

# Improving Quality Outcomes by Addressing Gaps in Care

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# ACO Physician Integration

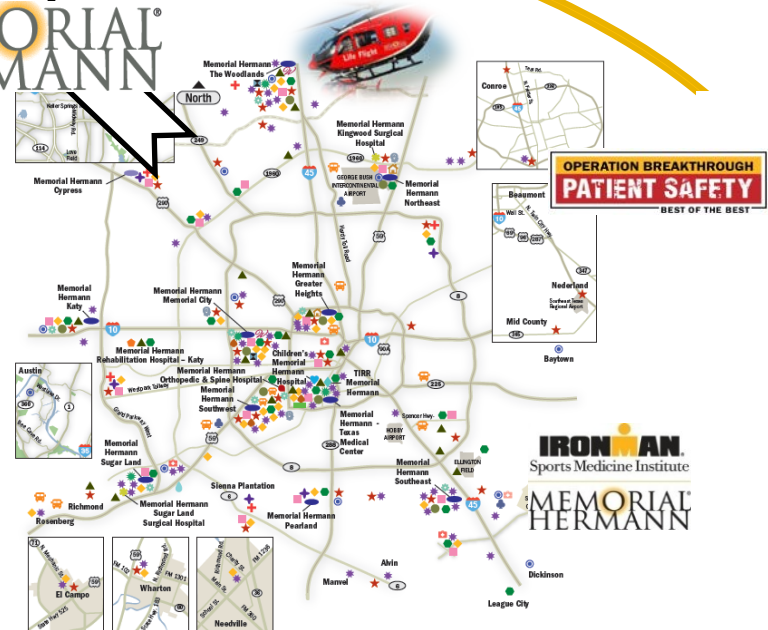


The Memorial Hermann ACO allows for integration of a pluralistic physician model to drive quality outcomes

MEMORIAL HERMANN  
Accountable Care Organization

Commercial

Medicare



~4,000 MHMD Physicians, ~3500 'CIN'  
Clinically Integrated Network  
Private, Employed & Faculty Integration

## 3 DISTINCT PRACTICE MODELS

Employed

Private

Faculty



Population Health Infrastructure

# ADVANCE System Strategy



## Align with physicians

Develop and deploy a pluralistic physician enterprise with turn-key offerings that engage our physicians, advances integrated care and creates indispensable value.

## Deliver high reliability care

Redesign care models to transform care delivery across the System with an evidence-based, high reliability, waste eliminating, safety culture.

## Value and develop people

Create an environment of One Memorial Hermann: one vision, one organization. Create a sense of community that prides itself on respect, diversity, high performance, and innovation while advancing patient care and transforming our System.

## Achieve operational targets

Optimize the System structure, clearly delineating responsibility across service lines and business units, that will drive cost reduction, grow managed care volumes and exceed targeted financial operating performance.

## Nurture smart growth and innovation

Pursue and execute on innovation and smart growth opportunities that expand scale, program offerings, and access that grows targeted market share, improve payor mix, and generate positive cash flow while making our System essential to the community.

## Create consumer centric experiences

Create seamless end-to-end healthcare experiences that differentiate Memorial Hermann and place the consumer at the center of our integrated health system.

## Enhance population health management

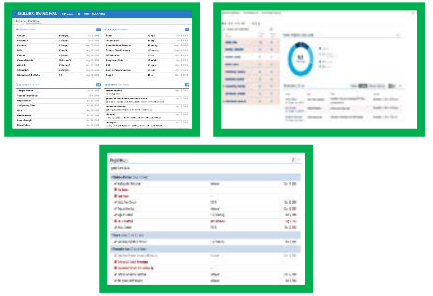
Evolve Memorial Hermann's operating model to support an optimized, comprehensive care continuum coupled with a highly integrated right-sized physician network, ACO and Health Plan structures that grow managed populations and advanced payment models.

Our mission is to **ADVANCE** the overall health of each individual and population through **innovative technology solutions** that drive preventative care and evidence-based disease management. **These solutions are powered by claims and clinical data derived from multiple sources that generate a master person longitudinal record.** By placing these tools directly within the **Electronic Health Record workflow**, quality performance is improved, **physician integration is strengthened** and **cost is reduced.**

# Population Health Platform



## Applications



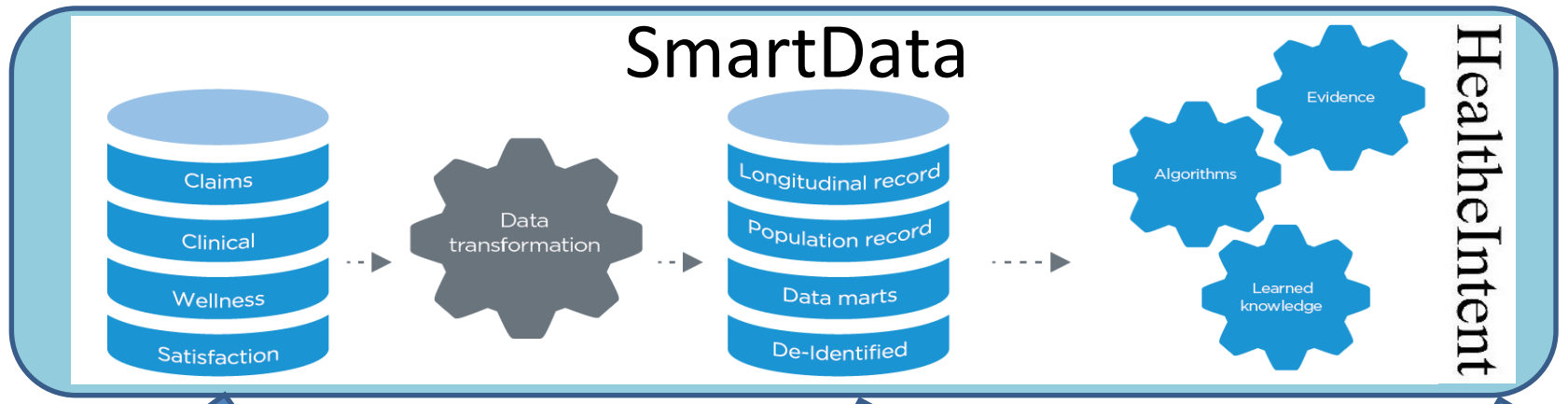
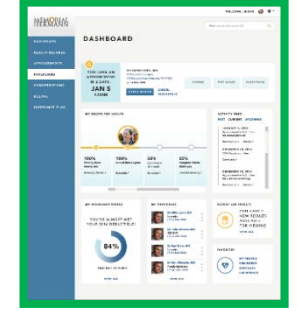
## Algorithms

- Sepsis
- TOC
- Readmissions
- HCC Suspected
- 3M
- Truven

## Analytics



## EverydayWell



### EMRs

- Allscripts
- Athena
- Care4
- Cerner
- eClinicalWorks
- GE Healthcare
- PointClickCare

### Paid Claims

- Aetna
- BCBS
- CMS
- Humana
- MHHP
- United Healthcare

### On-site

### Biometrics



# SmartData Sources

Aetna  
Blue Cross Blue Shield  
Humana  
Memorial Hermann Health Plan  
MSSP  
United Healthcare

Allscripts (116 PCP & Specialty Clinics)  
Athena (24 Urgent Care Clinics)  
Cerner Millennium (15 Hospitals, 106 PCP & Specialty Clinics)  
eClinicalWorks (124 PCP & Pediatric Clinics)  
GE Centricity (2 PCP Clinics)  
Greater Houston HIE  
Post Acute: PointClick Care, HomeCare Homebase, etc.  
United Surgical Partners International (3 Hospitals)

Allscripts (116 PCP & Specialty Clinics)  
Cerner Millennium (15 Hospitals, 106 PCP & Specialty Clinics)  
eClinicalWorks (124 PCP & Pediatric Clinics)  
GE Centricity (2 PCP Clinics)

Cerner Millennium (Wellness Data)

Payer

Clinical (HIE)

Clinical (EMR)

\*Daily & Historical Extracts

Biometric

# SmartRegistry

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# SmartRegistry

- Powered by Cerner's HealthIntent platform, which creates a single person record across ~40 sources comprised of payor claims data and clinical data
- Places patients into different registries based on certain health condition(s)
- Allows clinicians to manage and improve the overall health of a population one person at a time
- Measures are heavily driven by CMS ACO Measures of Excellence, but also include a variety of Memorial Hermann custom measures





# List of Registries

Senior Wellness

Adult Wellness

Pediatric  
Wellness

Childhood &  
Adolescent  
Immunizations

Adult Diabetes

Ambulatory  
Urgent Care

Asthma

Back Pain

COPD

Depression

Heart Failure

Hepatitis C

Hypertension

Ischemic Vascular  
Disease Coronary  
Artery Disease

Rheumatoid  
Arthritis



# SmartRegistry Measures

## **For All Wellness Registries**

- Annual Office Visit (7+)
- Chlamydia Screening (Women 16-25)
- Depression Screening (12+)
- Tobacco Use Screening and Cessation (13+)

## **Pediatric Wellness**

- Tobacco Exposure Screening
- Well-Child Visits (First 15 Months of Life; Yearly)

## **Adult and Senior Wellness**

- BP Measurement / Rescreen if high
- BMI and Follow-Up Plan
- Bone Density Screening (Women 65-84)
- Breast Cancer Screening (Women 50-74)
- Cervical Cancer Screening (Women 21-64)
- Colorectal Cancer Screening (50-75)
- Depression Screening and Follow-Up Plan
- Fall Risk Screening (65+)
- Hepatitis C Screening (DOB 01/01/1945-12/31/1965)
- HIV Screening (18-64)
- HPV Vaccination (18-26)
- Influenza Vaccination
- Lipid Panel (q 5 yrs, Men 35+; Women 45+)
- Pneumococcal Vaccination (65+)
- Post-Osteoporotic Fracture Evaluation (50-85)
- Shingles Vaccination (60+)
- Screening Male Smoker for AAA (Males 65-75)
- Tdap Vaccination

## **Asthma:**

- Medication Management

## **Adult Diabetes**

- Anti-platelets for DM with IVD/CAD
- Blood Pressure < 140/90mm Hg
- Diabetes Tx Mgmt ACEi/ARB Therapy
- Eye Exam
- Foot Exam
- HbA1C and Lipid Monitoring
- HbA1C control (Goal <8%, Poor HbA1c >9%)
- Nephropathy Screening
- Semi-Annual Office Visit
- Statin Therapy- Diabetic Group

## **Ambulatory Urgent Care:**

- Acute Otitis Externa Topical Therapy
- Avoidance of Antibiotic Treatment in patients with Acute Bronchitis
- Appropriate Treatment for Children with URI
- Appropriate Testing for Children with Pharyngitis

## **Heart Failure**

- ACEI/ARB for Low EF (<40%)
- Beta Blocker for Low EF (<40%)
- Beta Blocker Therapy After AMI
- Semi-Annual Office Visit

## **Hypertension:**

- Blood Pressure < 140/90 mm Hg

## **Ischemic Vasc. Disease/Coronary Artery Disease**

- AMI or CAD: ACEI or ARB if diabetic or EF <40%
- Antiplatelet Therapy for DM with IVD/CAD
- Lipid-Lowering Therapy
- Statin Therapy- ASCVD Group

## **Back Pain**

- Avoid Imaging for Low Back Pain

## **COPD**

- Pneumococcal Vaccination
- Semi-Annual Office Visits

## **Hepatitis C**

- Hepatitis A Vaccination
- Hepatitis B Vaccination

## **Depression**

- Depression Remission- 12 Months
- Meds During Acute & Continuous Phase
- Utilization of Full PHQ-9 Tool

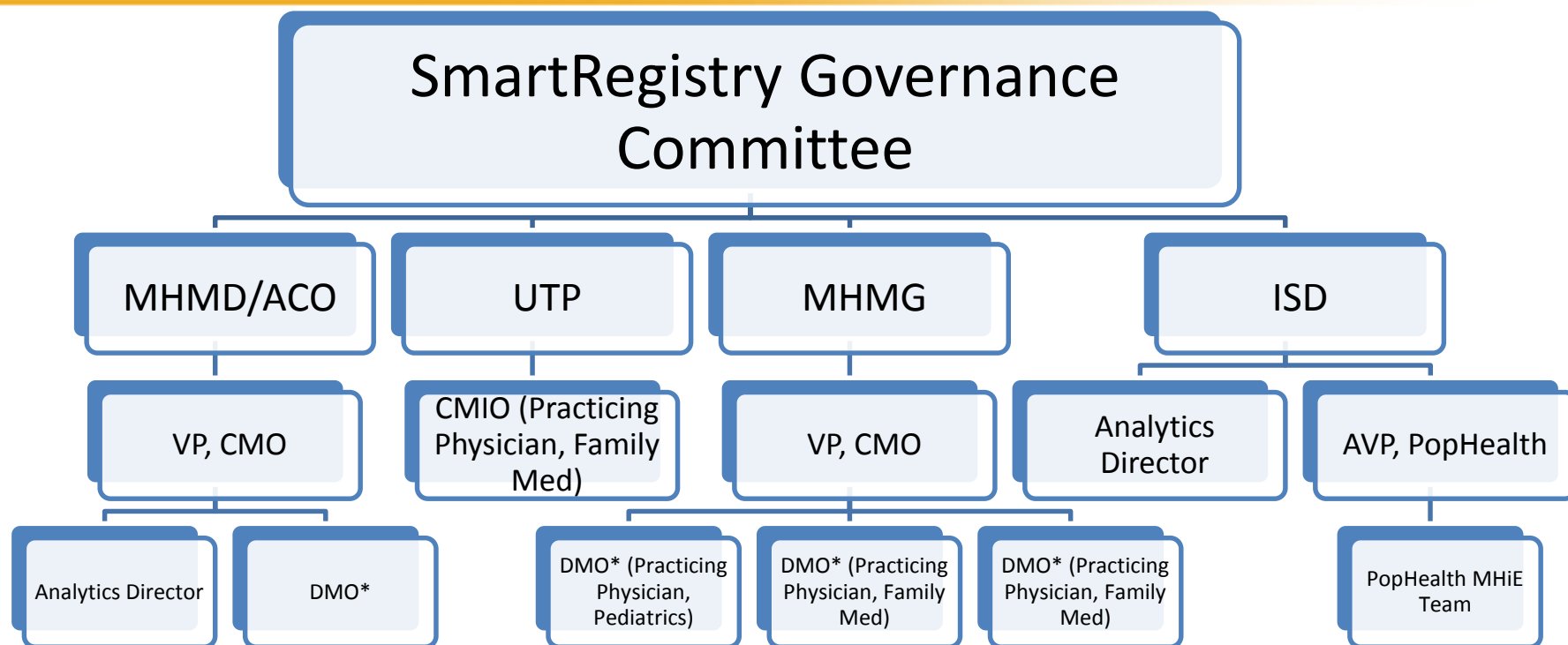
## **Rheumatoid Arthritis Management**

- Medication Management

## **Childhood & Adolescent Immunizations:**

- DTaP
- Hepatitis A
- Hepatitis B
- HiB
- Human Papillomavirus (HPV)
- Influenza
- IPV
- Meningococcal
- MMR
- Pneumococcal Vaccination- Pediatric
- Rotavirus
- Tdap
- Varicella

# SmartRegistry Governance Committee



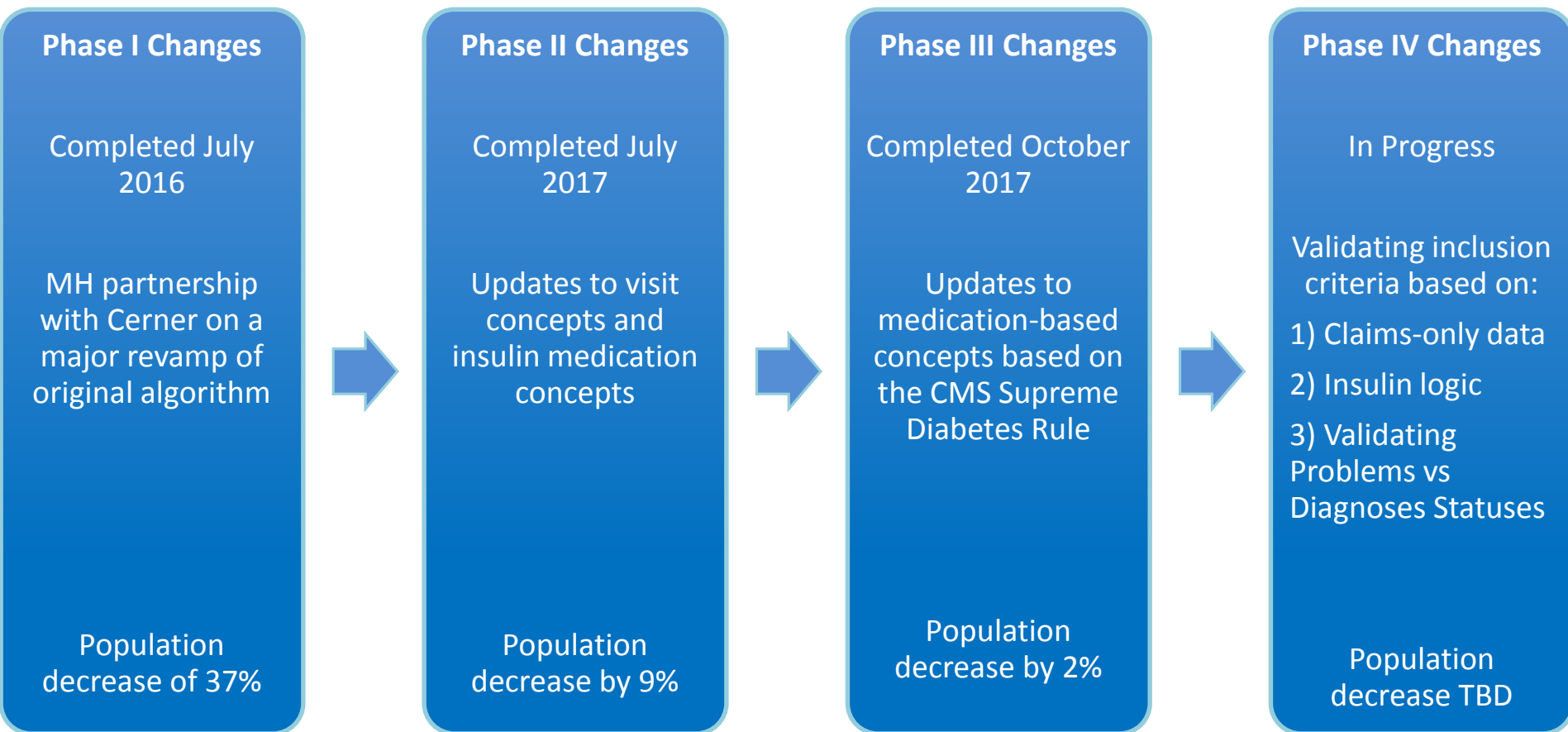
- Established August 2017
- Consists of key stakeholders from across the organization
- Scorecard and incentive discussions
- Positive feedback loop with practicing physician leaders

# SmartRegistry Governance Committee



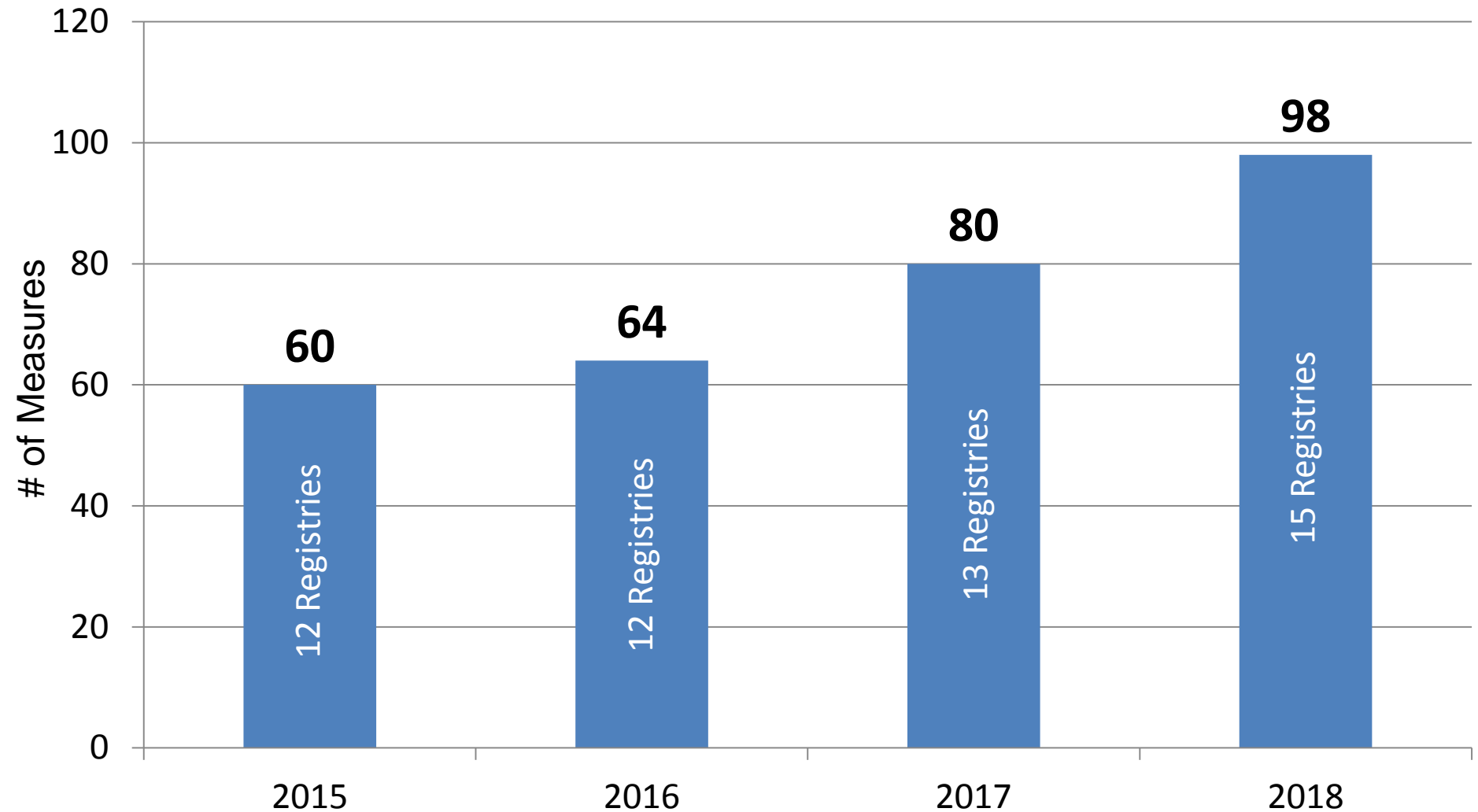
- ISD facilitates monthly meetings to discuss registry and measure updates, changes, and workflow standardization
- Major decisions of the committee include:
  - Diabetes Algorithm Updates (Cerner adopted these as the Clinical Standard for all clients)
  - Onboarding new registries and measures
  - Retiring outdated measures
  - Updating content to yearly standards
  - Roll-out strategies to clinicians
  - Provider feedback

# Timeline of Adult Diabetes Registry Criteria Changes



Overall population decrease of 47%.

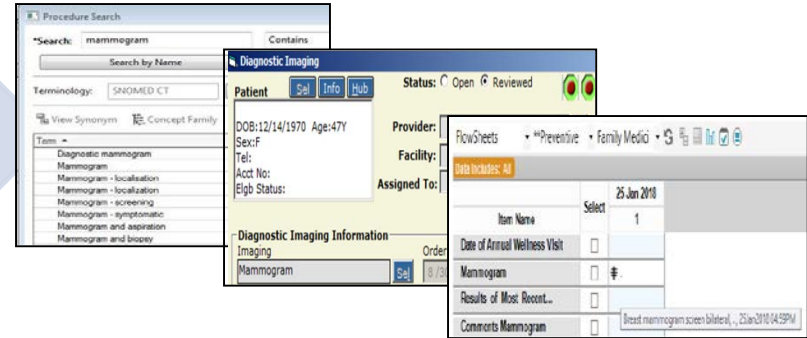
# SmartRegistry Changes Over Time



# Data Mapping Process

## Workflow Analysis

Identify all formats in each data source how the data must be documented to meet each measure



## Concept Mapping

Each concept is made up of hundreds of codes; ensure that each code is mapped appropriately



## Data Intelligence Dashboard Validation

Validate that each mapped code has hits in the dashboard from each source

Criteria	Fact	Concept	CLAM	EMR ENR
Exception	MammogramDeclined	MAMMOGRAM_DECLINED_CLIN		2
Exclusion	BilateralMastectomy	MASTECTOMY_BILATERAL_CLIN	5,732	945
		MASTECTOMY_BILATERAL_PROC	338	2,757
MastectomyLeft		MASTECTOMY_LEFT_CLIN	5,400	700
		MASTECTOMY_LEFT_PROC	109	1,722
		MASTECTOMY_UNILATERAL_PROC	1,479	
MastectomyRight		MASTECTOMY_RIGHT_CLIN	4,659	617
		MASTECTOMY_RIGHT_PROC	100	1,556
UnilateralMastectomySD		MASTECTOMY_UNILATERAL_PROC	1,457	
		MASTECTOMY_UNILATERAL_PROC	713	
Inclusion	FemaleGender	FEMALE_GEN	1,844	1,280,697
Met	BilateralMammogram	MAMMOGRAM_BILATERAL_OBSTYPE		58,461
		MAMMOGRAM_BILATERAL_PROC	923,323	148,302
	Mammogram	MAMMOGRAM_DOCUMENTED_OPTF_PROC	495,494	374,377
		MAMMOGRAM_OBSTYPE		38,135
Mastectomy		MAMMOGRAM_PROC	1,132,739	787,214
		MASTECTOMY_LEFT_CLIN	5,400	700
		MASTECTOMY_LEFT_PROC	109	1,722
		MASTECTOMY_RIGHT_CLIN	4,659	617

## Workflow Validation

Provide documentation for a standardized workflow in each individual data source for each measure

Breast Cancer Screening	Place a Mammogram order (measure is met once the results are documented in the Results section). If done elsewhere, document in the procedure history section as "Mammogram" with the exam date in the Date field. A scanned mammogram will also meet this measure if scanned appropriately in the Mammogram folder with result date documented. NOTE: If a patient has had a double mastectomy, document as "Bilateral Mastectomy" in the patient's procedure history to exclude them from this measure. Patients with a unilateral mastectomy will still be included.
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# Importance of Workflow Standardization

- Work with clinical stakeholders to optimize and standardize workflows
- Discretely documented information can be mapped

**Breast Cancer Screening**

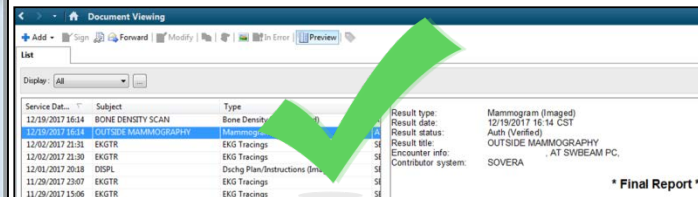
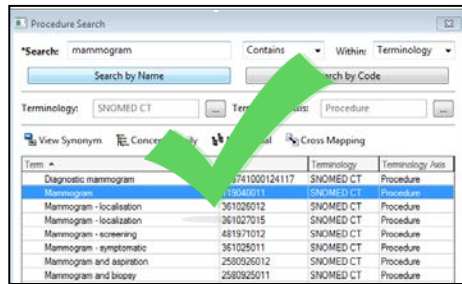
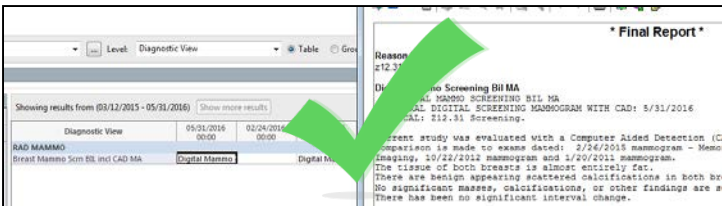
Place a Mammogram order (measure is met once the results are documented in the Results section). If done elsewhere, document in the procedure history section as “Mammogram” with the exam date in the Date field. A scanned mammogram will also meet this measure if scanned appropriately in the Mammogram folder with result date documented.  
 NOTE: If a patient has had a double mastectomy, document as “Bilateral Mastectomy” in the patient’s procedure history to exclude them from this measure. Patients with a unilateral mastectomy will still be included.

- When the standardized workflow is followed, measures will be met

Interfaced Result

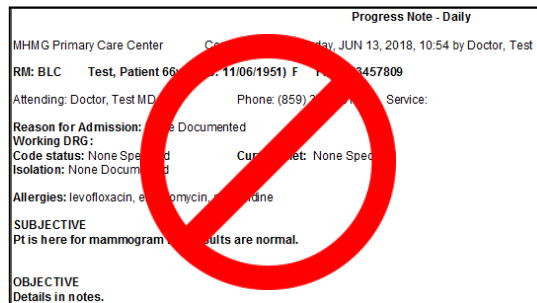
Documented Procedure History

Scanned Document



- If standardized workflow has not been followed, the measures will not show as met

Free Text





# Integrated Workflow Process

## Physician documentation for “Breast Cancer Screening” in EMR:

Cerner Ambulatory:

eClinicalWorks:

All Scripts:

Procedure Search

\*Search: mammogram

Search by Name

Terminology: SNOMED CT

Term	Code
Diagnostic mammogram	726741000124117
Mammogram	119040011
Mammogram - localisation	361026012
Mammogram - localization	361027015
Mammogram - screening	481971012
Mammogram - symptomatic	361025011
Mammogram and aspiration	2580926012
Mammogram and biopsy	2580925011

Diagnostic Imaging

Status: Open Reviewed

Patient: Sel Info Hub

DOB: 12/14/1970 Age: 47Y

Sex: F

Tel:

Acct No:

Elgb Status:

Provider:

Facility:

Assigned To:

Diagnostic Imaging Information

Imaging	Order Date	Performed Date
Mammogram	8/30/2016	8/31/2016

FlowSheets

\*\*Preventive

Family Medici

Data Includes: All

Item Name	Select	25 Jan 2018
Date of Annual Wellness Visit	<input type="checkbox"/>	1
Mammogram	<input type="checkbox"/>	非.
Results of Most Recent...	<input type="checkbox"/>	
Comments Mammogram	<input type="checkbox"/>	Breast mammogram screen bilateral, , 25Jan2018 C



Closes gap in SmartRegistry:

Breast Cancer Screening(ages 50-64)

Dec 18, 2017

Achieved

Breast Cancer Screening(ages 50-64)

Dec 18, 2019

Breast Cancer Screening(ages 50-64)

From Document: Dec 18, 2017 2:56 P.M.

Breast Mammo Scrn  
BIL incl CAD MA

Memorial Hermann (EMR)

Screening Jan 19, 2017

mammography  
results documented  
and reviewed (PV)

CPT-4 3014F



Satisfies the following Programs:

- HEDIS
- NCQA
- MSSP
- STARS
- MIPS Quality
- Commercial Contracts

# SmartRegistry: Point of Care (POC) Report



## Point Of Care Document July 18, 2016

Test, Patient  
**DOB:** 01/01/1960    **Age:** 60 years    **Gender:** Female    **MRN:** MRN\_1234  
**Location:** Sugar Lakes Family Practice    **Appointment:** Jul 18, 2016 10:20 AM  
**Provider:** Cantu, Nora    **Payer:**

### Registry: Adult Wellness

Measure Name	Status	Due Date
Cervical Cancer Screening (ages 21-64)	Not Achieved	Due Now
Influenza Vaccination	Not Achieved	Due Now

### Registry: Asthma

All measures have been met for this registry at this time.

### Registry: Heart Failure

All measures have been met for this registry at this time.

### Registry: Hypertension

Measure Name	Status	Due Date
Blood Pressure < 140/90 mm Hg	Not Achieved	1/31/17

### Registry: Ischemic Vascular Disease Coronary Artery Disease

All measures have been met for this registry at this time.

### Diagnosis Persistence Blank fields indicate no data available

HCC	HCC Description	Diagnosis Persistence Condition	Code	Last Service Date	Source
58	Major Depressive, Bipolar, and Paranoid Disorders	Bipolar I disorder, most recent episode (or current) unspecified	296.7	5/20/14	HealthIntent
85	Congestive Heart Failure	Congestive heart failure, unspecified	428.0	2/24/14	HealthIntent

### Suspected Diagnosis

HCC	HCC Description	Supporting Facts	Competing Facts
111	Chronic Obstructive Pulmonary Disease	ipratropium albuterol = true 7/3/16	No Competing Facts Found

- For EMRs that do not have the SmartRegistry component fully integrated, the Point of Care (POC) Report has been created to show the gaps of care for all patients (scorable and non-scorable).
- The Report shows three types of gaps:
  - Measures due now,
  - Measures due within six months and
  - Measures that have not been achieved.
- The Report also shows Hierarchical Condition Categories (HCC).

# Care<sup>4</sup> Integrated Workflow



- Care<sup>4</sup> Ambulatory users have integrated access to Registry care gaps via the Recommendations Module.
- SmartRegistry care gaps can be addressed and are **actionable** via this module.

Recommendations

\* To satisfy this requirement, you must satisfy all overdue recommendations.

Pending (17) Not Due / Historical (8) HealthRegistries (27) Communication Preference: Telephone

Recommendation	Last Action	Due	Actions
<b>Adult Diabetes</b>			
<b>Senior Wellness</b>			
Senior Wellness - Fall Risk Screening	Implement measures listed u...	<b>OCT 06, 2016</b>	
Senior Wellness - Bone Density Screening	--	FEB 01, 2018	
Senior Wellness - Breast Cancer Screening	--	FEB 01, 2018	Digital Mammo Screen Bil MA w tomo Order Digital Mammo Screening Bil MA Order Refused Permanently
Senior Wellness - Colorectal Cancer Screening	--	FEB 01, 2018	
Senior Wellness - Depression Screening	--	FEB 01, 2018	
Senior Wellness - Influenza Vaccination	--	FEB 01, 2018	
Senior Wellness - Pneumococcal Vaccination	--	FEB 01, 2018	
Senior Wellness - Shingles Vaccination	--	FEB 01, 2018	

All recommendations are shown for the category above. Show only Favorites Manage Favorites

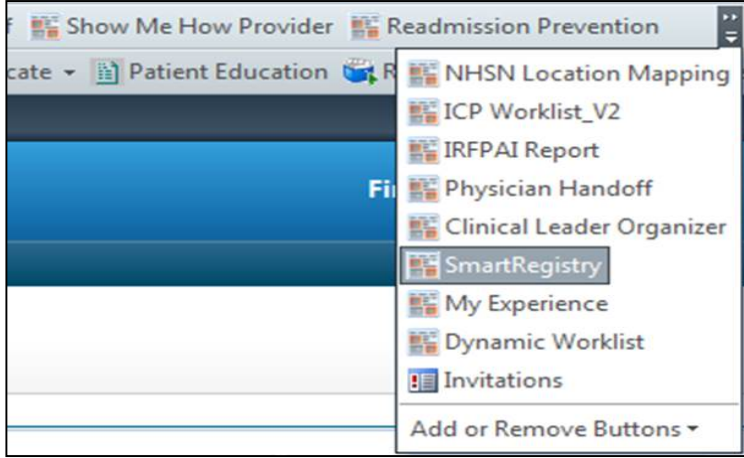
Senior Wellness - Breast Cancer Screening  
2018 (Today) Unknown

Category/Registry: Senior Wellness  
Last Action: --  
Status: Missing Data

# Care<sup>4</sup> Integrated Workflow



- Care<sup>4</sup> Ambulatory users also have web-based access to the SmartRegistry portal directly from within the application.
- Web-based access allows physicians to view and filter their entire attributable patient population and scorecards.
- SmartAnalytics reporting and dashboards are also available within the web-based application.



A screenshot of a patient's 'Adult Wellness' dashboard. The dashboard displays various health metrics and screening results. A red box highlights a popup window for 'Breast Cancer Screening(ages 50-64)'. The popup shows two items:

- ✓ From Document: Breast Mammo Scrn BIL w tomo incl CAD MA (Nov 27, 2017 1:33 P.M. UTC)
- ✓ Computer-aided detection (computer algorithm analysis of digital... (Jun 14, 2016)

The dashboard also shows other metrics such as 'Blood Pressure Measurement' (120/82 mm Hg), 'Annual Office Visit' (Achieved), 'Body Mass Index' (Achieved), 'Breast Cancer Screening(ages 50-64)' (Achieved), 'Depression Screening' (Performed), 'Influenza Vaccination' (Performed), 'Lipid Panel' (Excluded), and 'Shingles Vaccination' (Excluded). The top right corner indicates '11 out of 11 Met'.



# eCW Integrated Workflow

- A fully integrated panel within eClinicalWorks displays gaps of care for patients via a SmartRegistry API call to SmartData.

Overview DRTLA History CDSS Labs/DI Templates eEHx PopHealth

EXTERNAL REGISTRIES (2) ? -- All --

Risk Score: 0.02

Quality Score: 25%

ADULT WELLNESS (2 OUT OF 7 MET)

Annual Office Visit

Value unit : Not Achieved

Last satisfied date : N/A

Due date : N/A

Frequency : N/A

Supporting Facts

Encounter with Doshi, Ankur ECWx EMR (EMR) (2016-04-25)

Blood Pressure Measurement

Value unit : Not Achieved

Last satisfied date : 2016-04-25

Due date : 2017-04-25

Frequency : 365

Supporting Facts

Blood Pressure 110/70 mm[Hg] PrimeCare Medical Group; MHMD HIE (EMR) (2016-04-25)

Body Mass Index

Colorectal CA Screening(ages 50-64)

Depression Screening

Influenza Vaccination

Tobacco Use Screening and Cessation

HYPERTENSION (0 OUT OF 1 MET)

Blood Pressure < 140/90 mm Hg

- Risk Score: represents a patient's overall expected health outcome or cost; the higher the risk score, the more costly than average a patient's care is likely to be.
- Quality Score: the overall score for patient's quality of measures completed and achieved.
- Measure Status:
  - Black – measure has been performed and was successfully achieved.
  - Grey – patient is excluded from this measure due to one of the exclusion rules.
  - Red – measure has not been achieved or documentation is missing.
- Supporting Facts: supporting evidence explaining how the measure was achieved/performed (i.e. – claims data or EMR data)

# AllScripts Workflow

- A fully integrated panel within AllScripts displays gaps of care for patients via a SmartRegistry API call to SmartData.

**SmartRegistry**

Patient Name: / MRN: Sex: Female DOB: Patient ID: Close

Registries information is up to date

Quality Score: 40%

**Adult Diabetes Supporting Facts:**

Diabetes mellitus  
Memorial Hermann (EMR)

Encounter for gynecological examination (general) (routine) without abnormal findings  
2017-10-13  
Memorial Hermann BCBS Claims (Claim)

HEMOGLOBIN A1c 6.2  
2015-09-27  
ECWx EMR (EMR)

DM II (Diabetes mellitus type II)  
2015-07-06  
ECWx EMR (EMR)

insulin regular, PYXIS  
2006-01-12  
Memorial Hermann (EMR)

Encounter with Brown, Jeffrey, Brown, Jeffrey, Wisniski, Sherry D, Brown, Jeffrey and Bryant, Rebecca L  
2006-01-11  
Memorial Hermann Memorial City Hospital, Memorial Hermann (EMR)

LDL < 100 mg/dL	2018-09-18	Not Achieved	2015-07-07
LDL ≥ 130 mg/dL	--	Not Achieved	2015-07-07
Lipid Panel	2018-09-18	Achieved	2017-09-18
Nephropathy Monitoring	--	Achieved	2017-04-06
Semiannual Office Visit	2018-04-11	Not Achieved	2017-10-13

**Adult Wellness<sup>(4 of 9 met)</sup>**

Measure Name	Due Date	Outcome	Date
Annual Office Visit	--	Achieved	2017-10-13
Blood Pressure Measurement	2018-04-10	Not Achieved	2017-04-10
Body Mass Index	2018-04-10	Not Achieved	2017-04-10
Cervical Cancer Screen (ages 21-64)	2022-10-12	Achieved	2017-10-13
Depression Screening	2016-07-05	Not Achieved	2015-07-06
HIV Screening	--	Non React	2013-02-06
Influenza Vaccination	--	Not Achieved	2013-11-04
Lipid Panel	--	Excluded	2015-07-06
Tdap Vaccination	--	--	--
Tobacco Use Screening and Cessation	2019-04-10	Performed	2017-04-10

**Supporting Facts:**

neversmoker  
2017-04-10  
ECWx EMR (EMR)

Patient screened for tobacco use and received tobacco cessation intervention (counseling, pharmacotherapy, or both), if identified as a tobacco user (PV, CAD)  
2016-09-26  
Memorial Hermann BCBS Claims

- This component shows patient demographic information, registry and measure supporting facts, gaps of care with statuses, satisfied dates, and due dates.

# SmartRegistry: Smart on FHIR APP

- Memorial Hermann is currently working with various EMRs to deliver a HealthInsights Smart APP in line within a Physicians workflow. This app displays patients care gaps from the SmartData platform.

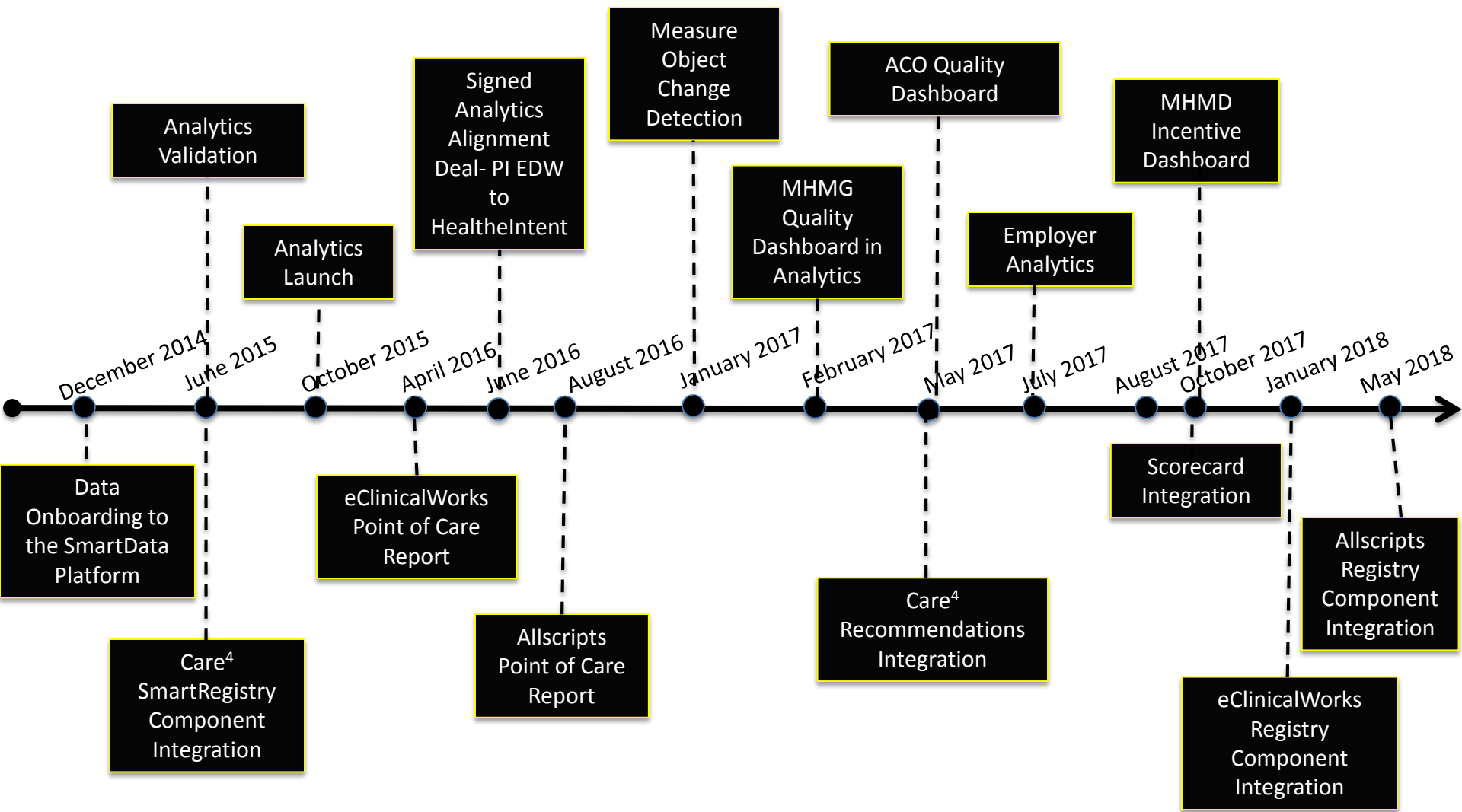
The screenshot displays the HealthInsights Smart APP interface. On the left is a navigation sidebar with the Cerner logo and 'HealthInsights' branding. It includes a 'Registries' section with a '15% Quality Score' and a list of measures: 'All Measures' (selected), 'Not Achieved Measures (85%)', '10 Adult Wellness', and '7 Ischemic Vascular Disease / Coro...'. Below this is an 'HCC' section with '5' and a 'Recent Visits' section with '0'. The main area contains a grid of 12 care gap cards, each with a title, a due date, a status (Not Achieved), and a category. The cards are: 1. Blood Pressure < 140/90 mm... (Mar 5, 2015, Not Achieved, Ischemic Vascular Disease / C...); 2. Blood Pressure Measurement (Mar 5, 2015, Not Achieved, Adult Wellness); 3. LDL < 70 mg/dL (Oct 1, 2015, Not Achieved, Ischemic Vascular Disease / C...); 4. Body Mass Index (Sep 13, 2016, Not Achieved, Adult Wellness); 5. Body Mass Index (Sep 13, 2016, Not Achieved, Ischemic Vascular Disease / C...); 6. Alcohol Use Screening (NOW, Not Achieved, Adult Wellness); 7. Breast Cancer Screening (NOW, Not Achieved, Adult Wellness); 8. Cervical Cancer Screening (NOW, Not Achieved, Adult Wellness); 9. Comprehensive Care (NOW, Not Achieved, Ischemic Vascular Disease / C...); 10. Depression Screening (NOW, Not Achieved); 11. Diabetes Screening (NOW, Not Achieved); 12. HIV Screening (NOW, Not Achieved).



# Lessons Learned

- Validation is the KEY to success
  - There is no such thing as too much validation.
- Emphasis on standardized workflows
  - Understanding providers' workflow in each EMR and coding tool
- Understanding mapping processes
  - Proprietary codes, standardized codes, concepts, etc.
- Keep customizations to a minimum
  - Clinical Standard vs. MH Custom Measures
- Consistency across components
  - Similar builds across each EMR component

# SmartData Timeline



# SmartAnalytics



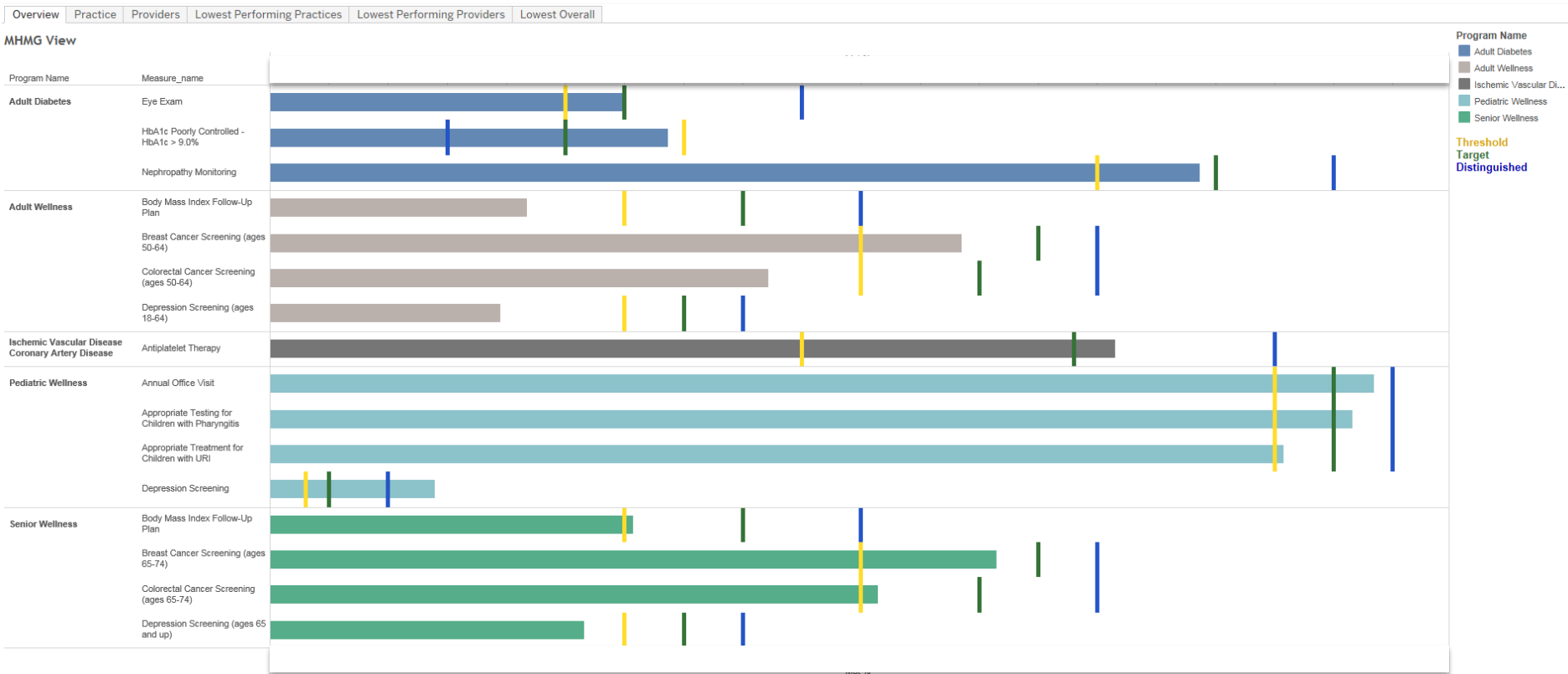
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- Powered by Cerner's HealthIntent platform, which creates a single person record across ~40 sources comprised of payer and clinical data
- All large data is processed through the normalization engine on the Hadoop platform
- Data is then made available through Business Objects or Tableau on a Vertica database that allows for highly tuned querying

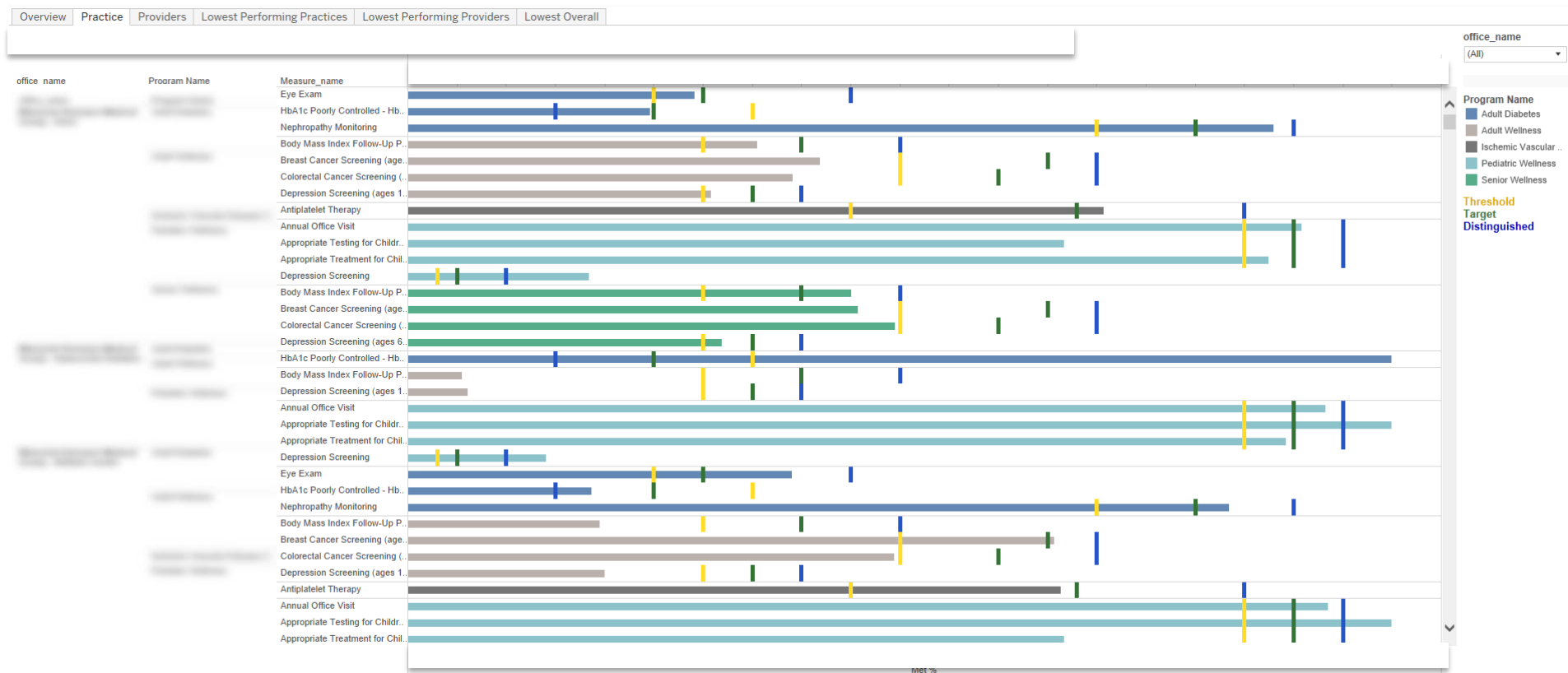
# SmartAnalytics: MHMG Quality Dashboard



- Shows overall registry and measure quality scores for MHMG providers



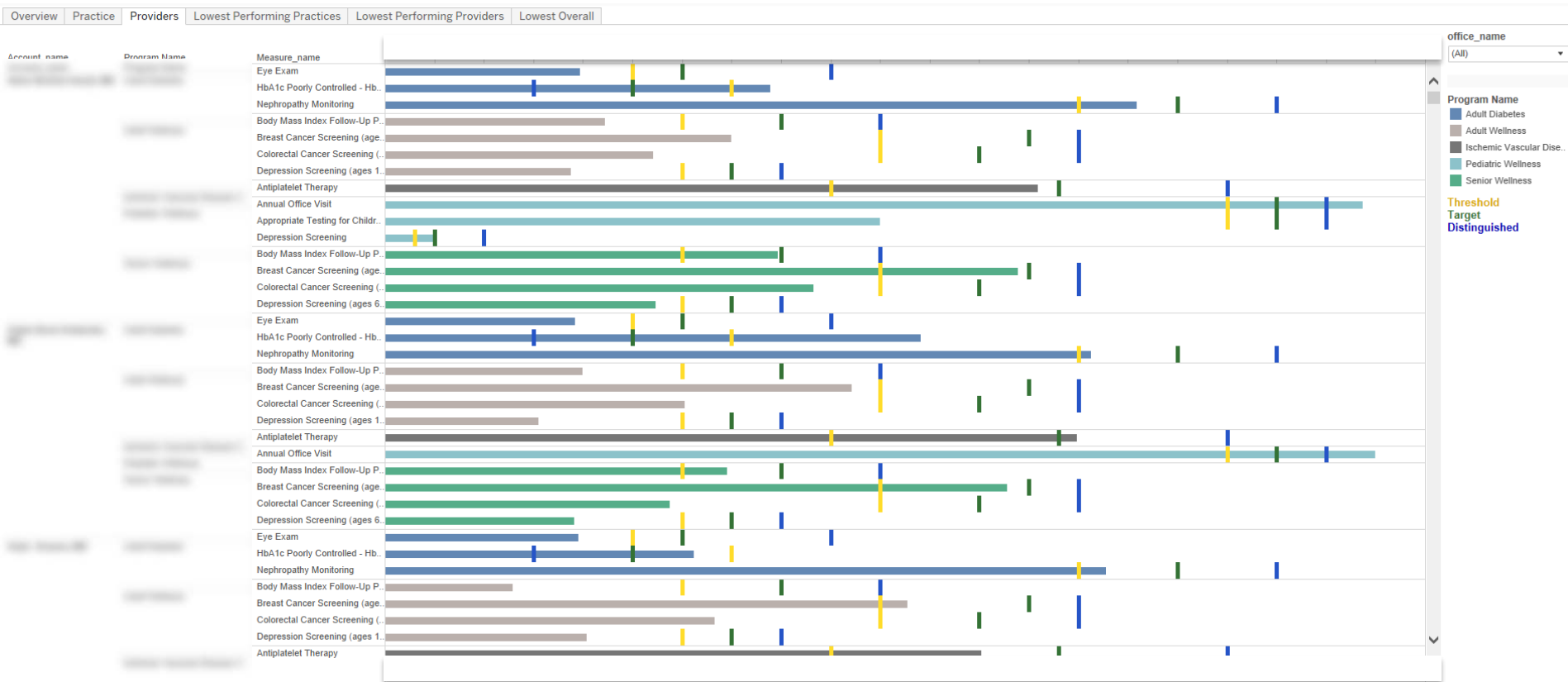
- Shows a breakdown of registry and measure performance by practice



# SmartAnalytics: MHMG Quality – Provider View



- Shows a breakdown of registry and measure performance by individual provider





# SmartAnalytics: Incentive Dashboard

- Shows a breakdown of registry and measure performance by provider for scorable measures

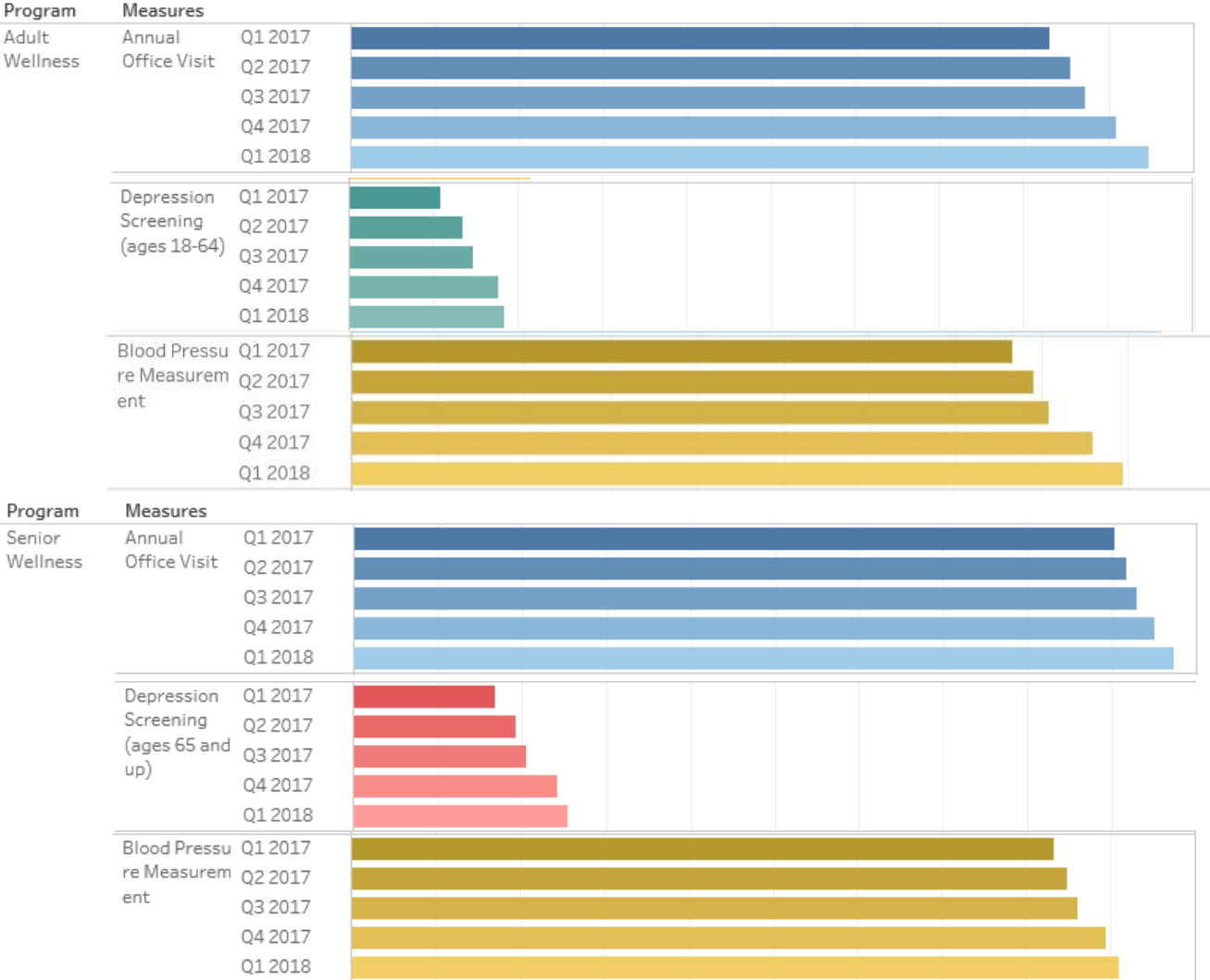


# MHMG Physician Results



Population	Measure	Initial Met %	End Met %	% Increase	Population Growth %
Adult Wellness Panel Size ~186,000	Annual Office Visit	83%	94%	11%	38%
	Depression Screening	11%	19%	8%	41%
	BP Measurement	77%	89%	12%	38%
Senior Wellness Panel Size ~65,000	Annual Office Visit	90%	97%	7%	24%
	Depression Screening	17%	26%	9%	24%
	BP Measurement	83%	91%	8%	24%
	BMI	86%	92%	6%	24%
Adult Diabetes Panel Size ~37,000	Eye Exam	22%	28%	6%	33%

# Employed Physician Results



# ACO Contract Performance



Payor	Measure	Pre	Post	Savings Revenue
Payor A 84,418 Lives	Breast Cancer Screening	79.5%	80.0%	\$636,787
	Diabetes A1c Testing	94.0%	94.5%	
	Diabetes Control	67.5%	71.1%	
	Pediatric Well Child Visit	83.7%	86.6%	
	Post MI: Ace-I/ARB Therapy	89.8%	91.2%	
Payor B 103,675 Lives	Breast Cancer Screening	72.1%	73.3%	\$2,500,000
	Cervical Cancer Screening	79.0%	80.0%	
	Diabetic Care – Retinal Eye Exam	33.7%	40.1%	
	Diabetic Care – Nephropathy Screening	74.7%	84.6%	
	Diabetic Care – HbA1c <8%	35.9%	41.6%	

# ACO Contract Performance

(cont'd)

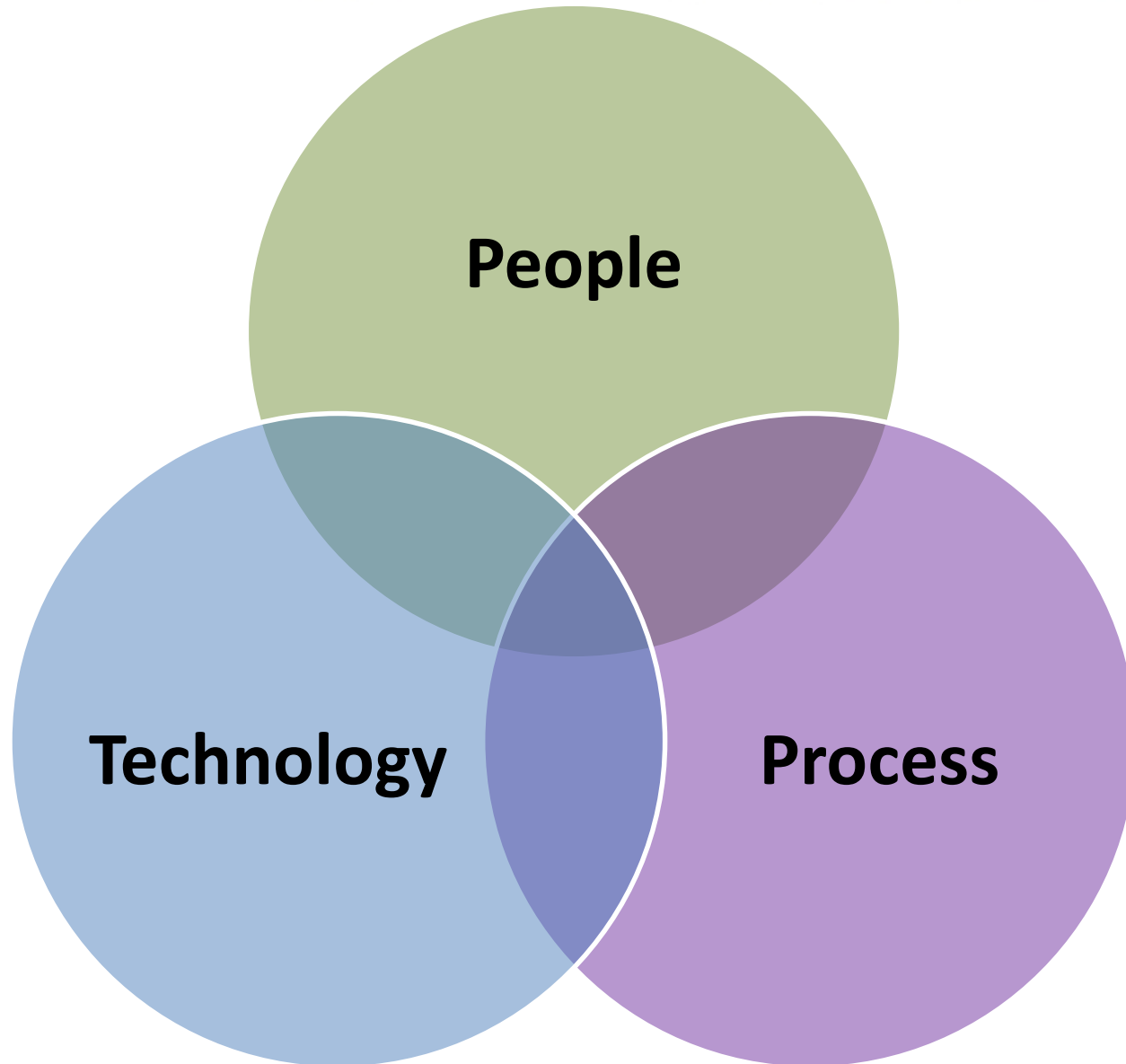


Payor	Measure	Pre	Post	Savings Revenue
Payor C 34,000 Lives	Ace-1/ARB: Persistent use with lab monitoring	89.6%	92.1%	\$636,787
	Diabetes: HbA1c <8%	60.9%	69.4%	
	Diuretics: Persistent use with lab monitoring	88.2%	91.9%	
	Persistent Medication with annual monitoring: ACE-1/ARB, Digoxin, Diuretics	89.1%	92.0%	
	Well child visits 3-6 years of life	81.9%	82.7%	
TOTAL				<b>\$3,696,787</b>

# Final Thoughts

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# Physician Feedback

“With continued improvements in the SmartRegistry application, I have been able to use this component within Cerner to help assure that I am addressing key health maintenance issues and helping patients remain up-to-date with treatment and prevention of chronic medical problems. Integration within the EHR and capturing claims data saves me time that would have otherwise been spent searching for data that previously may not have been easily available.”



Director of Medical Operations, MHMG

# THANK YOU!!!

