



# Driving Engagement and Action from Data

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# Agenda

- About Christiana Care
- Framework for Dashboard Best Practices
- Bringing data into caregiver workflows



**Classification of Work**



**Boring Wardrobes**



**Keep it Simple &  
Straightforward (KISS)**



# ChristianaCare<sup>®</sup>

WE SERVE TOGETHER WITH  
LOVE AND EXCELLENCE

**Regional Community Based Academic Health System**

*Delaware, Maryland, Pennsylvania & New Jersey*

### **Committed to:**

Value and actively partnering to assume risk.

Changing the care delivery model.

Reducing total cost of care.

- *Three hospitals and a freestanding ED.*
- *Gene Editing Institute.*
- *Health & Technology Innovation Center.*

- *Regional centers of excellence:  
heart and vascular care, stroke care,  
cancer care and women's health.*

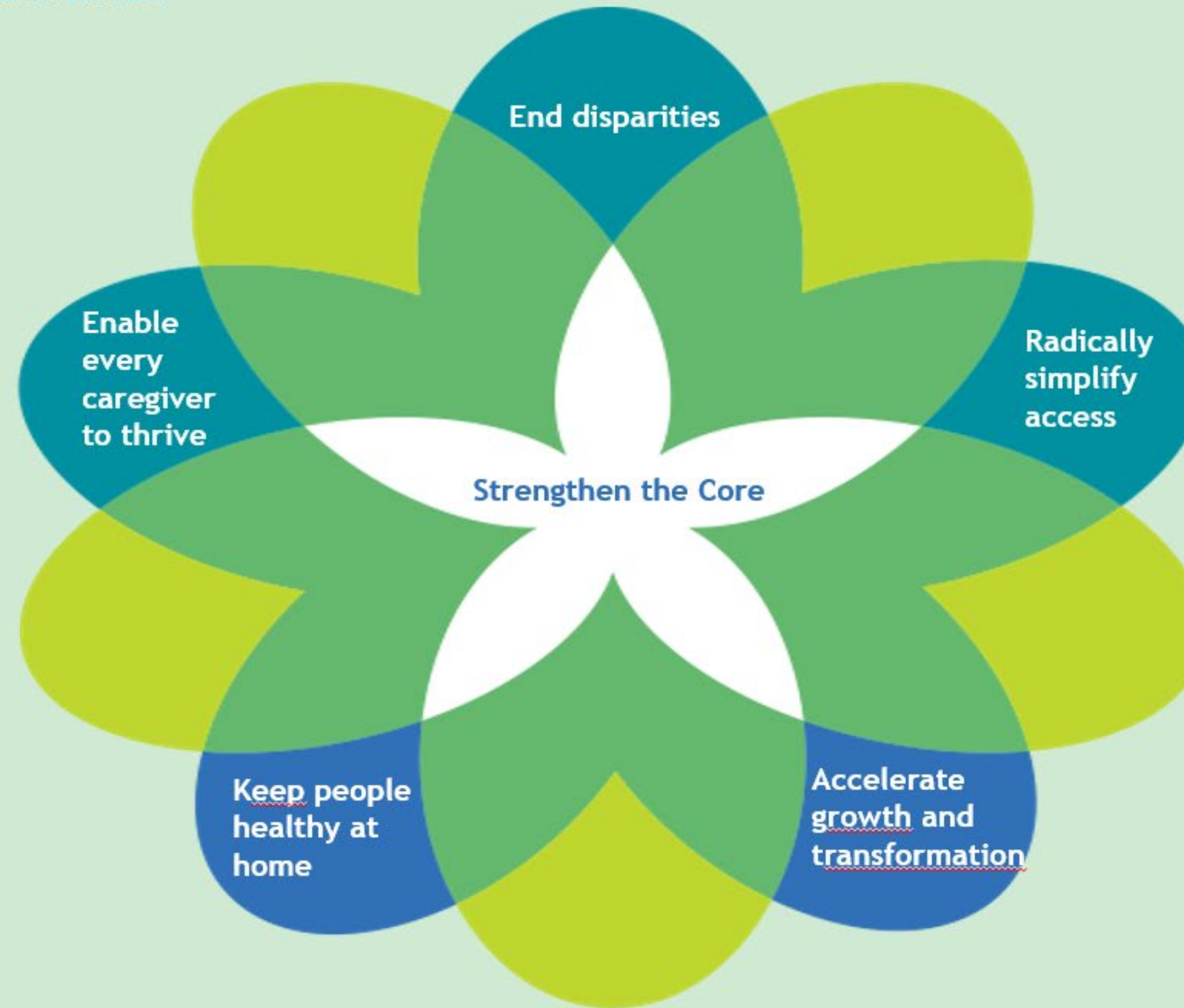
**13,000+** Caregivers

**130+** Practices, locations  
and urgent care



## Our aspirations

Building on what we do best, ChristianaCare will achieve **breakthrough outcomes** by creating a **boundless organization** driven to...



# Population Health Analytics & Informatics

## Performance Center

### Dedicated Population Health Analytics Team



Centralized Enterprise Analytics Warehouse

### Coordinated Pop Health Informatics Strategy



Core IT Infrastructure & EMR Application Teams

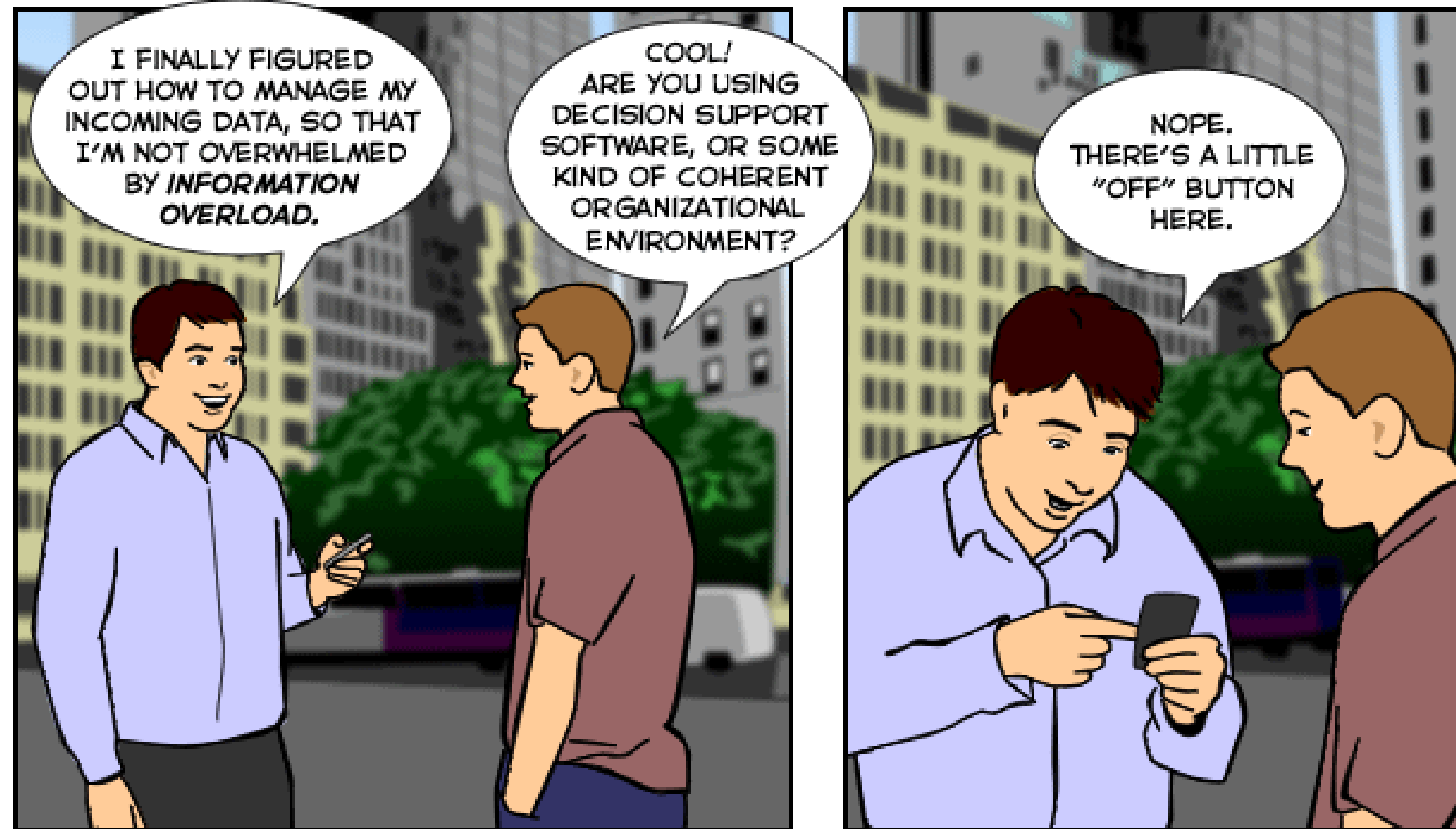


# Framework for Dashboard Best Practices

# The Move to Information Overload

The Joy of Tech™

by Nitrozac & Snaggy



©2008 Geek Culture

joyoftech.com

# Dashboarding Best Practices

## Understand the target audience and the intended purpose

- Show only the information that you need to show (avoid TMI)
- Anticipate secondary questions that the dashboard should support

## Focus on the user experience

- Usability of navigation
- Purposeful filtering capabilities

## Tell the story with the data; highlight what is important

- Apply thought to axes to drive the appropriate interpretation of the data
- Every visual should serve a purpose

## Stakeholder engagement at multiple stages

- Design
- Testing/validation
- Deployment



**Keep it Simple & Straightforward  
(KISS)**



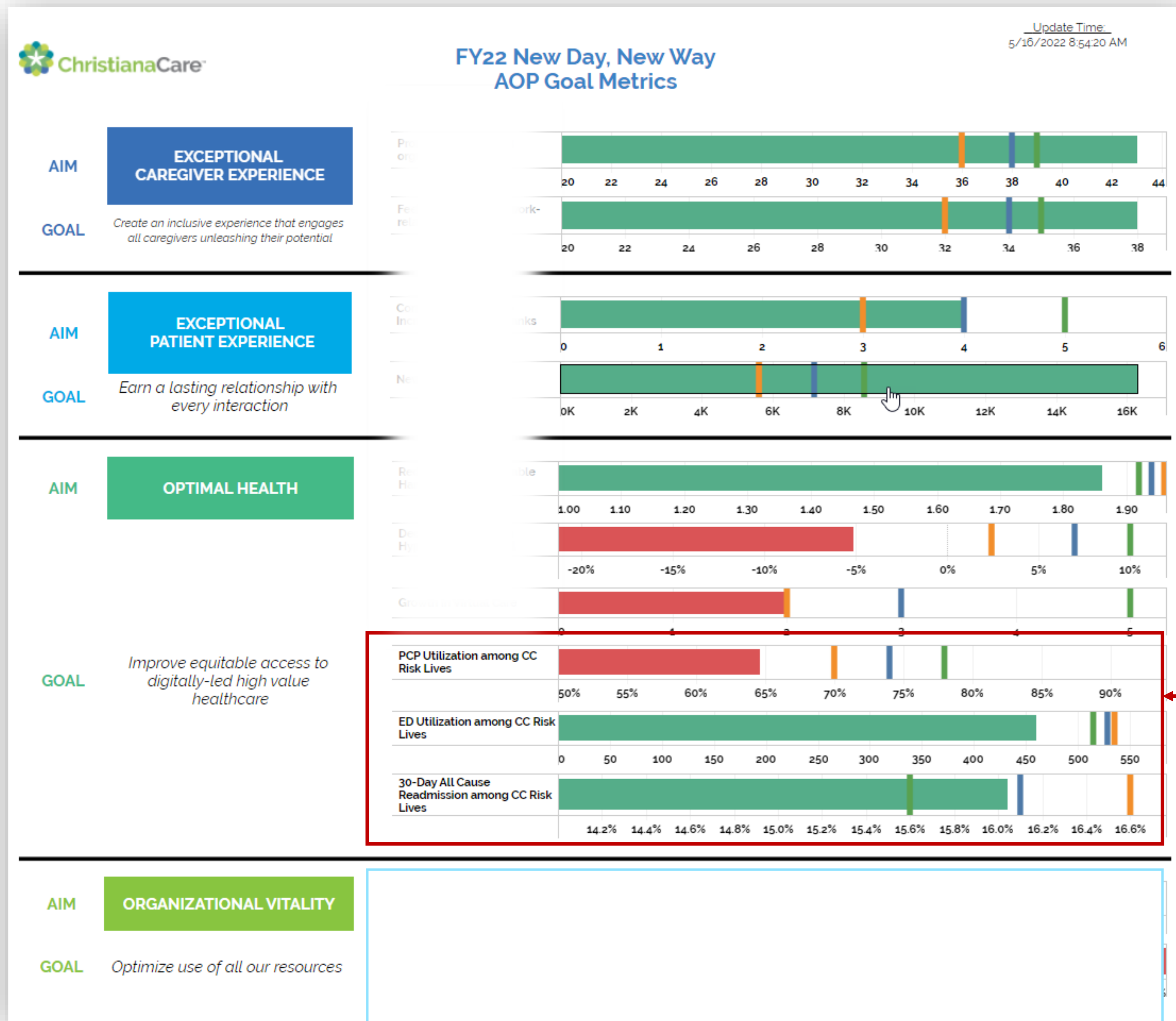
# Dashboard Classification



	Executive Dashboard	PI Tool	Analytic Explorer
WHO Who is the target audience?	Executive Leadership & Business Area leads	Business area lead, performance improvement team	Subject matter expert  May be complicated to navigate and requires analytical skills
WHAT What is it?	High level scorecard or summary view of KPIs demonstrating progress to goals	Self-service tool that allows teams to track performance on a prioritized subject matter, with visibility to outcome metrics and process metrics	Self-service tool that allow analysts to perform deep exploration of related outcomes and metrics
WHY Why are we sharing this data?	Leadership visibility Performance monitoring (high level)	Performance monitoring (local level) Performance improvement	Opportunity analysis, sizing, and prioritization. Analysis of drivers and performance pockets
WHERE Granularity of the data?	Rollup high level performance	Down to Patient/encounter level detail Filtering by practice/provider/population Filtering by intervention status	Down to Patient/encounter level detail Filtering by practice/org/provider /population/other
WHEN When is the data refreshed?	Near-real time (monthly/quarterly)	“Real Time-ish” (weekly, daily refresh)	Variable; claims lag is ok!

What other categories come to mind?

# Executive Dashboard



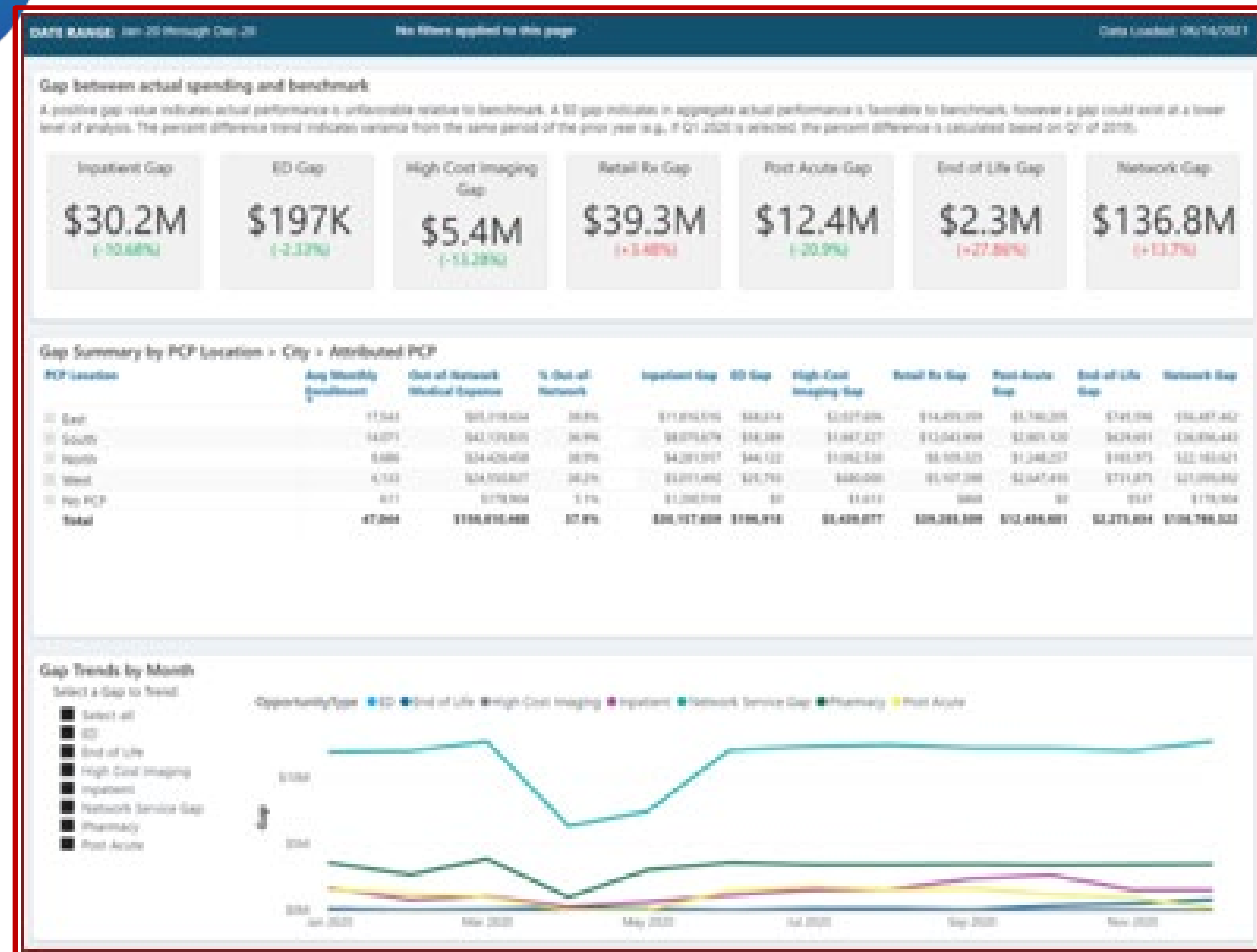
KPIs tracked at organizational level according to the quadruple aim.

- Three levels of goals -
- Threshold
  - Target
  - Stretch

Hover to see trend line

Three  
**Population Health**  
 aligned KPIs

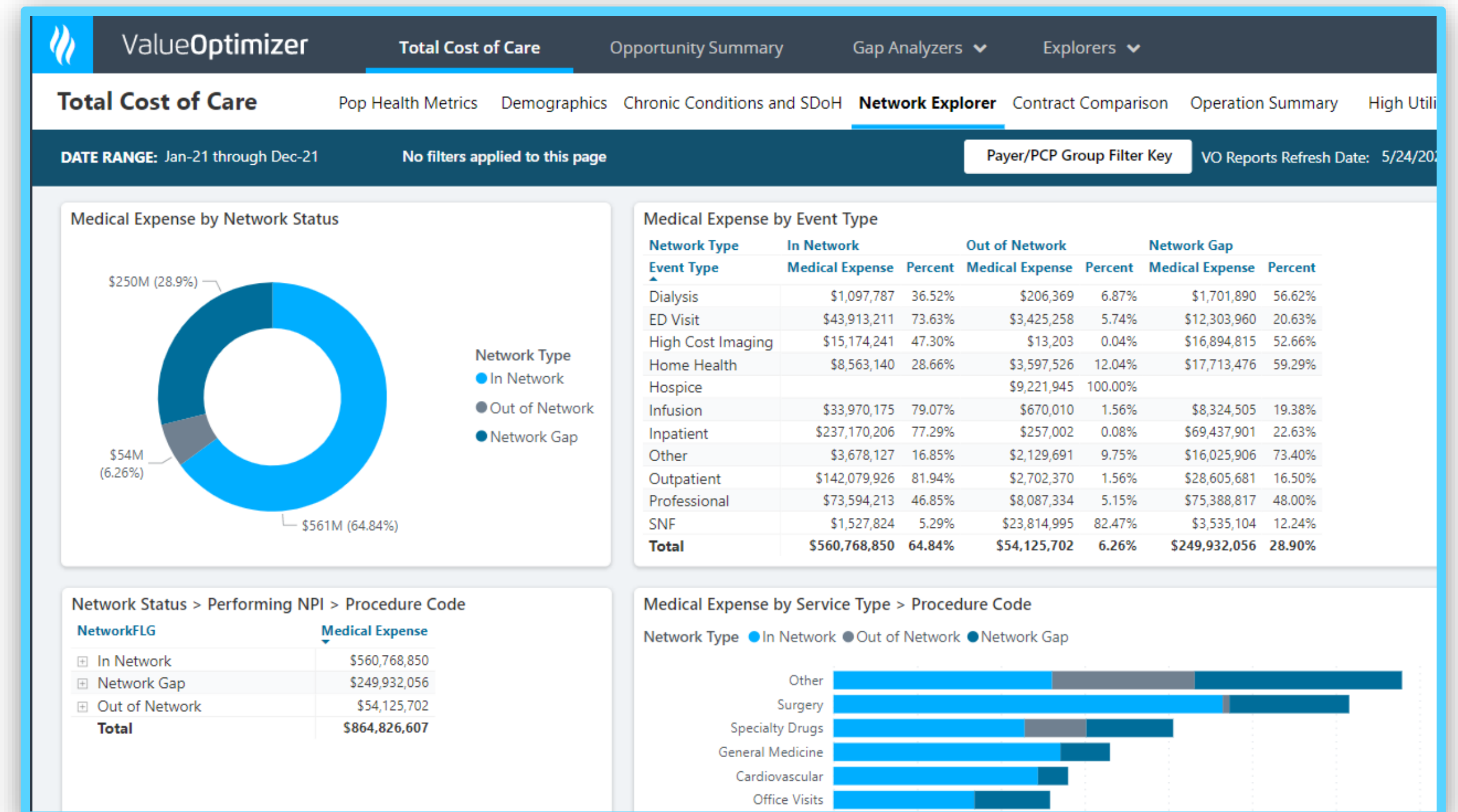
# Analytic Explorer



- Total Cost of Care- Cost Analysis by Conditions
- Opportunity Summary- In Network/Out Network Analysis
- Gap Analyzers and Explorers..

## Value Optimizer by Health Catalyst

- Next generation of cost & utilization performance analysis
- Drill down to any granularity
- Custom attribution and in-network configuration
- External benchmarks based on “digital twin” population

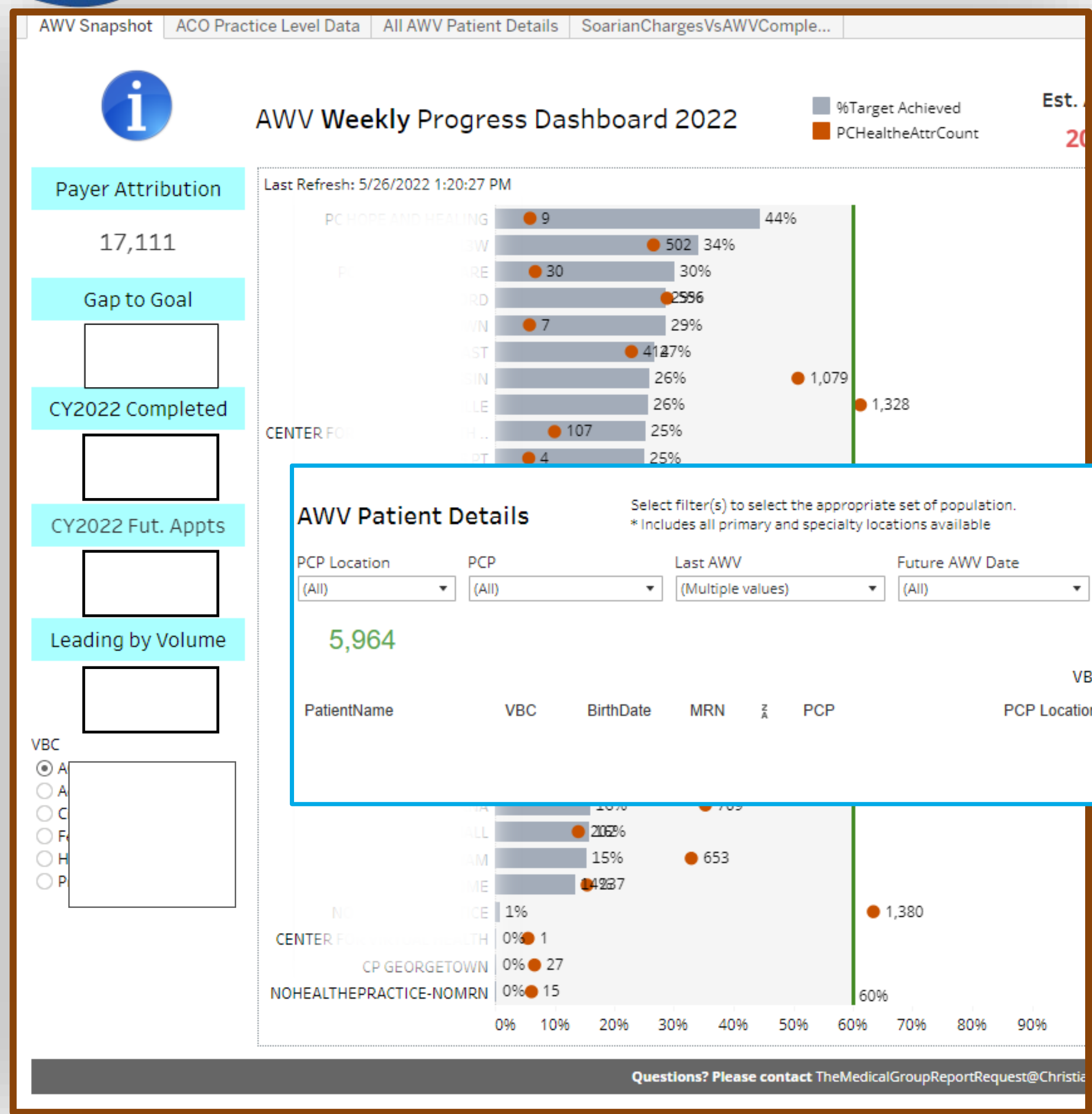


# PI Tool – AWW Dashboard

AWV Dashboard

- Tracks progress to goal across all medicare LOBs
- Performance rates by practice, provider
- Integrates charges and scheduling data

Actionable Patient-level Detail with multiple filters that allow for slicing dataset to target outreach, run queries, support chart audits





# Use dashboards to tell a story with the data



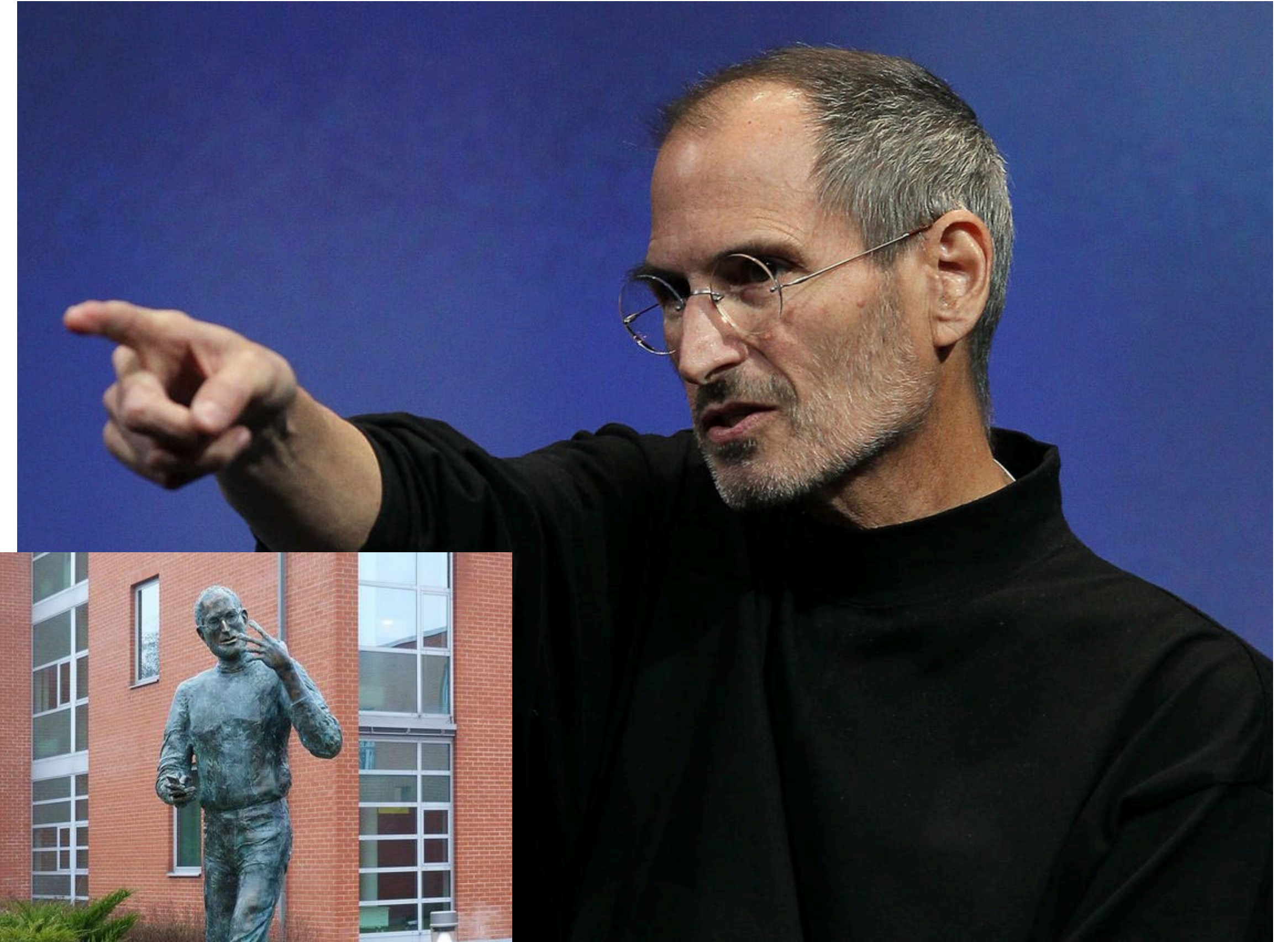
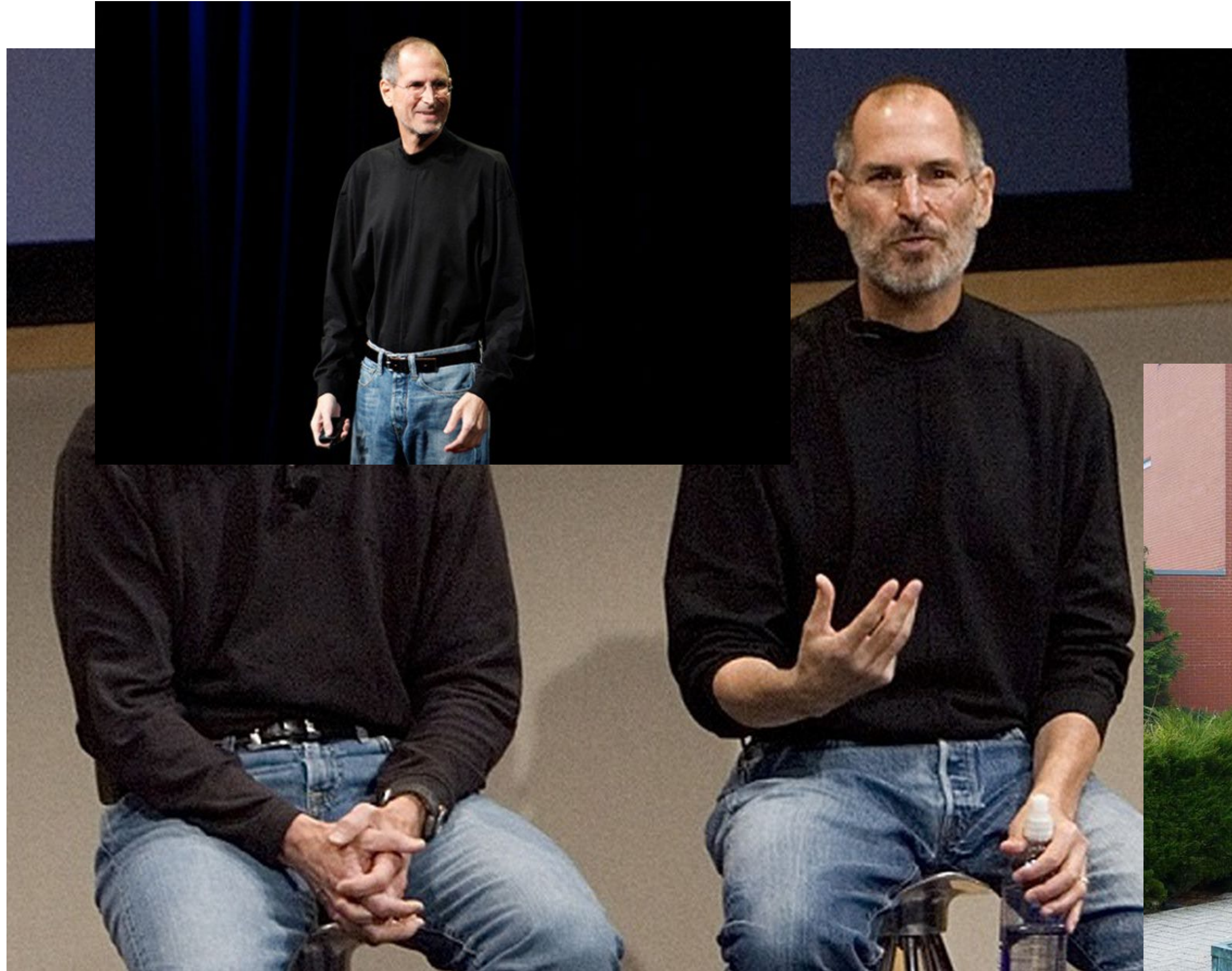
- Dashboard classification will help you to
  - Present the right version of the data for the right audience
  - Avoid solving for too much in one tool
  - Implement the level of data granularity and security that supports your goals

	Executive Dashboard	PI Tool	Analytic Explorer
Key Takeaways	Data to support Leadership needs to be CLEAR and CONCISE	Data to support PI needs to be LOCAL, TIMELY, and PROCESS-ORIENTED	Data to support exploration needs to be AGGREGATED, BENCHMARKED, and FLEXIBLE



# Driving Data into CareGiver Workflows

# Why was Steve Jobs always wearing the same thing?



# Decision Fatigue

JAMA Network | **Open**

Invited Commentary | Oncology

## Decision Fatigue, Running Late, and Population Health Management—Screening Out of Time

David T. Liss, PhD; Jeffrey A. Linder, MD, MPH

Oh dear! Oh dear! I shall be too late!

*The White Rabbit, Alice's Adventures in Wonderland, Lewis Carroll*

+ [Related article](#)

Author affiliations a

JAMA Network | **Open**

Invited Commentary | Infectious Diseases

## The Power of the Nudge to Decrease Decision Fatigue and Increase Influenza Vaccination Rates

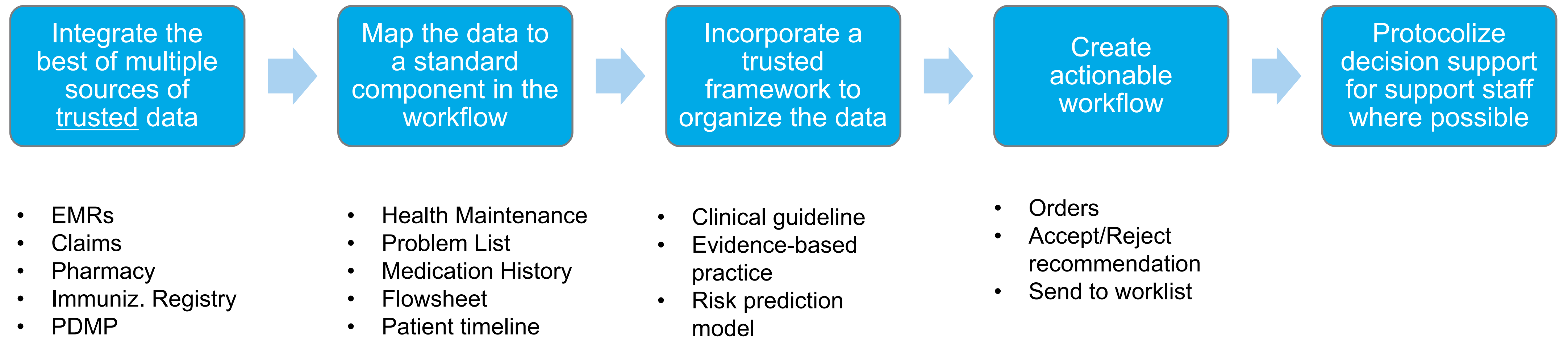
Suchitra Rao, MBBS; Ann-Christine Nyquist, MD, MSPH

“to tackle the problem of healthcare costs effectively, we’ll need a system in which “everyone is practicing at the top of their license.”  
— Robert Wachter, [The Digital Doctor: Hope, Hype, and Harm at the Dawn of Medicine’s Computer Age](#)



# Informatics Guiding principles

The goal is to reduce the steps (both physical and cognitive) involved in patient care



# Clinical Decision Support

## Integrating Claims & EMR data for Preventive Care

ZZTEST, SUZANNE

ZZTEST, SUZANNE  
Pref Lang: English

DOB:01/23/1968  
Age:54 years  
Gender:Female

MRN:11001033105  
Fin#:21003901676  
Loc:Endo WHC

Type:Outpatient [04/28/2020 07:00 - 04/28/2020 23:59]  
PCP:None, Given

CommonWell: Not Enabled  
Patient Portal: No

Ambulatory View

Primary Care Ancillary Wor... X QO - Primary Care X Asthma Action Plan X Advanced General Care An... X Amb Message Center Sum... X Ambulatory Timeline X

**\* Health Maintenance**

Pending Not Due / Historical HealtheRegistries

Communication Preference: Edit  My Role Only  Group By Category

Recommendation	Next Due	Last Action	Recurrence	Source	Orders
Screening for Diabetes	Overdue (23 months)	80 (4 years ago)	Every 3 YRS	HealtheRegistries	
Cervical Cancer Screening Ages 21-65	Today	--	Variable	--	Orders
Colorectal Cancer Screening	Today	--	Variable	--	Orders
Hepatitis C Screening	Today	--	One-time only	HealtheRegistries	Hepatitis C Antibody (anti HCV) - A...
Depression Screening	In 13 days	0 (11 months ago)	Seasonal	HealtheRegistries	

**\* Health Maintenance**

Pending Not Due / Historical HealtheRegistries

Communication Preference: Edit  My Role Only  Group By Category

Recommendation	Next Due	Last Action	Recu...	Source	Orders
▼ Active (8)					
Bone Density Screening	--	Documented (18 months...)	One-time o...	HealtheRegistries	Orders
Hepatitis C Screening	--	Ordered (3 years ago)	One-time o...	HealtheRegistries	Hepatitis C Antibody...
Medicare Annual Wellness Visit	--	Documented (5 months a...)	Unknown	HealtheRegistries	
Annual Serum Creatinine Test	In 5 months	Ordered (2 years ago)	Every 1 YRS	HealtheRegistries	BMP - Amb
Depression Screening	In 6 months	0 (5 months ago)	Seasonal	HealtheRegistries	
Fall Risk Screening	In 6 months	No (5 months ago)	Seasonal	HealtheRegistries	
Breast Cancer Screening	In 20 months	Documented (3 months a...)	Every 731...	HealtheRegistries	Orders
Screening for Diabetes	In 2 years	94 mg/... (6 months a...)	Every 3 YRS	HealtheRegistries	Whole Blood Glucose...

Actions Modify View Reference

**Breast Cancer Screening**

Next Due: FEB 19, 2024 (20 Every 731 DAY months)

Category/Registry	Status
Adult Preventive Care	✓ Achieved
View Supporting Facts	View Supporting Facts
Priority	Medium
Last Action	Performed Date
Documented (3 months ago) - MAM DIAG RT/TOMO	FEB 25, 2022
Performed By	
Source	HealtheRegistries

**Breast Cancer Screening Supporting Facts**

Diagnostic mammography, including computer-aided detection (CAD) when performed; unilateral CPT-4 77065	FEB 24, 2022
ACO CMS Claims (Claim)	
Diagnostic mammography, including computer-aided detection (CAD) when performed; unilateral CPT-4 77065	FEB 24, 2022
ACO CMS Claims (Claim)	

# Clinical Decision Support

## Integrating Claims & EMR data for HCC Capture

### Hierarchical Condition Categories

#### Diagnosis Insights

##### ▼ Prior and Suspected Diagnoses (3)

##### Prior Diagnoses (2)

Specified Heart Arrhythmias I48.91  
 Unspecified atrial fibrillation (I48.91) Feb 4, 2022  
 Added to This Visit and Chronic

Chronic Kidney Disease, Moderate (Stage 3) N18.30  
 Chronic kidney disease, stage 3 unspecified (N18.30) Oct 30, 2020  
 Reject

##### Suspected Diagnoses (1)

Protein-Calorie Malnutrition bmi = 13.67  
 High  
 Reject

##### ▼ Completed this Year (2)

Current year RAF: 0.649

Breast, Prostate, and Other Cancers and Tumors C61  
 Malignant neoplasm of prostate (C61) May 25, 2022  
 Diabetes without Complication E11.9  
 Type 2 diabetes mellitus without complications (E11.9) May 26, 2022

##### ► Rejected (7)

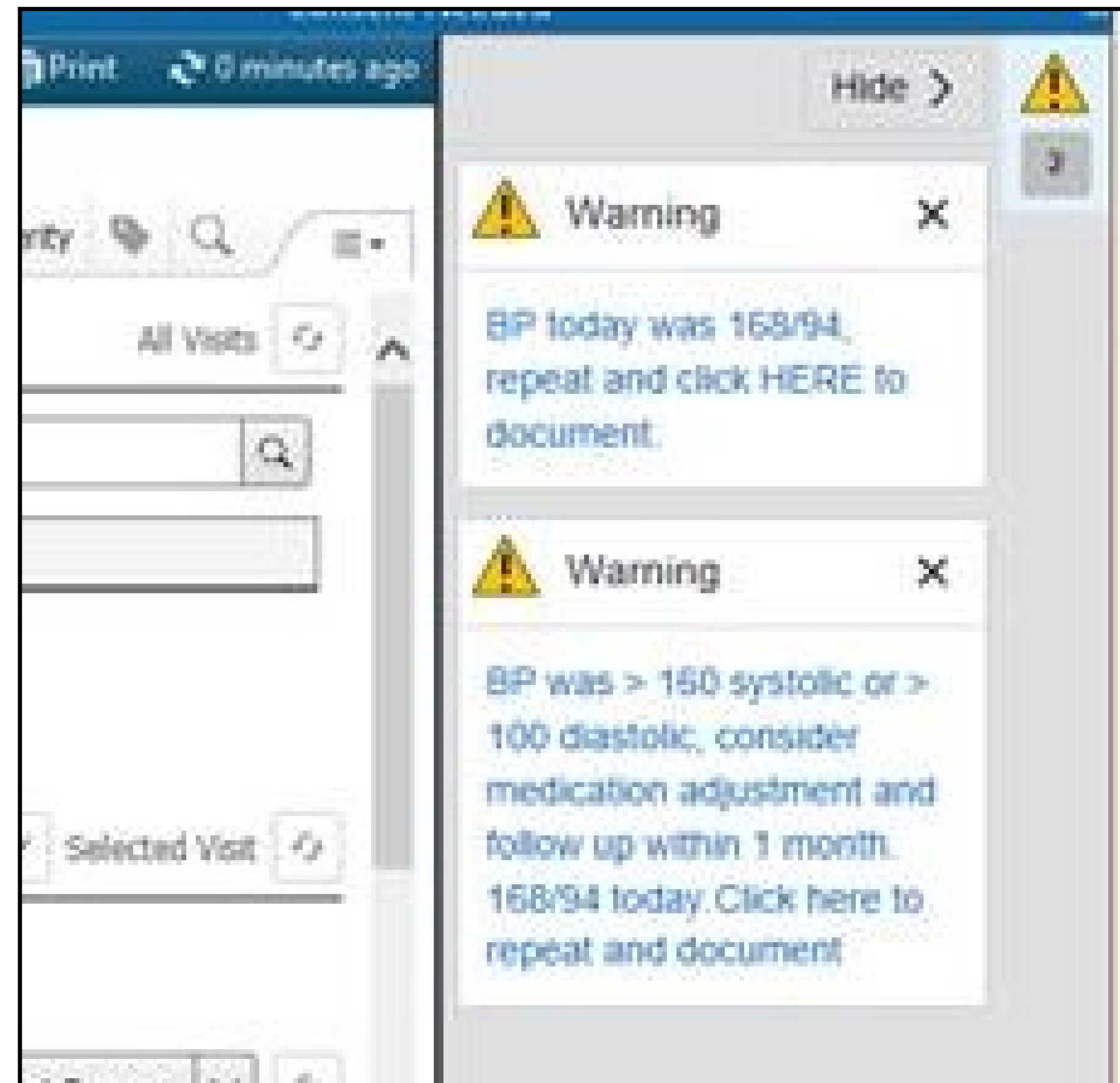
### Consolidated Problems

4	LAD (lymphadenopathy), supraclavic...	R59.0 (ICD-...	--	Medical	✓ This Visit	<input type="checkbox"/> Chronic
5	! (HCC) Malnutrition	E46 (ICD-1...	--	Medical	✓ This Visit Resolve	✓ Chronic
6	(HCC) Chronic atrial fibrillation, unsp...	I48.20 (ICD...	--	Medical	✓ This Visit	<input type="checkbox"/> Chronic
--	! (HCC) Breast cancer	C50.919 (IC...	--	Medical	✓ This Visit Resolved	<input type="checkbox"/> Chronic
--	(HCC) Diabetes	E11.9 (ICD-...	--	Medical	✓ This Visit Resolved	<input type="checkbox"/> Chronic
--	Nicotine dependence, cigarettes, unc...	F17.210 (IC...	--	Medical	✓ This Visit	<input type="checkbox"/> Chronic
--	! Pain	R52 (ICD-1...	--	Medical	✓ This Visit	<input type="checkbox"/> Chronic
--	Positive depression screening	R68.89 (IC...	--	Medical	✓ This Visit Resolved	<input type="checkbox"/> Chronic
	(HCC) COPD - Chronic obstructi...	--	2016	Medical	<input type="checkbox"/> This Visit Resolve	✓ Chronic
	GERD - Gastro-esophageal reflux dis...	--	--	Medical	<input type="checkbox"/> This Visit Resolve	✓ Chronic
	(HCC) Hx of CVA	--	--	Medical	<input type="checkbox"/> This Visit Resolve	✓ Chronic
	Hypothyroidism	--	2016	Medical	<input type="checkbox"/> This Visit Resolve	✓ Chronic
	(HCC) Long-term insulin use	--	--	Medical	<input type="checkbox"/> This Visit Resolve	✓ Chronic
	(HCC) Obesity, Class III	--	--	Medical	<input type="checkbox"/> This Visit Resolve	✓ Chronic
	Osteoarthritis	--	2021	Medical	<input type="checkbox"/> This Visit Resolve	✓ Chronic
	(HCC) Recurrent depression	--	--	Medical	<input type="checkbox"/> This Visit Resolve	✓ Chronic

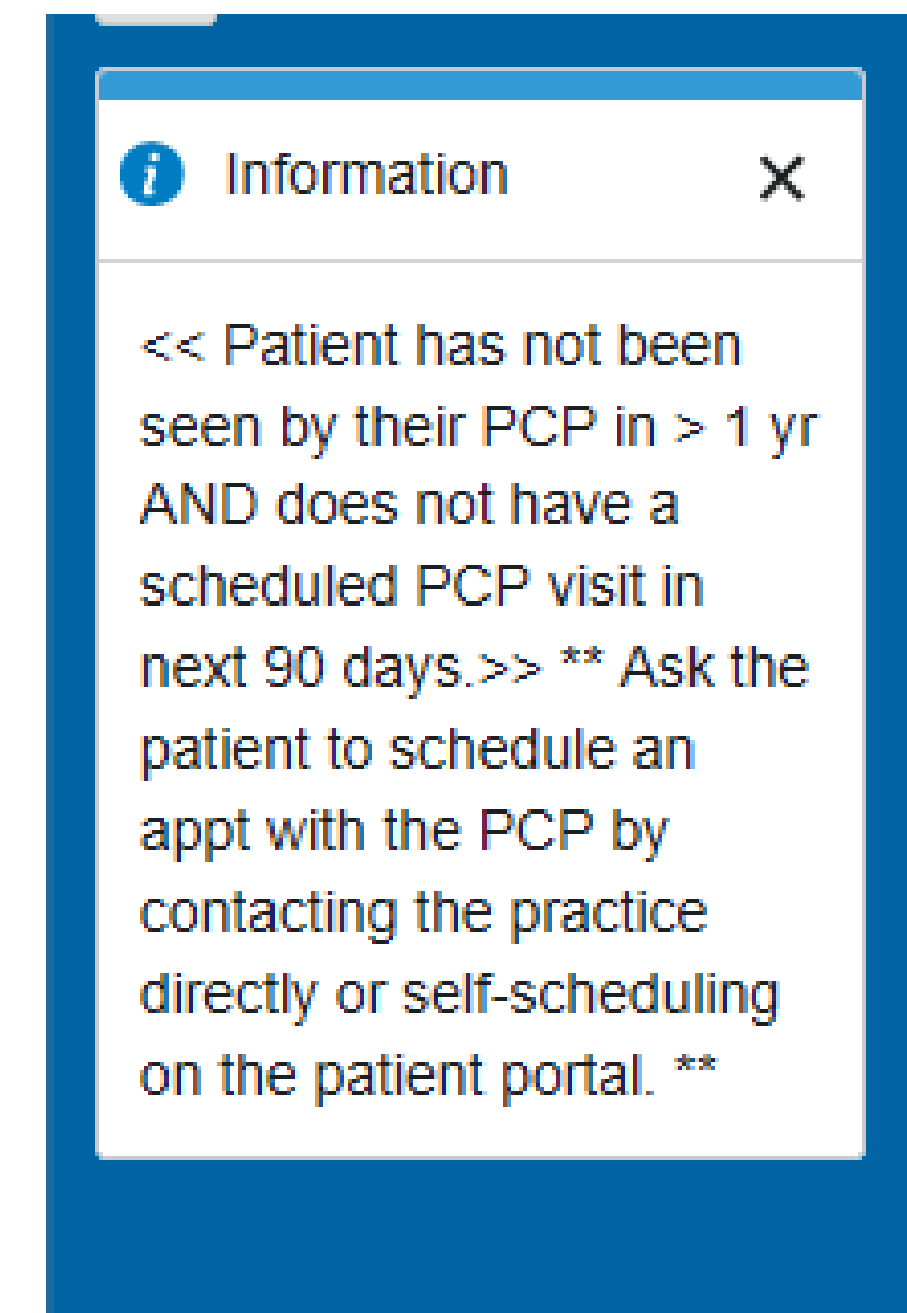
# “Nudge” Workflows

Using Data to Initiate Action at the Point of Care

Responding to clinical inertia regarding blood pressure management



Partnering with specialty practices to help drive primary care engagement





# Ambulatory Timeline

## Consolidating Data Elements Into a Single View

### Ambulatory Timeline

#### Visits

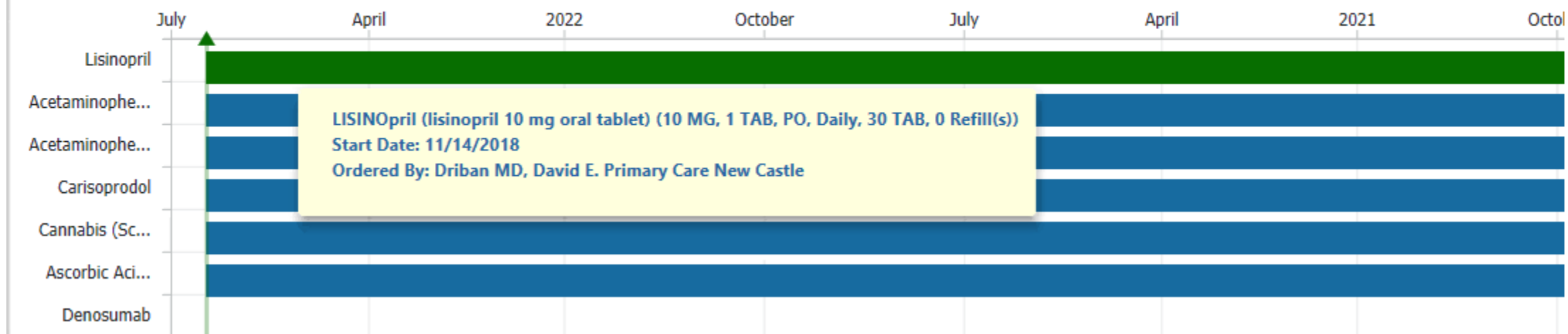
Toggle All Primary Care In Between Specialty

Settings 1 Month 6 Months 12 Months 18 Months 2 Years

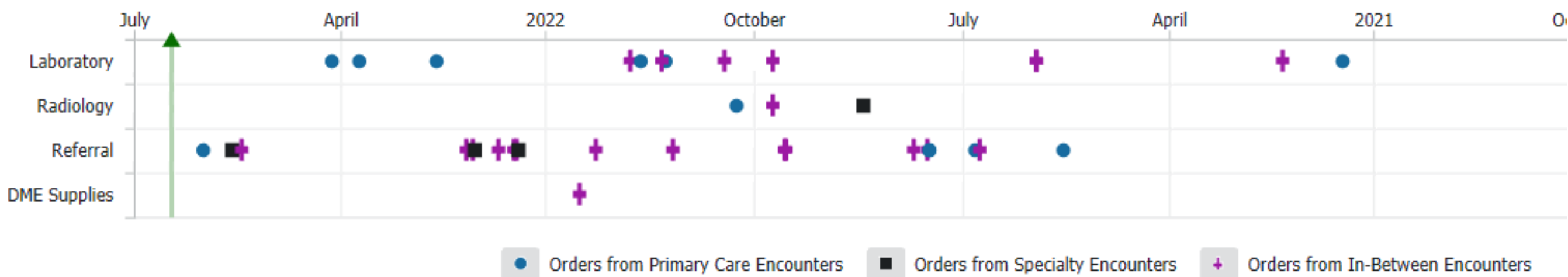


#### Ambulatory Medications Sort

Hide Inactive Toggle All Cardiovascular Central Nervous System Miscellaneous Nutritional Products Metabolic Anti-infectives Coagulation Respiratory Immunologic



#### Ambulatory Non-Med Orders





# Point-of-care workflows should integrate data elements to drive action

- Reduce physical steps (clicks, navigation) and cognitive steps (synthesizing information)
- Appreciate where the work gets done– drive to single integrated EMR components
- Leverage clinical decision-support to offload provider work to support staff



# Thank you!

- Please don't hesitate to reach out!

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