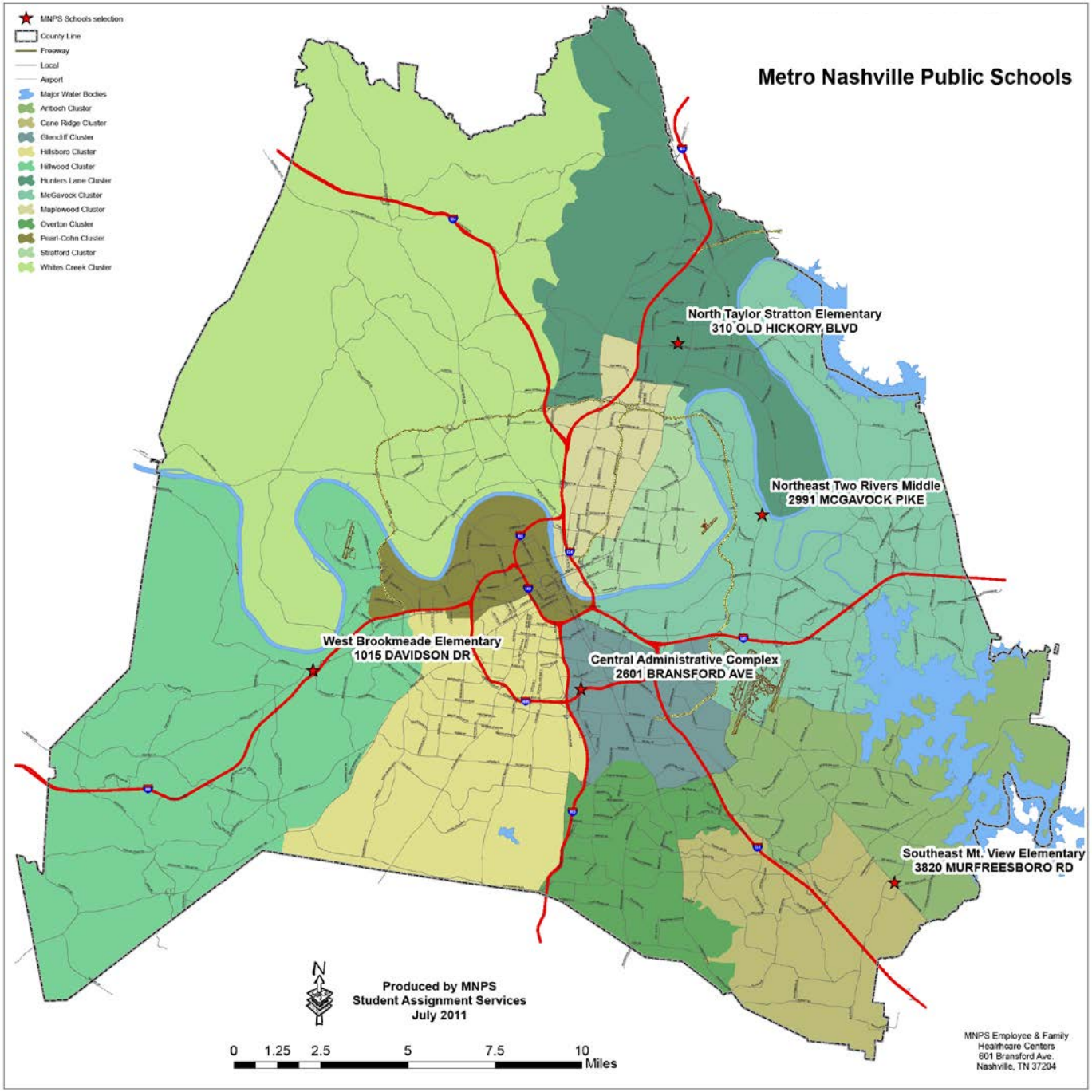
Optimize Comprehensive Health Data to Improve Workforce Health, Control Costs, & Drive Educational Outcomes

Continuance Health Solutions

Metro Nashville Public Schools

- 10,800 employees for 82,000 students.
- 140 work locations across 526 square miles.
- $792 million operating budget.
- $189 million (24%) attributed to health care costs, sick pay, disability, lost productivity, for actives & health care costs for retirees.
- Governed by health insurance trust.


MNPS Schools selection
County Line
Freeway
Local
Airport
Major Water Bodies
Antioch Cluster
Cane Ridge Cluster
Glencliff Cluster
Hillsboro Cluster
Hillwood Cluster
Hunters Lane Cluster
McGavock Cluster
Maplewood Cluster
Overton Cluster
Pearl-Cohn Cluster
Stratford Cluster
Whites Creek Cluster
Metro Nashville Public Schools
North Taylor Stratton Elementary
310 OLD HICKORY BLVD
Northeast Two Rivers Middle
2991 MCGAVOCK PIKE
West Brookmeade Elementary
1015 DAVIDSON DR
Central Administrative Complex
2601 BRANSFORD AVE
Southeast Mt. View Elementary
3820 MURFREESBORO RD
N
Produced by MNPS
Student Assignment Services
July 2011
0 1.25 2.5 5 7.5 10
Miles
MNPS Employee & Family
Healthcare Centers
601 Bransford Ave
Nashville, TN 37204

MNPS VISION

TO SUCCEED WE MUST

- Provide an **excellent teacher** in every class, for every student, every year…

WE BELIEVE

- Quality school staff is essential to academic excellence…
- **Metropolitan Nashville Public Schools will be the first choice for families.**

Excellence Involves Being In The Classroom

"We find large variation in adjusted teacher absence rates among schools. We estimate that each 10 days of teacher absences reduce students' mathematics achievement by 3.3 percent of a standard deviation."

"On average, public school teachers in the United States are absent five to six percent of the days schools are in session…U.S. teacher absence rates are nearly three times those of managerial and professional employees."

"Do Teacher Absences Impact Student Achievement? Longitudinal Evidence from One Urban School District" Raegen T. Miller, Richard J. Murnane, and John B. Willett, NBER Working Paper No. 13356 August 2007

Evolution in Process

2006

- Established mission: “To look beyond health care cost alone to the impact of poor health on the total health & productivity paradigm.”

2009

- Opened 5 onsite medical clinics
- Located within 15 minutes of any worksite
- Same day access with less than 15 minute wait

2013

- Value-based plan design
- Integrated Data Warehouse/Enhanced Analytics
- ROI/impact analysis

2014

- Onsite & integrated disease management & wellness
- Focused outreach to under-served, at-risk populations

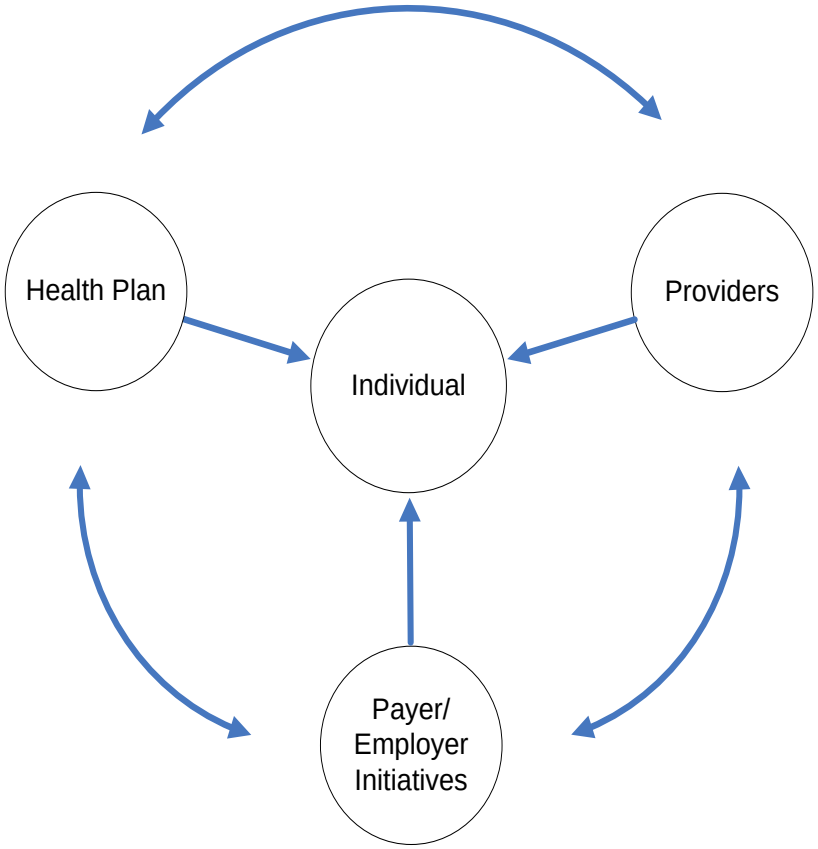
Educational Outcomes

CY 2012-Teachers only, excludes retirees & children

Continuance Health Solutions, Inc.

- Serves self-funded employers & other organizations responsible for a population's health.
- Integrates actuarial, behavioral, clinical, & operational perspectives to drive actionable, results-oriented business intelligence.
- WellScore® integrated data warehouse enables clients to demonstrate outcomes & focus resources more effectively.
  - Wellness & health promotion
  - Condition management
  - Medical home
- Consulting, data warehouse, & analytic tools help our clients meet their objectives.

Continuance's Strategic Direction: Support Transformative Models of Health Care Delivery



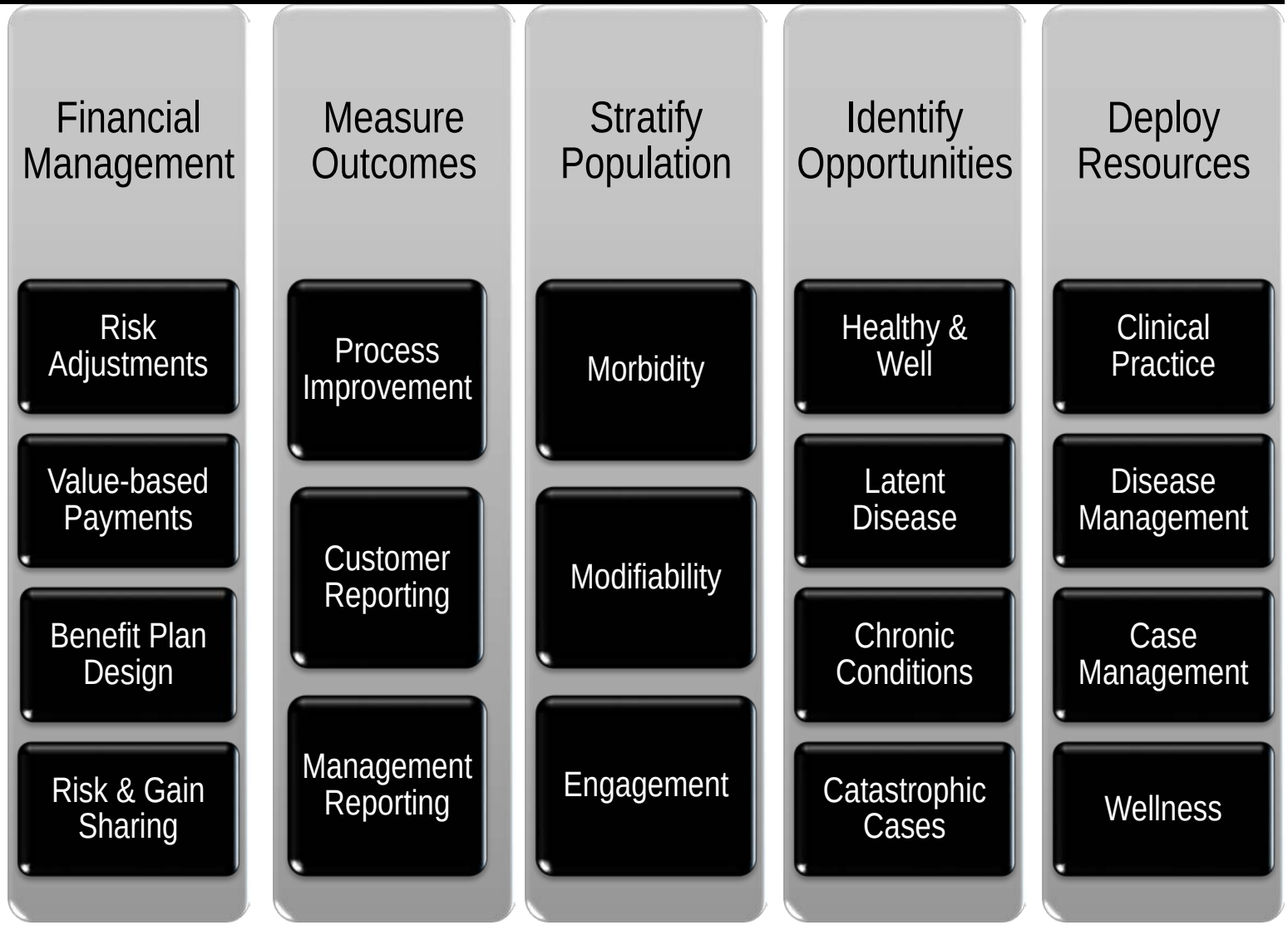
- Population health orientation
  - Wellness & lifestyle
  - Prevention
  - Chronic condition management
- Bridge perspectives
  - Population health
  - Care of individuals
- New roles/skills
  - Employers
  - Health plan
  - Clinicians
  - Facilities
- Support innovations
- Tie health to productivity & business outcomes

From Data to Business Intelligence

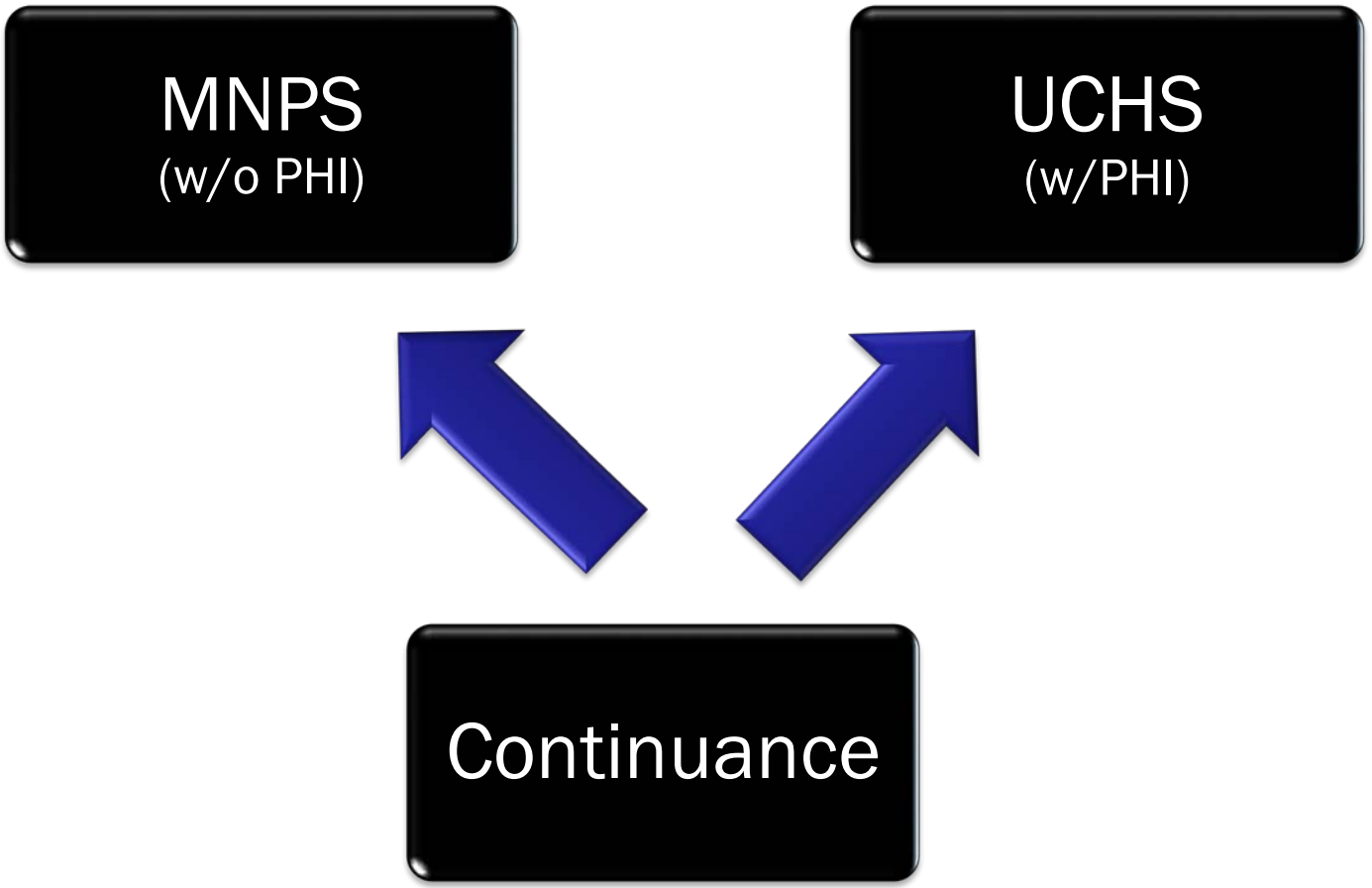
Making Data Actionable

Vendor Focus	Data Centric	Subject Area Oriented	Rules-Based Opportunities
Disparate Data	Master/Linked IDs Unified Structures	360 Degree View	WellScore
Health Plans, PBMs, EHRs, Lab Vendors Wellness Vendors, Workers' Comp, Payroll, HRIS, etc.	Medical Records, Claim Payments, HRA Responses, Biometric Values, Absenteeism, Disability, etc.	Diagnoses/Problems, Social History, Vitals/Labs, Medications, Re-admissions, Wellness Activities, Lost Work Days, etc.	Medical Home, Patient Engagement, Prevention, Chronic Care Gaps, Medication Adherence, Avoidable Hospital Use, Lifestyle Choices, etc.

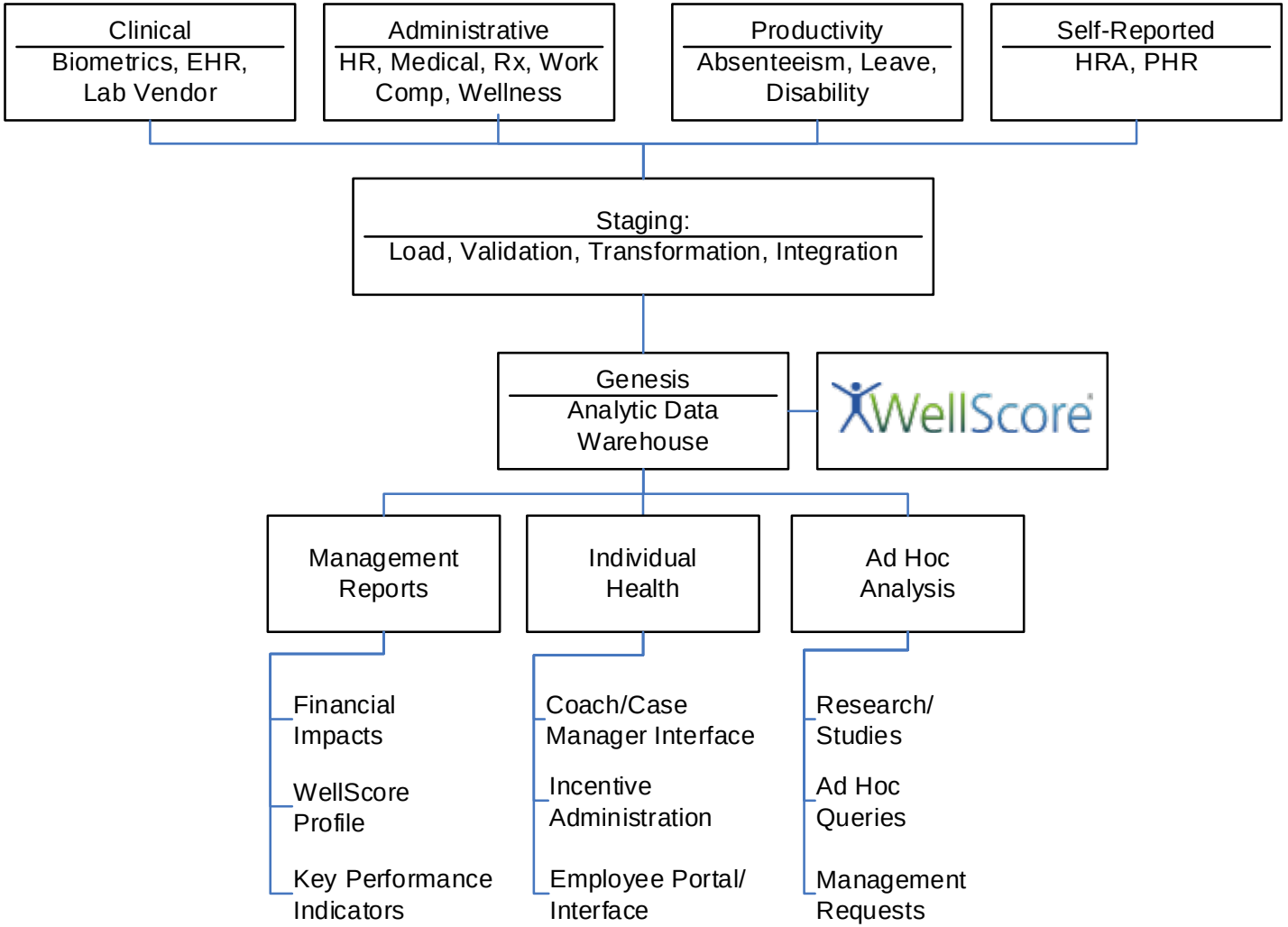
Population Health Information Requirements



Putting Information into Action



Components of Our Solution

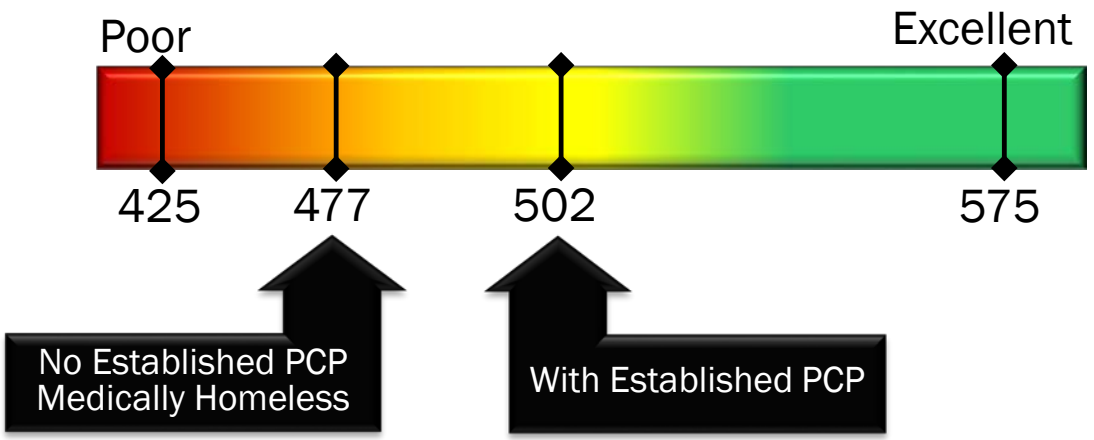


What's Your WellScore®?
Measuring Clinical Risk & Opportunity

Biometric Values	• Vital signs: Body Mass Index, Body Fat, Blood Pressure, etc. • Lab Results: Glucose, HbA1c, HDL, LDL, Triglycerides, etc.
Lifestyle Choices	• Nutrition & physical activity • Participation in wellness/health improvement programs
Prevention	• Primary prevention • Secondary prevention & chronic disease management
Diagnosed Conditions	• Chronic & acute conditions • Number & complexity of concurrent conditions
Medication Use	• Gaps in therapy (adherence) • Medication management/polypharmacy
Physician Use	• Appropriate primary care engagement • Coordination of specialist activity
Inpatient, ER, Urgent Care Center Use	• Frequent flier identification & management • Appropriate follow through
Lost Work Days	• Absenteeism & FMLA • Disability (Occ & Non Occ)

WellScore

- WellScore uses a broad range of clinical & behavioral indicators to quantify health, wellness, & engagement.
- Incorporates, biometric values, wellness participation, preventative care, medication adherence, avoidable hospital visits, physician engagement, diagnosed conditions, lifestyle choices, etc.
- WellScore measures whether a person is healthy & the likelihood that they will remain healthy.
- Higher WellScores indicate better health outcomes & are associated with lower PMPM costs.

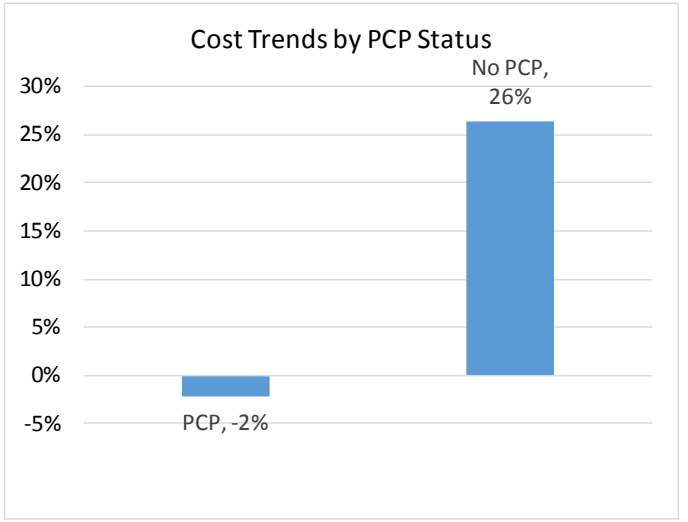


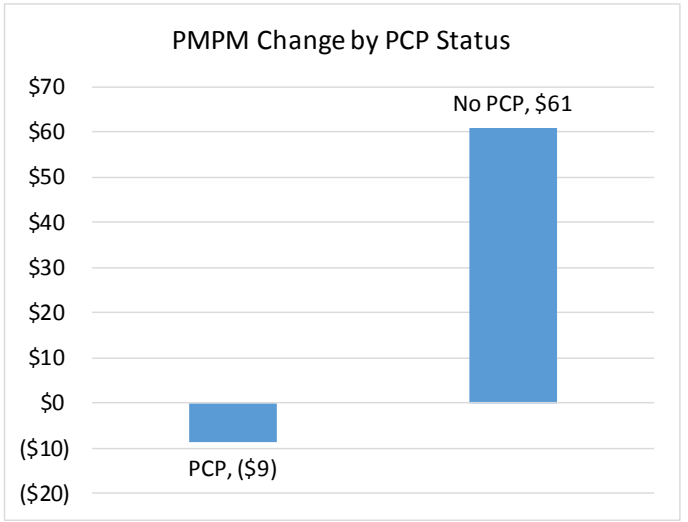
CY 2012-Teachers only, excludes retirees & children

Impact of PCP Relationships on Cost Trends

- Higher cost is the long-term consequence of being medically homeless.
- Connecting members to PCPs slows the rate of increase in costs for medical, pharmacy, & dental benefits.
- False economies: PMPM costs for the medically homeless are lower than for those with a PCP.

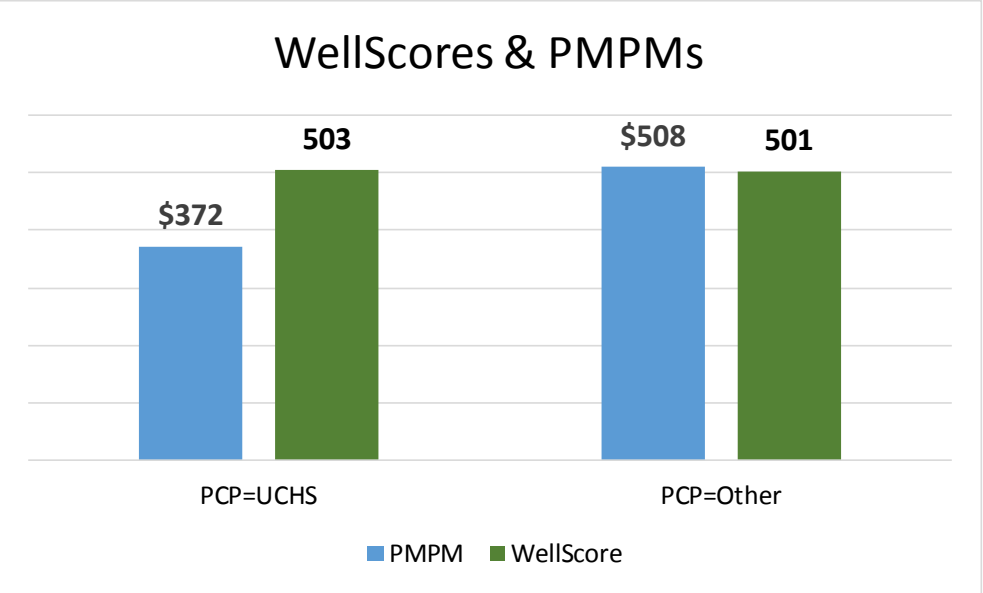
Coverage	PCP= UCHS	PCP= Other	PCP= None
Active-Adult	22%	58%	20%
Active-Children	16%	71%	12%
Retiree<65	12%	75%	13%
Retiree>65	6%	81%	13%





Value: Cost & Outcomes
Bottom-line Impact of UCHS

- Value is created by improving health outcomes, lowering costs, or both.
- UCHS provides quality care & achieves outcomes consist with community-based physicians at a much lower cost.



- Bottom-line Impact: $2.8 million for CY 2012.

Sources of Savings

Virtually all of the savings is related to lower utilization

	PCP=UCHS	PCP=Other	%
Hospital Services			
o Inpatient (Admits/1,000)	52	64	-19%
o Outpatient (Visits/1,000)	2,540	4,381	-42%
Emergency Room (ER) & Urgent Care Center Services (UCC)			
o ER (Visits/1,000)	143	187	-24%
o UCC (Visits/1,000)	107	266	-60%
Professional Services			
o Anesthesia (Visits/1,000)	165	229	-28%
o Medicine (Visits/1,000)	6,778	7,994	-15%
o Surgery (Procedures/1,000)	1,435	1,681	-15%
o Radiology (Procedures/1,000)	987	1,427	-31%
o Laboratory (Tests/1,000)	2,559	3,009	-15%

CY 2012-Teachers only, excludes retirees & children

Sources of Savings

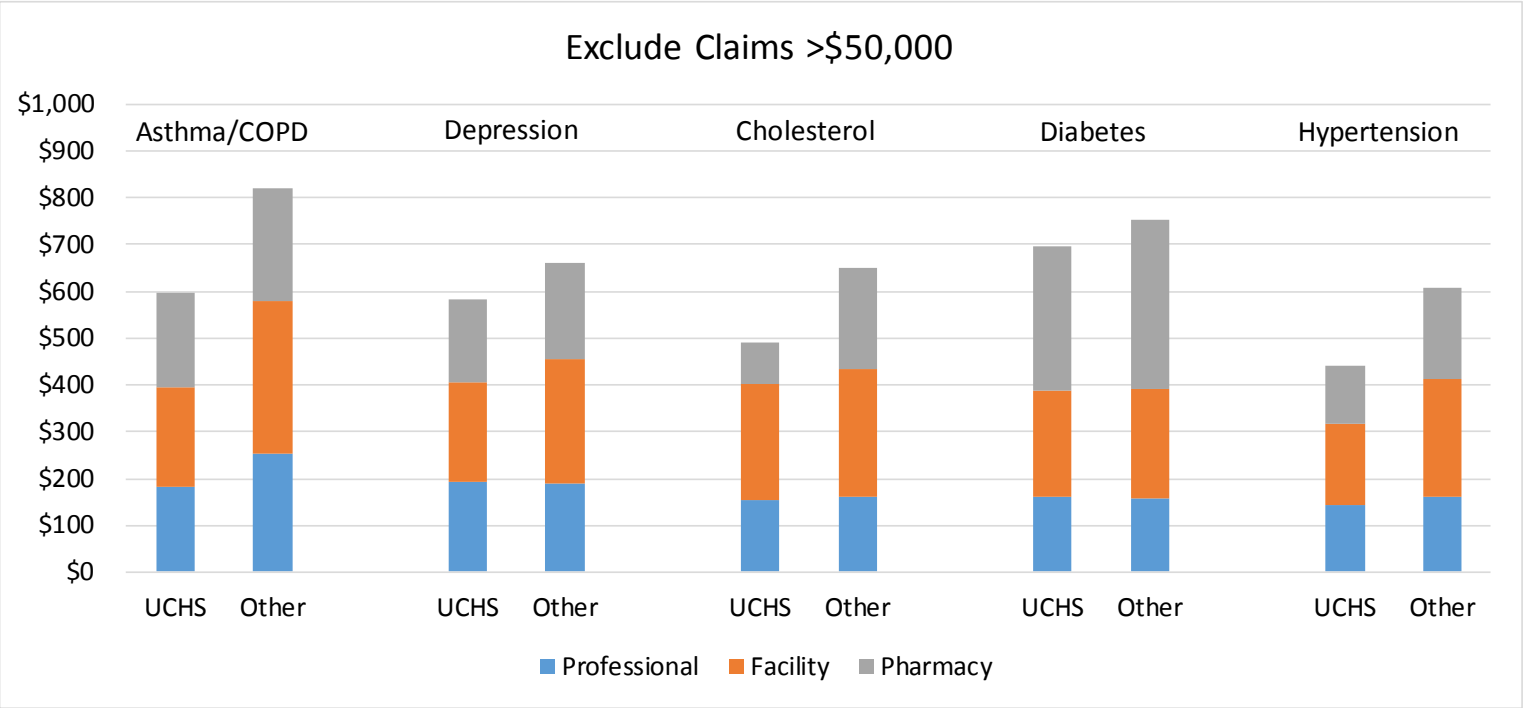
- Fewer prescriptions are written for members with a UCHS PCP.
- Members connected to a UCHS PCP are more likely to use generic medications.

	PCP=UCHS	PCP=Other	%
Outpatient Rx (Scripts/1,000)	11,149	16,685	-33%
Generic Use Rate (% Scripts)	84.5%	82.5%	2.0%

CY 2012-Teachers only, excludes retirees & children

Chronic Conditions Management

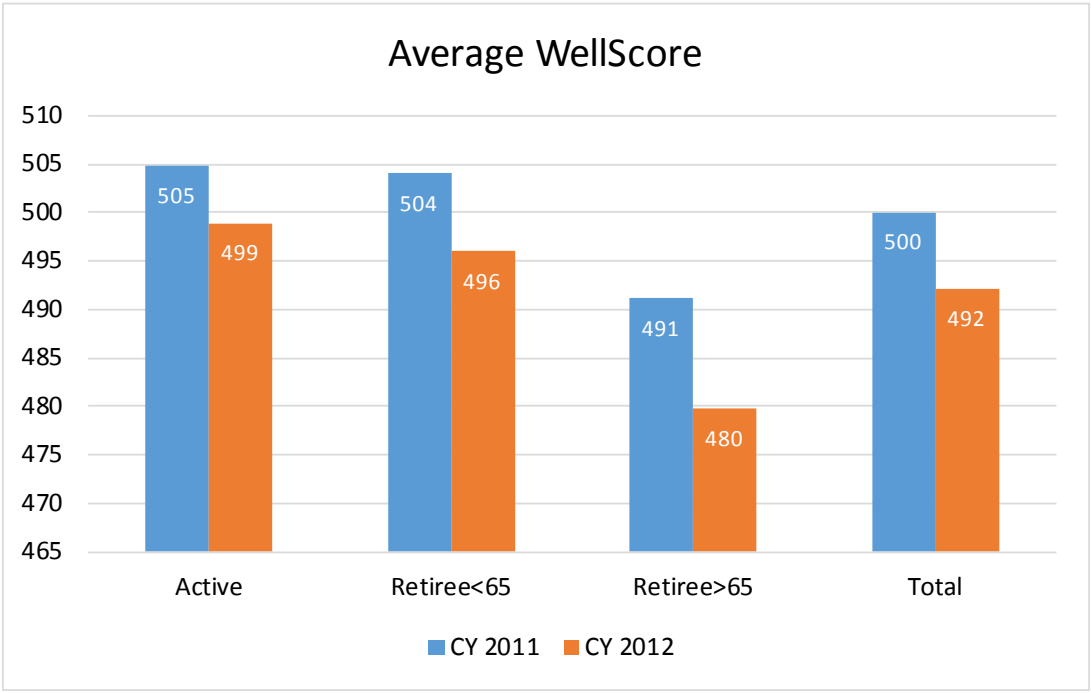
Overall PMPM costs are lower for members attributed to a UCHS PCP for Asthma/COPD (-27%), Depression (-12%) Cholesterol (-25%), Diabetes (-8%), & Hypertension (-28%).



CY 2012-Teachers only, excludes retirees & children

WellScore Profile: Health Outcomes

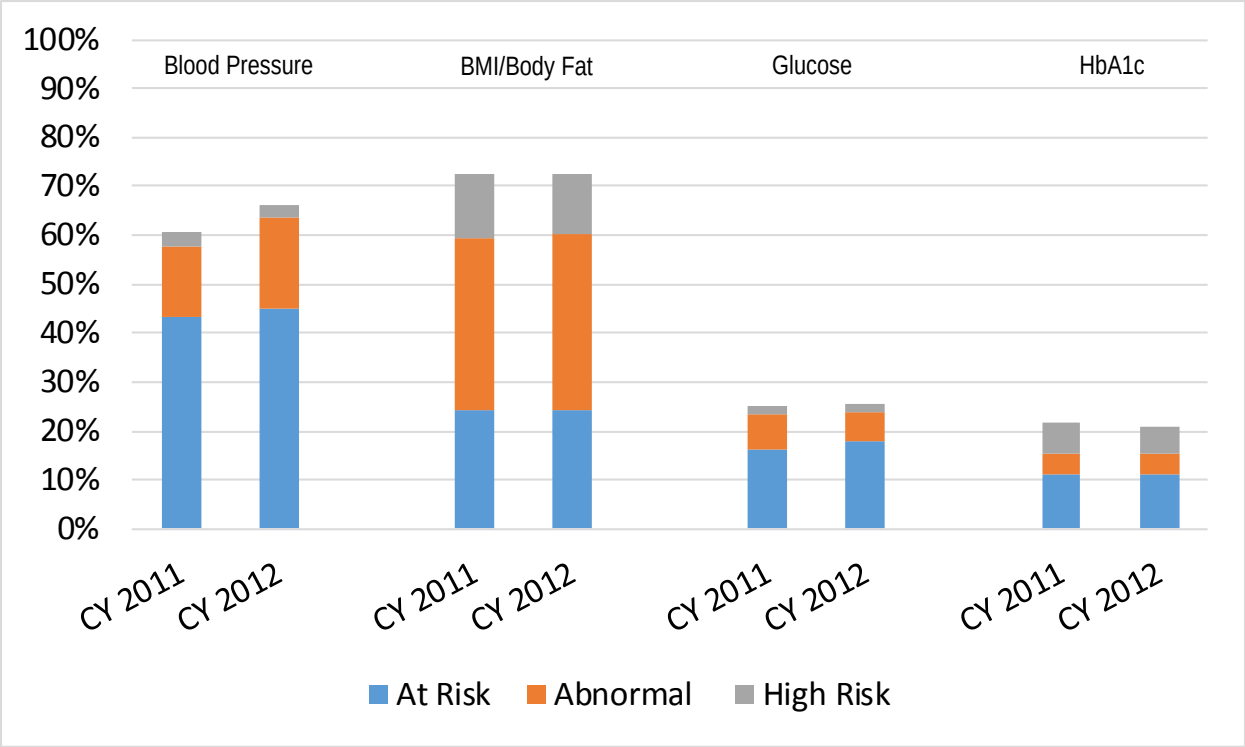
- For a continuous population, the overall WellScore values decreased by 8 points from 500 to 492.
- The active group decreased by 6 points.
- The retiree groups decreased by 8 & 11 points for the under 65 & over 65 groups, respectively.



CY 2012-Teachers only, excludes children

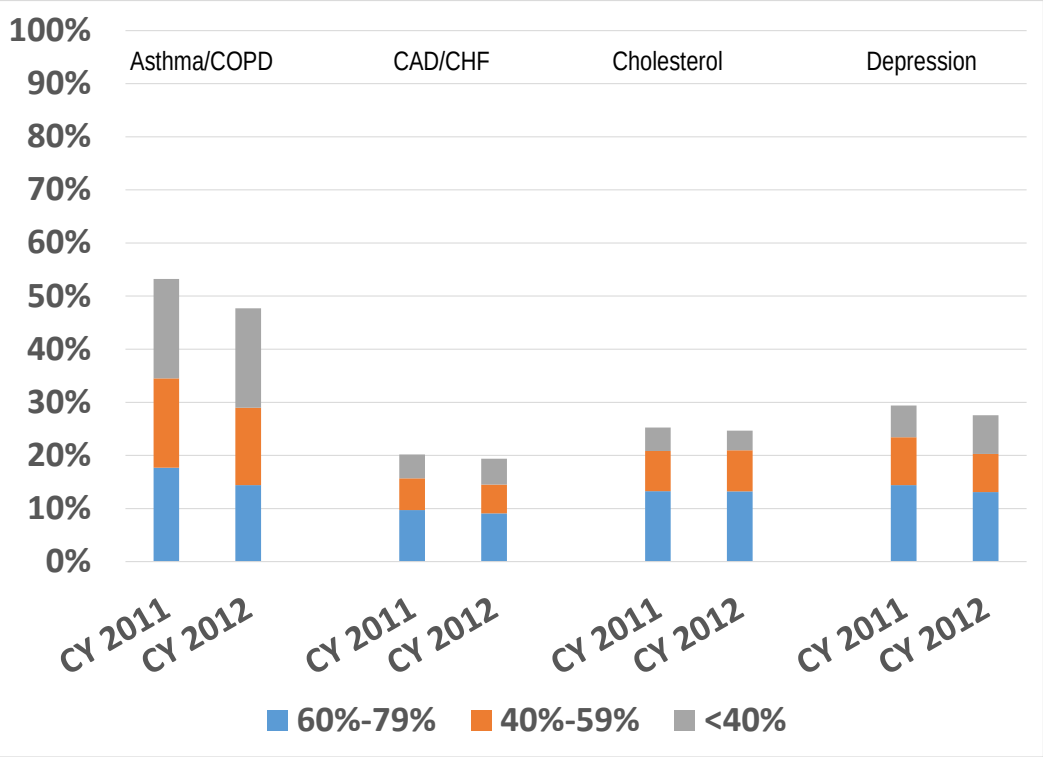
Opportunities: Biometric Values

The percentage of members above normal

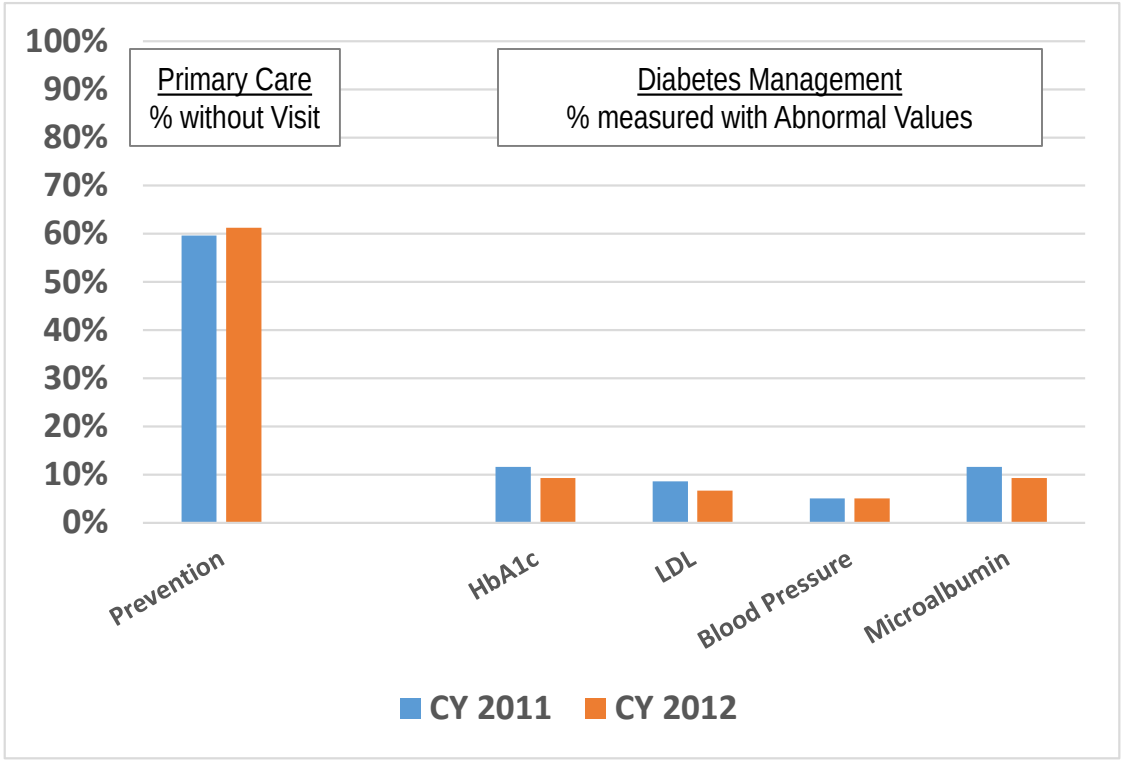


Opportunities: Medication Adherence

The percentage of members who use less than 80% of their meds.



Opportunities: Prevention & Diabetes Care



Educational Outcomes

CY 2012-Teachers only, excludes retirees & children

University Community Health Services

- Affiliate of Vanderbilt School of Nursing
- Nurse-Practitioner managed health care
  - 4 Federally Qualified Health Centers
  - 10 worksite clinics located in Tennessee & Kentucky
- Enhanced primary care model
  - Patient education
  - Family focus
  - Outreach
  - Onsite disease management
- Freed from the fee-for-service treadmill

Use Data to Proactively Improve Population Health

WellScore by MNPS School Cluster

- Groups all schools that feed into high school.
- MNPS Benefits sees the WellScore & “hot spot” reports for clusters.
  - Health, wellness & engagement.
  - General health of large population segments.
  - Benefits cannot see group smaller than this for privacy reasons.
- Clinicians see WellScore & “hot spot” reports for clusters, schools, & individuals.
  - Resource planning.
  - Outreach.

WellScore

All Active Employees*	506

Active Employees	Least Healthy	Most Healthy
School Clusters (N=14)	494	512
Schools/Worksites (N=140)	461	543
Individuals (N=9,000)	309	675

*Excludes dependents & retirees

“Hot Spot” Report

- 50 parameters provide comprehensive view of factors driving health & wellbeing.
  - Biometrics
  - Medication adherence
  - Preventive care
  - Medical home
  - Avoidable hospital use
  - Diabetes management
  - Health management behaviors
  - Perceived wellbeing
  - Worksite factors
  - Disease registry

Hot Spot-Sample Metrics

Measure Type	Count	WellScore	Primary Medical Home PCP= UCHS	PCP= Other	PCP= None
Demographic	9,219	495	2,104 23%	4,522 49%	2,593 28%

Measure Type	Measure	Count	% Meas'd	Okay	Oh My	Oh Crap	OH CRAP+	% Not Okay
Biometrics	Blood Pressure	3,495	38%	40%	48%	10%	2%	60%
	BMI/Body Fat	4,833	52%	37%	25%	29%	8%	63%
	Glucose	704	8%	75%	16%	7%	2%	25%
	LDL	1,154	13%	43%	34%	16%	7%	57%
	HbA1c	504	5%	81%	8%	6%	6%	19%
Medication	Asthma/COPD	382	4%	46%	15%	21%	18%	54%
	Cholesterol	822	9%	66%	16%	10%	8%	34%
	Depression	1,547	17%	70%	14%	9%	7%	30%
	Diabetes	477	5%	70%	15%	10%	6%	30%
	Hypertension	1,188	13%	77%	13%	7%	3%	23%
Prevention	Primary Care-Prevention	8,443	92%	44%	56%	0%	0%	56%
Hospital Use	Avoidable Inpatient	54	1%	0%	87%	13%	0%	na
	ER-Avoidable/Divertable	747	8%	0%	35%	60%	5%	na
Diabetes Care	Diabetes LDL Controlled	200	2%	58%	42%	0%	0%	42%
	Diabetes Blood Pressure Controlled	305	3%	57%	43%	0%	0%	43%
	Diabetes HbA1c Controlled	222	2%	60%	40%	0%	0%	40%
Health Management	Tobacco User-Cigarettes	4,579	50%	93%	7%	0%	0%	7%
	Nutrition-High Fiber	4,579	50%	75%	24%	1%	0%	25%
	Nutrition-High Fat/Cholesterol	4,579	50%	16%	64%	19%	1%	84%
	Physical Activity-Heavy	4,579	50%	54%	32%	14%	0%	46%
	Physical Activity-Light/Moderate	4,579	50%	67%	18%	11%	5%	33%
Perceived Wellbeing	Social Ties	4,577	50%	75%	25%	0%	0%	25%
	Personal Loss or Misfortune	4,579	50%	79%	17%	4%	0%	21%
	Tension, Anxiety, Depression	4,579	50%	44%	56%	0%	0%	56%
Worksite	Personal Illness Absences	4,547	49%	21%	42%	35%	2%	79%
	Personal Illness Performance Impair	424	4%	86%	14%	0%	0%	14%

Action for Cluster WellScores

- Care Coordinators review the cluster scores & focus on the clusters with lower scores for outreach to individuals with identified medical needs.
- Clinics out reach to all population segments:
  - Patients who use the clinics as their medical home.
  - Patients who use who use community-based providers.
  - People who are medically homeless.
- “Hot-spot” reports profile the medical needs of the cluster.
  - Health status.
  - Chronic conditions.
  - Engagement & lifestyle.
  - Wellbeing & worksite

From Cluster to School to Individual

- Care coordinators & clinicians review the WellScores for each school feeding into the clusters with lower WellScores.
  - Stratify schools.
  - Healthy schools & sick schools.
- Identify individuals with lower WellScores.
  - Stratify people
  - Health status, wellbeing, & engagement.
- Is the low score caused by not seeing a healthcare provider, not filling prescriptions, not living a healthy lifestyle, worksite issues, family stress, etc.?
  - Focus resources
  - Align programs & interventions

Using Actionable Data

Clinicians review in depth 360 degree profiles of individuals to identify candidates for outreach.

- Is the individual is adhering to medications.
- Are medications are working.
- Is the patient is on the correct medications
- Is patient is overusing emergency room or urgent care.
- Has the patient been hospitalized.
- Does the patient have a primary medical home.
- Are chronic conditions being managed according to evidence-based standards.
- Are lifestyle, worksite, or stress issues a factor.

Risk Factor Summary-Sample

- **Demographics**

Gender: F Date of Birth: 2/20/1979

Preferred Contact method: No stated preference

Work Phone: Home Phone: Cell Phone: Other Phone: (201) 555-4452

Work Fax: Home Fax:

Work Email: Megan.Harvey@myisp.com Home Email: Megan.Harvey@behemoth.net

Work Address:

Home Address: 1707 Walnut Road, South Park, NJ 08211

Other Address: 48 Maple Avenue, Bluffington, FL 33191

- **Employment Data**

Employer: Memorial Hospital

Title: Job Class: Hire Date: 6/29/2004 Termination Date: Continuous Employment: Y

Loc/Dept: Full Time: Status: Active Union: N

Period	WellScore
2013Y1	448
2012Y1	449
2011Y1	422

Risk Factor Summary-Sample Metrics

Type	Measure	2013Y1 Metric	Indicator
Biometric	**Blood Pressure**	118/88	At Risk
Biometric	**BMI/Body Fat**	41/NR	High Risk
Biometric	**Glucose**	280	High Risk
Biometric	**LDL**	69	Normal Values
Biometric	**HDL**		Not Reported
Biometric	**Triglyercides**	231	Abnormal Value
Biometric	**Total Cholesterol**		Not Reported
Biometric	**HbA1c**	8	Abnormal Value
Medication Adherence	**Cholesterol**	54	40%-59%
Medication Adherence	**Depression**	100	>= 80%
Medication Adherence	**Diabetes**	100	>= 80%
Medication Adherence	**Hypertension**	54	40%-59%
Medication Adherence	**Seizures**	83	>= 80%
Physician Visits	**Primary Care Medical Home**	24354	Attributed PCP-Preferred
Physician Visits	**Primary Care-Prevention**	0	No Visit
Physician Visits	**Primary Care-Cardiometabolic**	3	2 or more visits
Physician Visits	**Primary Care-Asthma/COPD**		
Hospital Use	**Avoidable Inpatient**		
Hospital Use	**ER-Avoidable/Divertable**		

Risk Factor Summary-Sample Metrics

Type	Measure	Indicator
Comprehensive Diabetes Care	**Diabetes Blood Pressure Controlled**	No
Comprehensive Diabetes Care	**Diabetes HbA1c Claim**	
Comprehensive Diabetes Care	**Diabetes HbA1c Controlled**	No
Comprehensive Diabetes Care	**Diabetes LDL Claim**	
Comprehensive Diabetes Care	**Diabetes LDL Controlled**	Yes
Comprehensive Diabetes Care	**Diabetes Microalbumin Controlled**	No
Comprehensive Diabetes Care	**Diabetes Retinal Exam Visit**	No
Health Management Behaviors	**Tobacco User-Cigarettes**	Yes
Health Management Behaviors	**Tobacco User-Smokeless**	Yes
Health Management Behaviors	**Nutrition-High Fiber**	Rarely / never
Health Management Behaviors	**Nutrition-High Fat/Cholesterol**	3-4 servings/day
Health Management Behaviors	**Physical Activity-Heavy**	Less than 1 time/week
Health Management Behaviors	**Physical Activity-Light/Moderate**	3 or 4 days/week
Perceived Wellbeing	**Social Ties**	Weaker than average
Perceived Wellbeing	**Personal Loss or Misfortune**	No
Perceived Wellbeing	**Subjective-Tension, Anxiety, Depression**	Never
Perceived Wellbeing	**Subjective-Impact of Stress (1 year)**	None
Perceived Wellbeing	**Subjective-Satisfaction with Life**	Mostly Satisfied
Perceived Wellbeing	**Subjective-Overall Physical Health Status**	Good

Risk Factor Summary-Sample Metrics

Type	Measure	Indicator
Worksite	**Subjective-Job Satistaction**	Agree
Worksite	**Subjective-Other People's Job Performance**	Better Performance (7-8)
Worksite	**Subjective-Personal Job Performance (1 year)**	Better Performance (7-8)
Worksite	**Subjective-Personal Job Performance (4 weeks)**	Better Performance (7-8)
Worksite	**Personal Illness Full-day Absences (4 weeks)**	1 - 2
Worksite	**Personal Illness Absences (prior year)**	6 - 10
Worksite	**Personal Illness Performance Impairment (4 weeks)**	Some of the time
Worksite	**Family Illness-related absences (2 weeks)**	0
Worksite	**Days Worked Extra (4 weeks)**	16 +
Worksite	**Hours Expected to Work (week)**	30 - 999
Diagnosed Conditions	**Asthma/COPD**	
Diagnosed Conditions	**Heart Diseases, CAD/CHF**	
Diagnosed Conditions	**Cholesterol**	Current
Diagnosed Conditions	**Depression**	Current
Diagnosed Conditions	**Diabetes**	Current
Diagnosed Conditions	**Hypertension**	Current

Medical History Summary-Sample

PCP

PCP Report Period: 2012Y1

Attributed PCP: Provider #24354 Attributed PCP Preferred Group: Our Clinic Attributed PCP Visit %: 61.9

Last Visited PCP: Provider #24354 Last PCP Preferred Group: Our Clinic Total PCP Count: 9

Preferred Group

Any PCP Visits in Preferred Group: Y Preferred Group PCP Visit %: 85.7

Diagnoses

Diag Code	Diagnosis	Last Date of Svc
6262	Excessive or frequent menstruation	6/8/2013
V2509	Other general counseling and advice on contraceptive management	6/8/2013
25002	Diabetes mellitus without mention of complication, type II or unspecified type, uncontrolled	4/19/2013
78079	Other malaise and fatigue	3/8/2013
27800	Obesity, unspecified	12/27/2012
2662	Other B-complex deficiencies	12/8/2012
1121	Candidiasis of vulva and vagina	11/22/2012
4779	Allergic rhinitis, cause unspecified	11/17/2012

Physicians Visited (Office)

Prov ID	Provider Name	Last Date of Svc
9981928	Provider #25811	6/8/2013
1742230	Provider #4141	5/1/2013
9043168	Provider #24354	4/19/2013
9386991	Provider #24900	4/18/2013
6838237	Provider #20199	12/27/2012
4760374	Provider #13092	12/26/2012
8047762	Provider #22691	11/22/2012
2193288	Provider #5938	11/17/2012
2681330	Provider #7942	10/13/2012
6714375	Provider #19977	7/7/2012
8540366	Provider #23485	6/29/2012
6448923	Provider #19445	6/24/2012
83[illegible]890	Provi[illegible]r #23[illegible]09	6/24[illegible]012

Medical History Summary-Sample

Outpatient Medications

First Fill	Last Fill	Drug Name	#Scripts	Total Days Supply
12/31/2011	8/2/2013	Clonazepam	2	120
1/2/2011	7/31/2013	Cyclobenzaprine Hydrochloride	10	116
8/31/2011	7/20/2013	Acetaminophen-Hydrocodone Bitartrate	7	50
7/20/2013	7/20/2013	Misoprostol	1	1
12/31/2011	7/17/2013	Victoza	8	568
12/27/2010	6/17/2013	Hydrochlorothiazide-Lisinopril	8	720
12/27/2010	6/17/2013	Simvastatin	10	720
3/8/2013	6/3/2013	Paroxetine Hydrochloride	2	180
2/5/2012	5/26/2013	METFORMIN HCL ER	7	570
11/29/2010	5/1/2013	Fluconazole	15	53
5/1/2013	5/1/2013	Sulfamethoxazole-Trimethoprim DS	1	10
4/30/2013	4/30/2013	Doxycycline Hyclate	1	7
4/30/2013	4/30/2013	Mupirocin	1	7
4/30/2013	4/30/2013	Naloxone HCl-Pentazocine HCl	1	2
5/23/2012	4/20/2013	Diazepam	2	104
3/18/2011	4/20/2013	ONETOUCH ULTRA BLUE	4	155
12/26/2012	3/31/2013	Gabapentin	2	180
1/6/2013	3/10/2013	Sronyx	2	112

WellScore

Are my health & wellness programs adding value?

Are my people any healthier than they were a year ago?