

Data to Drive Decisions: Best Practices and Challenges in Addressing Low Value Care

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Presenters



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Colorado



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CIVHC



Emma Anderson, MA
CIVHC

Our Mission

To equip partners and communities in Colorado and across the nation with the resources, services and unbiased data needed to improve health and health care.

Our Vision

Everyone has the opportunity to be healthy and has access to equitable, affordable, high-quality health care.

We Are

- Non-profit
- Independent and objective
- Service-oriented



Who We Serve

Change Agents

Individuals, communities, or organizations working to lower costs, improve care, and make Colorado healthier.



Clinicians



Hospitals



Government



Consumers



Employers



Researchers



Health Plans



Non-Profits



How We Serve

- Administrator of the Colorado All Payer Claims Database



Public CO APCD Data

Identify opportunities for improvement in your community through interactive reports and publications



Non-Public CO APCD Data

License data from the most comprehensive claims database in CO to address your specific project needs

- Research & Evaluation Services
- Community Engagement
- Program Focus Areas: Advance Care Planning, Palliative Care



What's in the CO APCD



Over 1 Billion Claims (2013-2022)



Over 70% of Covered Lives (medical only, 2021)



5.5+ Million Lives*, Including 1M (50%) of self-insured



40 Commercial Payers, + Medicaid & Medicare*



Trend information (2013-Present)

**Reflects 2022 calendar year only*

What's not in the CO APCD



Federal Programs - VA, Tricare, Indian Health Services



Uninsured and self-pay claims



Majority of ERISA-based self-insured employers

What is “Low Value Care”?

- Low value care is care in which the potential harm or cost is greater than the benefit to a patient
- Defined principally by Choosing Wisely guidelines
 - Developed by American Board of Internal Medicine Foundation
 - Selected by practicing physicians and medical specialty societies
- Barriers to addressing low value care:
 - Fear of malpractice
 - Perception that patients want or expect tests or medications
 - Lack of information about the patient
 - Financial incentives of fee-for-service reimbursement



LOW-VALUE CARE .vs HIGH-VALUE CARE

.VS

EXAMPLES



Eye screening for diabetics



ALTARUM
HEALTHCARE VALUE HUB



Examples of Low Value Care Measures

- Pediatric Head CT Scans
 - Low diagnostic yields and high risks
- Imaging Tests for Eye Disease
 - Unnecessary for patients without symptoms of significant disease
- Cardiac Stress Testing
 - Often times unnecessary and therefore wasteful
- Routine General Health Checks
 - Controversial, but unnecessary for people who have no pre-existing conditions



Methods

- Only patients with 'Sufficient History' are included
- Geographic data is based on patient's address, NOT provider
- Different low value care services cause different levels of potential harm
- Spending for low value care results are reported as the allowed amount (plan and patient paid amounts) for the specified services
- Services are classified as 'wasteful', 'likely wasteful', 'necessary', and 'optimal'
 - We defined low value care as 'likely wasteful' and 'wasteful' services



Example – Imaging Tests for Eye Disease

Choosing Wisely Guidelines:

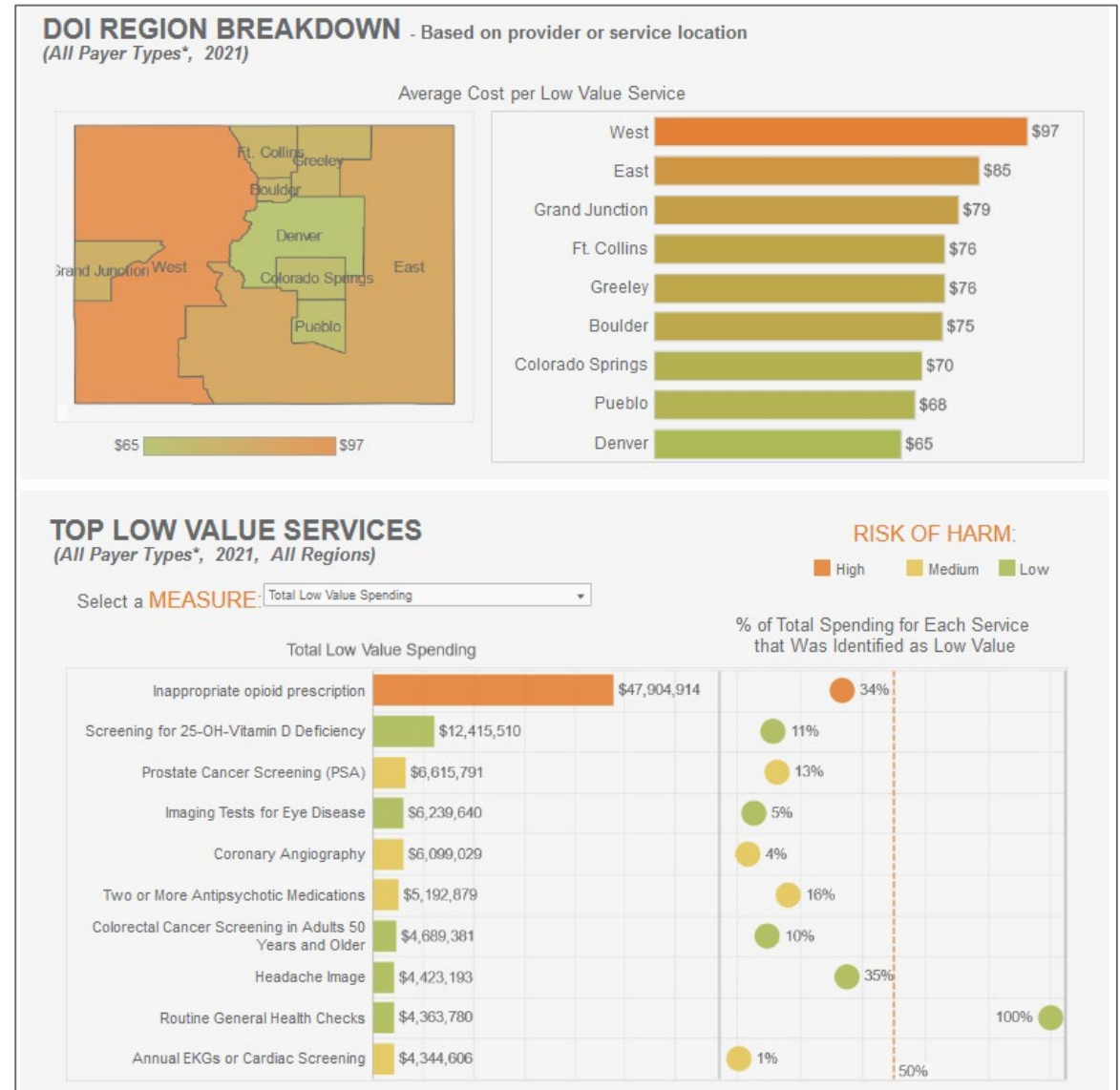
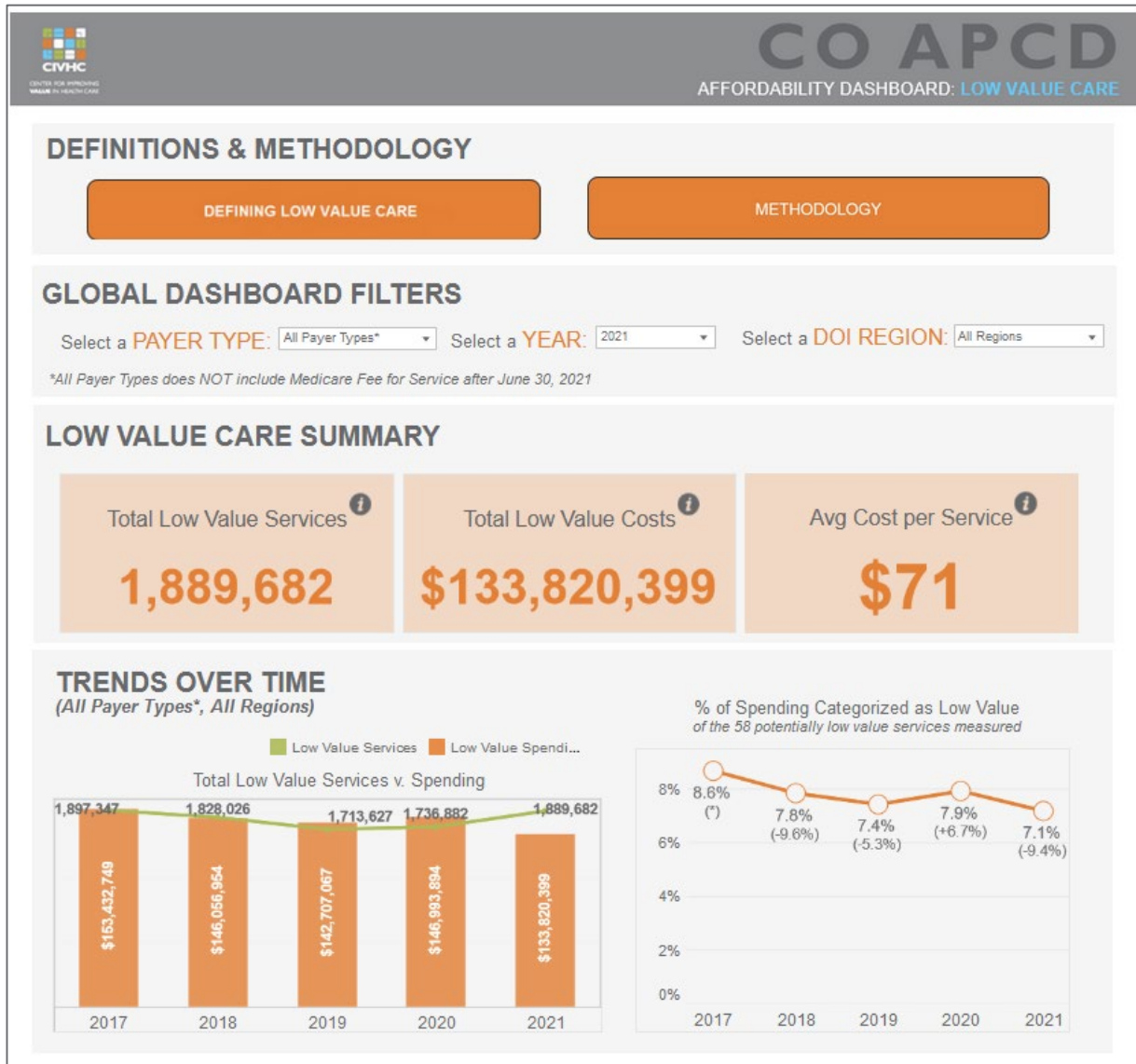
- Don't routinely order imaging tests for patients without symptoms or signs of significant eye disease
- Potential Harm (Low)

Categorization using CO APCD data:

- **Optimal** - Patients with a claim with an evaluation and management code that also contains a diagnosis of eye disease without a service for advanced eye imaging within one year.
- **Necessary** - Patients with a service for advanced eye imaging, but also had a specialty code for an ophthalmologist or optometrist visit within 30 days prior to the imaging.
- **Likely Wasteful** – None.
- **Wasteful** – Patients with eye imaging tests without a specialty code for an ophthalmologist or optometrist visit within 30 days prior to the imaging.



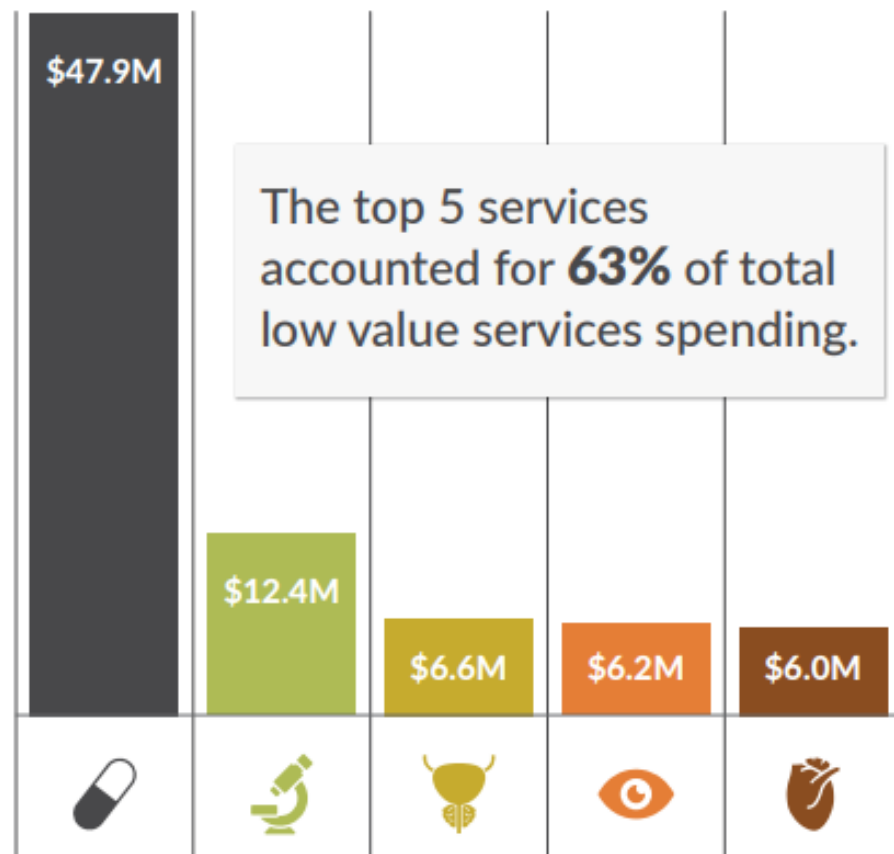
Low Value Care Interactive Report Demo








Statewide Findings

In 2021:

1.9M Low Value Services, resulting in **\$134M** in spending.*



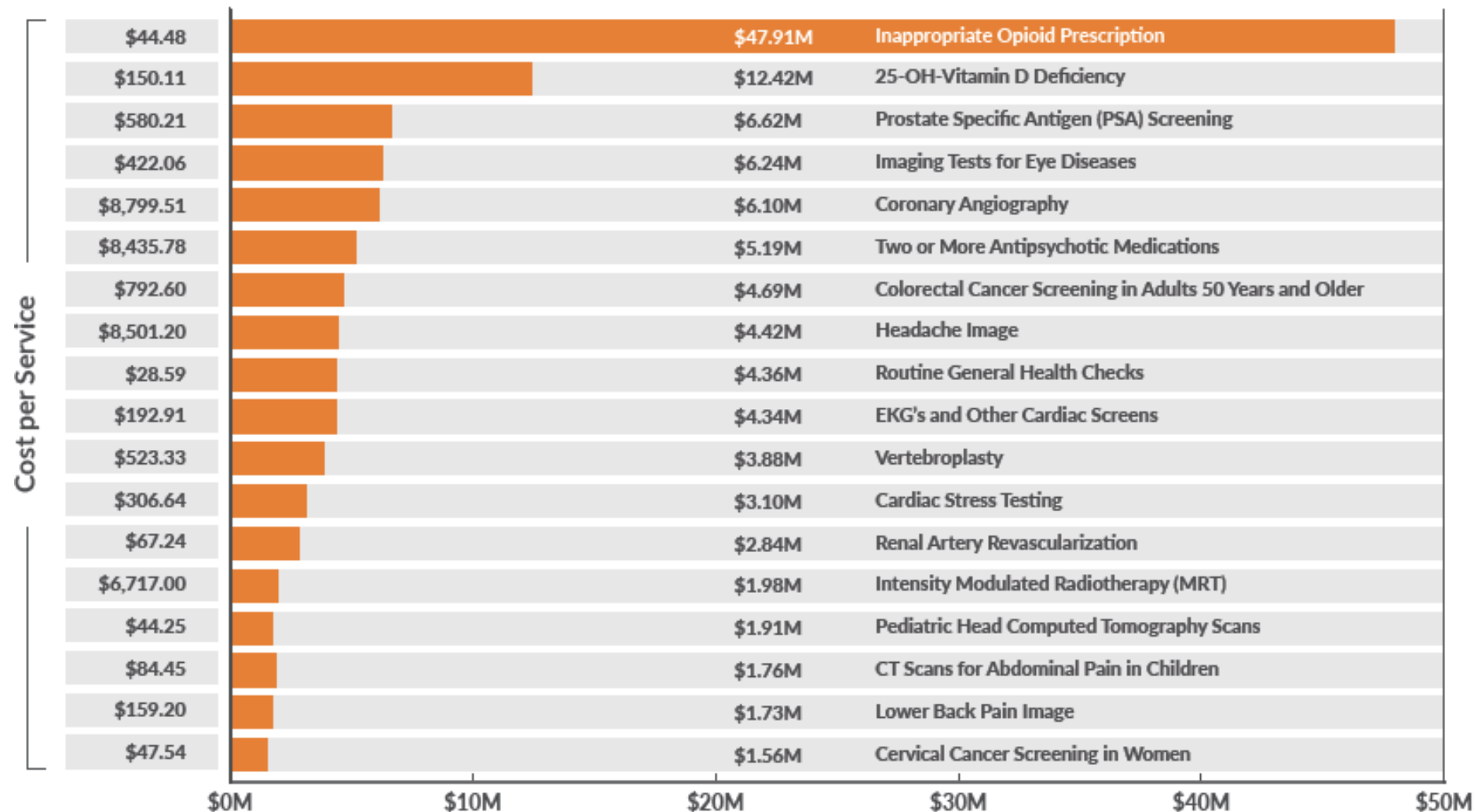
	Inappropriate opioid prescription
	Screening for 25-OH-Vitamin Deficiency
	Prostate Cancer Screening (PSA)
	Imaging Test for Eye Disease
	Coronary Angiography

*All Payer data only includes 6 months of data for Medicare FFS for 2021



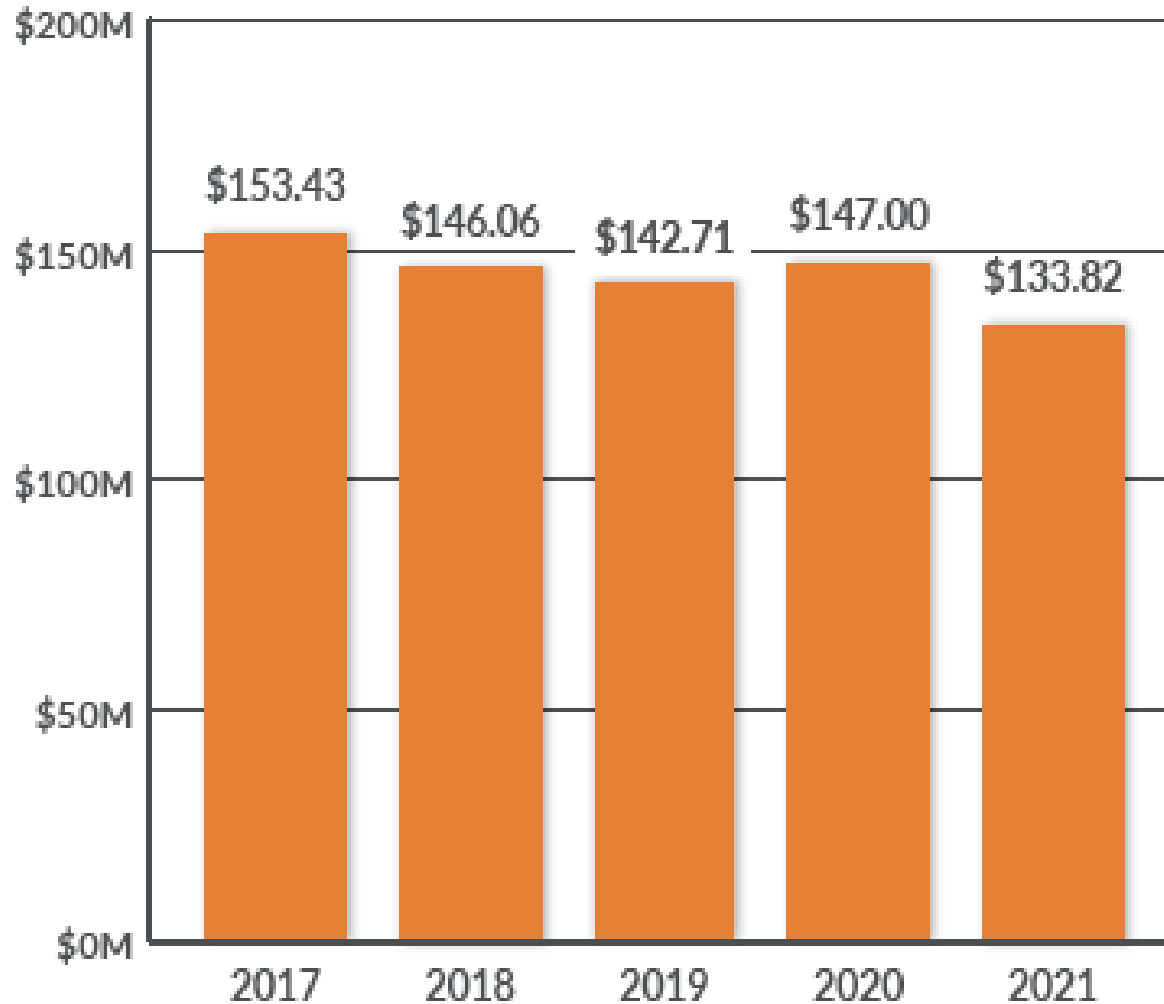
Statewide Top Services

Eighteen Services Account for **Over 85%** of Total Services and Total Spending for Low Value Care in 2021

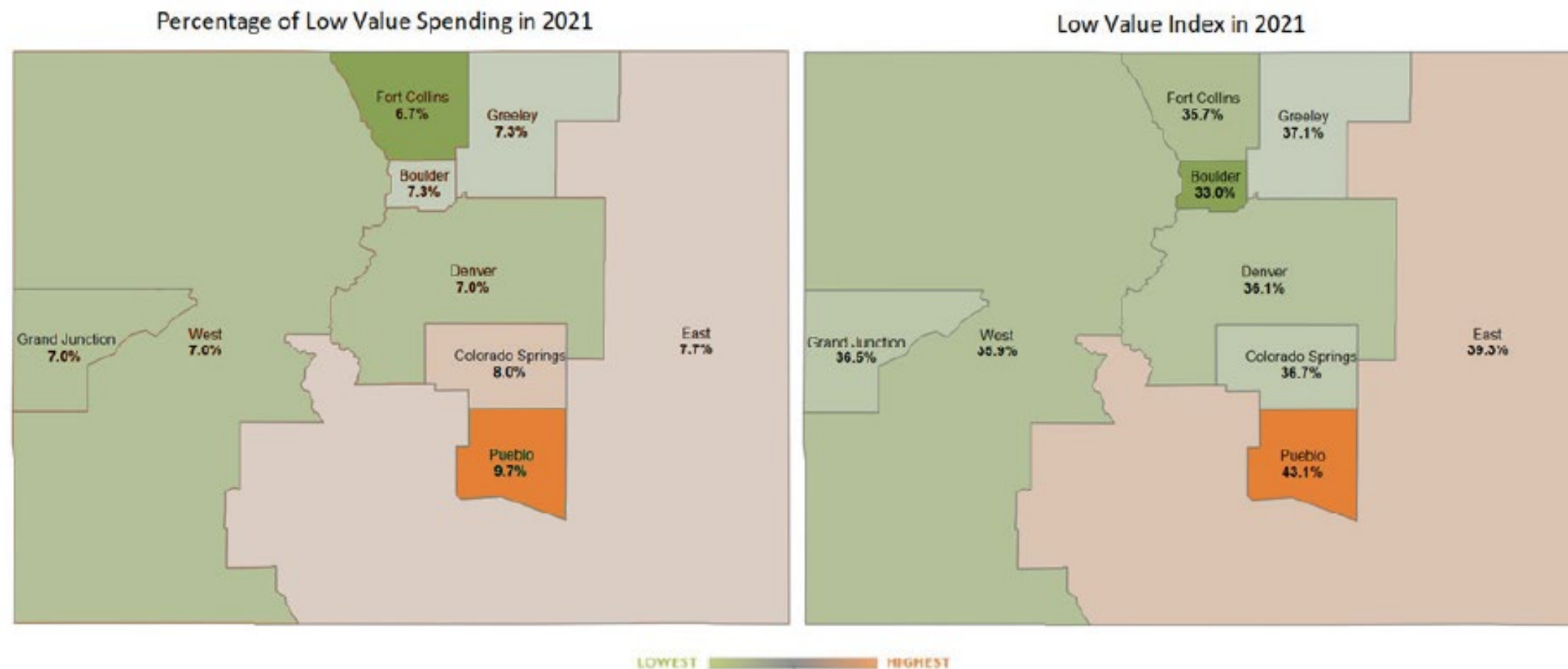


Statewide Trends in Spending

Low Value Spending (Millions)



Geographic Variation – Division of Insurance Regions



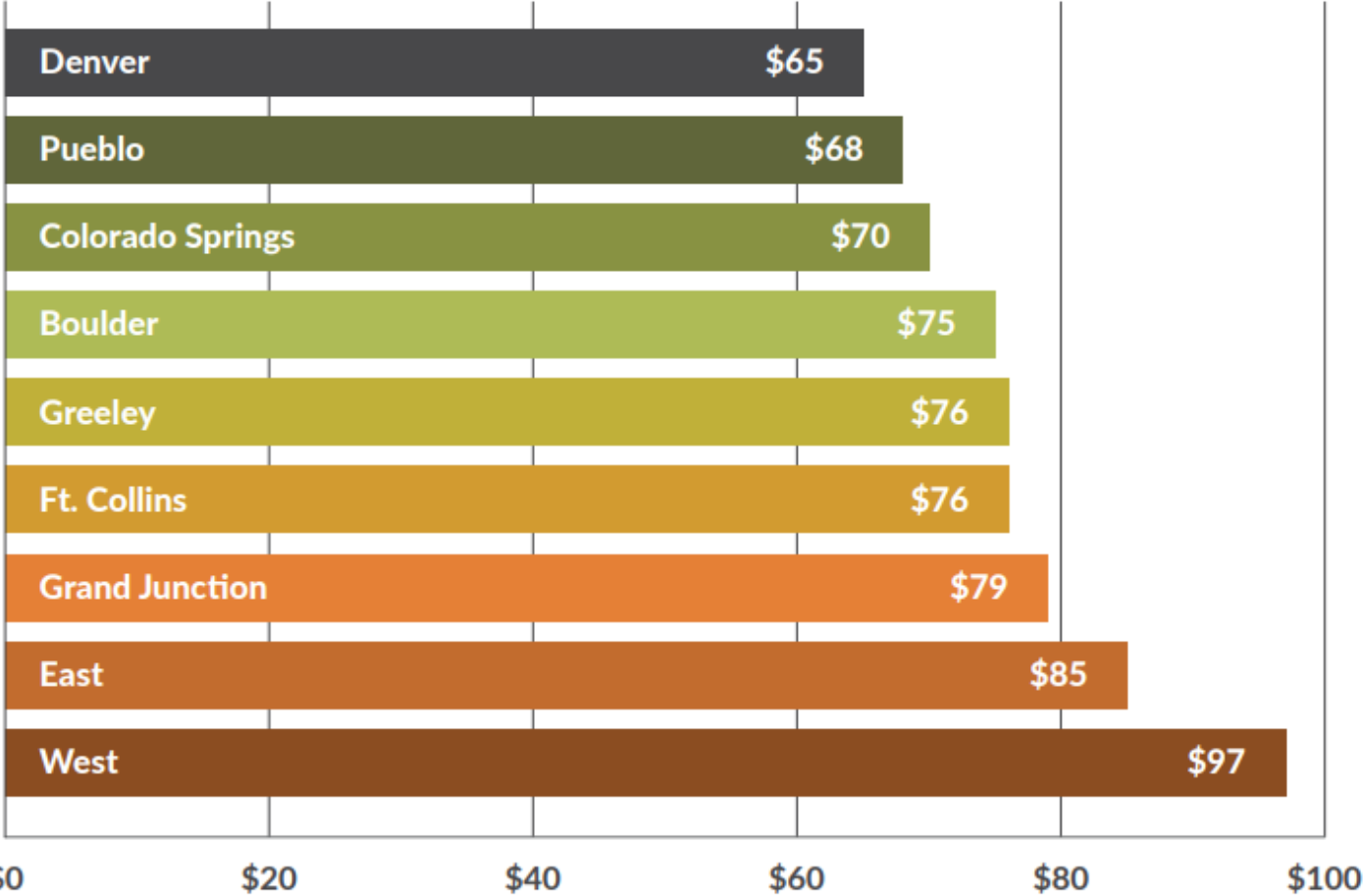
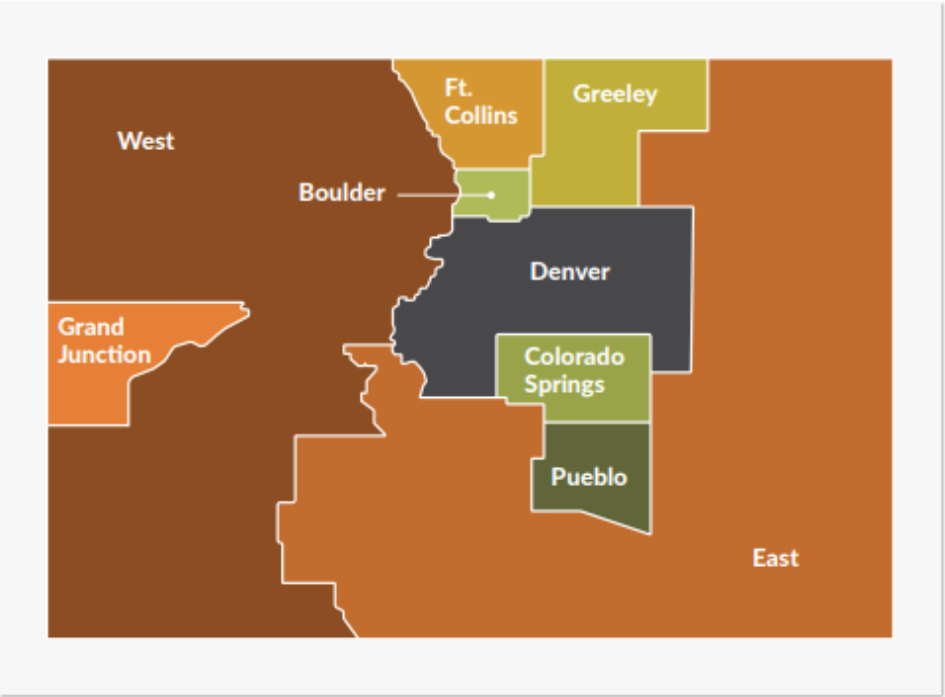
Geographic Variation in Avg. Cost



Statewide Division of Insurance Spending Variation

(Avg. Cost per Low Value Care Service)

All Payers, 2021












Payer Variation

Top Three Low Value Care Services by Payer, 2021

For detailed methodology and to view the interactive dashboard, visit us at civhc.org.



Low Value Service	Commercial	Medicaid	CHP+	Medicare FFS*	Medicare Advantage
 Colorectal Cancer Screening in Adults 50 and Older				\$8.6M	\$1.8M
 CT Scans for Abdominal Pain in Children			\$163K		
 Inappropriate Opioid Prescription	\$12.5M	\$12.9M			\$13.6M
 Pediatric Head Computed Tomography Scans			\$108K		
 Prostate Cancer Screening (PSA)				\$2.3M	
 Routine General Health Checks	\$3.4M				
 Screening for 25-OH-Vitamin D Deficiency	\$6.8M	\$4.2M	\$177K		
 Two or More Antipsychotic Medications		\$1.4M		\$1.8M	
 Vertebroplasty					\$2.5M

*Medicare FFS claims only available through June 30, 2021



Low Value Care Use Cases

- **Providers:** CIVHC can provide provider-specific data identifying your top low value care services and the cost impact that you can use as a benchmark to target reducing low value services for your patients.
- **Policy Makers:** Consider policy to encourage reducing the volume and cost impact of low value services.
- **Payers:** Evaluate payment models that reward reduction in low value care services.
- **Consumers:** Educate yourself on common low value care services and discuss treatment options with your providers.



SEPTEMBER 21ST, 2023

DATA TO DRIVE DECISIONS

CENTER FOR IMPROVING VALUE IN HEALTH CARE

Decreasing low value care: Strategies to change practice

Lalit Bajaj MD, MPH

Professor of Pediatrics and Emergency Medicine

Chief Quality, Equity, and Outcomes Officer

University of Colorado School of Medicine

Children's Hospital Colorado



Objectives

- Discuss 2 case studies on decreasing low value care
 - Axial imaging for abdominal pain
 - CXR, Viral Panels, and Bronchodilators in Bronchiolitis
- New strategies to incent “the right care at the right time”
 - Outcomes
- Discussion

Implementation sometimes requires De-Implementation

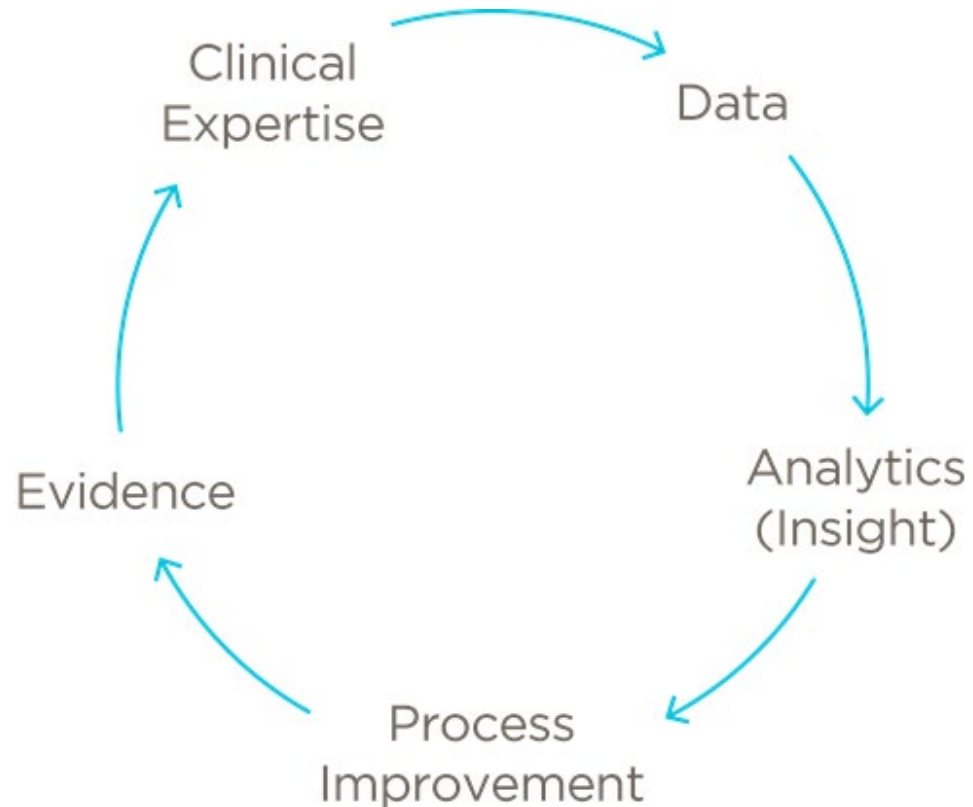
Failure to Translate Evidence into Practice

- 30-40% of patients do not get treatments of proven effectiveness
- 20-25% of patients get care that is not needed or potentially harmful

Clinical Effectiveness Mission and Vision

- Empowering extraordinary care through information, insight, and action
- Partner to inspire and serve our community in delivering the best value care for kids

CE Strategic Objectives



- Partner with clinical experts to embed evidence into practice and improve care and outcomes
- Partner in the development of reliable data and analytic tools to support sustainable improvements in value
- Partner in the design and implementation of value-based models and measures
- Promote a positive culture of engagement, learning, partnership, and transparency; generate and share knowledge locally and nationally

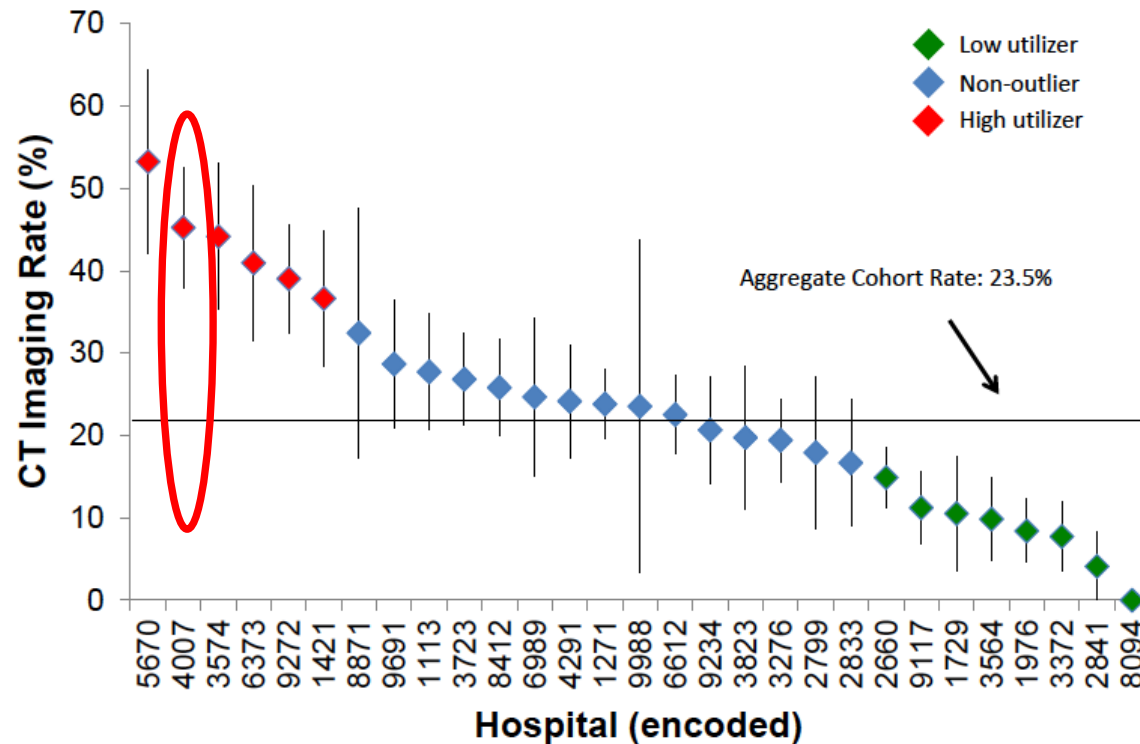


Current resources (Clinical Effectiveness)

- Director
- Manager
- Admin Assistant
- 4 medical directors
 - Pathways
 - Diagnostic Safety
 - Pop Management
 - Regional Care
- Process Improvement Specialists
 - Pathways Program Manager
 - Diagnostic Safety Program Manager
 - Emergency Department/Urgent Care
 - PICU/Hospitalist
 - Breathing Institute/Digestive Health Institute
 - 2 Population Management
 - 2 Senior level PIs
 - 2 Dedicated data analysts

Abdominal Pain and those pesky CT scans

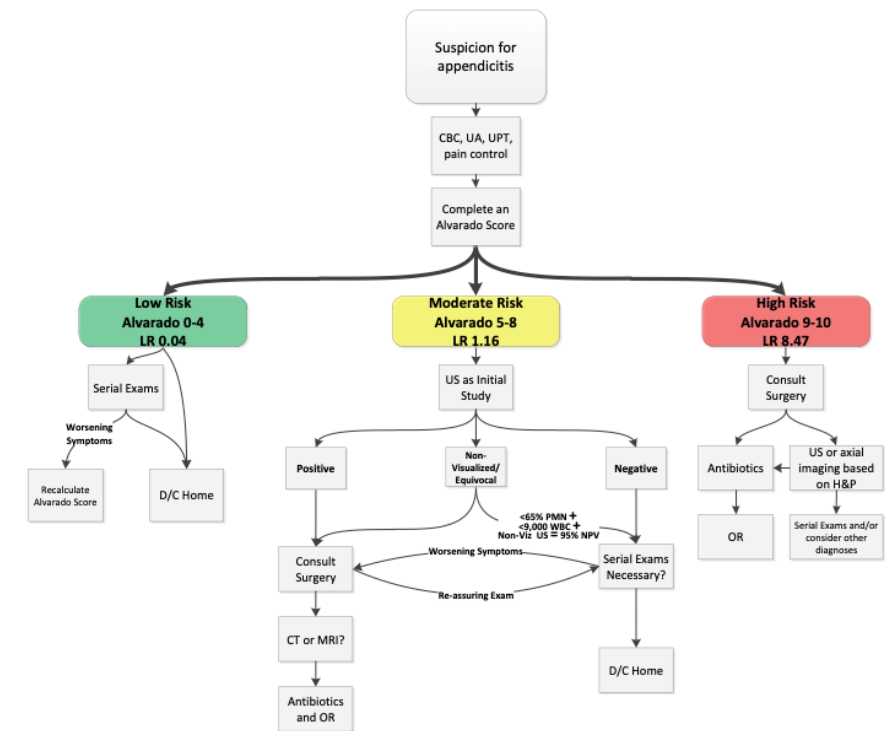
Preoperative abdominal CT utilization*



*NSQIP-P hospitals only; patients receiving imaging at transferring hospitals excluded. Results not risk/demographic adjusted.

23

Acute Appendicitis Diagnostic Algorithm



GUIDELINE ALGORITHM

Multidisciplinary Team



Practice Change Alert: Acute Appendicitis Clinical Care Guideline

The ED, Radiology and Surgery departments have agreed to the following changes to the Acute Appendicitis Clinical Care Guideline: (Complete guideline under revision)

1. Imaging:

- Children under three years of age and/or patients with persistent symptoms for greater than 72 hours may be screened by ultrasound first and no longer need to go directly to CT
- An appendicitis imaging template has been instituted by radiology to increase the objective nature of the report

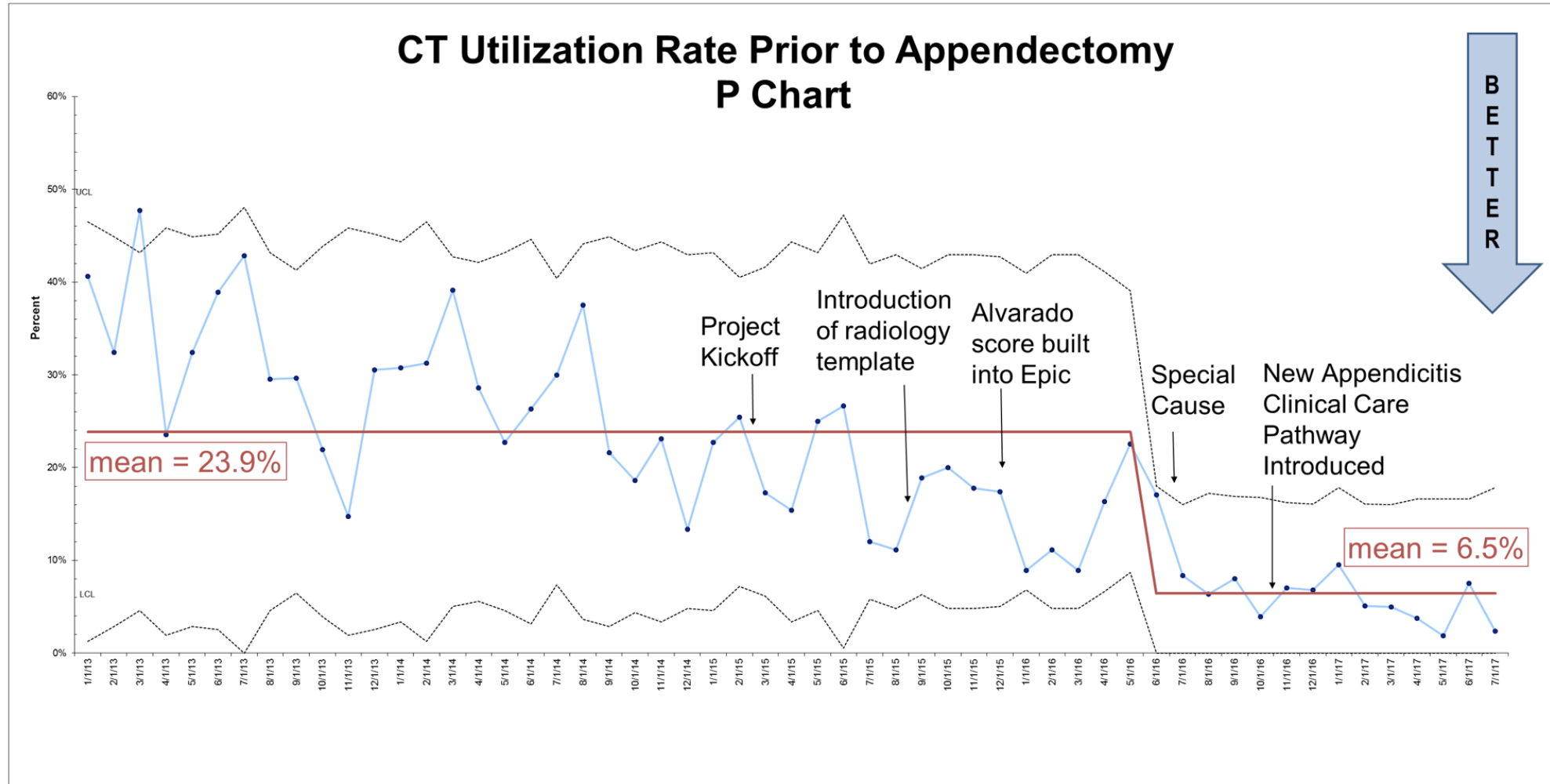
2. Surgical consults:

- Surgery is working with resident staff to respond promptly to ED consults
- Strongly consider a CBC and surgical consult prior to imaging in patients deemed to be clinically high probability. A CBC is indicated in the standard workup in our surgical group. Note that the surgical team may still recommend an ultrasound for the clinically high probability patient, however, the goal is for a portion of these high probability patients to avoid the imaging and go straight to the OR.
- Strongly consider a surgical consult in a clinically suspicious patient with an equivocal ultrasound prior to ordering a CT scan. While a CT may still be recommended, the goal is for a portion of these patients to either go the OR, or to be observed for disease progression. The decision to observe on the floor or the ED will be made via a collaborative discussion between the ED attending and the surgical attending.

3. Rectal contrast:

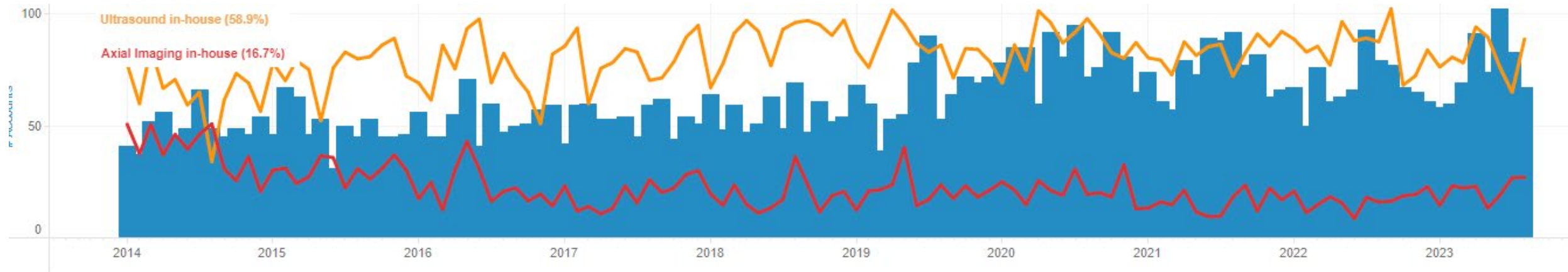
- Patients 6 years and younger require rectal contrast
- Patients 7-12 years of age with less than 50% BMI need a rectal contrast
- Patients aged 7-12 years of age with greater than or equal to 50% BMI do not need rectal contrast
- Patients 13 years and older do not require rectal contrast

The pathway acts as an anchor to improvement...



Appendicitis Volume vs. Imaging Rates

Last Data Refresh Date: 9/3/2023 9:08:47 AM



The Power of Branding Initiatives

REST is best

For previously healthy patients with uncomplicated bronchiolitis, age 1 month to 24 months

Reduce unnecessary interventions

Educate team about AAP guidelines and families on expectations of care

Supportive care (suctioning, fluids, oxygen)

Time = improvement. Have patience.



SEPSIS READINESS

Suspect sepsis? Be ready.

Search "sepsis" on MyChildrensColorado to access sepsis response resources.



Bronchiolitis

- Bronchiolitis is a viral infection that cause lower airway swelling and mucus plugging resulting in various degrees of respiratory distress
- It is the most common reason for hospitalization of infants
 - >100,000 admissions annually in the U.S.
 - Estimated cost of \$1.73 billion

Table 2. American Academy of Pediatrics Guidance for Diagnosis and Management of Bronchiolitis.*

Intervention	Recommendation	Comment
Diagnostic Test		
Chest radiography	Not recommended for routine use	Poor correlation with severity of disease or risk of progression; studies show increase in inappropriate use of antimicrobial therapy owing to similar radiographic appearance of atelectasis and infiltrate
Testing for viral cause	Not recommended for routine use	May influence isolation of symptomatic patients, but infection-control procedures are similar for most respiratory viruses
Treatment		
Bronchodilator therapy	Not recommended	Randomized trials have not shown a consistent beneficial effect on disease resolution, need for hospitalization, or length of stay
Epinephrine	Not recommended	Large, multicenter, randomized trials have not shown improvement in outcome among outpatients with bronchiolitis or hospitalized children
Glucocorticoid therapy	Not recommended	Large, multicenter, randomized trials provide clear evidence of lack of benefit
Nebulized hypertonic saline	May be considered	Nebulized 3% saline may improve symptoms of mild-to-moderate bronchiolitis if length of stay is >3 days (most hospitalizations are <72 hr)
Supplemental oxygen	Routine use not recommended if oxyhemoglobin saturation is >90% in the absence of acidosis	Transient episodes of hypoxemia are not associated with complications; such episodes occur commonly in healthy children
Pulse oximetry	Not recommended for patients who do not require supplemental oxygen or if oxygen saturation is >90%	Oxygen saturation is a poor predictor of respiratory distress; routine use correlates with prolonged stays in the emergency department and hospital
Chest physiotherapy	Not recommended	Deep suctioning is associated with a prolonged hospital stay; removal of obstructive secretions by suctioning the nasopharynx may provide temporary relief
Antimicrobial therapy	Not recommended for routine use	Risk of serious bacterial infection is low; routine screening is not warranted, especially among infants 30 to 90 days of age
Nutrition and hydration	Hospitalization for observation of hydration and nutritional status may be needed for infants with respiratory distress	Intravenous or nasogastric hydration may be used

* Adapted from the clinical practice guidelines for the diagnosis and management of bronchiolitis in children 1 through 23 months of age.⁹

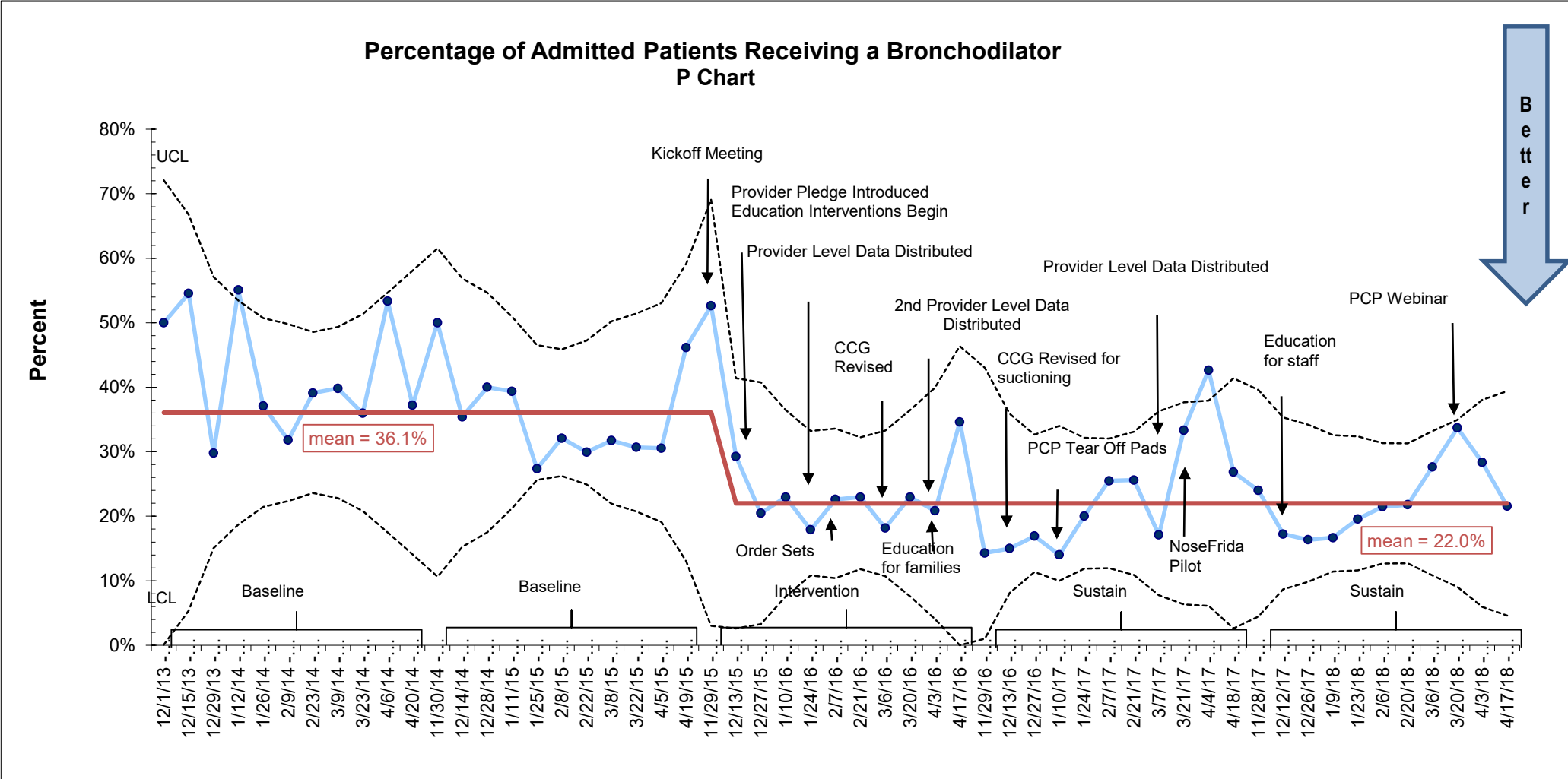
Chest X-rays

Studies show increase in inappropriate use of antibiotic therapy owing to similar appearance of atelectasis and infiltrate

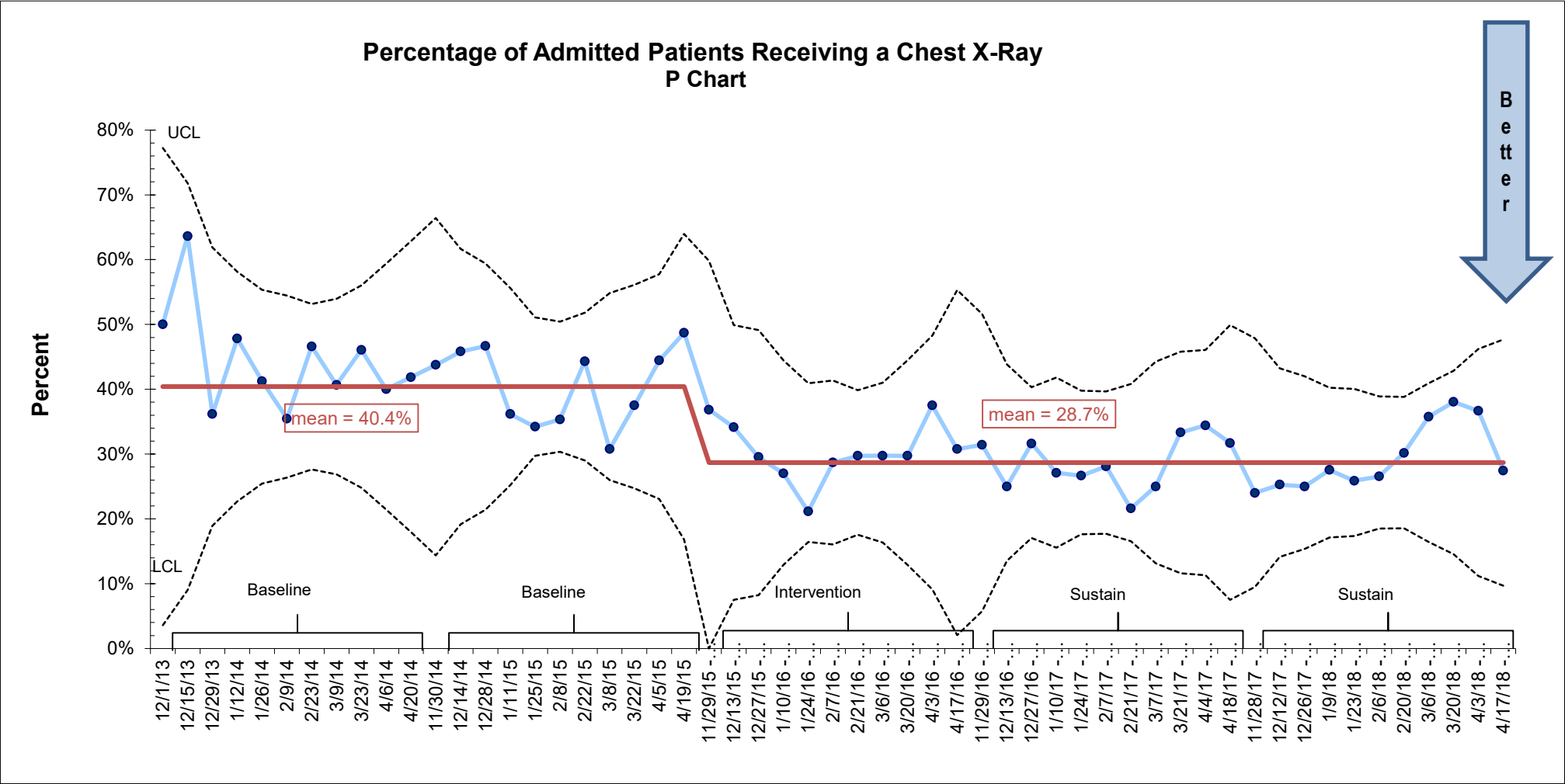
Bronchodilators

Randomized trials have not shown a consistent beneficial effect on disease resolution, need for hospitalization or length of stay

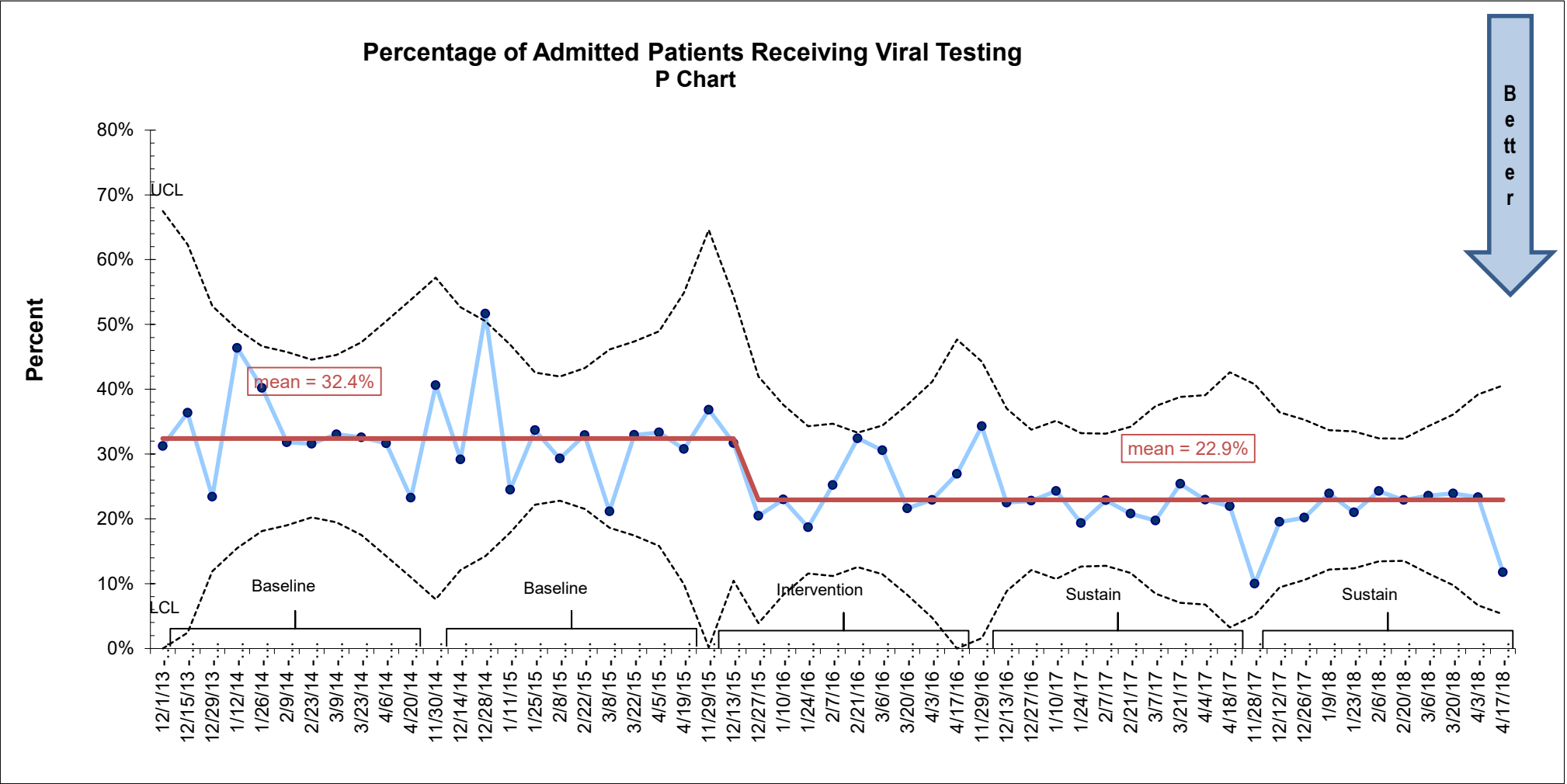
Bronchodilators



Chest X-rays



Viral Testing



Bronchiolitis

Site Specific Data

Balancing Measures

Respiratory Support

PICU HHFNC Transfer Standar...

Hotdog HHFNC Weaning

Bronchiolitis HTP

Measures

(Multiple values)

Bronchiolitis

Accounts

% Chest X-rays

% Bronchodilators

% RPP Tests



Discharge Date Range

12/1/2014

12/31/202

Patient Class

(Multiple values)

Admit Location

(Multiple values)

Admit Department

(All)

Discharge Location

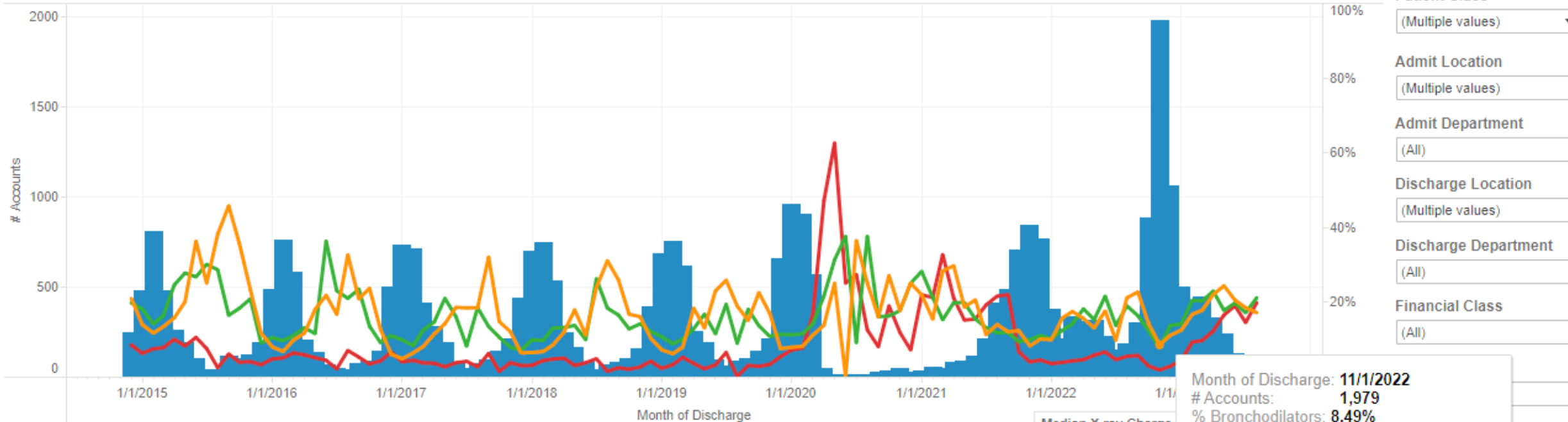
(Multiple values)

Discharge Department

(All)

Financial Class

(All)



Group by

Bronchiolitis Entire Year (Dec-Nov)

Bronchiolitis Entire Year (Dec-Nov)

Median X-ray Charge

Median RVP Test Cha

Month of Discharge: 11/1/2022

Accounts: 1,979

% Bronchodilators: 8.49%

% Chest X-rays: 7.7%

% RPP Tests: 1.77%

LOS (hours): Avg: 21.17, Median: 6.00

* Blue text indicates Anthem measures

Pathways need to be accessible to all



[childrenscolorado.org](#) • [PolicyTech](#) • [Clinical Pathways/DSR](#) • [Learning Resources](#) • [Staff Directory](#)

All

Policies & Procedures

Patient Handouts

Search...

go

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Help

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Quick Links

Clinical Pathways

Department Specific Resources

COVID-19

Search All

Learn More

Clinical Pathways

Clinical pathways (CPs; formerly called clinical care guidelines) assist clinicians in standardizing the evaluation, diagnosis, and care of patients with specific conditions, with the goal of achieving optimal outcomes. They translate national guidelines and the best available evidence for clinical application into local context. Clinical pathways are used to inform decision-making at the point of care, to train new clinicians on evidence-based practice, and to support continuous improvement.¹

Click [here](#) for more detailed information about clinical pathways.

A comprehensive process has been initiated in partnership across campuses to review and assess all clinical pathways for alignment with Colorado Springs practice and operations. This process will be ongoing. Pathways that have been reviewed and confirmed to be in alignment with Colorado Springs can be identified on this page under the Reviewed for Colorado Springs column.

If you have any questions about this process or a specific pathway, please contact [Katie Sellinghausen](#).

As a reminder, clinical pathways are intended for informational purposes only. They are current at the date of publication and are reviewed on a regular basis to align with the best available evidence. Clinical pathways are not intended to take the place of a physician's or other health care provider's advice, and is not intended to diagnose, treat, cure or prevent any disease or other medical condition.

***NOTE: Must use Chrome browser to open**

Search for a Clinical Pathway:

Enter a Title, Category, or Keyword...

▲ Pathway Name	Reviewed for Colorado Springs?
Abdominal Pain in Oncology or Bone Marrow Transplant (BMT) Patient, Typhilitis	
Acetaminophen (APAP) Toxicity	
Acute Abnormal Uterine Bleeding (AUB)	
Acute Chest Syndrome (ACS)	
Acute COVID-19 Pathway	*NOTE: Must use Chrome browser to open
Acute Painful Scrotum	*NOTE: Must use Chrome browser to open Yes

Make them external - PCPs and other EDs

Clinical Pathways

What are Clinical Pathways?

Clinical pathways assist clinicians in standardizing the evaluation, diagnosis, and care of patients with specific conditions, with the goal of achieving optimal outcomes. They translate national guidelines and the best available evidence for clinical application into local context. Clinical pathways are used to inform decision-making at the point of care, to train new clinicians on evidence-based practice, and to support continuous improvement.¹

How can I learn more?



References



COVID-19 Clinical Pathways

Please visit [Children's Hospital Colorado on AgileMD](#) for COVID-19-specific pathways and clinical guidance documents. Types of guidance include immune modulation, convalescent plasma, medication guidelines and more.

- [MIS-C \(Multisystem Inflammatory Disease in Children\) Associated with COVID-19](#)
- [Acute COVID-19 Pathway](#)
- [Cardiac Evaluation for Post COVID-19 \(SARS-CoV-2\) Infection Return to Play in Children and Adolescents](#)

Note: Use the Google Chrome browser to access AgileMD. The links above will not work in other browsers.

AgileMD Clinical Pathways

Please visit [Children's Hospital Colorado on AgileMD](#) for pathways and clinical guidance documents as we transition from the PDF format below.

- [Appendicitis](#)
- [Acute Painful Scrotum](#)
- [Asthma Exacerbation Management](#)
- [Bronchiolitis](#)

I hate toggling between EMR and pathways

- So, we embedded links in Epic via the order sets
 - Still toggling
- Orders set and pathway are not concordant
- Hard to keep up through upgrades
- Administrative burden is high

Order Sets

Orders

ED DKA ⌵

- [DKA Clinical Pathway](#)

▼ Patient Care Orders

▼ Patient Care Orders

☐ Vital Signs

Every 1 hour





☐ Neurological Checks

Every 1 hour


☐ Start 2 peripheral IVs

—

Workup

 Results Review  Screening/Scoring  Patient Labels  Pathways

Pathways

 Children's Hospital Colorado

Home

Active


Resources


Bookmarks


Updates

Past activity


Featured Resources

 Emergency Medicine Pathways
89 files











 Clinical Calculators & Scoring Tools
97 files

 Inpatient Pathways
95 files

See 4 other resources →

★  Emergency Medicine Pathways

10 of 73 items

Type	Name	Resource	Status	Last Used	
	Abdominal Pain in Oncology or Bone Marrow Transplant (BMT) Patient, Typhilitis	Emergency Medicine Pathways			
	Abscess Launch Pad	Emergency Medicine Pathways			
	Acetaminophen (APAP) Toxicity	Emergency Medicine Pathways			
	Acute Abnormal Uterine Bleeding (AUB)	Emergency Medicine Pathways			
	Acute Chest Syndrome (ACS)	Emergency Medicine Pathways			
	Acute COVID-19	Emergency Medicine Pathways			
	Acute Painful Scrotum Last Update: 5/23/2023 Approval: October/November 2021	Emergency Medicine Pathways			
	Acute Pancreatitis	Emergency Medicine Pathways			
	Anaphylaxis	Emergency Medicine Pathways			
	Anaphylaxis Launch Pad	Emergency Medicine Pathways			

Show 63 more files



Fever in Infant 0 to 60 days | Inpatient

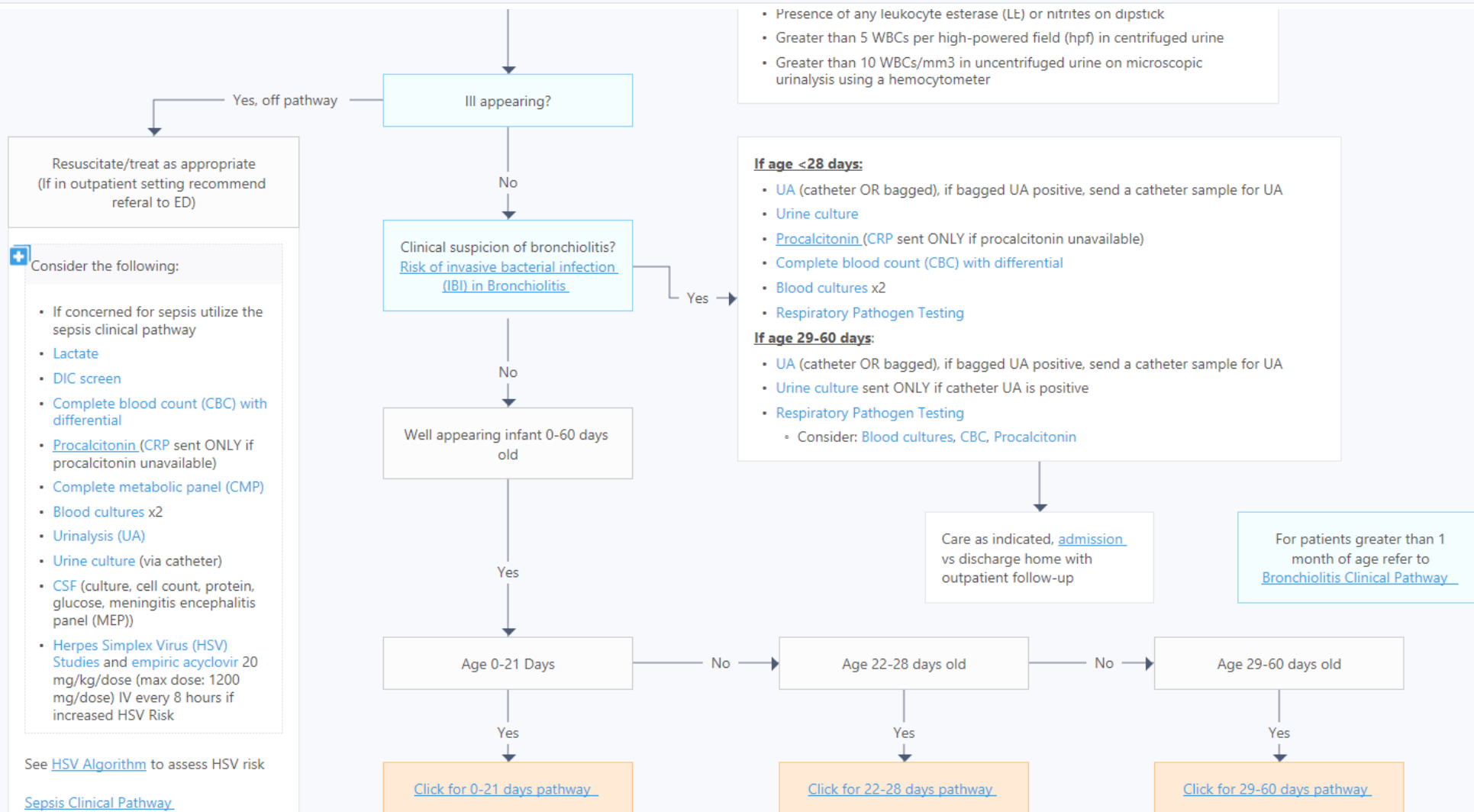
Last update: 4/25/2022 | Approval: CPMC: 08/22/2022 | P&T: 09/01/2022

Emergency Medicine Pathways

Initial Workup

Subsequent Workup Based on Age

HSV Testing



- Presence of any leukocyte esterase (LE) or nitrites on dipstick
- Greater than 5 WBCs per high-powered field (hpf) in centrifuged urine
- Greater than 10 WBCs/mm³ in uncentrifuged urine on microscopic urinalysis using a hemocytometer













If age <28 days:


- UA (catheter OR bagged), if bagged UA positive, send a catheter sample
- Urine culture
- Procalcitonin (CRP sent ONLY if procalcitonin unavailable)
- Complete blood count (CBC) with differential
- Blood cultures x2
- Respiratory Pathogen Testing

If age 29-60 days:

- UA (catheter OR bagged), if bagged UA positive, send a catheter sample for UA
- Urine culture sent ONLY if catheter UA is positive
- Respiratory Pathogen Testing
 - Consider: Blood cultures, CBC, Procalcitonin

Place New Orders

-  Urinalysis 
-  Urine Culture 
-  Procalcitonin 
-  CBC with differential 
-  Blood Culture 
-  Respiratory Pathogen Testing 

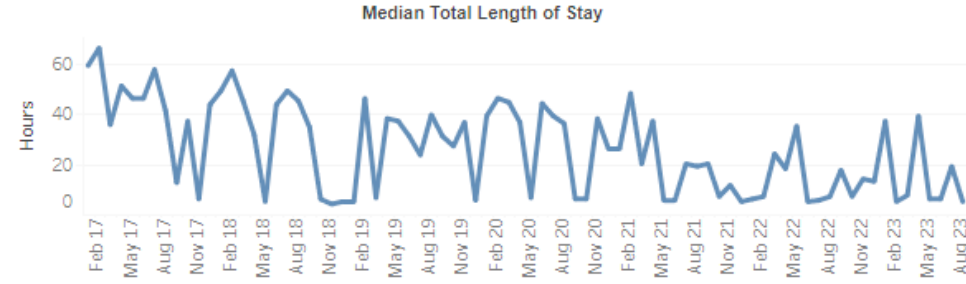
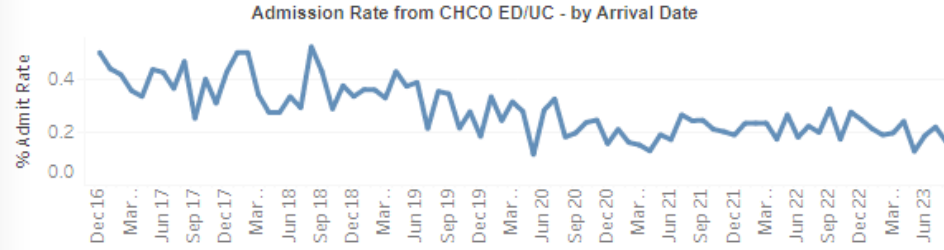
 **Accept**

Monitoring
pathway
goals

Requires close partnership
with analytics team

Devoted resources are the
best, but still need to be
connected to central
infrastructure

Infant Fever Dashboard



Date Displayed by:

Month

Discharge Date

1/1/2017

9/4/2023

Patient Class

(All)

Admit Location

(All)

Admit Department

(Multiple values)

Discharge Location

(All)

Discharge Department

(All)

Financial Class

(All)

Payer Name

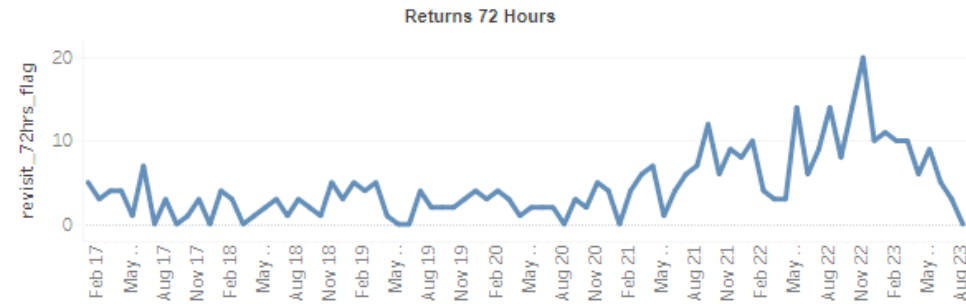
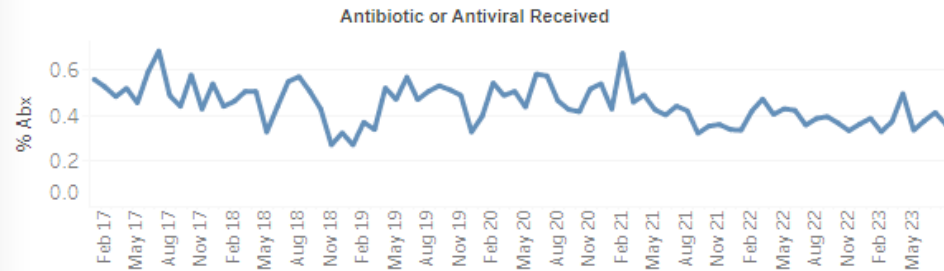
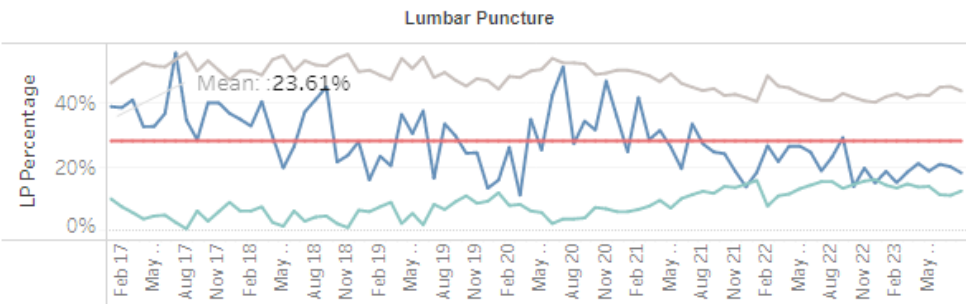
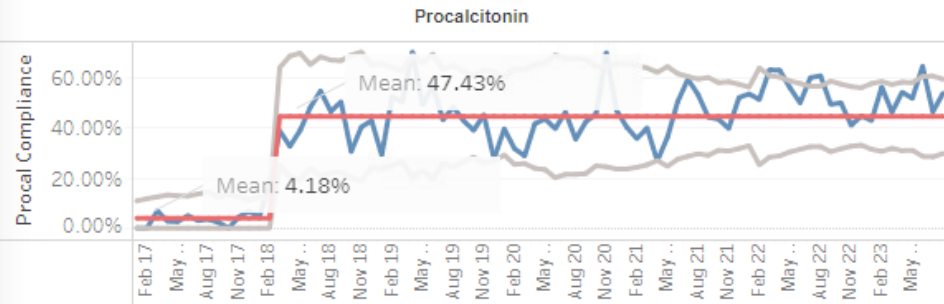
(All)

AGE

(All)

Overall LOS Hrs

2310



PHIS Low Value Care Report

Assessing Condition Specific Low Value Care

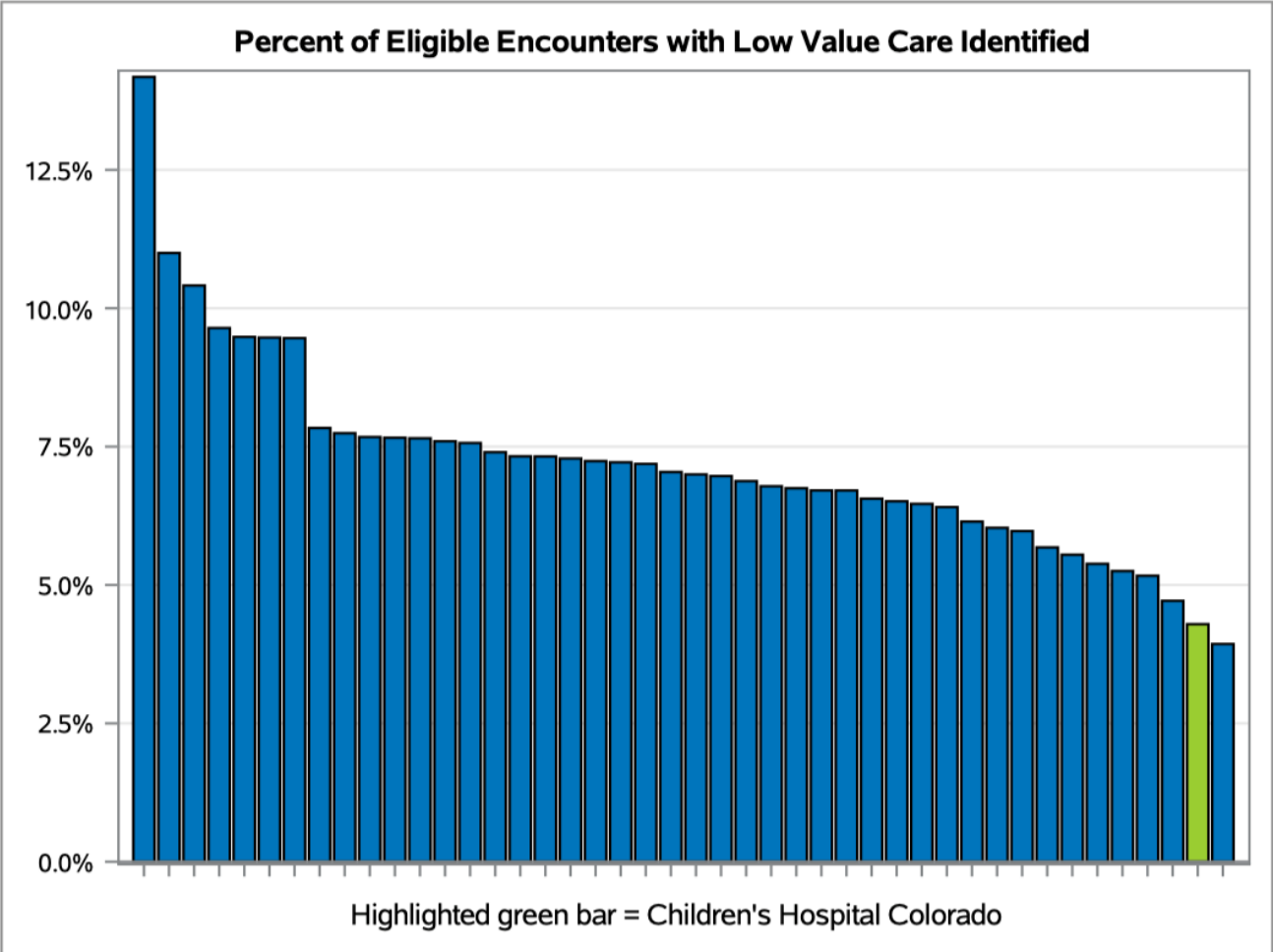
Children's Hospital Colorado (Denver)

Based on Q1-Q4 2022 Emergency Department, Inpatient, and Observation Discharges

Published March 2023

Total Low Value Care Across All Settings for Included Conditions

Of 110,152 encounters that met inclusion criteria in Q1-Q4 2022, 87,973 were eligible for Low Value Care (LVC) calculations after global exclusions were applied. 3,776 (4%) of encounters had some form of resource overutilization representing \$525,915 (PHIS Standardized Costs).



Total Low Value Care by Type of Service

Measures are categorized into three types of service: Imaging, Labs, and Medications. Resource overutilization for Imaging represented \$429,226, Labs \$23,232, and Medications \$73,457 (PHIS Standardized Costs).



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Questions and Feedback



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Recording will be posted here:

www.civhc.org/about-civhc/news-and-events/event-resources/