2011/07/brookmeyer2007.pdf
3 Baseline year 2006 - http://www.who.int/cardiovascular_diseases/en/cvd_atlas_15_burden_stroke.pdf
4 Baseline year 2006 - http://depts.washington.edu/rfgh/wordpress/wp-content/uploads/2011/04/Global-burden-of-chronic-dz-JAMA-2004.pdf
5 https://www.aamc.org/download/286592/data/
6 http://pr.euractiv.com/pr/possible-shortage-two-million-health-care-workers-2020-eu-taking-action-prevent-impending-crisis.
7 http://www.chinadaily.com.cn/china/2011-07/07/content_12858248.htm.
8 http://www.reuters.com/article/2013/06/28/us-brazil-doctors-idUSBRE95R13N20130628
9 Sept 2014, Peer360 research report – Unnecessary Imaging, Up to $12 Billion Wasted Each Year
10 *JAMA* study of diagnostic errors

A convergence of enabling technologies is setting the stage for industry transformation

1 Internet of Things

"Hospital of Things" plethora of devices

Accelerating Bio-sensor market/use

Mobile healthcare explosion – $27B by 2017[1]

2 Intelligent Machines

Machines protecting and treating patients

Devices for new care givers and settings

Algorithms as updatable content

3 Big Data

High volume of data from physiology monitoring

Care shift from population median to high-def individual

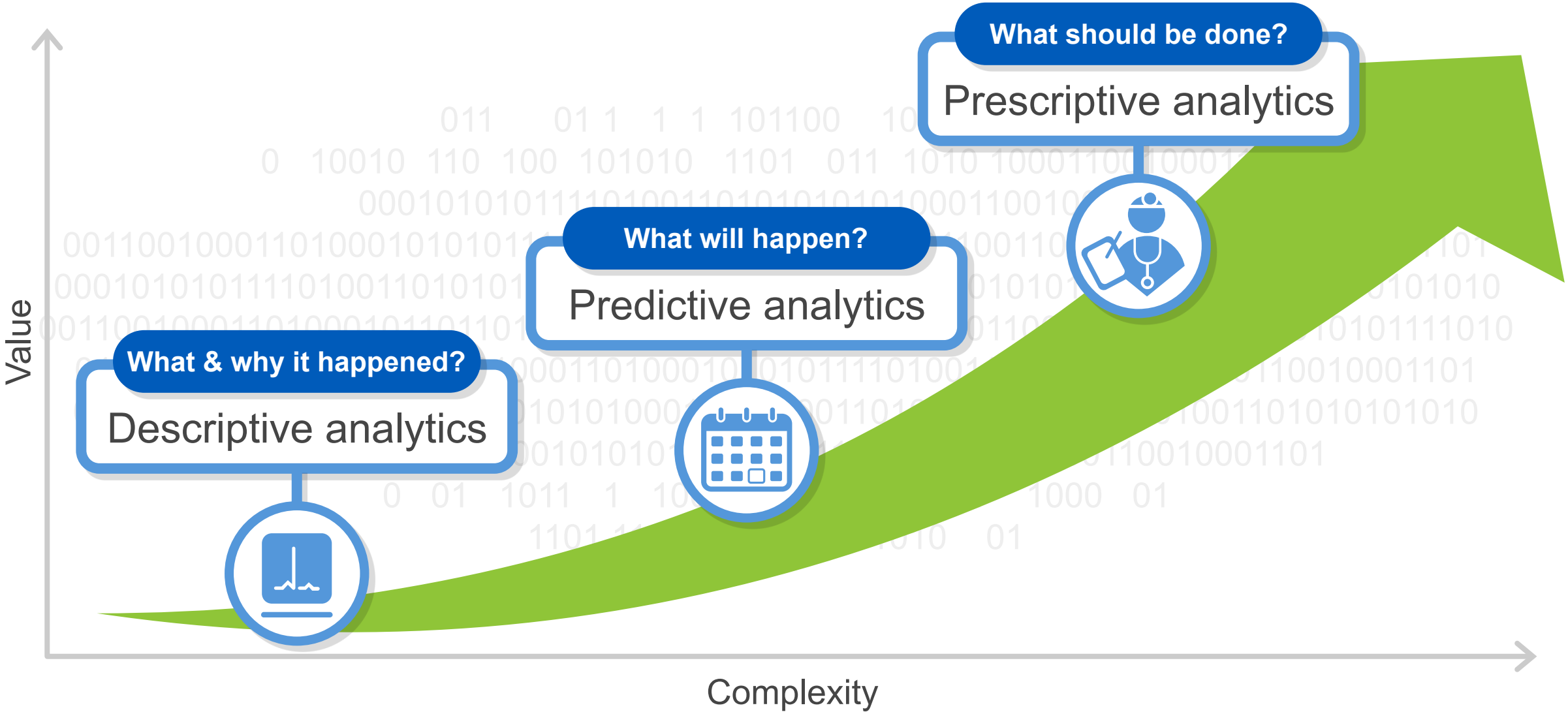
4 Analytics

Forecasting and predicting future health

End of fee-for-service models drives data collect and analysis

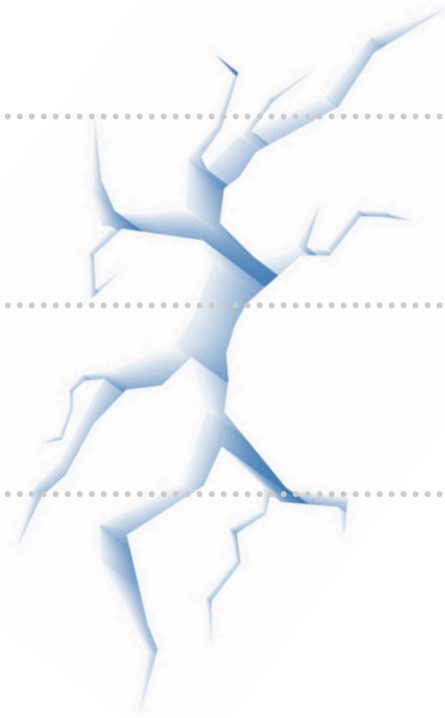
1 $27B by 2017 for Mobile health services:
The market for mHealth services has now entered the commercialization phase and will reach $26 billion globally by 2017 according to new *"Global Mobile Health Market Report 2013-2017"* by research2guidance. The report is one of the leading publications in the mHealth market. Companies that have purchased previous editions of the report includes: Agfa Healthcare, DTAG, Fresenius, Fujitso, GE Healthcare, LG, Nokia, Novartis, Pfizer, Qualcomm, Roche, Roland Berger, Sanofi Aventis and many more.

Big Data analytics – maturity model and value



A transformational shift happening in healthcare delivery

Past	Future
Patient care	Population care
Episodic of care	Clinical pathway
Cure the symptom	Discover the cause
Heal the sick	Prevent the sickness



Efficient hospital operations

Optimize Patient Safety & Security

- ER returns within 72 hours
- Hospital induced patient accidents

Efficiency & Performance

- Patient wait times and diagnosis turnaround time
- Asset & labor utilization rates

Costs Savings

- Material/equipment consumption rates
- Bed blockers (Length Of Stay > 30 days)

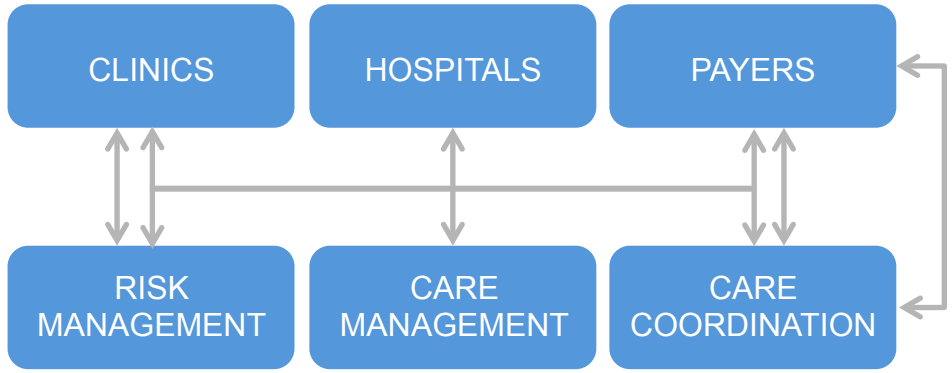
Clinical Insights

- Data algorithm to predict sepsis[1]
- Data algorithm to predicted future risk of metabolic syndrome[2]

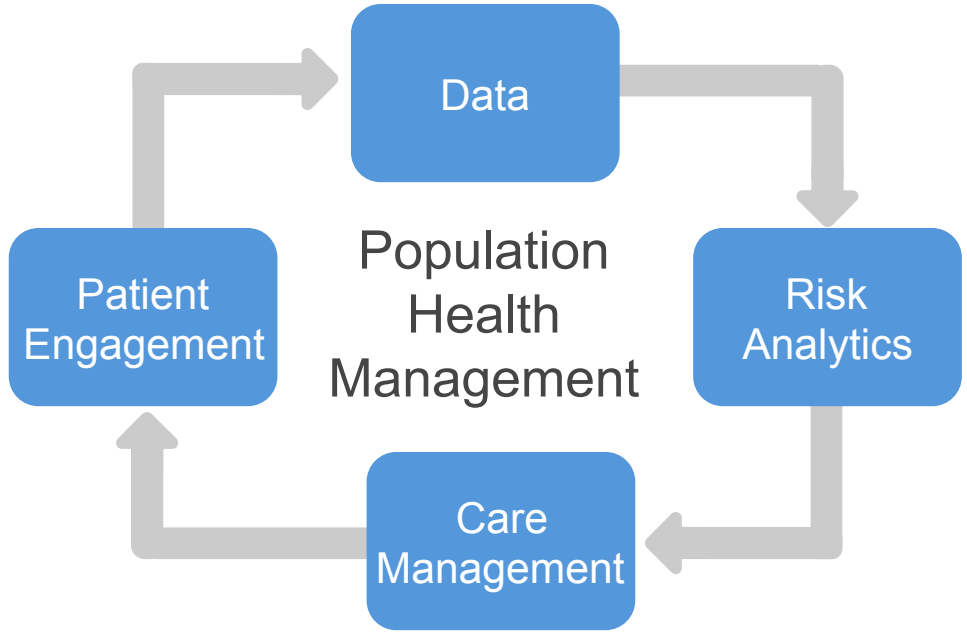
1 Gregory B. Steinberg, MB, BCh; Bruce W. Church, PhD; Carol J. McCall, FSA, MAAA; Adam B. Scott, MBA; and Brian P. Kalis, MBA - See more at: ttp://www.ajmc.com/publications/issue/2014/2014-vol20-n6/Novel-Predictive-Models-for-Metabolic-Syndrome-Risk-A-Big-Data-Analytic-Approach#sthash.yxMBQg2L.dpuf

2 Puopolo KM, Draper D, Wi S, et al. Estimating the probability of neonatal early-onset infection on the basis of maternal risk factors. Pediatrics 2011;128:e1155-63.

Effective coordination of care will require new capabilities



Standardized, evidence-based and connected care



Improve quality

Reduce cost

Increase access

Population health management: Key challenges

Customer Challenges

1	Population risk management	*"How can I predict the clinical and financial risk of our patient population?"*
2	Care coordination and management	*"How can I best care for our high-risk patients with available resources?"*
3	Patient engagement	*"How can I more actively engage patients so they take a more proactive role in their own care?"*
4	Connecting disparate data systems	*"I have a lot of IT systems – can I get one view of the patient?"*

GE Healthcare IT Solution Portfolio

Integrated Care Solutions

Enterprise Imaging

System-wide

- Visualization
- Workflow
- Collaboration
- Archiving

Care Delivery Management

Ambulatory Care

- Ambulatory EMR
- Clinical Quality Reporting

Care Areas

- High Acuity
- Maternal-Infant
- Cardiology
- Radiology
- Pathology Omnyx

Population Health Management

caradigm

- Data Control
- Healthcare Analytics
- Care Coordination & Management
- Wellness & Patient Engagement

Financial Management

Revenue & Risk Mgt

- Revenue Cycle Mgt
- Financial Risk Mgt
- EDI
- Practice Mgt

Profit Analytics

- Activity-Based Costing
- Contract Modeling
- Utilization Management

Workforce Management

API HEALTHCARE

- Time & Attendance
- Staffing & Scheduling
- Patient Classification
- HR & Payroll

Enhance diagnostic speed & confidence

Make care pathways more productive

Lower cost of treating chronic disease

Improve health system profitability

Optimize workforce productivity

Caradigm Population Health Management Solution addresses critical challenges

Customer Challenges		Customer Outcomes[1]
1 *"How can I predict the clinical and financial risk of our patient population?"*	→	Ability to prioritize limited clinical resources to patients with highest potential for impact
2 *"How can I best care for our high-risk patients with available resources?"*	→	IT enabled evidence-based care management increase efficiency by 25% and reduce hospitalization of chronic patients by 40%
3 *"I need to engage patients to take a more proactive role in their care."*	→	Provide patient portal with 200+ health empowerment tools
4 *"I have a lot of IT systems – can I get one view of the patient?"*	→	Aggregated, normalized patient data available at the point of care

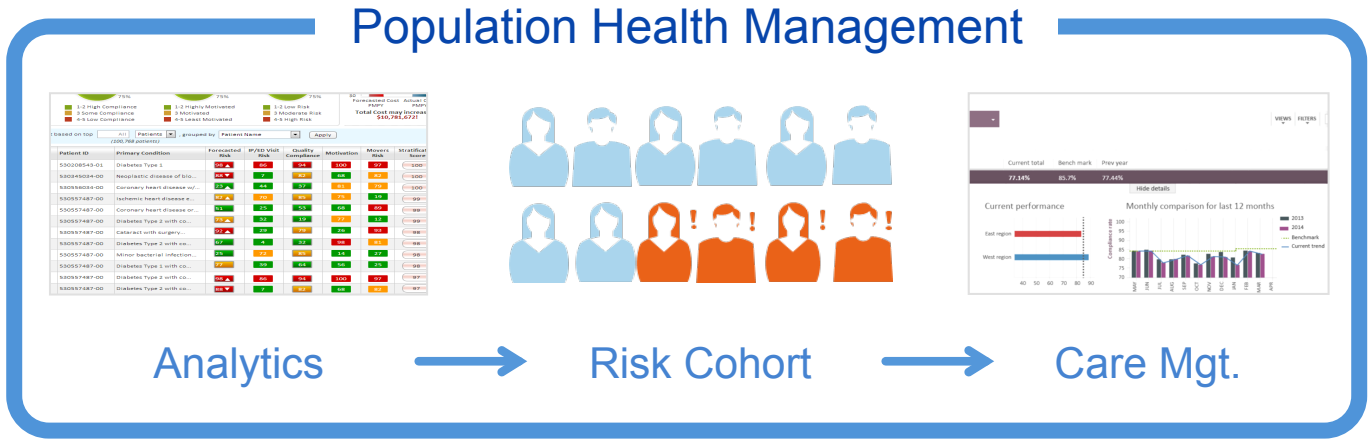
[1] "Caradigm™ Care Management Propels Geisinger Population Health Strategy into the Future," Jan. 2014. Results may vary and do not constitute a representation, warranty or performance guarantee.

Population health management is key to improving care quality, and reducing cost in a value-based care delivery model

- Typically 25–30% of high-risk patients drive greater than 70% of costs
- Nearly 5–10% of the population are complex, polychronic and require dedicated care management

Caradigm customers have reduced hospitalization of chronic patients by 40%

Caradigm customers have increased efficiency of their care managers by 25%



Source: Customer metrics program. Results may vary and do not constitute a representation, warranty or performance guarantee.

Case Study: **Geisinger Health Plan**

Caradigm Population Health Management Solution

Danville, PA | HMO serving 450,000 members

Challenges

Disparate information, applications and data stores

12-15 applications per user for core business tasks

Manual data aggregation, disparate workflows, lack of automation

Inconsistent, variable care depending on location

Solution

PRODUCTS:
MEDai Risk Management, Caradigm Care Management

SERVICES:
Joint development with customer leveraging on-site consulting, Continued 24x7 technical support after go-live, On-site education and training

ECOSYSTEM:
MEDai analytics

Outcomes

Longitudinal patient record for use by the community

Common workspace to support integrated care teams

Normalized data, automated workflows and analytics to stratify, measure utilization, productivity, and outcomes

Tools for standardized, evidence-based care with decision support

All those folks who are part of a population health strategy – the primary care physicians, care managers, nurses, pharmacists, radiologists, respiratory therapists and PTs working out of multiple systems with no intuitive decision support, no transparency of data – that's what we hope to change with Caradigm's solution propelling our population health strategy into the future.

4/18/2015 – Janet Tomcavage, SVP & Chief Value-Based Care Strategic Officer

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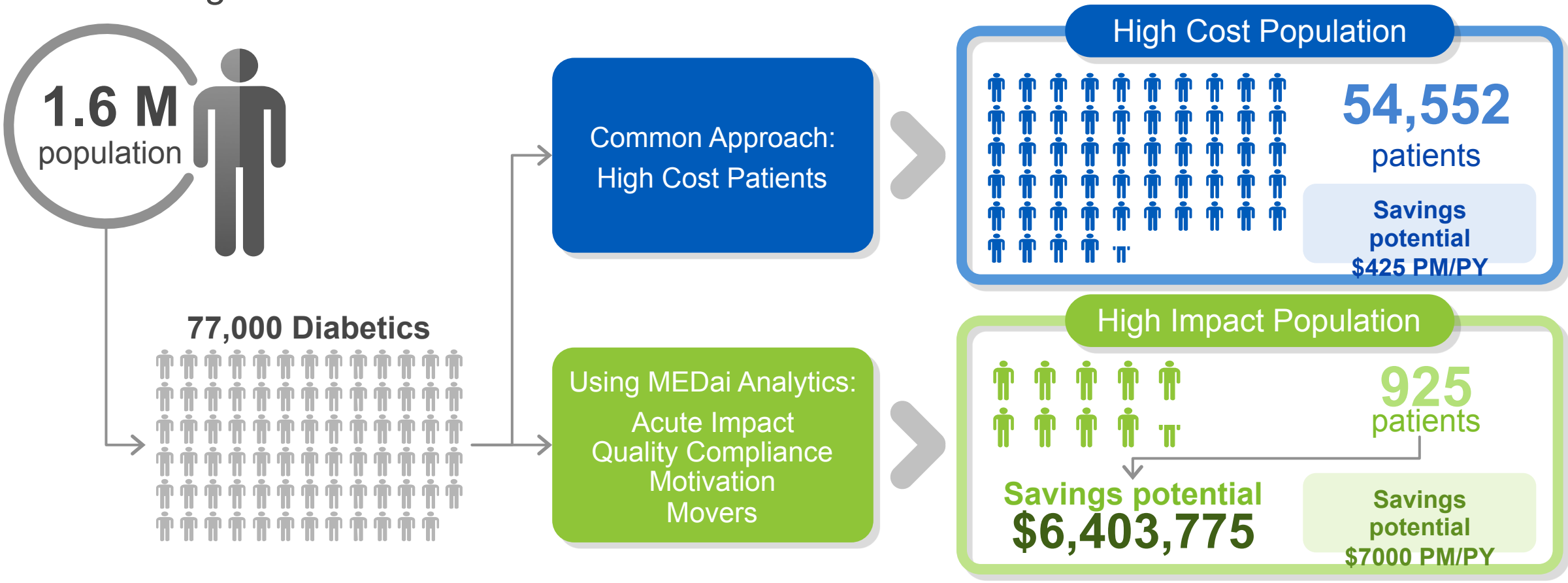
Data: **Clinical** – Population health management

Risk management and return on intervention

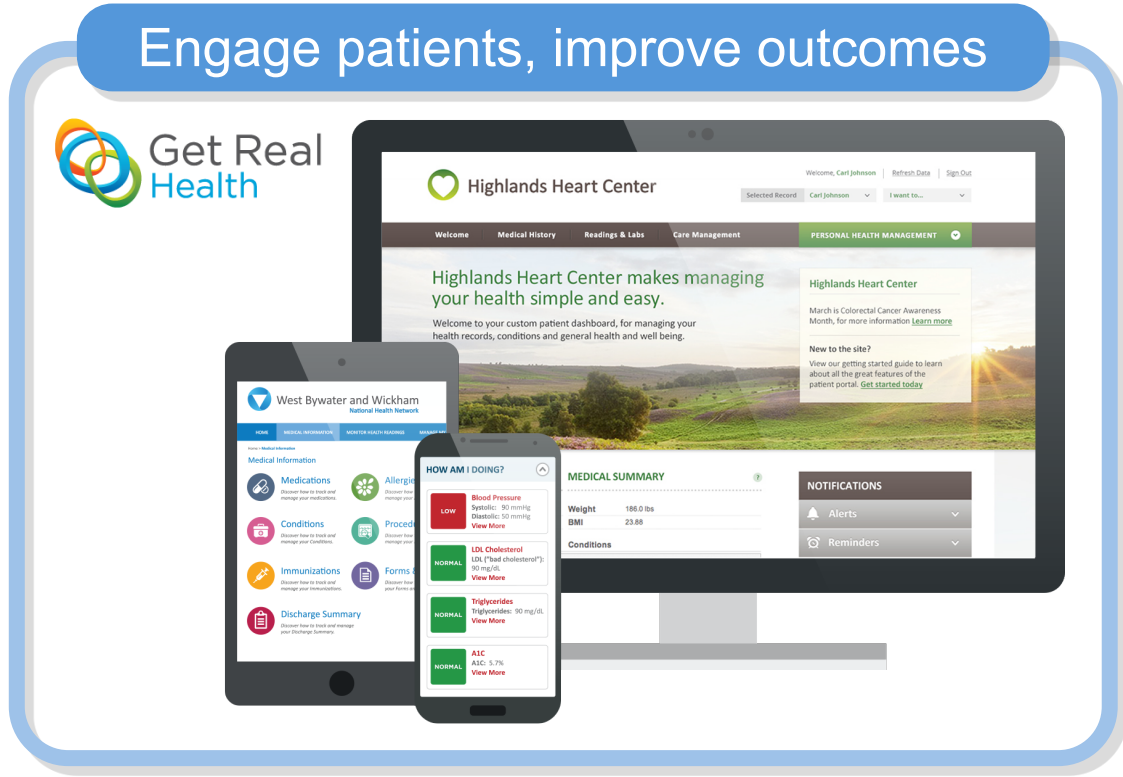


Focus on the right interventions with the most actionable patients

Risk Management, powered by LexisNexis® with MEDai science, identifies populations of patients, stratifies them (by risk, utilization, motivation and other factors), predicts costs and potential savings, and supports care management to drive better outcomes. The numbers represented in this slide resulted from an internally developed scenario specifically for demonstration purposes to show the value of combining the predictive results from Caradigm's MEDai to find the people who would be most impacted by intervention and management over the next 12 months rather than focusing on only those who were the highest cost, highest risk retrospectively (past 12 months).

Wellness and Patient Engagement – reach from everywhere

- ✓ Patient-friendly tools and applications
- ✓ Reach from everywhere
- ✓ Messaging, alerts, communication, self-management action plans
- ✓ Programs focused on chronic care management, care transitions and readmission reduction



Empower patients using convenient and high impact patient engagement tools and resources

A trusted partner for your population health journey

1. Strong focus on software-enabled population health solutions
2. Committed to continued innovations that improve patient health outcomes
3. Trusted partner in driving measurable outcomes
   Our success is defined by your success