

# Behavioral Health Care Innovation Enabled by Health IT Innovation

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# Overview

## Behavioral Health Care Innovation Enabled by Health IT Innovation

- ❑ **Current Health Care Environment**
- ❑ **Behavioral Health Lean Six Sigma Project at Medstar Union Memorial Hospital**
  - Reducing readmissions for our Behavioral Health Patients
  - Notification of admissions/visits to non-MedStar hospitals
- ❑ **Health IT Innovation**
  - CRISP-Encounter Notification Service (ENS) Service
  - Identifying patients discharged from a Medstar Union Memorial Hospital nursing unit to a non-Medstar hospital
- ❑ **Standard Work Flow**
- ❑ **Barriers and Aids**
- ❑ **Summary**

# The Maryland Health Services Cost Review Commission



- Limit hospital per capita spending in Maryland to annual growth of 3.58 percent
- Reduce total Medicare hospital spending in Maryland by \$330 million over five years
- Limit growth in total Medicare spending in Maryland to no more than national growth
- Reduce the readmissions rate in Maryland to the national average within five years
- Reduce hospital-acquired conditions by 30 percent within five years

Waiver Year One Dashboard

	Maryland Performance	Year One Target	PERIOD
ALL-PAYER HOSPITAL SPENDING GROWTH PER CAPITA <small>(compared to prior year Maryland)</small>	✓ 1.47% <small>spending growth</small>	3.58% <small>spending growth as below</small>	PERIOD: Jan-Dec 2014 vs. Jan-Dec 2013 DATA: HCSC monthly financial data
MEDICARE HOSPITAL SPENDING GROWTH PER BENEFICIARY <small>(compared to national)</small>	✓ \$116 <small>reduction in savings</small>	\$0 <small>cumulative savings at year 1</small>	PERIOD: Jan-Dec 2014 vs. Jan-Dec 2013 DATA: CMS data
MEDICARE ALL PROVIDER SPENDING GROWTH PER BENEFICIARY <small>(compared to national)</small>	✓ -0.4% <small>spending decrease</small>	1% <small>no more than above national growth rate (national growth rate was 0.4%)</small>	PERIOD: Jan-Dec 2014 vs. Jan-Dec 2013 DATA: CMS data
MEDICARE READMISSION RATE <small>(compared to national)</small>	! -0.70% <small>decrease</small>	-0.96% <small>decrease or lower</small>	PERIOD: Jan-Dec 2014 vs. Jan-Dec 2013 DATA: CMS data, Y-4 subject to verification
MARYLAND HOSPITAL ACQUIRED CONDITIONS RATE <small>(compared to prior year Maryland)</small>	✓ -26.26% <small>decrease</small>	-6.89% <small>decrease or more</small>	PERIOD: Jan-Dec 2014 vs. Jan-Dec 2013 DATA: HS-IC inpatient case mix data

Slide 1 Performance, updated November 2015

Last updated November 23, 2015

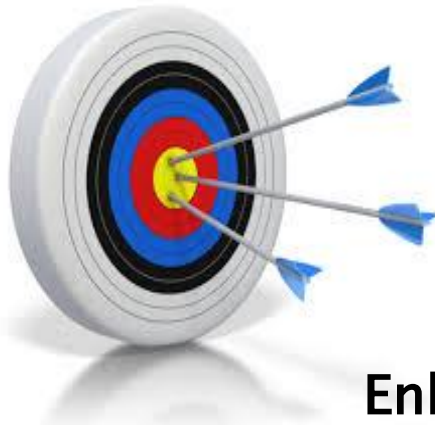
# OLD

# NEW

Fee-for-service → Global budgets  
Episodic Care → Population Health  
Fragmentation → Care coordination



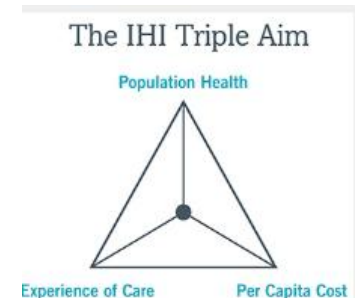
## Institute of Health Care Improvement TRIPLE AIM



Improve the Health of Populations

Reduce Per Capita Costs of Care

Enhance the Patient Experience





CARDS

CONGRATULATION

GOOD LUCK WITH THE  
AMERICAN  
HEALTH-CARE SYSTEM

GET WELL

msrevers

# Medstar Union Memorial Hospital Readmission Rate Reduction Behavioral Health

## Lean Six Sigma



# Behavioral Health Prevalence, Cost, and Access



## A national look...

**9.6 million** adults report having a serious mental illness

**One of the five** most costly conditions nationwide is mental health

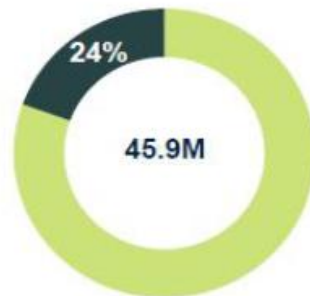
**55 percent** of U.S. counties, all rural, do not have a practicing psychiatrist, psychologist, or social worker

**91 million** Americans live in federally designated Mental Health Professional Shortage Areas

**Behavioral health issues are treatable, but access to care is limited**



- Adolescents & adults needed substance abuse treatment
- Received treatment at specialty facility



- Adults with a mental illness
- Reported an unmet need

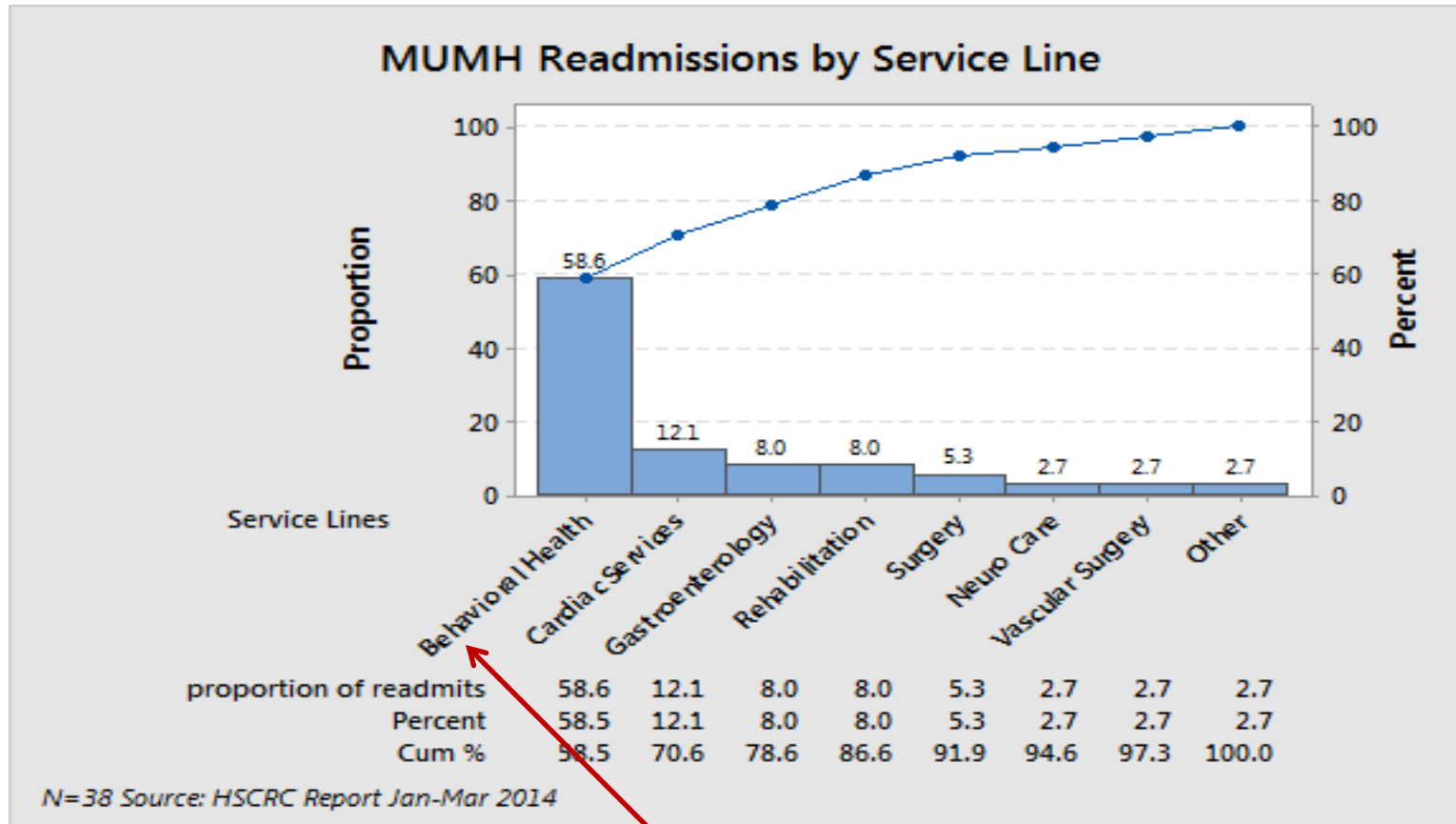
Behavioral health workforce is aging—average age of psychiatrists and psychologists is 56 and 50, respectively



## About Us:

The Maryland Hospital Association advocates on behalf of Maryland's 65 hospitals and health systems; membership is composed of community, teaching, specialty, long-term care, and veterans hospitals

# MUMH Readmissions by Service Line

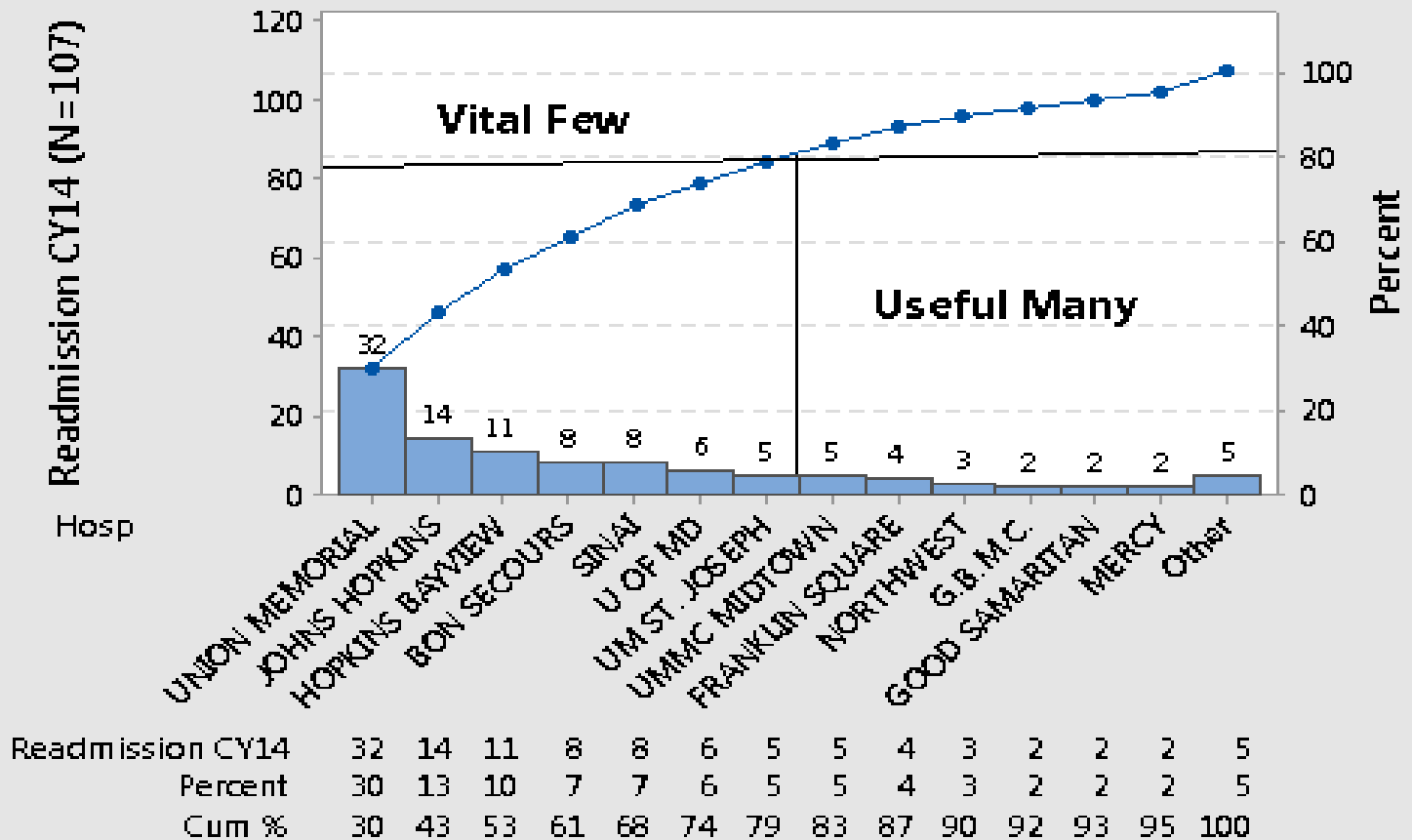


**Conclusion: The Behavioral Health service line represented 58.6% of overall readmissions during baseline timeframe of CY 2014, Q1.**



# Behavioral Readmissions by Site CY14

Pareto Chart of Hospital Readmissions (Behavioral) CY14



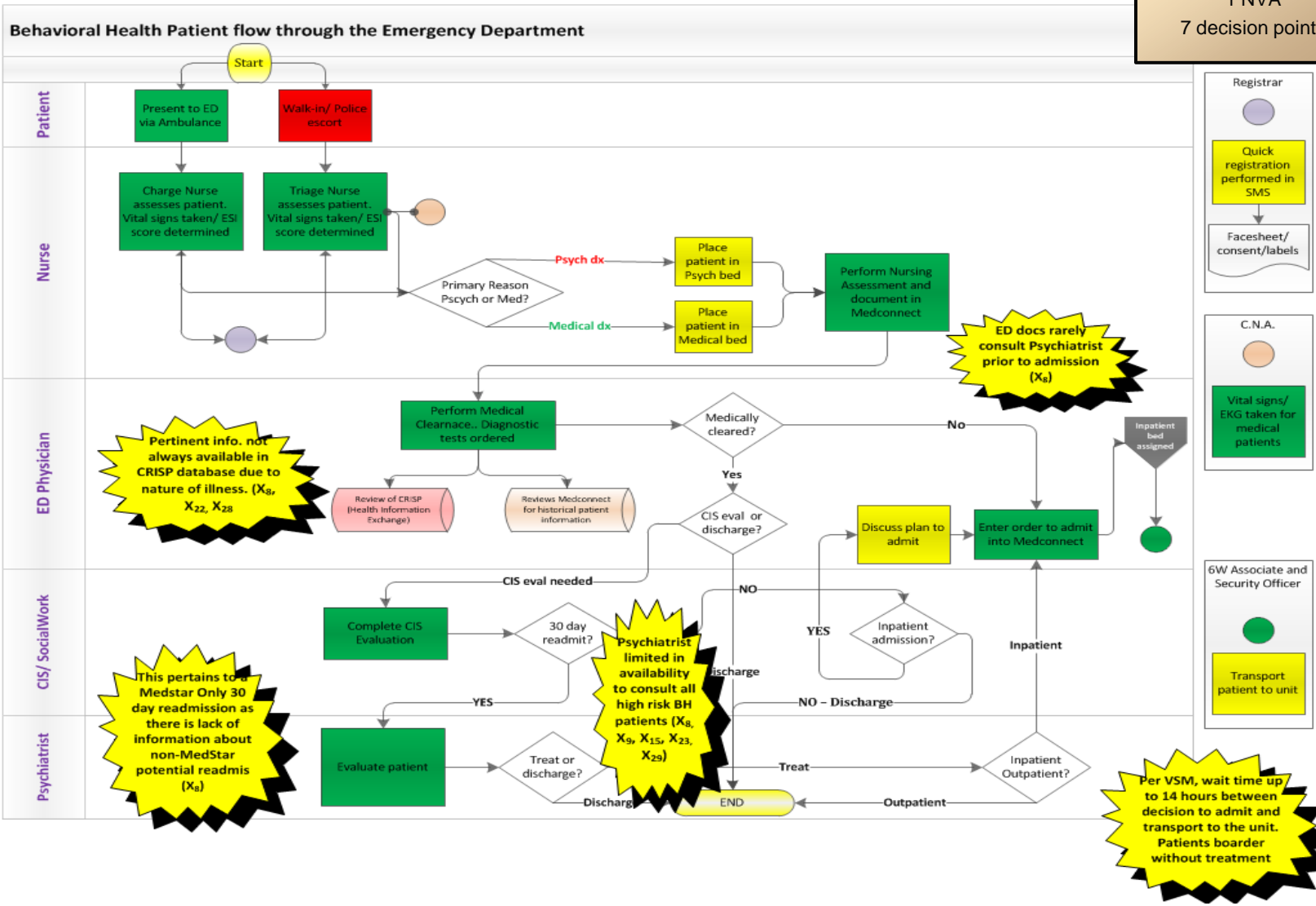
Source: HSCRC Readmission Data CY14 January-March (N=107)

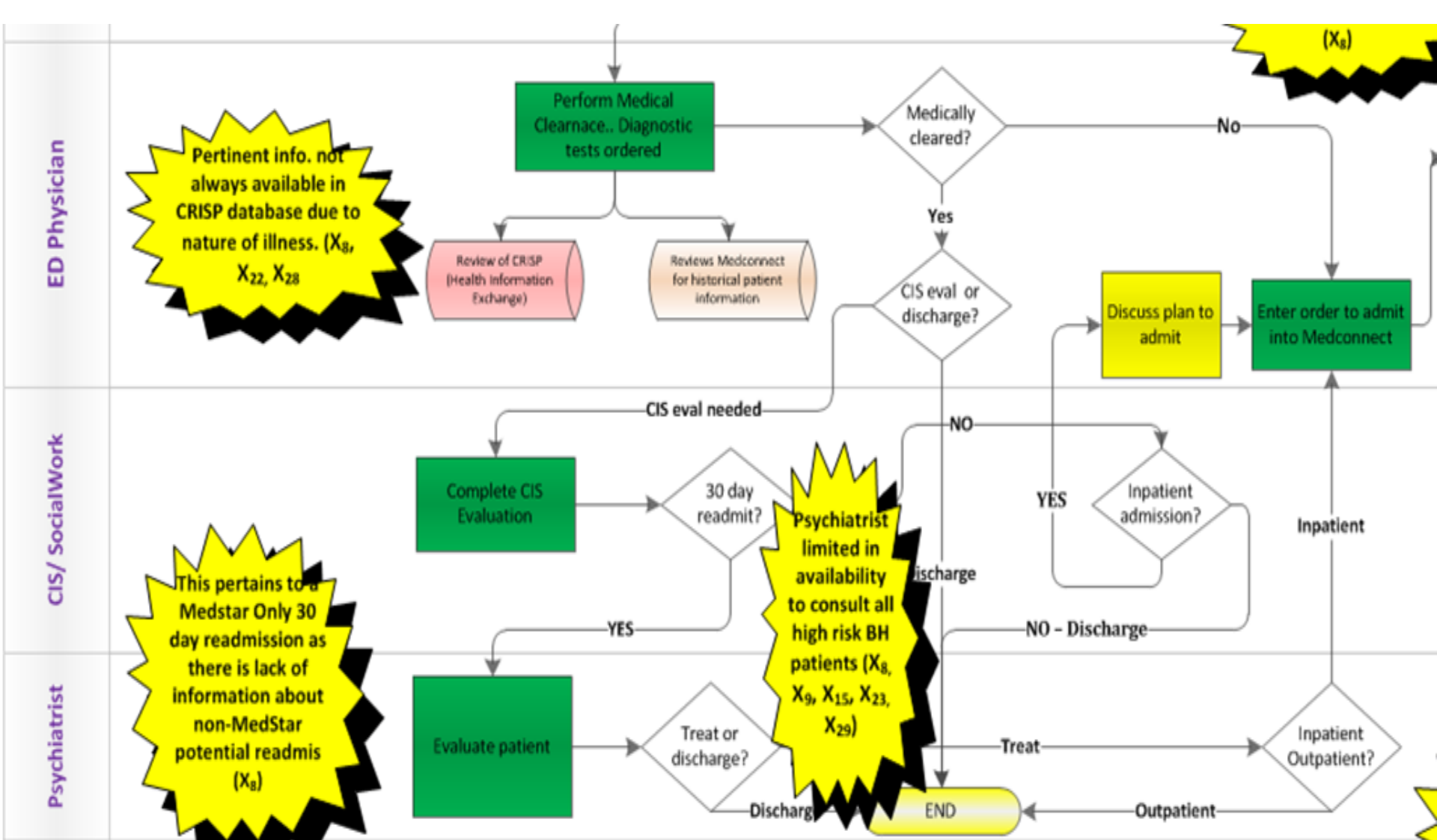
**Conclusion: 30% of readmissions were within Medstar (MUMH), and 70% occurred in a non-Medstar facility.**

# VA/NVA Analysis Process Map(s) with Kaizen Burst

Legend:  Value added  Non value added but necessary  Non value added

15 total steps  
 9 VA  
 5 NVA but necessary  
 1 NVA  
 7 decision points





## Closer Look

# Test of Theory $X_8$ .

- ▶ **Theory:** Interacting with a Psychiatrist in the ED affects readmission rate
- ▶  **$H_0$ :** There is no difference in readmission rate between those BH patients who interact with a Psychiatrist in the ED, and those who do not
- ▶  **$H_a$ :** BH Patients who interact with a Psychiatrist in the ED have a lower readmission rate than those who do not

## ▶ **Analysis:** Test and CI for Two Proportions

- ▶ Sample X N Sample p
- ▶ 1 4 39 0.102564
- ▶ 2 14 39 0.358974
- ▶ Difference =  $p(1) - p(2)$
- ▶ Estimate for difference: -0.256410
- ▶ 95% upper bound for difference: -0.106915
- ▶ Test for difference = 0 (vs  $< 0$ ):  $Z = -2.82$  **P-Value = 0.002**
- ▶ \* NOTE \* The normal approximation may be inaccurate for small samples.
- ▶ Fisher's exact test: P-Value = 0.00
- 1. BH Patients who interacted with a Psychiatrist in the ED
- 2. BH Patients who did not interact with a Psychiatrist in the ED

▶ **Statistical Conclusion:**  $P=0.002 < 0.050$ , therefore reject the null hypothesis.

## ▶ **Practical Conclusion:**

- **Patients who interact with a Psychiatrist when in the ED have a lower readmission rate.**

# Improvement Strategies for Proven Xs

Proven Xs (Causes)	Strategies
X <sub>4</sub> : Case Management assignment post discharge is below best practice level	Through a network of community resource agreements, provide specific treatment services to meet needs of behavioral health patients
X <sub>8</sub> : Interacting with a Psychiatrist in the ED affects readmission rate	Ensure an interdisciplinary and collaborative model of care that integrates physical and mental health for patients with behavioral disorders
X <sub>22</sub> : Previous admissions and documented noncompliance affect readmission rate	Through a network of community resource agreements, provide specific treatment services to meet needs of behavioral health patients

Example of some of the Proven Xs and the Strategies developed



# Chesapeake Regional Information System for Our Patients

## Services

- Result Viewing Portal
- **Encounter Notification Service**
- DIRECT Messaging
- Prescription Drug Monitoring Program (PDMP)

## **CRISP Encounter Notification Service (ENS)**

- Offers a service which enables physicians to receive real-time alerts when a patient is hospitalized. The service is offered in partnership with participating hospitals at no cost to ambulatory providers.
- Sends a secure email message to providers for active patients in the practice. Practices may choose which alerts are most relevant to them, such as: hospital admission, hospital discharge, or emergency room visit.



CRISP



Demographic Data



Clinical Data



Pharmaceutical Data



Amalga

# Data Flow/Notification Overview

Filter created (Amalga) for MUMH  
6W discharges that re-present to non-MSH hospitals within 30 - 60 days post discharge.



MUMH Patient Navigators



Contacts the Crisis Intervention Specialist at the non-MSH hospital

# Notification Filters



- Updates made to the CRISP view in Amalga (Clinical group in the view listing)
- When the view opens, it is showing one row per visit, for ED or Inpatient visits, to a non-Medstar facility for patients who have had prior inpatient or ED visits to a Medstar site within the prior 60 days.
- Data includes:
  - Prior Medstar facility
  - The new (non-Medstar facility)
  - Information about the new visit to the non-Medstar facility (admit/discharge dates, complaint, visit type <ED or Inpt>, etc).

We are able to build filters on this data:  
**show me all the patients who were discharged from UMH 6W PSY service on Medicaid who have had a subsequent non-Medstar visit.**

II	OLDFAC	II	NEWFAC	EI	O	S	ADMITDATETIME	DISCHARGE
	MedStar Union Memorial	L	Lifebridge Nursing home	78	7	d	08/13/2015 16:03	
	MedStar Union Memorial	M	Mercy Medical Center	ce	c	a	08/13/2015 01:36	
	MedStar Union Memorial	M	Mercy Medical Center	dc	d	e	08/13/2015 01:23	

Column Stats: NEWFAC		All Results	
		Count	%
<input checked="" type="checkbox"/>	NEWFAC		
<input checked="" type="checkbox"/>	University of Maryland Medical Center	45	15.46
<input checked="" type="checkbox"/>	John Hopkins Hospital	41	14.09
<input checked="" type="checkbox"/>	Mercy Medical Center	34	11.68
<input checked="" type="checkbox"/>	UMMS_MMC	29	9.97
<input checked="" type="checkbox"/>	Sinai Hospital	25	8.59
<input checked="" type="checkbox"/>	Johns Hopkins Bayview Medical Center	23	7.90
<input checked="" type="checkbox"/>	Baltimore Washington Medical Center	15	5.15
<input checked="" type="checkbox"/>	Greater Baltimore Medical Center	14	4.81
<input checked="" type="checkbox"/>	University of Maryland St. Joseph Medical Center	14	4.81
<input checked="" type="checkbox"/>	Bon Secours Hospital	13	4.47
<input checked="" type="checkbox"/>	Saint Agnes Hospital	6	2.06

Stats for Selection



General	Lab: Panel	Lab: Component	Lab: Patient	Lab: Pending	Meds	Patient Movement	Crisp	Quick Edit	Quick Edit - Surgery	Vitals and RRT	BedClean
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Alert me when a patient has activity again after discharge

<b>Discharging Facility</b>		<b>New Facility</b>	
Facility:	<input type="text" value="MEDSTAR_UMH_AS"/>	Facility:	<input type="text" value="BSB"/>
Unit:	<input type="text" value="6W"/>	Event Code:	<input type="text"/>
Service:	<input type="text" value="PSY;"/>	Event Reason:	<input type="text"/>
Attending MD Number:	<input type="text"/>	Patient Class:	<input type="text"/>
Attending MD Name:	<input type="text"/>	Facility is external:	<input type="text"/>
Patient Class:	<input type="text"/>	Patient City:	<input type="text"/>
Patient Type:	<input type="text"/>	Patient State:	<input type="text"/>
Insurance Company Name:	<input type="text"/>	Patient Zip Code:	<input type="text"/>
		*Email:	<input type="text" value="Kristen.Meredith@Medstar.net"/>
		Message Subject:	<input type="text" value="Your event has been detected"/>
		*Notify for (min):	<input type="text" value="240"/> (0: run indefinitely)

**Filters in Amalga allow for targeting of specific population of patients. In our case, 6W discharges that re-present to non-MSH hospitals (ex: Bon Secours) within 30 – 60 days post discharge**

# Email Notification

-----Original Message-----

**From:** Medstar Alerts [[MedstarAlerts@medstar.net](mailto:MedstarAlerts@medstar.net)]

**Sent:** Thursday, January 14, 2016 04:02 PM Eastern Standard Time

**To:** Roig, Kristen M

**Subject:** Your event has been detected

CRISP Event

**Patient: S.....,S... J, New Facility Account: 5....., Medstar MRN: 1....**

Sex: F, DOB: 1/8/19.. 12:00:00 AM -05:00

Patient Class: E, Event Date/Time: 1/14/2016 3:50:51 PM -05:00

Admit Date/Time: 1/14/2016 3:50:00 PM, Discharge Date/Time:

Admit Reason:

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**New Facility: SJMC**

**Previous Medstar Discharging Facility: UMH**

Previous Medstar visit: admit: 2015-12-29T14:41:00-05:00, discharge: 2016-01-06T16:43:00-05:00

Previous Medstar visit: unit: 6W, service: PSY

Event Code: A04

# MedConnect and CRISP

Task Edit View Patient Chart Links Navigation Help

Patient List Patient Access List Org Level MPage

Micromedex

Tear Off Suspend Exit Calculator Patient Education Charge Entry Communicate Batch Charge Entry Add Specimen Collection

StarPort Report Request Report Request Maintenance CareFusion Pyxis ES

List Recent Name

Menu

Inpatient Summary

Full screen Print 0 minutes ago

Inpatient Summary

100%

**Consolidated Problems**

All Visits

Classification: All

Add new as: This Visit (Diagnosis)

Priority Problem

This Visit (Diagnosis) (0)

Problems (Active & Inactive) (0)

No results to display

Historical Diagnoses & Resolved Problems (0)  Show Previous Visits

**Allergies/Intolerances (0) +**

**Medications & Fluids Administered +**

**Home Medications (0) +**

**Immunizations (0)**

**D/C Follow-up (0) +**

**D/C Patient Education (0) +**

**Vital Signs**

Last 36 hours for the selected visit

No results found

**Measurements and Weights (0)**

Selected visit

No results found

**CDC Growth Chart**

**Flagged Events (0)**

**Intake and Output**

Last 3 days for the selected visit

No results found

\* Indicates a day without a full 24 hour measurement period

**RT Vent Measurements**

**RT O2 Therapy**

**Quality Measures (0)**

Filter by:

4 Incomplete (0)

No results found

4 Complete (0)

No results found

**Spontaneous Breathing Trial Results**

**CORES Coverage Summary**

**MedStar HIE**

11 documents found in MedStar HIE for the specified time frame.  
CVS/MinuteClinic visit summaries now in the MedStar HIE. [Click here](#) to see what else you can find in the MedStar HIE.

Past 60 days

Date	Title	Source
12/10/2015	MedStar Outpatient Clinical Summary	Ambulatory
12/6/2015	MedStar Montgomery Medical Center CCD	Hospital-MGH
12/5/2015	Lab Result - CMP (Final)	Hospital-MGH

**CRISP HIE-Results from MD & DC Hospitals**

**CRISP** found in CRISP!  
[Click HERE](#) to access CRISP  
[Click here](#) to view CRISP data sources  
For CRISP support, call 877-952-7477

PDMP - Prescription Drug Monitoring Program (Maryland) Past year

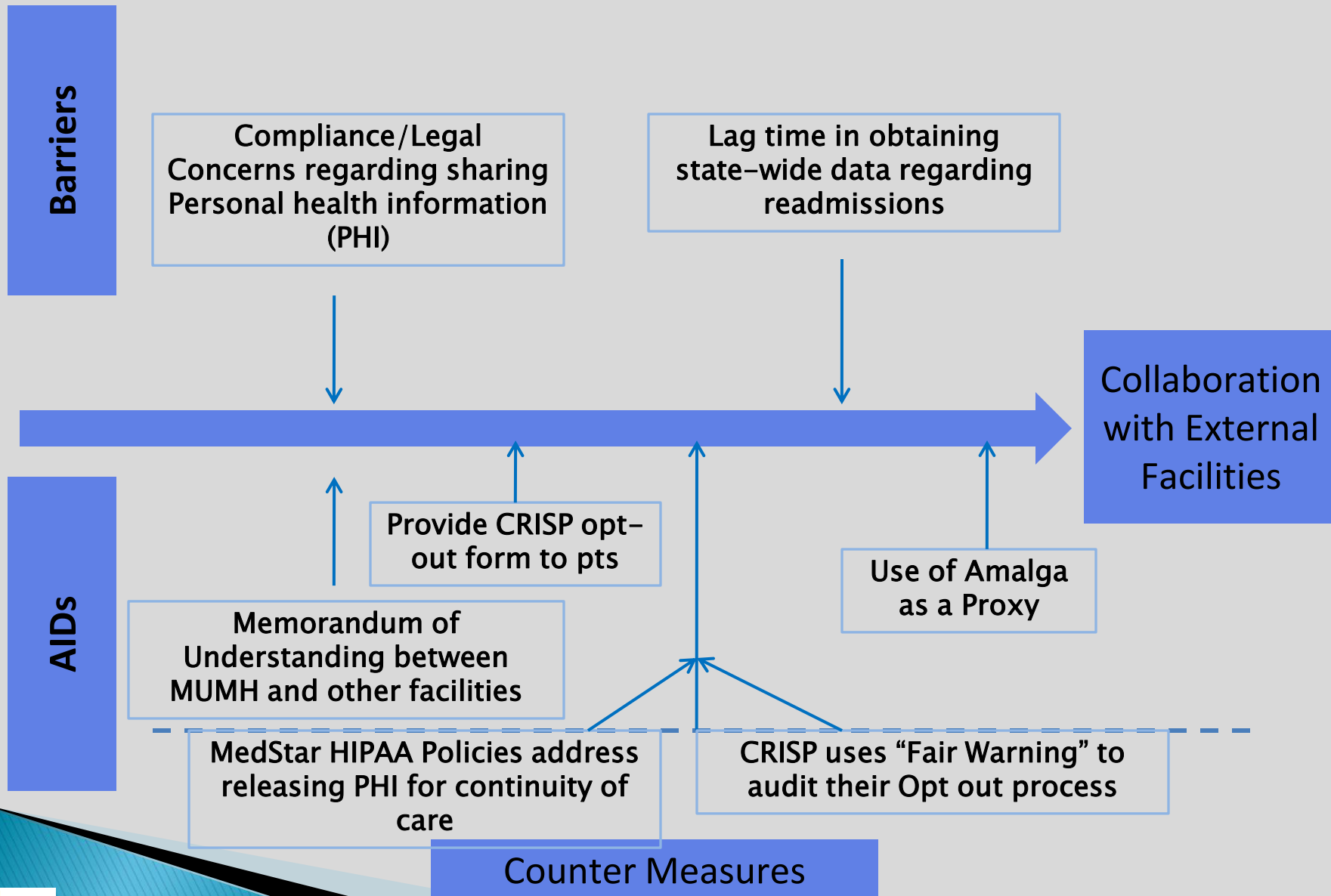
Medication	Written	Filled	Supply	Prescribing Provider
OXYCODONE-ACETAMINOPHEN 5-325	12/5/2015	12/6/2015	5 days	Momenzadeh, Elnaz

## Pilot Improvement #5. Standard Work – Collaboration with External Hospitals

Order	Process Step	Owner	Tools
1	An Amalga alert indicating the patient has presented to external facility is received on alphapager	Inpatient Psychiatric Navigator	Alpha Numeric pager
2	A phone call is made to the CIS dept. within the ED of external hospital to apprise them that the patient was a recent discharge and that key information from the medical records will be faxed to them for decision making	Inpatient Psychiatric Navigator	Phone Updated fax list for area hospitals Fax cover sheet with disclaimer
3	Access MedConnect's Report Request and print the following: Inpatient Clinical Summary Discharge Summary Discharge Medication List Case Management notes Other as needed.		
4	Fax to the new facility. Verify receipt	Inpatient Psychiatric Navigator	Fax machine

Example of Standard Work developed around the “ENS” alerts

# Barriers and Aids Chart



# Summary

## OLD- Psych Unit

Fee-for-service



Episodic Care



Fragmentation



- rewarded for volumes not outcomes

## NEW- Behavioral Health

Global budgets



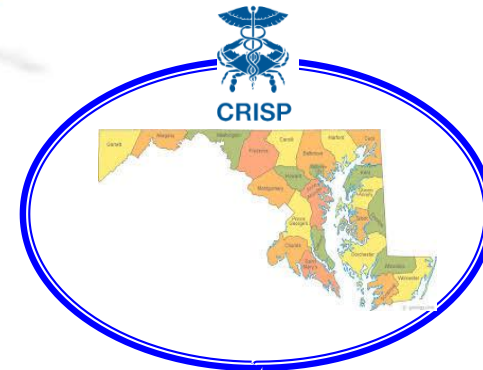
Population Health

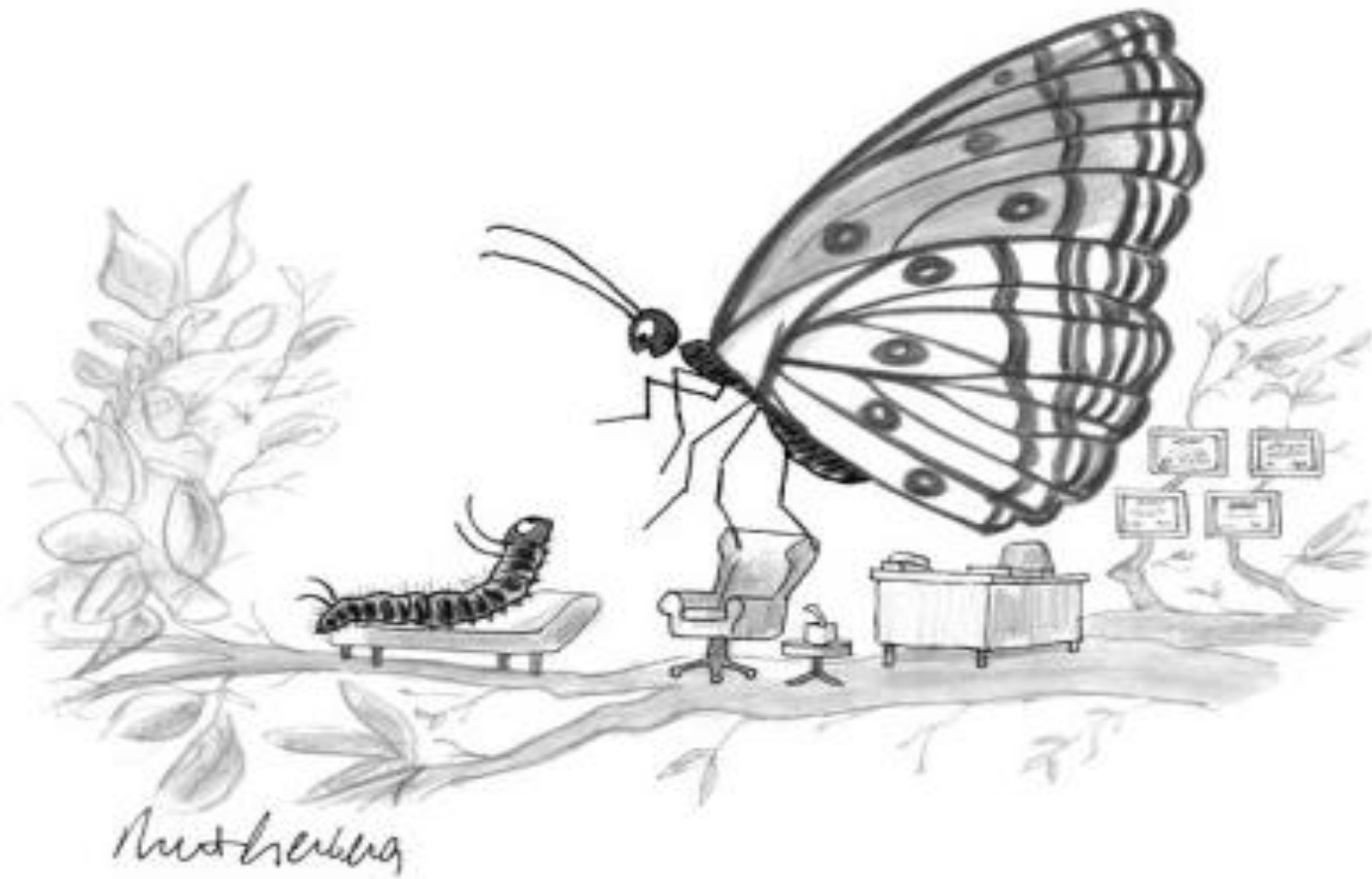


Care coordination



IT Innovation





*"The thing is, you have to really want to change."*