Telligen

Population Health Management

HIMSS 2014

Healthcare Intelligence

Disclosure

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- Paul Mulhausen and Brian Barry are employed by Telligen.

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Session Objectives

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- You will be able to define population health management (PHM) and population medicine.
- You will recognize the opportunity to use PHM solutions to achieve better care, healthier populations, and lower costs.
- You will understand the keys to a successful IT implementation of a PHM solution.
- You will apply population health management models and the chronic disease pyramid to chronic disease prevention and management.

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Iconic Image of Western Medicine

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The Doctor 1849, Luke Fildes

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Iconic Image for Population Health Management

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John Snow Breaks the Handle on the Broad Street Pump, 1854

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What is Population Health Management?

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Is it….

- The relative investment into healthcare services vs. social services to support health ?
- The management of resources in a population of patients in a capitation payment arrangement health plan ?
- The management of healthcare resources for a geographic population served by a healthcare system ?
- The coordination of care for a panel of patients cared for by a clinical service or healthcare system ?
- Employee Wellness Programs ?

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What is Population Health Management?

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- The relative investment into healthcare services vs. social services to support health ?
- The management of resources in a population of patients in a capitation payment arrangement health plan ?
- The management of healthcare resources for a geographic population served by a healthcare system ?
- The coordination of care for a panel of patients cared for by a clinical service or healthcare system ?
- Employee Wellness Programs managing demand ?

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Population Health

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Population Health is a concept of health defined as *"the health outcomes of a group of individuals, including the distribution of such outcomes within the group"*.

Example Populations

- Geographic regions
- Nations
- Communities
- Employees
- Ethnic Groups
- Health Plan Members

Kindig and Stoddart. Am J Pub Health 2003; 93(3):380-383

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The Elements of Population Health

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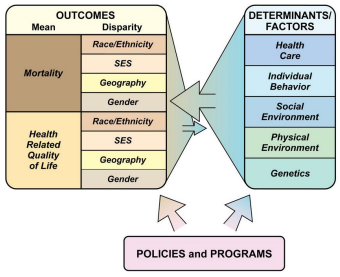

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What is Population Health Management ?

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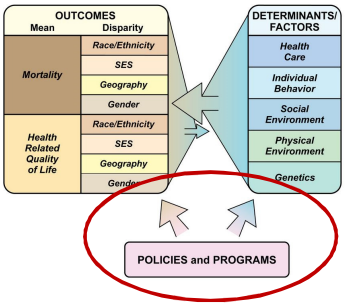

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Defining Population Health Management

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Improving the systems and policies that affect health care quality, access, and outcomes, ultimately improving the health of an entire population.

Editorial Board of the Journal *Population Health Management*

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Population Health Management Confusing Terminology

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- Population Health Management
- Population Management
- Population Medicine
- Empanelment
- Panel Management
- Public Health

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Population Medicine

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"The specific activities of the *medical care system* that, by themselves or in collaboration with partners, promote population health beyond the goals of care of the individuals treated."

Harvard Pilgrim Department of Population Medicine

http://www.improvingpopulationhealth.org/blog/2012/06/is-population-medicine-population-health.html

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The Rationale for Population Health
The US HHS National Quality Strategy

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- **Better Care:** Improve the overall quality by making health care more patient-centered, reliable, accessible, and safe
- **Healthy People/Healthy Communities:** Improve the health of the U.S. population by supporting proven interventions to address behavioral, social, and environmental determinants of health in addition to delivering higher-quality care
- **Affordable Care:** Reduce the cost of quality health care for individuals, families, employers, and government.

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The Rationale for Population Health Management

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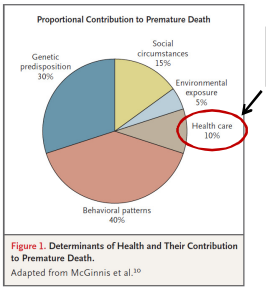

Figure 1. Determinants of Health and Their Contribution to Premature Death.
Adapted from McGinnis et al.[10]

Where we spend most of our national expenditures on

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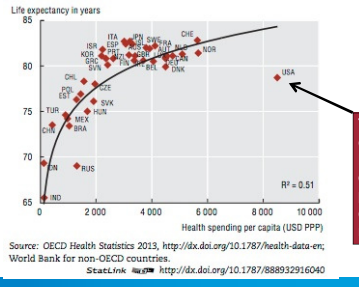
http://www.nejm.org/doi/pdf/10.1056/NEJMsa073350

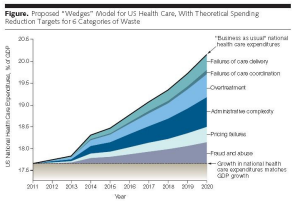
The Rationale for Population Health Management



Source: OECD Health Statistics 2013, http://dx.doi.org/10.1787/health-data-en; World Bank for non-OECD countries.
StatLink http://dx.doi.org/10.1787/888932916040

The higher amount of spending on health care in the US does not appear to produce commensurate results.

Rationale for Population Health Management



JAMA. 2012;307(14):1513-1516

"Current waste diverts resources from productive use, resulting in an estimated $750 billion loss in 2009."

IOM (Institute of Medicine). 2013. *Best care at lower cost: The path to continuously learning health care in America.*

Rationale for Population Health Management in Healthcare

- Complements the medical provider role as a consultant.
- Improves coordination of care in a system of complex care.
- Enhances recognition and closure of care gaps.
- Opportunity to intervene at root causes.

Population Health Management
Ten Steps of PHM

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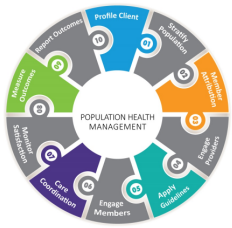

1. Profile Client	Define Population
2. Stratify Population	
3. Member Attribution	
4. Engage Providers	
5. Apply Guidelines	Gaps in Determinants
6. Engage Members	
7. Care Coordination	Apply Policy
8. Member Satisfaction	
9. Measure Outcomes	Monitor Outcome
10. Report Outcomes	

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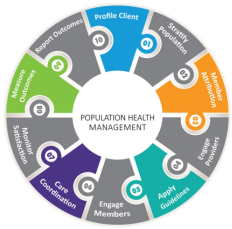
Population Health Management
Ten Steps of PHM



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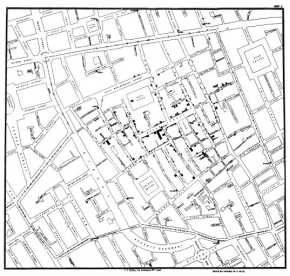
8. Measure Outcomes	Monitor Outcome
9. Report Outcomes	
10. Profile Client	

Population Health Management
Hot Spotting – What's Old is New



https://youtu.be/id06Y-P58UE

Population Health Management
Disabling the Broad Street Pump

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Steps in PHM	Ending the Broad Street Cholera Epidemic
1. Define the Population	People living in the Soho District of London
2. Stratify or characterize the population	Those with cholera and those without cholera, and where they live
3. Identify gaps in determinants	Water from Broad Street Pump
4. Apply policy or procedure to close the gaps in determinants	Remove the Broad Street Pump Handle
5. Monitor the outcome	Cholera epidemic stops

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Population Health Management
What's Different Now?

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- Costly Disease Treatments
- Chronic Disease
- Aging Populations
- Complex Healthcare Settings
- Capacity to access and analyze information

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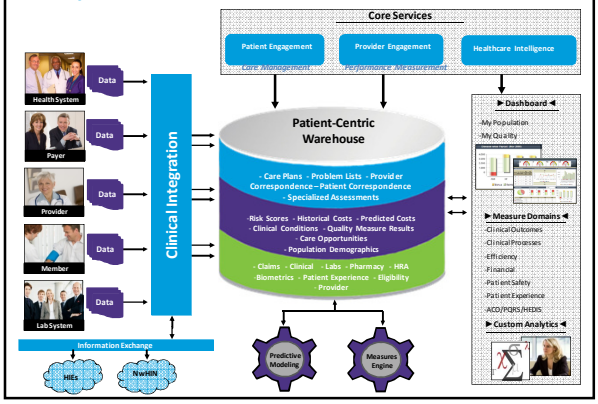
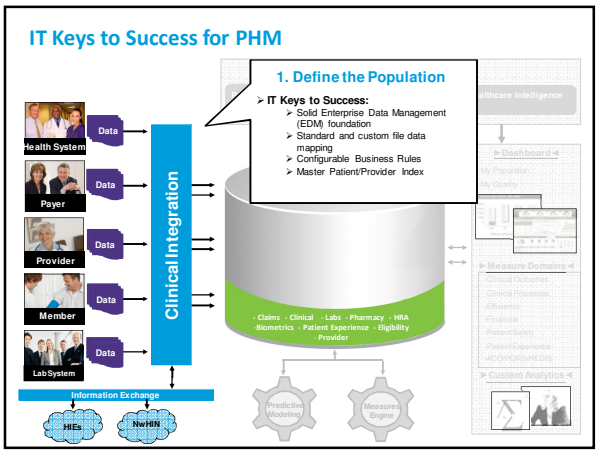
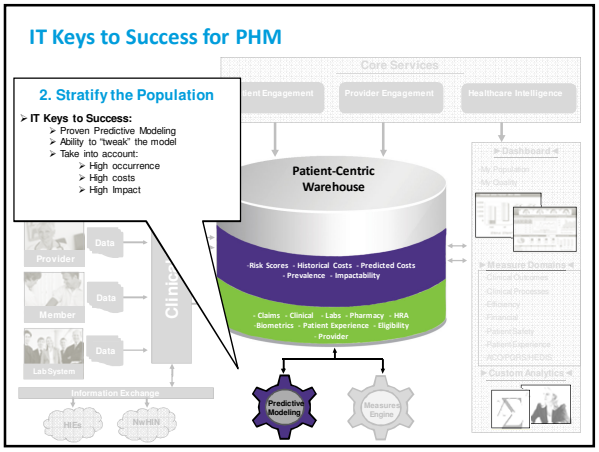
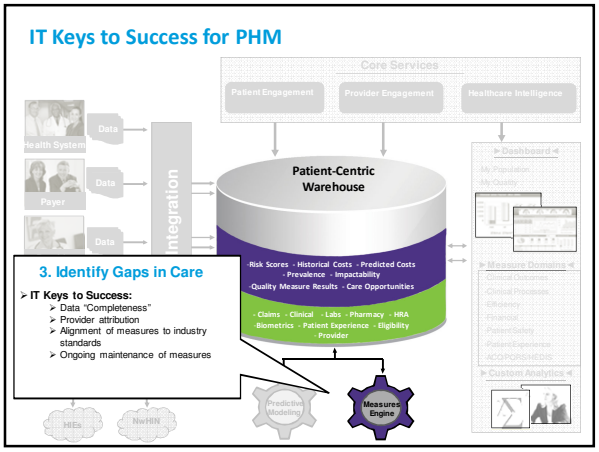
IT Keys to Success for PHM




IT Keys to Success for PHM
1. Define the Population
IT Keys to Success:
Solid Enterprise Data Management (EDM) foundation
Standard and custom file data mapping
Configurable Business Rules
Master Patient/Provider Index
Health System
Payer
Provider
Member
Lab System
Data
Clinical Integration
Information Exchange
HIEs
NwHIN
Claims · Clinical · Labs · Pharmacy · HRA
Biometrics · Patient Experience · Eligibility
Provider
Predictive Modeling
Measures Engine
Core Services
Patient Engagement
Provider Engagement
Healthcare Intelligence
Dashboard
Measure Domains
Custom Analytics


IT Keys to Success for PHM
2. Stratify the Population
IT Keys to Success:
Proven Predictive Modeling
Ability to "tweak" the model
Take into account:
High occurrence
High costs
High Impact
Core Services
Provider Engagement
Healthcare Intelligence
Patient-Centric Warehouse
Risk Scores · Historical Costs · Predicted Costs
Prevalence · Impactability
Claims · Clinical · Labs · Pharmacy · HRA
Biometrics · Patient Experience · Eligibility
Provider
Predictive Modeling
Measures Engine
Dashboard
Measure Domains
Custom Analytics


IT Keys to Success for PHM
3. Identify Gaps in Care
IT Keys to Success:
Data "Completeness"
Provider attribution
Alignment of measures to industry standards
Ongoing maintenance of measures
Core Services
Patient Engagement
Provider Engagement
Healthcare Intelligence
Patient-Centric Warehouse
Risk Scores · Historical Costs · Predicted Costs
Prevalence · Impactability
Quality Measure Results · Care Opportunities
Claims · Clinical · Labs · Pharmacy · HRA
Biometrics · Patient Experience · Eligibility
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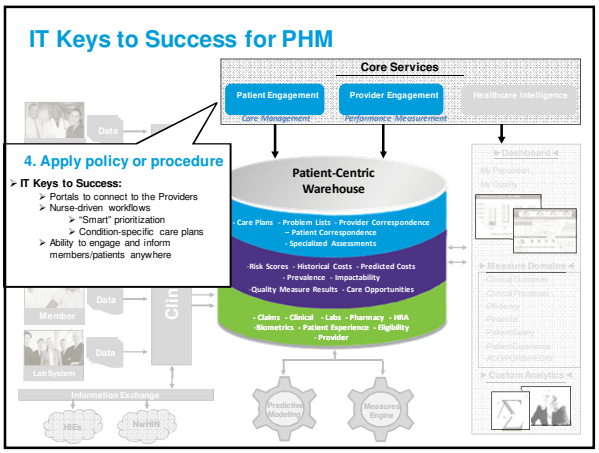
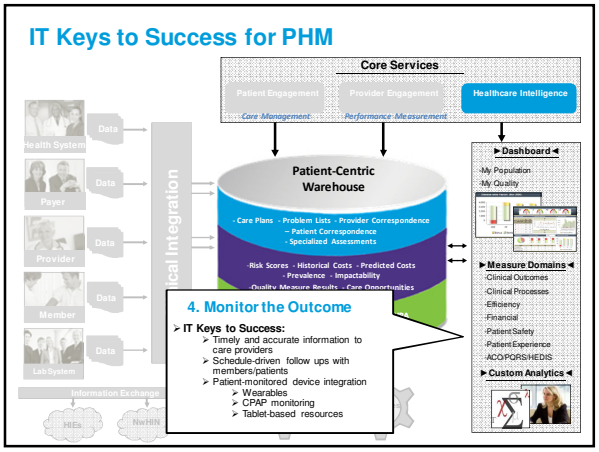

IT Keys to Success for PHM
Core Services
Patient Engagement
Provider Engagement
Healthcare Intelligence
Care Management
Performance Measurement
Patient-Centric Warehouse
Care Plans - Problem Lists - Provider Correspondence
– Patient Correspondence
- Specialized Assessments
Risk Scores - Historical Costs - Predicted Costs
- Prevalence - Impactability
Quality Measure Results - Care Opportunities
Claims - Clinical - Labs - Pharmacy - HRA
Biometrics - Patient Experience - Eligibility
- Provider
Predictive Modeling
Measures Engine
Dashboard
My Population
My Quality
Measure Domains
Clinical Outcomes
Clinical Processes
Efficiency
Financial
Patient Safety
Patient Experience
ACO/PQRS/HEDIS
Custom Analytics
Data
Member
Lab System
Information Exchange
HIEs
NwHIN
4. Apply policy or procedure
IT Keys to Success:
Portals to connect to the Providers
Nurse-driven workflows
"Smart" prioritization
Condition-specific care plans
Ability to engage and inform members/patients anywhere


IT Keys to Success for PHM
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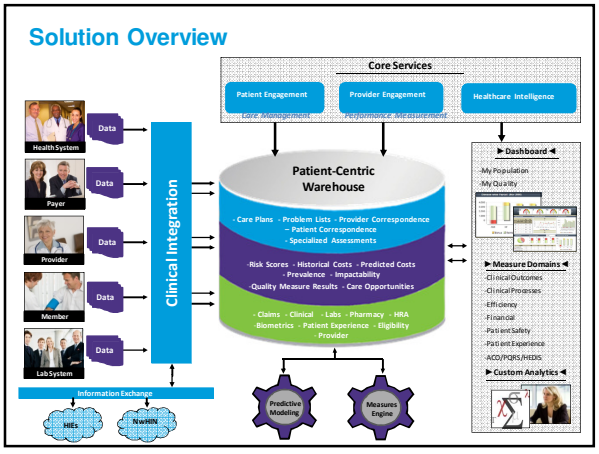
Custom Analytics
Health System
Payer
Provider
Member
Lab System
Data
Information Exchange
HIEs
NwHIN
4. Monitor the Outcome
IT Keys to Success:
Timely and accurate information to care providers
Schedule-driven follow ups with members/patients
Patient-monitored device integration
Wearables
CPAP monitoring
Tablet-based resources


Solution Overview
Core Services
Patient Engagement
Provider Engagement
Healthcare Intelligence
Care Management
Performance Measurement
Patient-Centric Warehouse
Care Plans - Problem Lists - Provider Correspondence
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NwHIN

Telligen "Future State" of PHM

- Automated alerts
  - Member: email, text messages, apps
  - Provider: care gaps, performance scores, CDS (integration with EHRs)
- Device integration
  - Mobile: disease, nutrition, socio-economics, gamification
  - Monitoring devices: pedometers, glucometers, scales, CPAP
  - Bi-directional Data integration: HIE, EHR, Public reporting
- Automated Intelligence/Natural Language Processing
  - Big Data; tap the value of unstructured data
- Financial/Actuarial modeling
- Social Networking
  - Care Team, Member self-management, chat rooms

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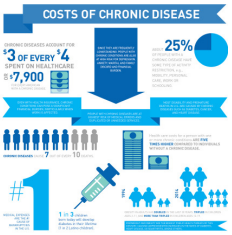
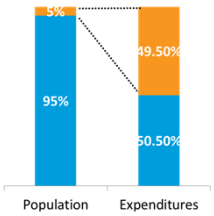
Chronic disease and concentration of healthcare spending





75% of healthcare dollars are spent on chronic disease, and
50% of all healthcare spending is spent on 5% of the population

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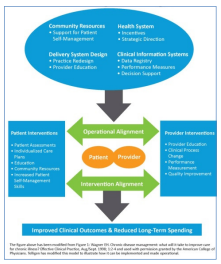
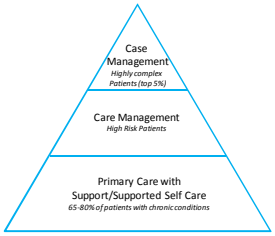
Population Health Models Addressing Chronic Disease

The Chronic Care Model



Pyramid of Care



Adapted from Nolte E, McKee M. Caring for people with chronic conditions. A health system perspective. McGraw Hill.

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Chronic Disease and PHM
A Case Study – SoonerCare HMP

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Steps in PHM	High Risk Care Management
1. Define the Population	SoonerCare Members with Common Chronic Disease
2. Stratify or characterize the population	Regression models to predict risk of utilization and expenditures: Tier 1. Highest Predicted Risk Tier 2. Next Highest Predicted Risk
3. Identify gaps in determinants	Care manager assessment Clinical registry of claims and quality measures

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Cerebrovascular Disease and PHM
A Case Study – SoonerCare HMP

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Steps in PHM	High Risk Care Management
4. Apply policy or procedure to close the gaps in determinants	Health coaching Self-management support Outreach for treatment and prevention Care Coordination Coordination of social services
5. Monitor the outcome	Closure in Care Gaps/ Rates of Hospitalization/Costs

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Inpatient Utilization Trends

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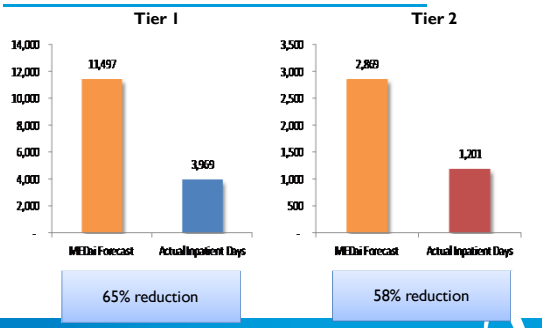

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ER Utilization Trends

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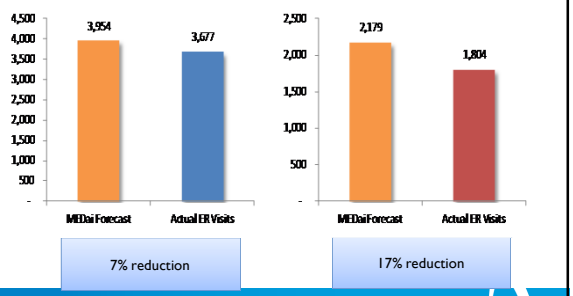

7% reduction

17% reduction

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Quality of Care Results

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Nurse Care Management	Practice Facilitation	Most Improved Measures
HMP participants performed better than the comparison group on 76% of disease-specific clinical measures	Improved on 83% of disease-specific clinical measures	Asthma, CHF, COPD, diabetes and hypertension

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Cost-effectiveness
Nurse Care Management

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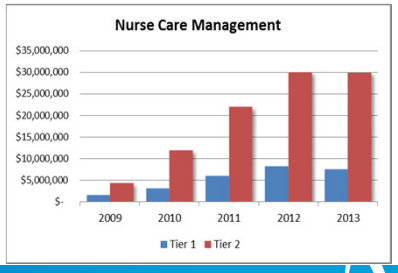
- Overall per member per month savings in medical expenditures runs a $32.62 deficit in the 1st 12 months, but results in savings of $342.67 after 13 months.

Aggregate savings of $124 million



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Take Home Points

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- Population Health Management strategies can be applied to the prevention, treatment, and care of patients.
- Population Health Models and models of risk stratification can guide the development and implementation of population management strategies.
- Approaches to care that incorporate population health management strategies can impact quality and cost of care.
- New information management technologies can help clinicians integrate population health management into their clinical work flow.

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