

Moving from Quality to Value in your Improvement Work

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Jessica Armijo, Kaitlin Widmer



Disclosures

- No financial conflicts of interest to disclose

Welcome and Introductions



Learning Objectives

- Define value as it applies to the healthcare environment
- Design a value improvement project that incorporates concepts of value in all stages of the project
- Develop techniques to measure value and changes in value for improvement projects

Agenda

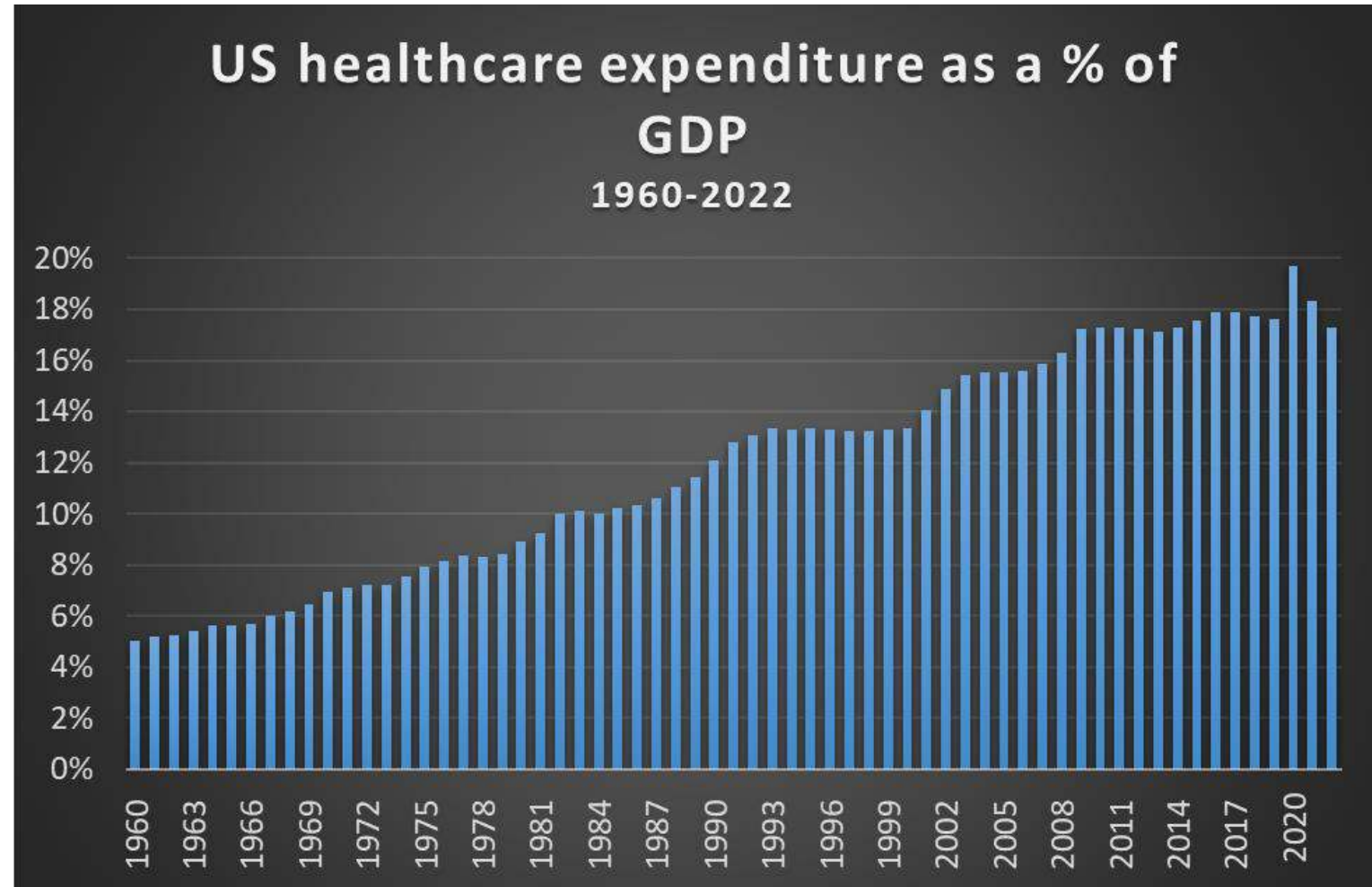
- Introduction to Value and Value Improvement
- Breakout #1: Initial Value Project Selection and Planning
- Value/Cost Measure Selection and Data Challenges
- Breakout #2: Develop Value Measures
- Develop Strategy for your Value Improvement
- Large Group Discussion: Key Driver / Intervention Development
- Wrap-up

Value and Value Improvement

(background)

Background

- Healthcare in the US is expensive and growing more so
- Are we getting our money's worth?



Implications of overspending & overuse

Spending trade-offs

- For society
- For families

High healthcare spending
&
Overuse of resources

Inefficient systems
and Burnout

Preventable Harm

What is Value?

Defining Value

Classic Definition of Value

$$\text{Value} = \frac{\text{Quality}}{\text{Cost}}$$

The Value Equation

$$\text{Value} = \frac{\text{Outcomes + Patient Experience}}{\text{Cost and Inputs}}$$

The Value Equation

$$\text{Value} = \frac{\text{Outcomes} + \text{Patient Experience}}{\text{Cost and Inputs}} \times \text{Equity}$$

To improve the value of care:

**Outcomes +
Patient Experience**

Cost and Inputs



Improve
Outcomes



Maximize Benefit
to Patients



Minimize Harm



Incorporate
Patient Values

To improve the value of care:

Outcomes + Patient Experience

Cost and Inputs



Minimizes Care that provides no benefit



Minimizes Cost when effectiveness is equal



Decrease wasted resources – improve efficiency



Decrease wasted staff time – improve burnout and work quality

A Value Matrix

	High Value	Low Value
High Cost	Chemotherapy for ALL	MRI for uncomplicated headache
Low Cost	Vaccines	Albuterol for bronchiolitis

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Value Improvement Projects



What is a Value Improvement Project?

A project whose outcomes focus on improving the **value** of care

- Improved outcomes and patient experience

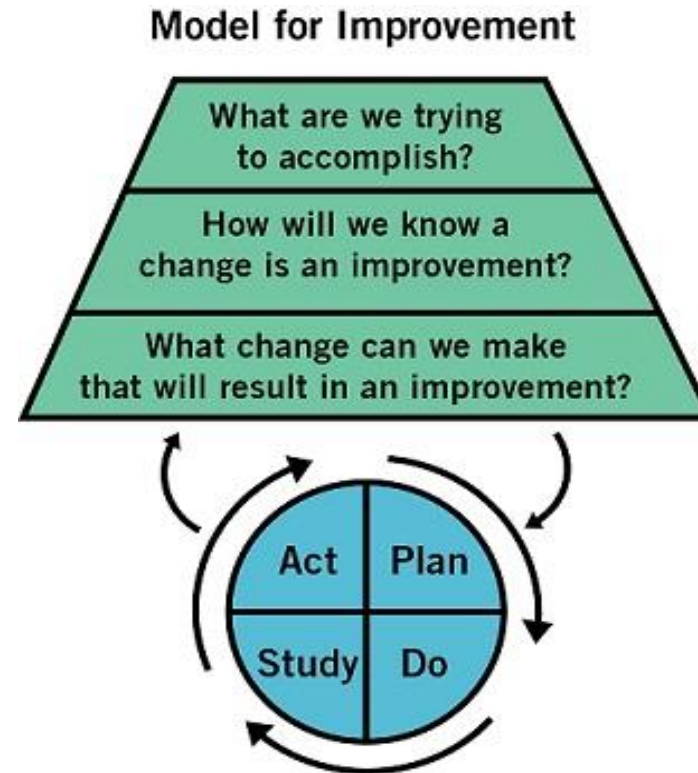
AND/OR

- Lower cost/resource utilization

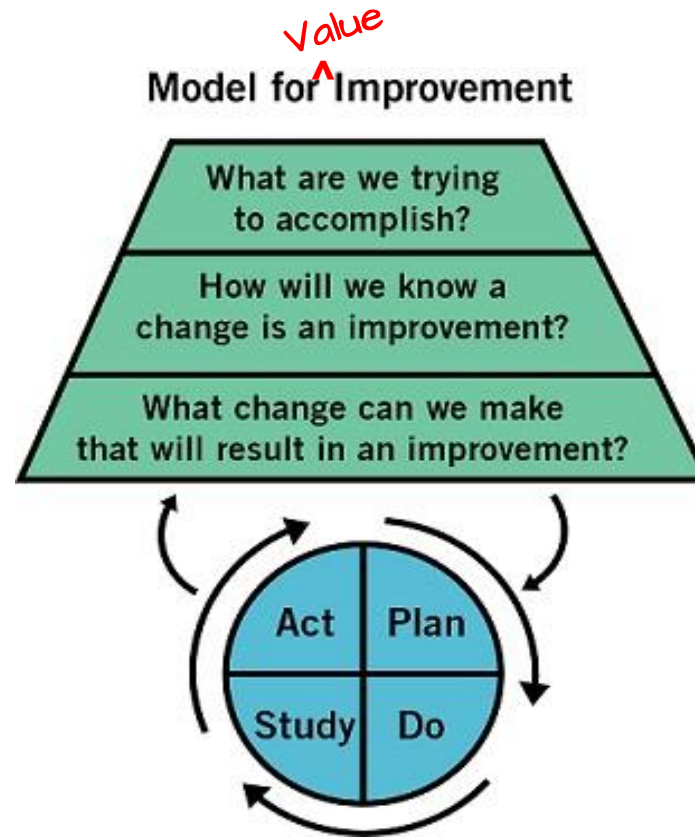
**Outcomes +
Patient Experience**

Cost and Inputs

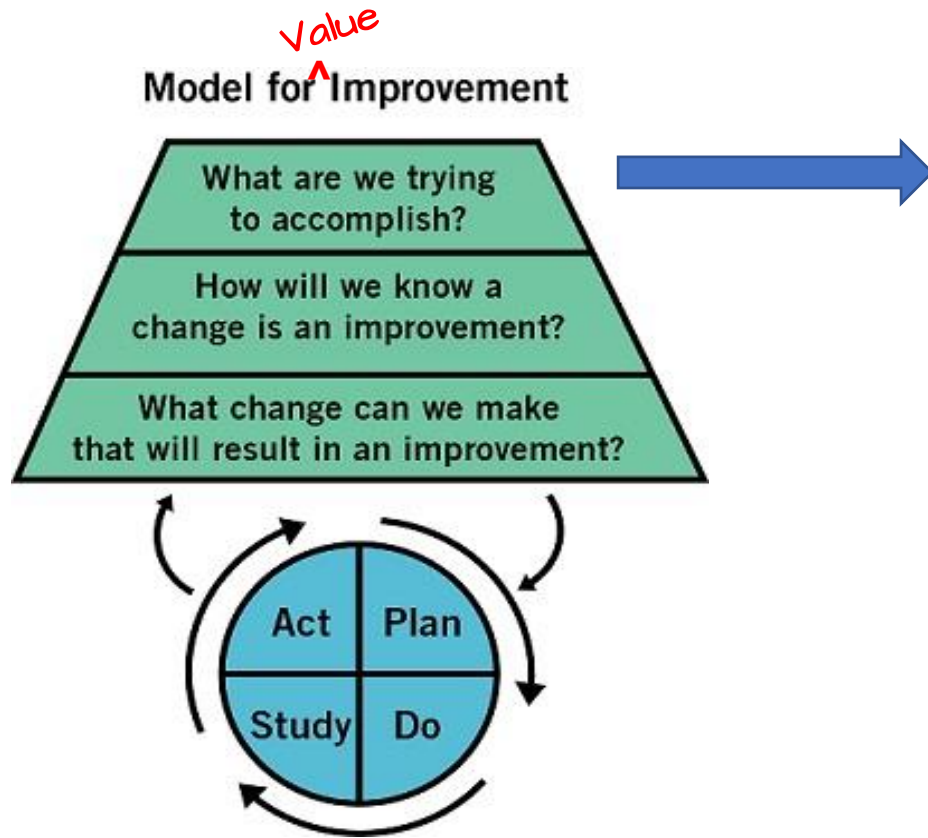
Model for Improvement



Model for Value Improvement



Model for Value Improvement



What are we trying to accomplish to improve the value of patient care?

Approaches to Choosing Value-focused Aims

Approach #1:

Improve both patient outcomes and decrease cost

Example:

Focus on reducing overuse

Overuse - medical care where the benefits of utilization do not outweigh costs or harms

Categories of Overuse

- Overtreatment
- Overdiagnosis
- Overtesting
- Overutilization of other resources

**Outcomes +
Patient Experience**

Cost and Inputs

Approaches to Choosing Value-focused Aims

Approach #2:

Maintaining quality while reducing costs / resource utilization

i.e. increase efficiency of care

Example:

- Eliminate processes that do not change outcomes

**Outcomes +
Patient Experience**

Cost and Inputs

Approaches to Choosing Value-focused Aims

Approach #3:

Improving underuse, patient experience, or equitable access to resources while maintaining cost

i.e. increasing utilization of best-practice / evidence-based care

Examples:

- Increased vaccine uptake

**Outcomes +
Patient Experience**

Cost and Inputs

Approaches to Choosing Value-focused Aims

Choose projects based on already established value principles

- Choosing Wisely
- Evidence-based guidelines
- Value Improvement Guides from the High-Value Practice Academic Alliance
- PHIS Low-Value Care Calculator

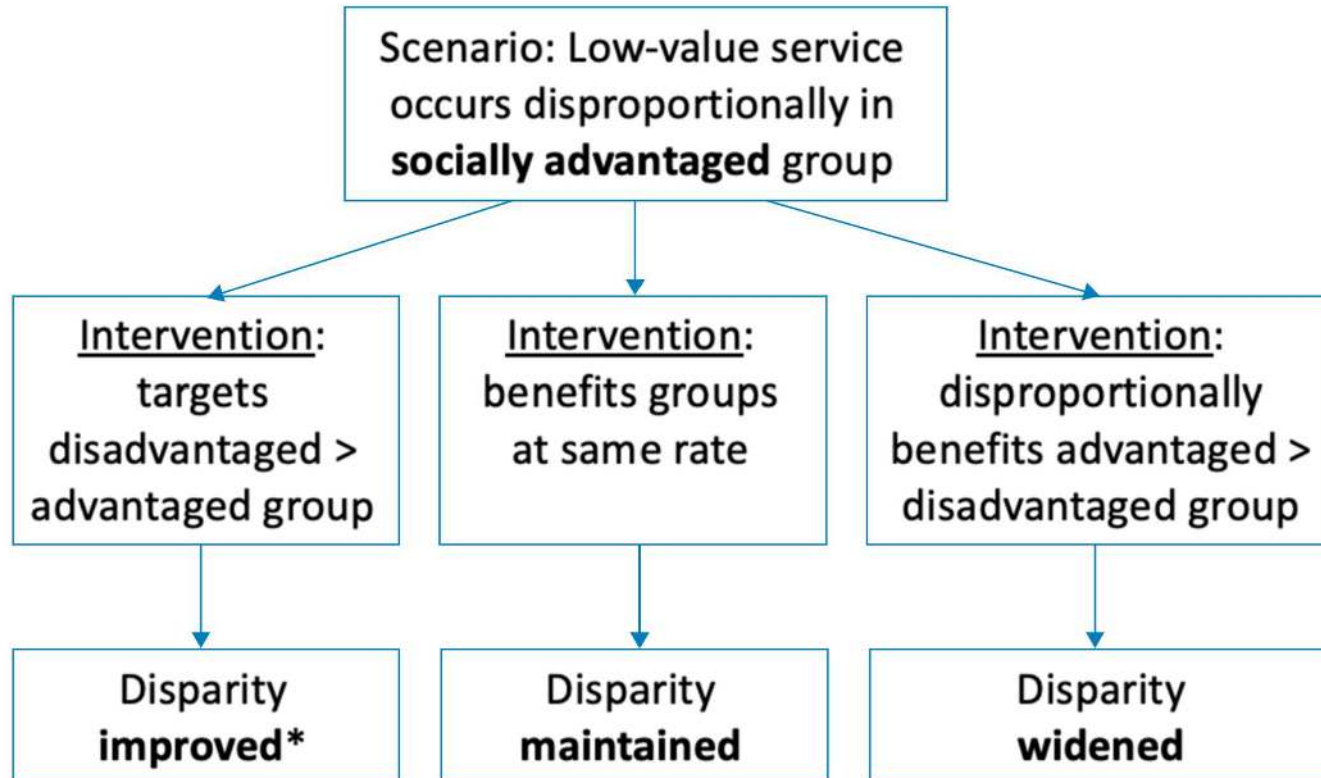
**Outcomes +
Patient Experience**

Cost and Inputs

Equity and Value

Improving healthcare value: The need to explicitly address equity in high-value care

Danni Liang MD^{1,2} | Samantha A. House DO, MPH³ | Christopher Moriates MD^{4,5}

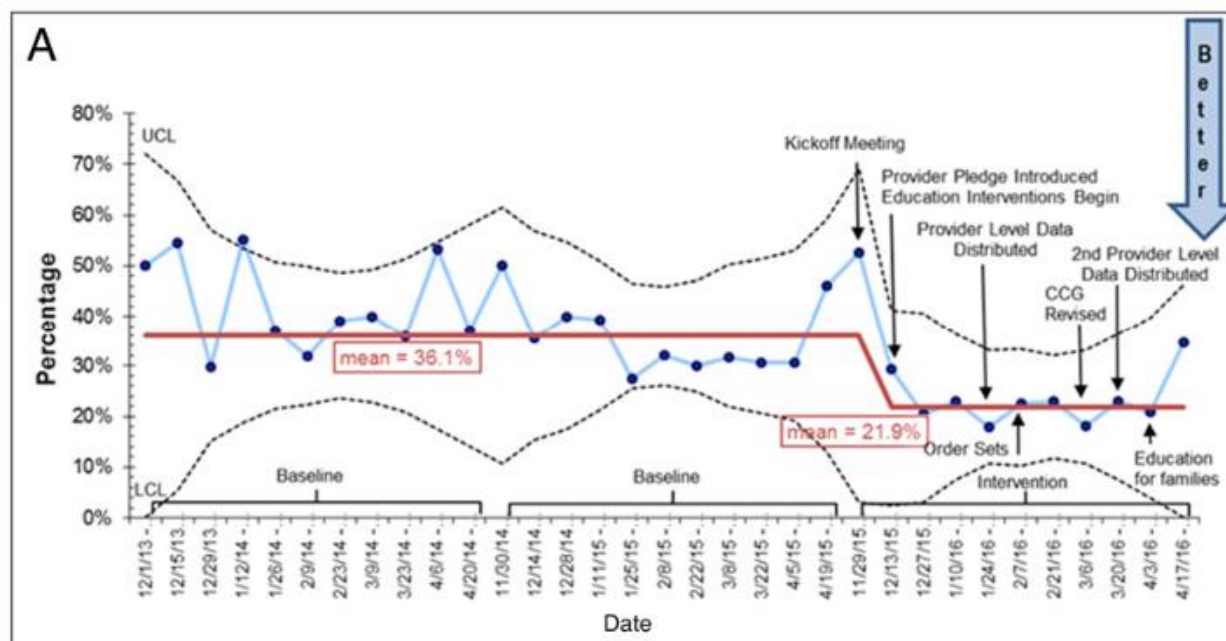


Examples of Aims related to value

Interventions to Reduce Over-Utilized Tests and Treatments in Bronchiolitis

Amy Tyler, MD, MScS,^{a,b} Paige Krack, MBA, MS,^a Leigh Anne Bakel, MD, MSc,^{a,b} Kimberly O'Hara, MD,^{a,b} Douglas Scudamore, MD,^{a,b} Irina Topoz, MD,^{a,b} Julia Freeman, MD,^{a,b} Angela Moss, MS,^c Renee Allen,^a Angela Swanson, MS,^a Lalit Bajaj, MD, MPH^{a,b}

- Adherence to Bronchiolitis guidelines
- Reduce overtesting, misdiagnosis and overtreatment
- CXR's incur cost, lead to misdiagnosis and overtreatment



Examples of Aims Related to Value

Reducing Electrolyte Testing in Hospitalized Children by Using Quality Improvement Methods

Michael J. Tchou, MD,^{a,b} Sonya Tang Girdwood, MD, PhD,^a Benjamin Wormser, MD,^c Meifawn Poole, DO,^c Stephanie Davis-Rodriguez, MD, MSc,^c J. Timothy Caldwell, MD, PhD,^c Lauren Shannon, CNP, MSN,^a Philip A. Hagedorn, MD,^a Eric Biondi, MD, MSBA,^d Jeffrey Simmons, MD, MSc,^{a,b} Jeffrey Anderson, MD, MBA,^{b,e} Patrick W. Brady, MD, MSc^{a,b}

Global Aim:

Reduce non-value added lab testing in the inpatient setting, with resulting improvement of value and patient / family experience

Specific Aim:

Reduce electrolyte labs drawn on hospital medicine services by 25% by January 2017

Examples of Aims Related to Value

A Multifaceted Quality Improvement Intervention to Improve Watchful Waiting in Acute Otitis Media Management

Di Sun, MD, MPH; Vanessa Rivas-Lopez, MD*; Danica B. Liberman, MD, MPH*†‡*

Global Aim:

Improve stewardship of antibiotics and the downstream impacts of antibiotic overuse

Specific Aim:

Improve adherence to AAP AOM management guidelines among PED physicians and nurse practitioners (providers) by 20% from a baseline of 44.1% to 64.1%

Breakout Group #1

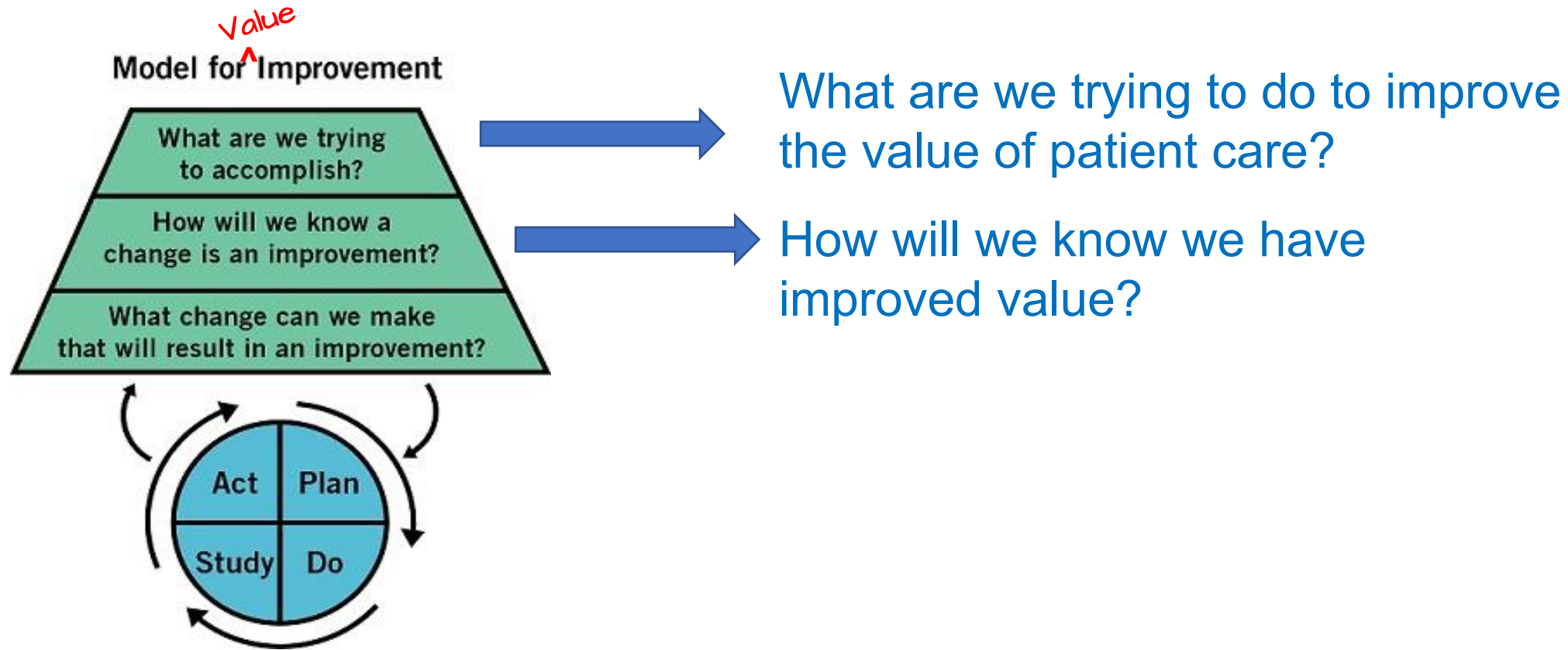
- Introductions in your small group
- Brainstorm potential/actual value improvement projects
 - **Choose a primary project for your table**
 - Can discuss other projects as well as time allows
- Identify how the projects improve value and what aspects of the value equation are involved
- Write a SMART Aim for your value improvement project(s)

Large Group Sharing and Questions

- Share your project and aims
- Questions or insights
- Other questions

Measuring Improved Value

Model for Value Improvement

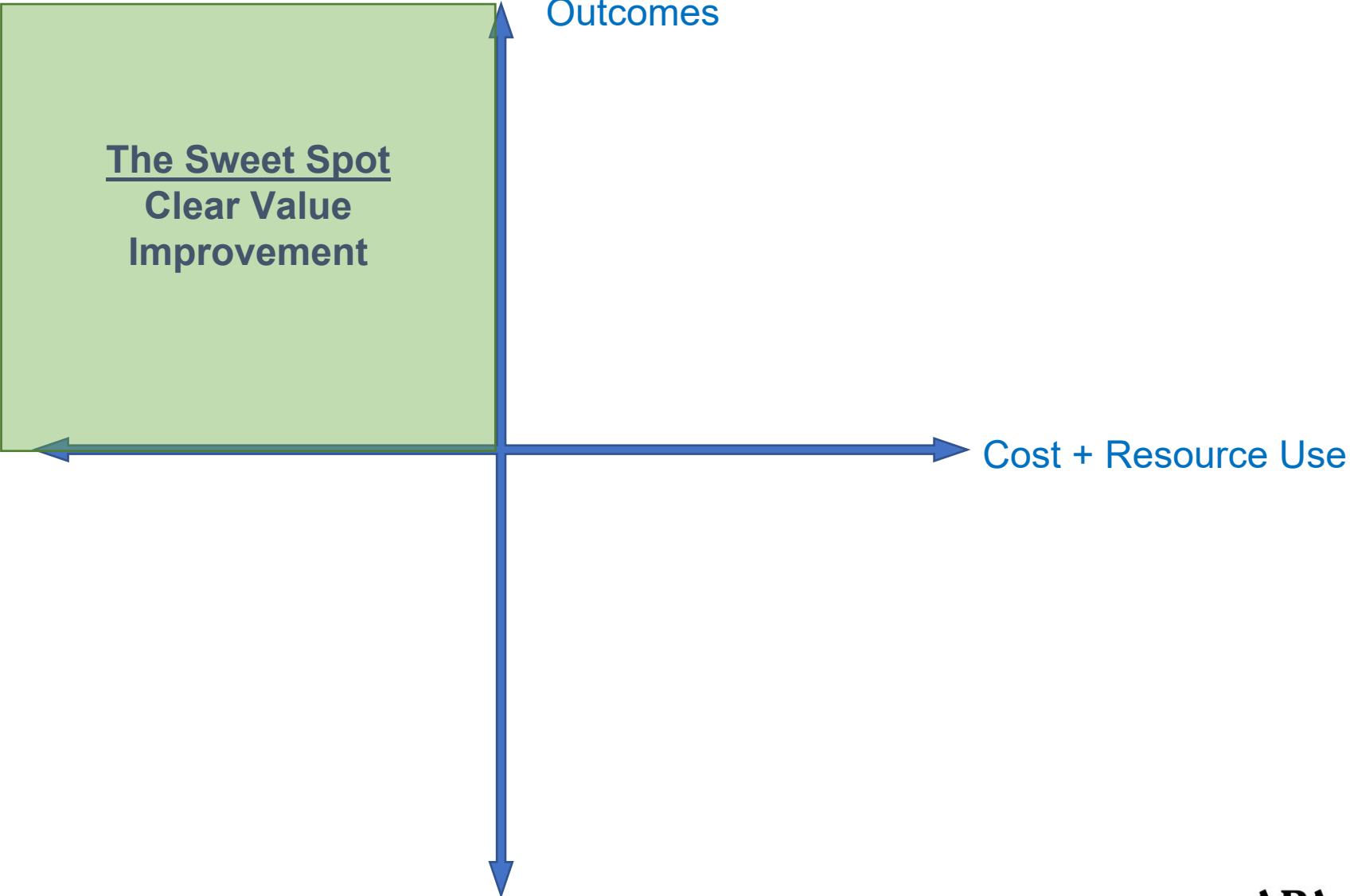


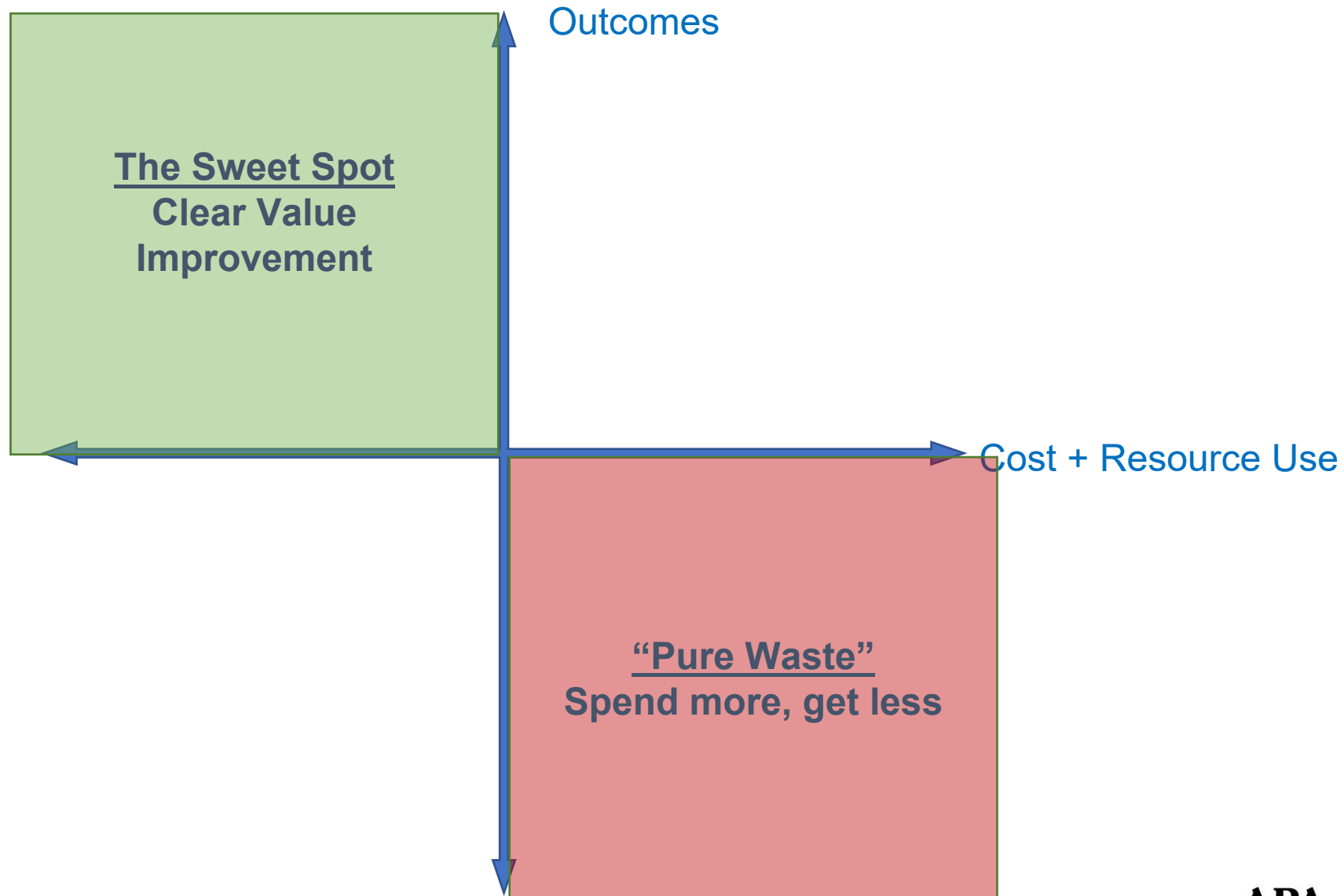
Value measurements for improvement projects

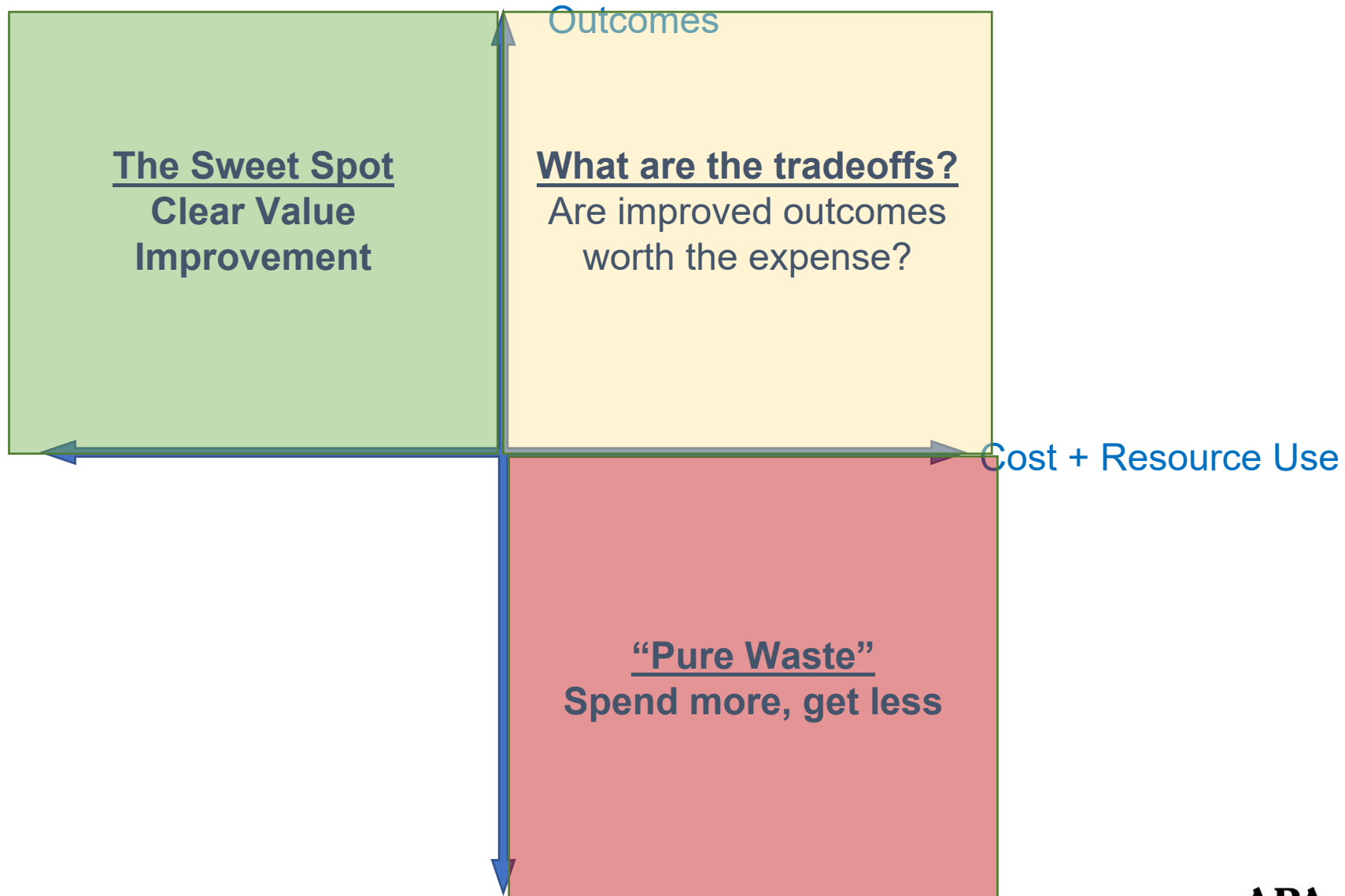
- How do we know we have improved value?
- Find measures that help you understand all/many aspects of the value equation
- Consider the balance and trade-offs

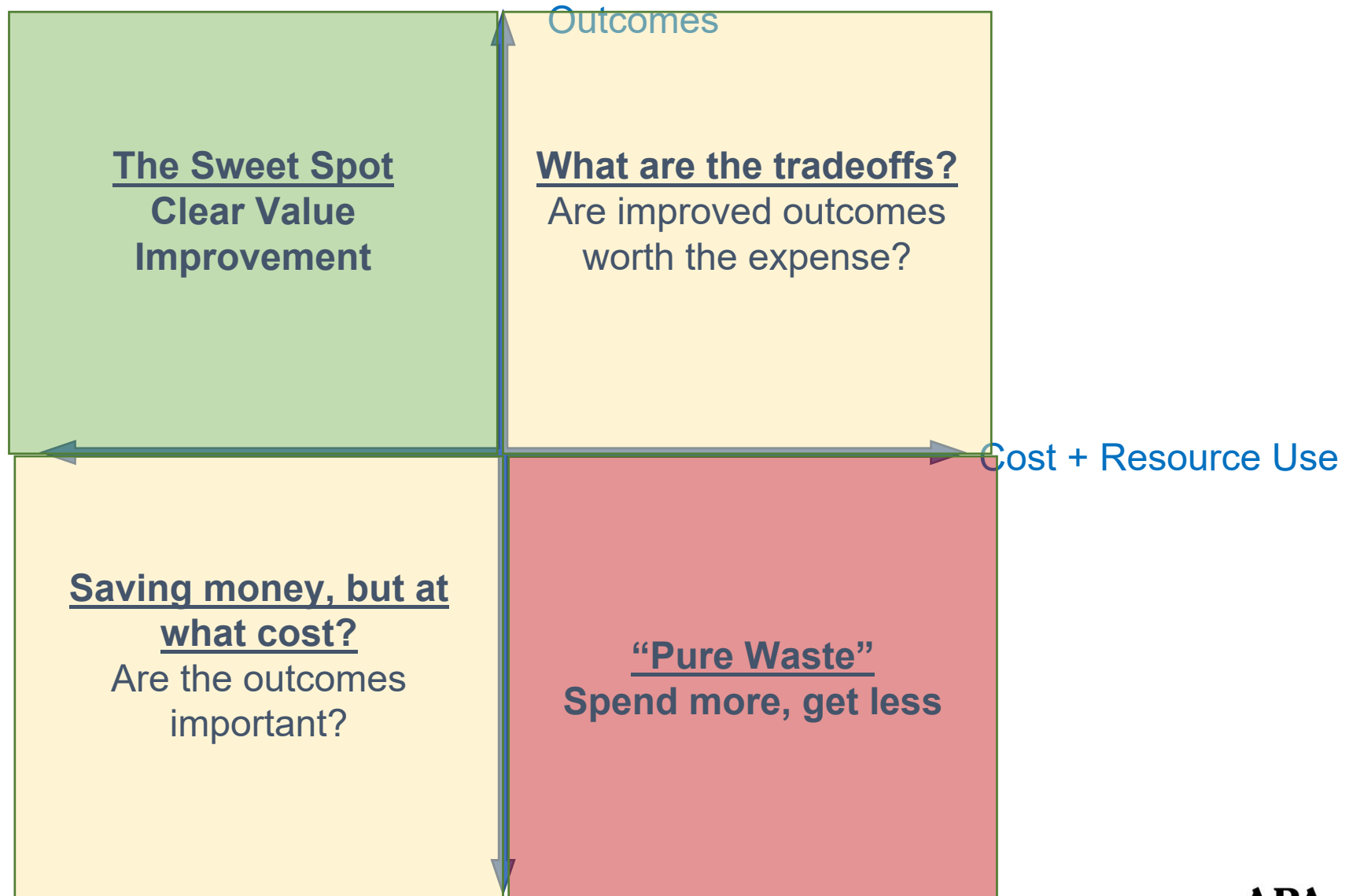
**Outcomes +
Patient Experience**

Cost and Inputs









Cost as a Measure

- When possible, measure the cost of your interventions and other key steps in your process

How to obtain cost information

- Seek out cost data at your institution's financial teams
- Related networks or databases – Children's Hospital Association – PHIS database
- Cost estimates based on online cost estimators

Example of Cost as a Measure

Leveraging the Outpatient Pharmacy to Reduce Medication Waste in Pediatric Asthma Hospitalizations

Erik R Hoefgen, MD, MS^{1*}, Yemisi Jones, MD², Joshua Courter, PharmD³, Andrew Hare, RRT³,
José A Torres Garcia, MD, MHA⁴, Jeffrey Simmons, MD, MSc²

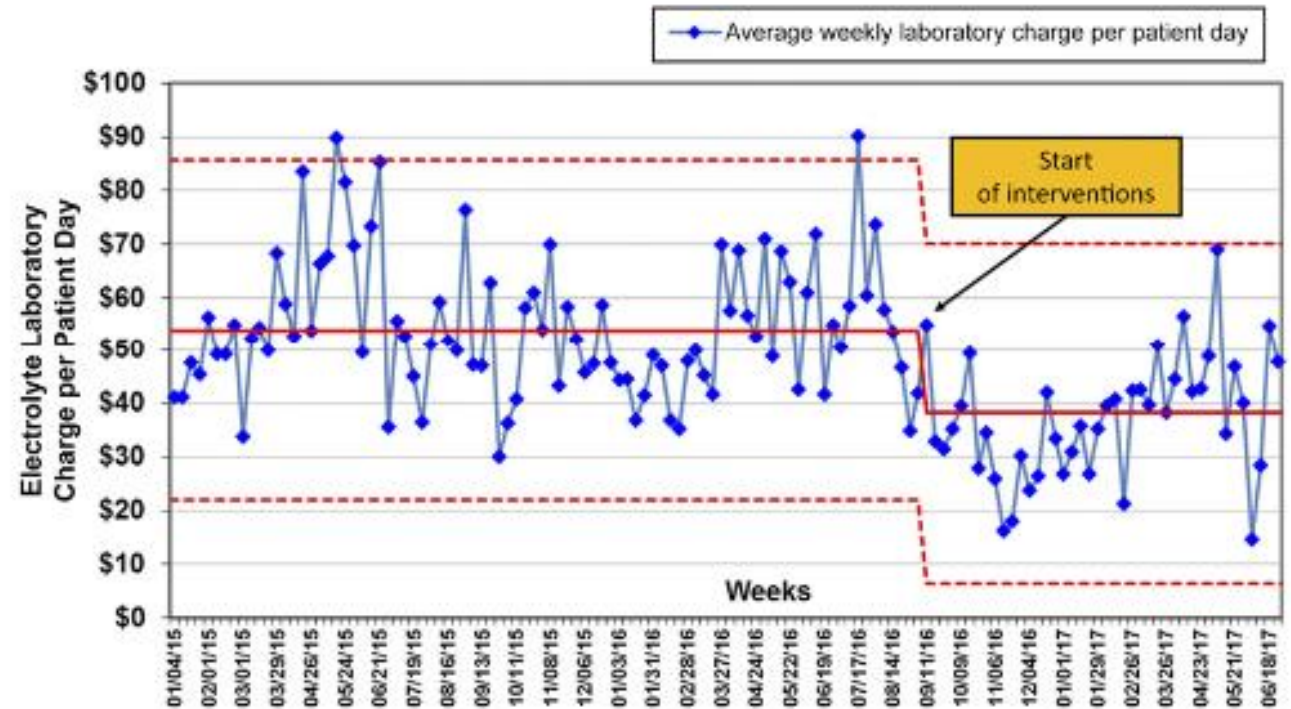
- Using average wholesale price through the pharmacy as a measure of cost reduction
- Change in average cost for inpatient treatment with inhaled corticosteroid: \$236.57 □ \$90.25

Alternatives to direct cost measurement

- Using charge as a measure of financial impact

Reducing Electrolyte Testing in Hospitalized Children by Using Quality Improvement Methods

Michael J. Tchou, MD,^{a,b} Sonya Tang Girdwood, MD, PhD,^a Benjamin Wormser, MD,^c Meifawn Poole, DO,^c Stephanie Davis-Rodriguez, MD, MSc,^c J. Timothy Caldwell, MD, PhD,^c Lauren Shannon, CNP, MSN,^a Philip A. Hagedorn, MD,^a Eric Biondi, MD, MSBA,^d Jeffrey Simmons, MD, MSc,^{a,b} Jeffrey Anderson, MD, MBA,^{b,e} Patrick W. Brady, MD, MSc^{a,b}



Measuring resource utilization

- Time-motion studies and activity-based costing
 - Measure hours of utilization for staff

Cidav et al. *Implementation Science* (2020) 15:28
<https://doi.org/10.1186/s13012-020-00993-1>

Implementation Science

CASE STUDY

Christopher J. Donovan
Mike Hopkins
Benjamin M. Kimmel
Stephanie Koberna
Carrie A. Montie

METHODOLOGY

Open Access

A pragmatic method for costing implementation strategies using time-driven activity-based costing



Zuleyha Cidav^{1,2*}, David Mandell^{1,2}, Jeffrey Pyne^{3,4,5,6}, Rinad Beidas^{1,2,7,12,13}, Geoffrey Curran^{8,9,10} and Steven Marcus^{1,2,11}

how Cleveland Clinic used TDABC to improve value

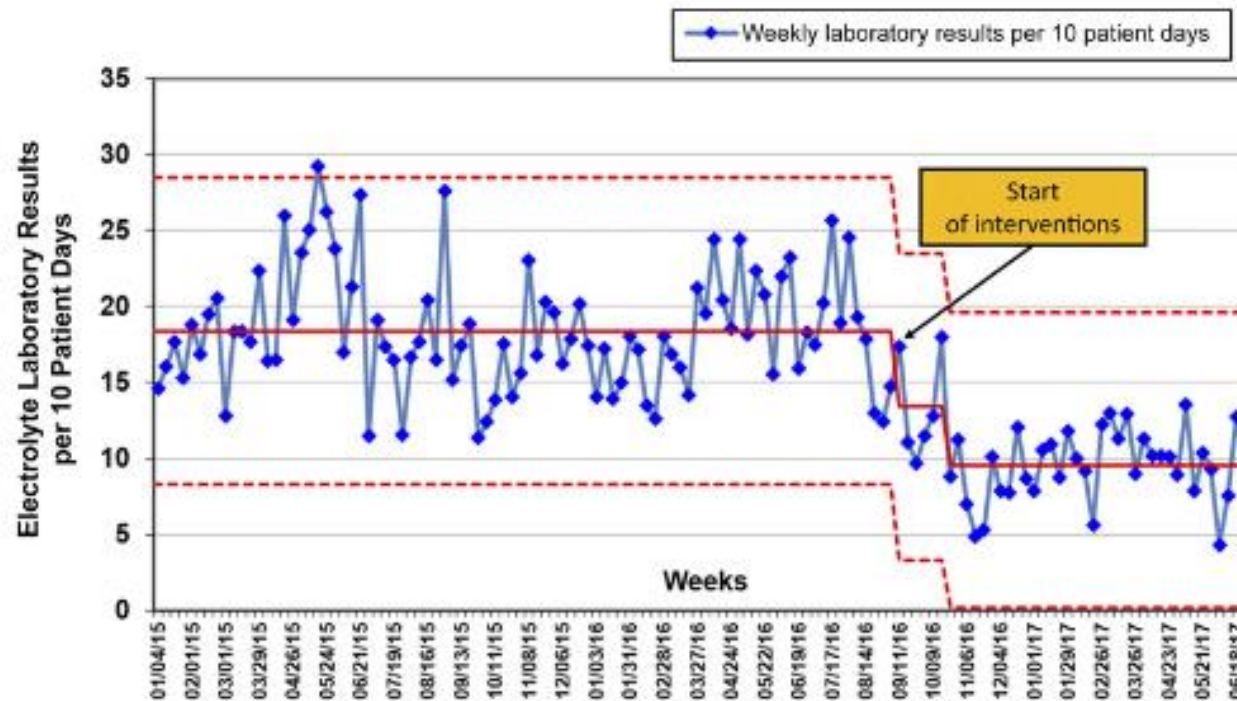
A time-driven activity-based costing pilot project reveals significant opportunities to improve processes of care and reduce costs related to heart-valve surgery.

Recently, Cleveland Clinic partnered with Robert Kaplan, PhD, the Marvin Bower Professor of Leadership Development (emeritus), and Derek Haas, senior project leader, Harvard Business School, to conduct a pilot project to explore the differences between time-driven activity-based costing (TDABC) and the relative value unit

As hospitals, health systems, and other providers

Measuring resource utilization

- Counts of resource utilization events

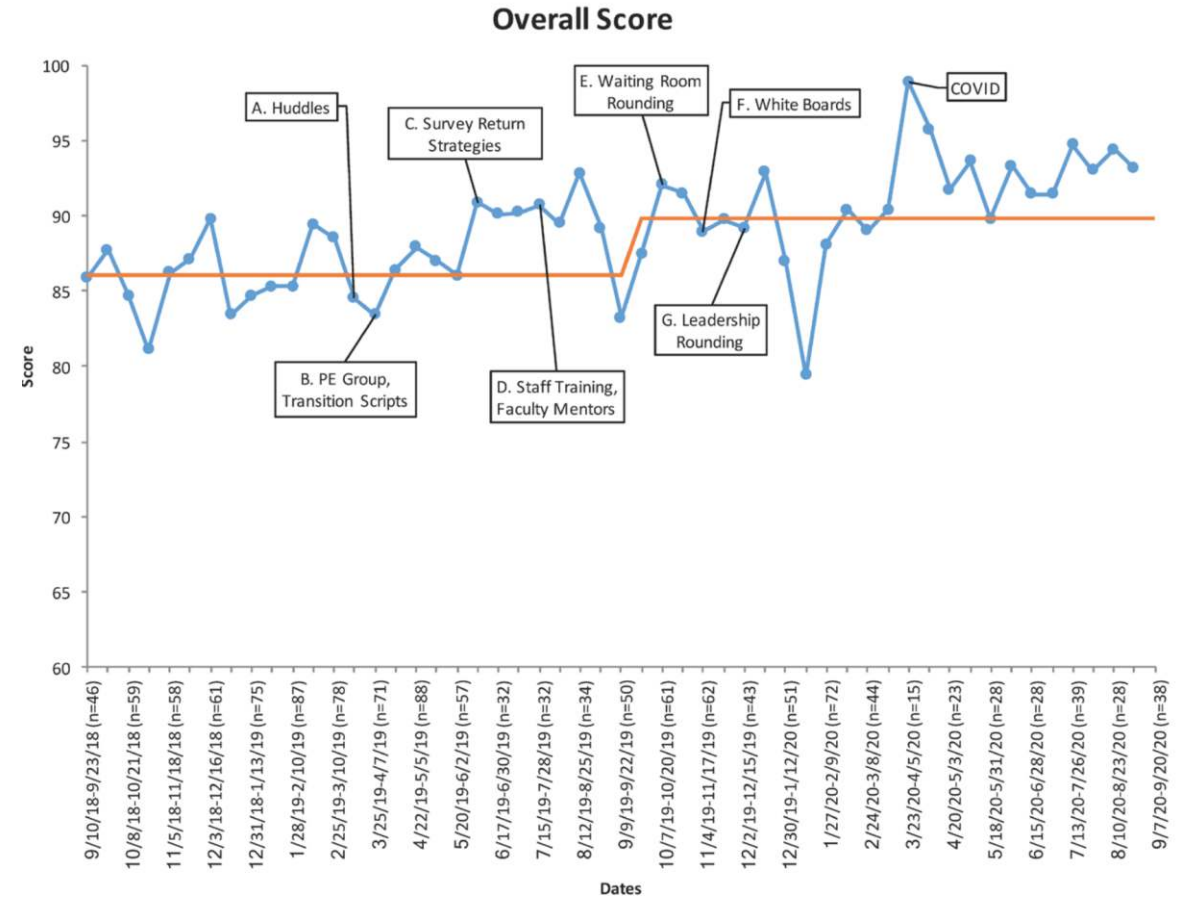


Measuring Patient Experience

- PROMIS Measures
- Interviews and perspectives

Improving Patient Experience Scores in a Pediatric Emergency Department

Beth L. Emerson, MD, MBA*; Erika Setzer, MSN, RN, CEN, CNML, NE-BC†; Kirsten Bechtel, MD*; Matthew Grossman, MD*



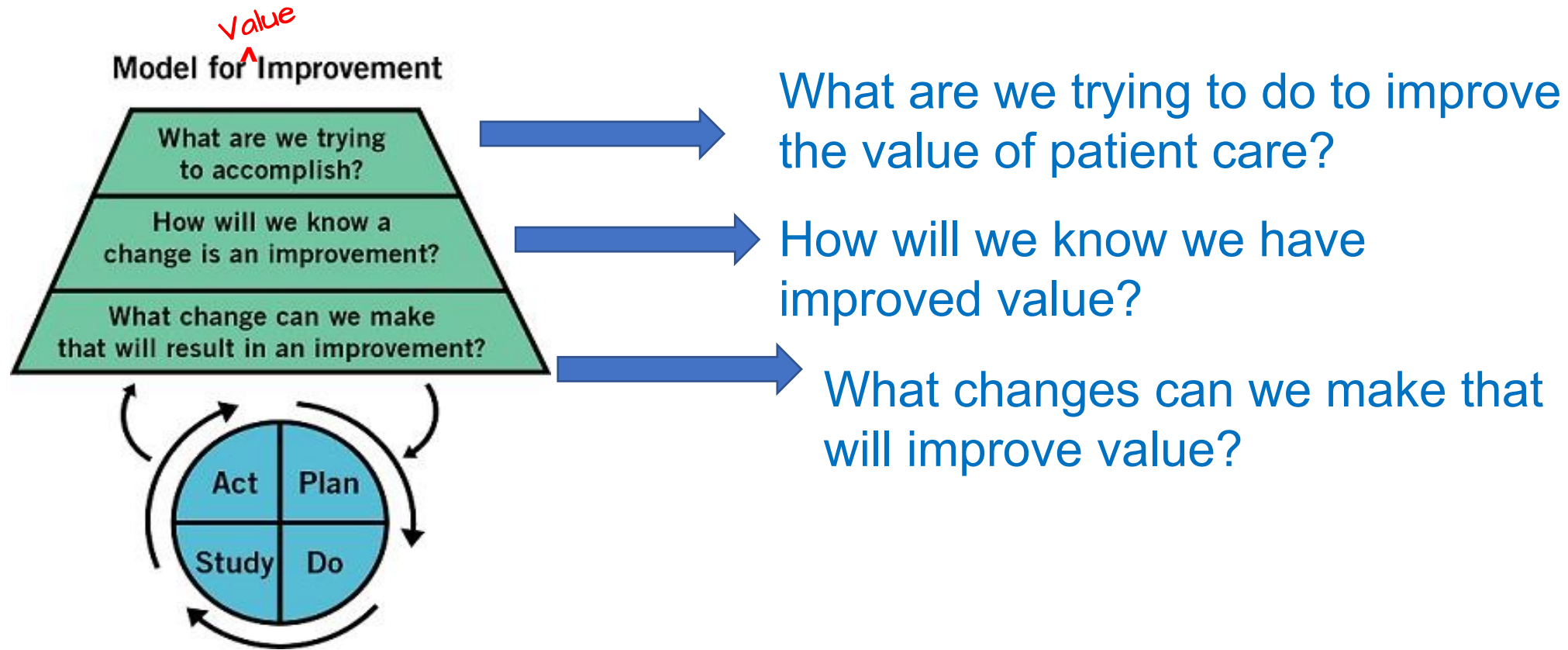
3. Run chart: overall PE score.

Breakout Group #2

- Identify how you will measure the change in value of your project
 - **Focus on one project primarily**
 - Can also expand to other projects as time allows
- Identify specific definitions of your measures and where data will come from

Planning your Interventions

Model for Value Improvement



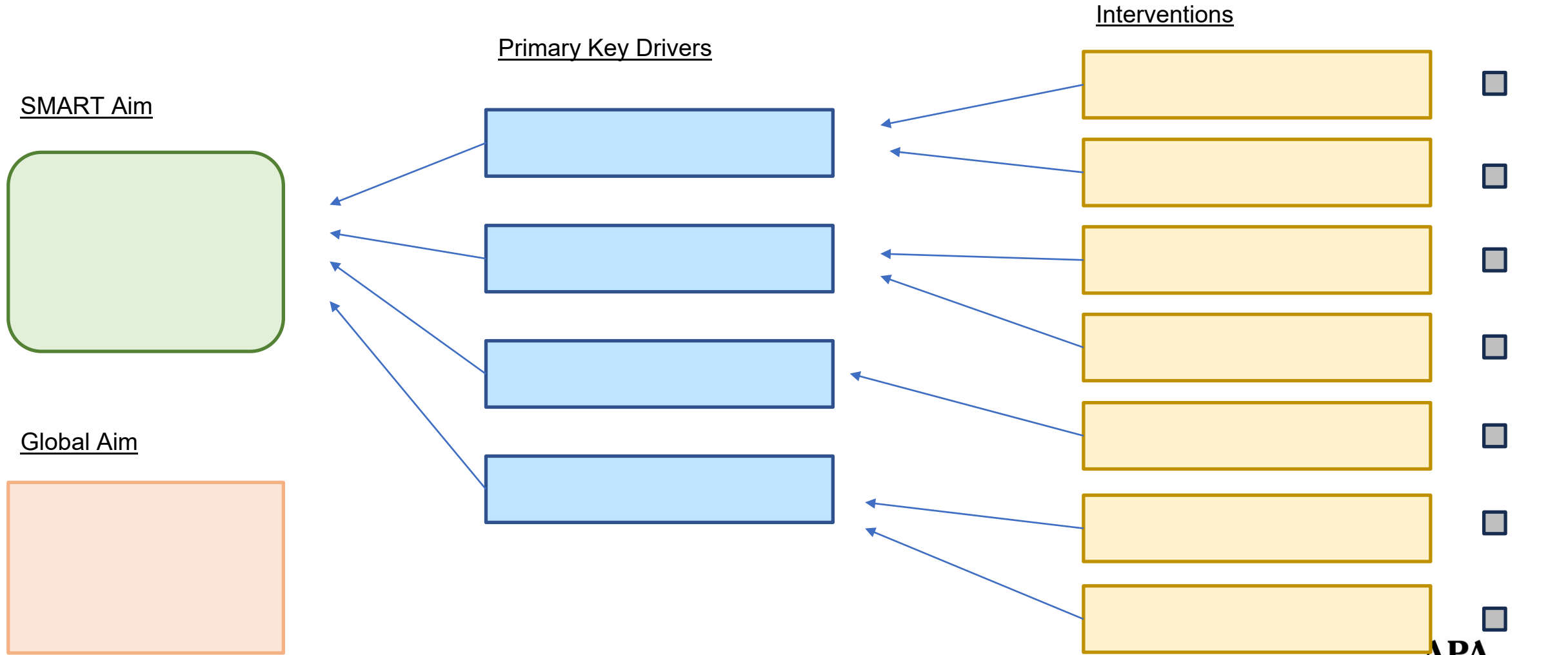
Designing your team's approach to value improvement

- What key drivers support the current low-value practice?
- What interventions may be effective at reducing low-value care?
- What steps in the current process are causing the most low-value care and key for value improvement?

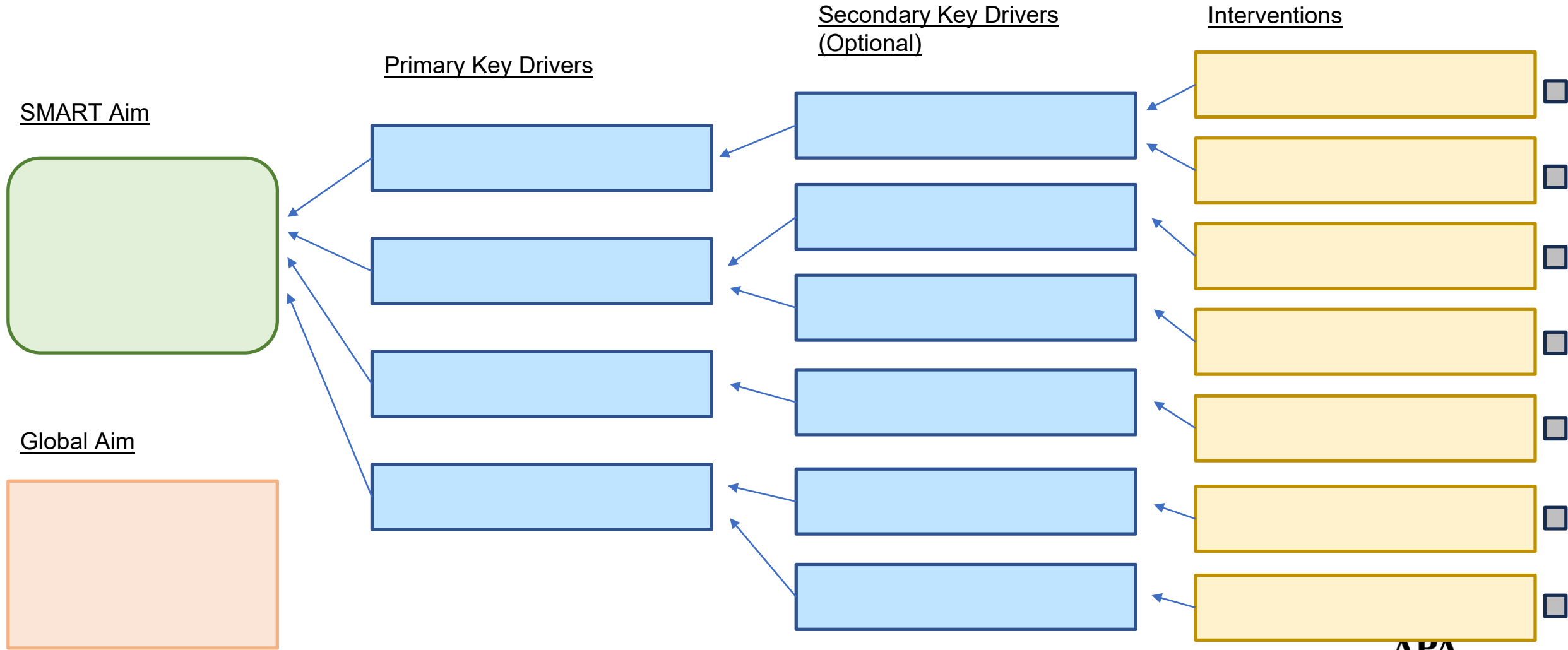
Key Drivers for Value Improvement

- What is a key driver diagram?
 - An organization figure that summarizes your understanding of a problem and key concepts/processes/understandings that will drive you project toward successfully achieving your SMART Aims

(Project Name) Key Driver Diagram



(Project Name) Key Driver Diagram



Frequent Key Drivers for Value Improvement

- Clear definitions for overuse/underuse that is a shared understanding
- Awareness or Shared Understanding of Cost/Resource Utilization
- Communication processes that include discussions of value
- Focused process / waste reduction
- Clear understanding or communication of harms / downstream impacts of overuse

Improving Value in Electrolyte Testing
Key Driver Diagram (KDD)

Interventions

Specific Key Drivers

SMART Aim

Reduce electrolyte labs drawn by 25% by January 2017

Population: Hospital Medicine Teams

Global Aim

Reduce non-value added lab testing in the inpatient setting, with resulting improvement of value and patient / family experience

Key Driver Categories

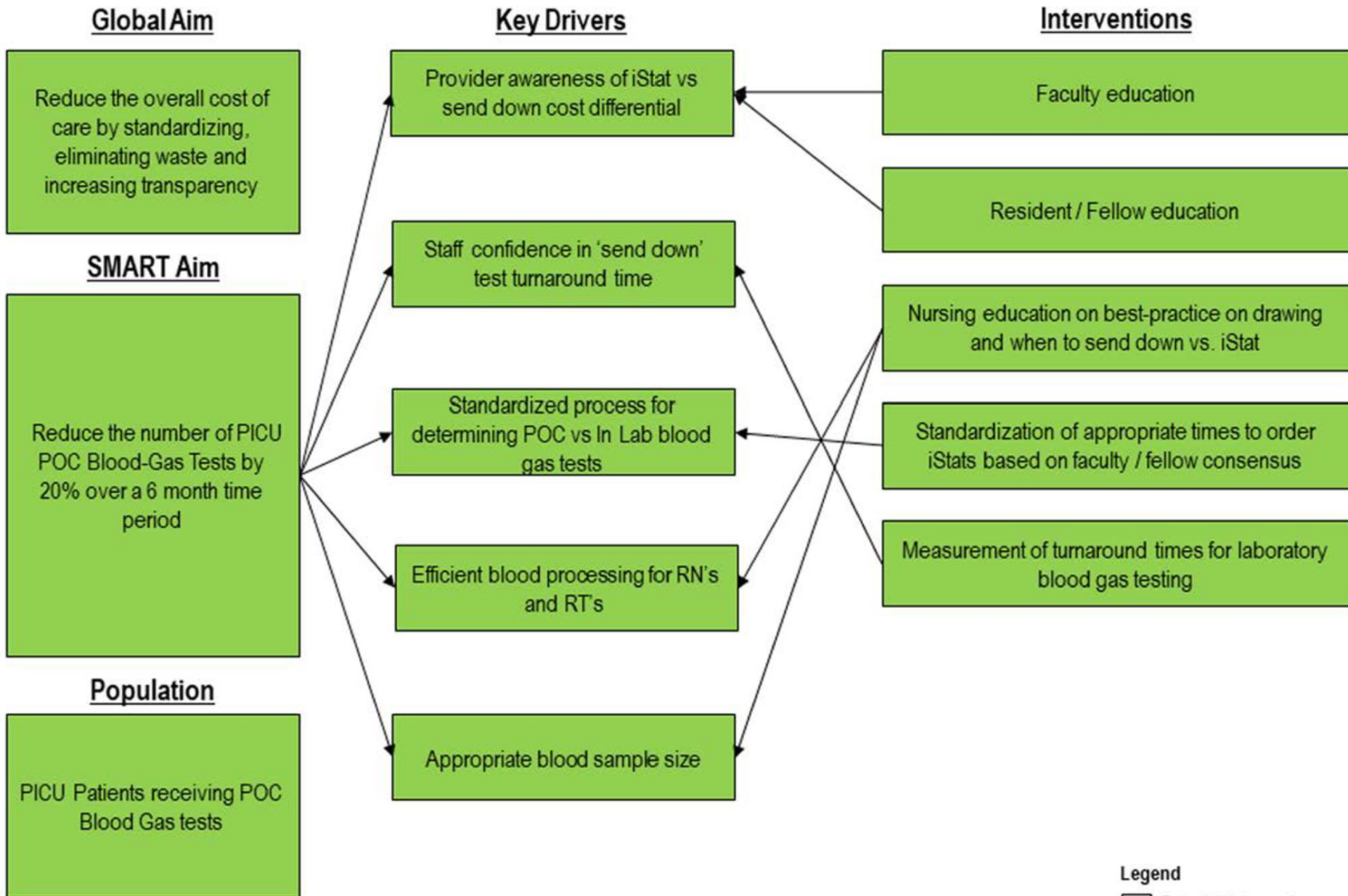
- Knowledge of Cost of Testing
- Discussion of Test Value / Necessity of Testing
- Awareness of Laboratory Testing Plan
- Best-Practice Guidelines for Electrolyte Testing
- Electronic Medical Record Design for Test Orders
- Staff Buy-In

Specific Key Drivers

- Knowledge of Cost of Testing
- Team Process of Discussing and Performing Lab Ordering (i.e. on Rounds)
- Discussions with Supervisors, Consultants and DPIC
- Understanding/Uncertainty of Best Practice around Electrolyte ordering
- Interpretation and Uncertainty around Lab Results
- Awareness of Ongoing Labs
- Provider buy-in and teaching
- Epic Orders and Ordersets Effect on Provider Behavior
- Awareness of own Ordering Behavior

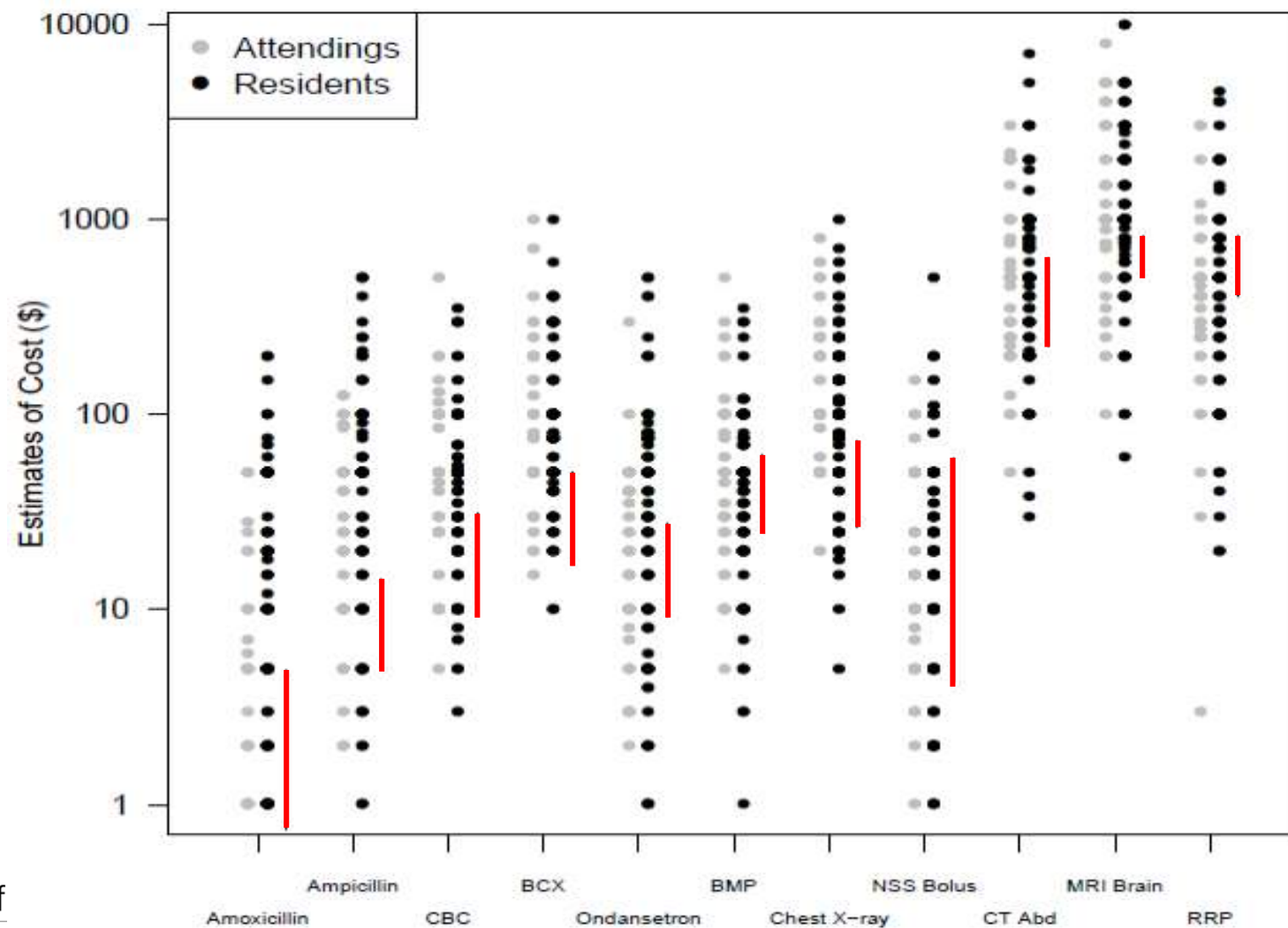
Interventions

- Roll out education materials around testing to residents, APRN's, attendings
- Ongoing Education around Test Value
- Provider/Team Specific Feedback on Lab Ordering
- Ongoing Feedback on Overall Project Measure through High Value Tip/Chart
- Cost/Charge Reference Cards with Link to Lab Plan in Notes Dot Phrase
- Ensure Teaching and discussion on rounds of labs including order read back and in notes.
- Lab Plan clearly documented in notes.
- Change to orientation materials to clearly focus on highest charge panel
- Trial Reduction of early AM labs
- Limit EMR Orders for daily repeating labs



Mixed Data on Impact of Cost Knowledge

- Physicians have poor understanding of relative healthcare costs



Mixed Data on Impact of Cost Knowledge

- Exposure to cost data doesn't always change practice

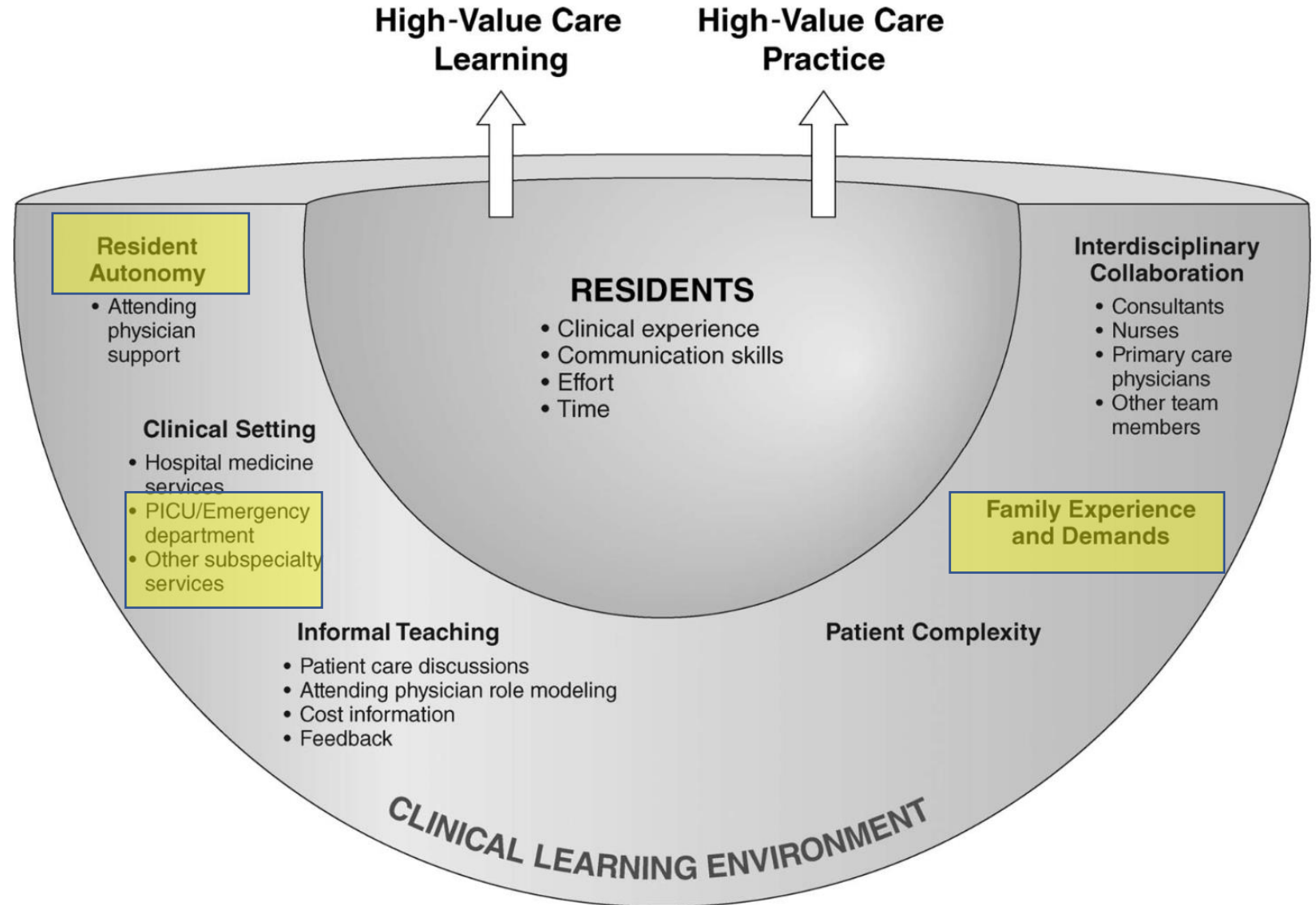
• TheUpshot

THE NEW HEALTH CARE

There's No Magical Savings in Showing Prices to Doctors

Pediatric Residents' Experiences With High-Value Care at an Academic Children's Hospital

L. Barry Seltz, MD
 Emma Nathaniel, MD
 Alexis Ball, MD
 Sheilah Jimenez
 Michael Tchou, MD, MSc



Large Group Discussion/Brainstorming

- Each table share a **SMART Aim** of one of your primary projects

Group Discussion/Brainstorm

- What are potential key drivers of each aspect of value that affect the SMART aim?
- What are potential interventions that may bend the value curve for the project?

Expanded Value Improvement Systems

- Value Improvement can occur on an organizational scale

JAMA | **Original Investigation** | INNOVATIONS IN HEALTH CARE DELIVERY

Implementation of a Value-Driven Outcomes Program to Identify High Variability in Clinical Costs and Outcomes and Association With Reduced Cost and Improved Quality

Vivian S. Lee, MD, PhD, MBA; Kensaku Kawamoto, MD, PhD, MHS; Rachel Hess, MD, MS; Charlton Park, MBA, MHSM; Jeffrey Young, MS; Cheri Hunter, BS; Steven Johnson, LSMBB, MBA; Sandi Gulbransen, BSIE; Christopher E. Pelt, MD; Devin J. Horton, MD; Kencee K. Graves, MD; Tom H. Greene, PhD; Yoshimi Anzai, MD, MPH; Robert C. Pendleton, MD

Bending the cost curve: time series analysis of a value transformation programme at an academic medical centre

Steven C Chatfield,¹ Frank M Volpicelli,² Nicole M Adler,² Kunhee Lucy Kim,^{3,4} Simon A Jones,^{3,4} Fritz Francois,^{1,5} Paresch C Shah,^{1,6} Robert A Press,^{1,7} Leora I Horwitz^{2,3,4}

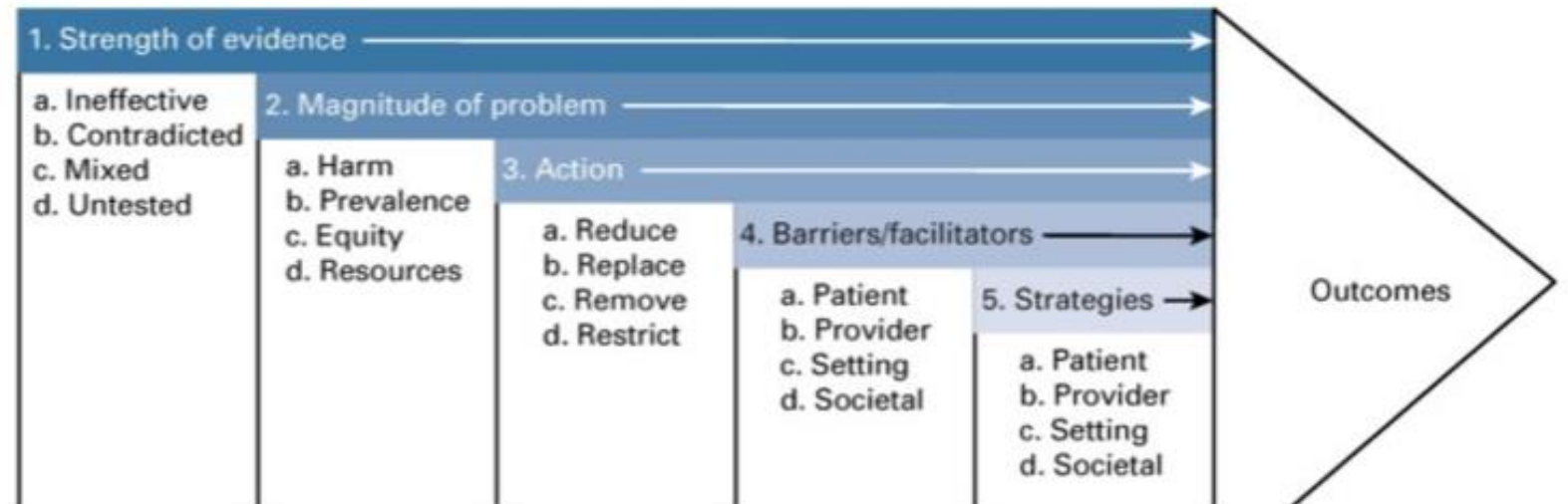
Expanded Value Improvement Systems

- Value Improvement can occur through multi-hospital networks

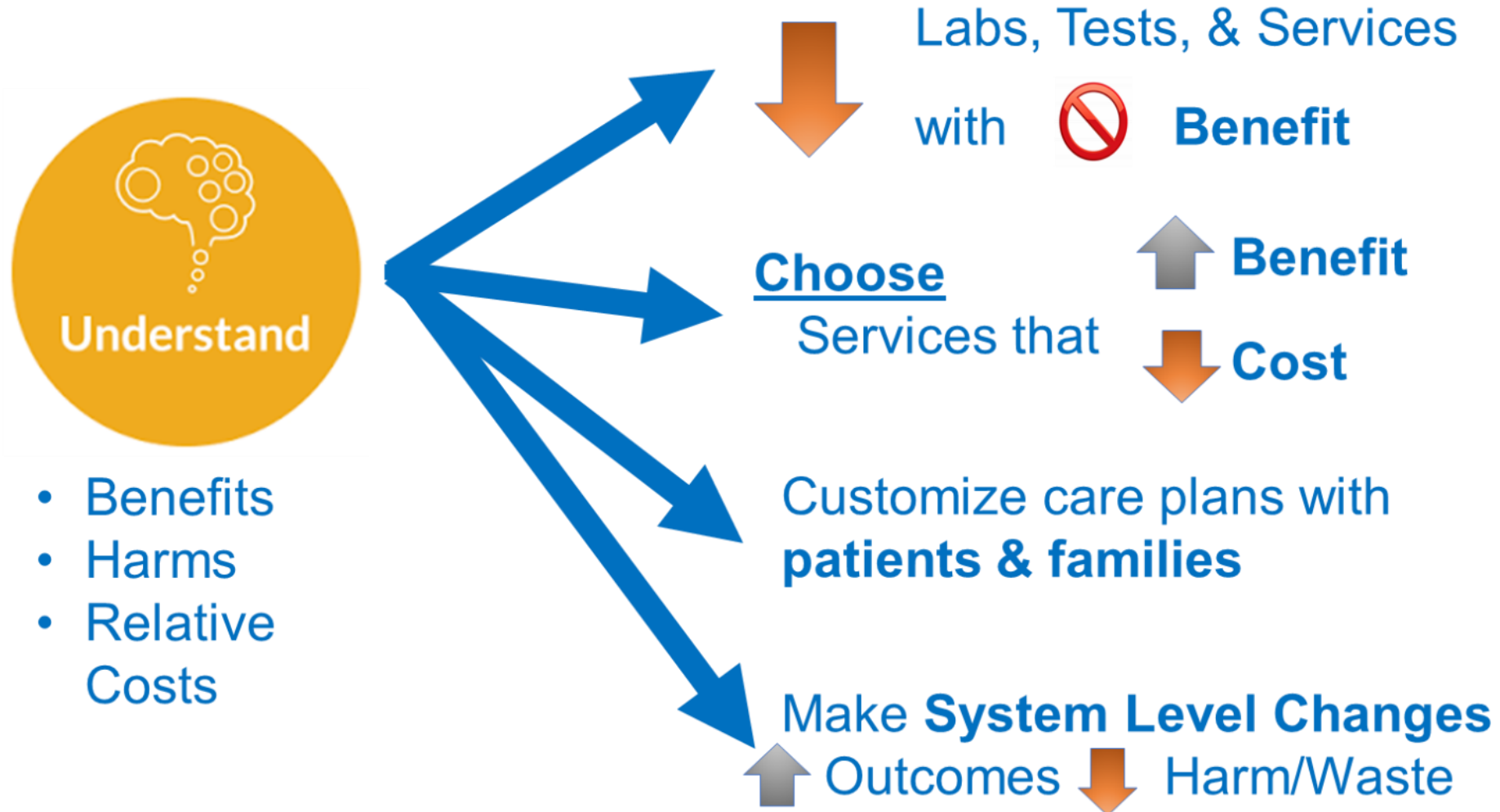


De-implementation Science

A lot depends on what you are de-implementing



How to *Achieve* High Value Care



Closing

- Value is an important concept to apply to improvement work
- The value equation can guide you in developing improvement projects

HVC Resources

- Scan the QR code in your toolkit with your phone camera to link to further resources on HVC
- If you find resources not on this list, please email them to Mike or any workshop presenter and he can add them

Thank you and evaluation

The link here can be used to evaluate the workshop

Reach out anytime with questions!

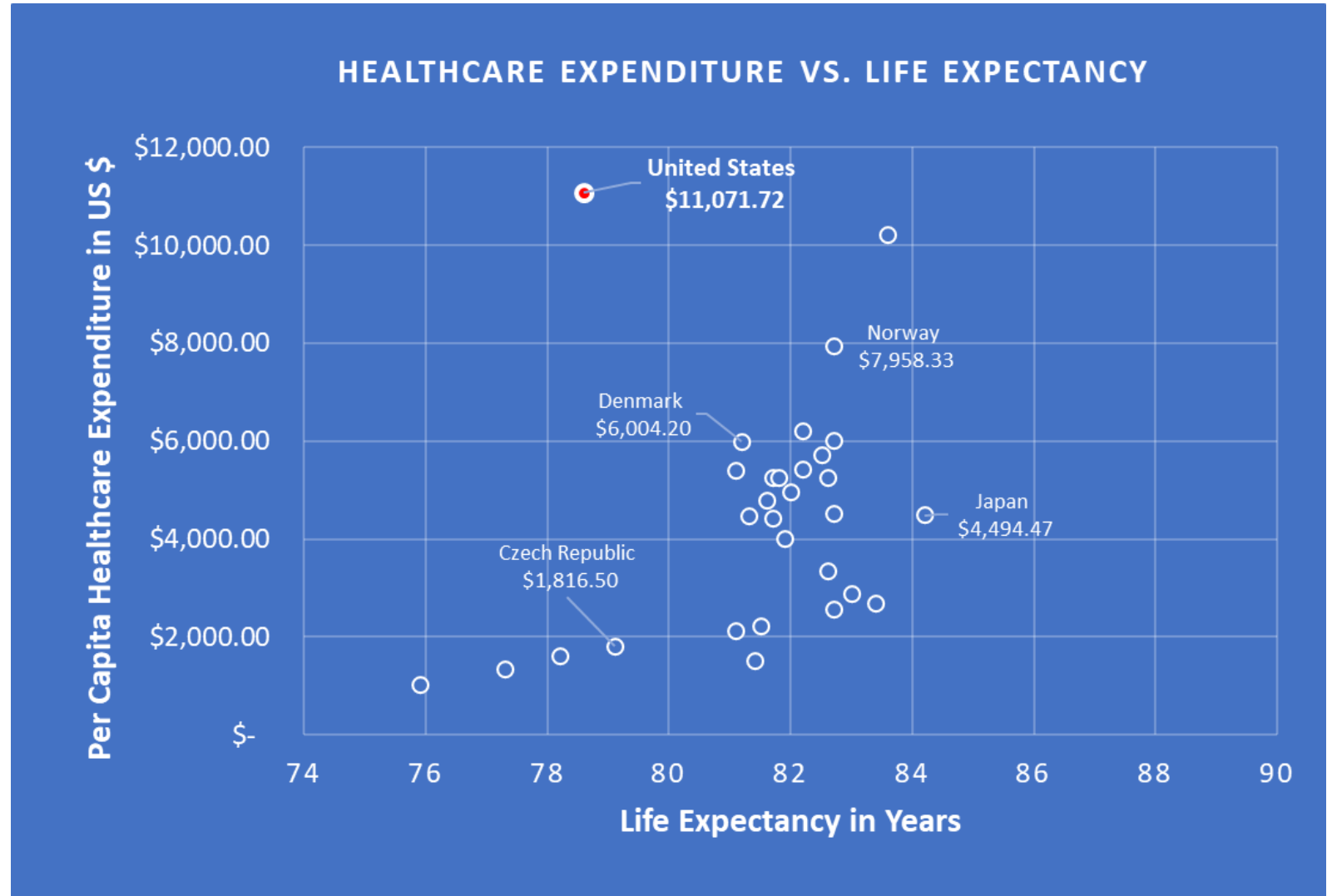
- Mike Tchou - michael.tchou@childrenscolorado.org
- Karen Allen – karen.allen3@nationwidechildrens.org
- Meghan Fennell – meghan.fennell@nationwidechildrens.org
- Jessica Armijo – jessica.armijo@childrenscolorado.org
- Kaitlin Widmer – kaitlin.widmer@childrenscolorado.org



Appendix

Background

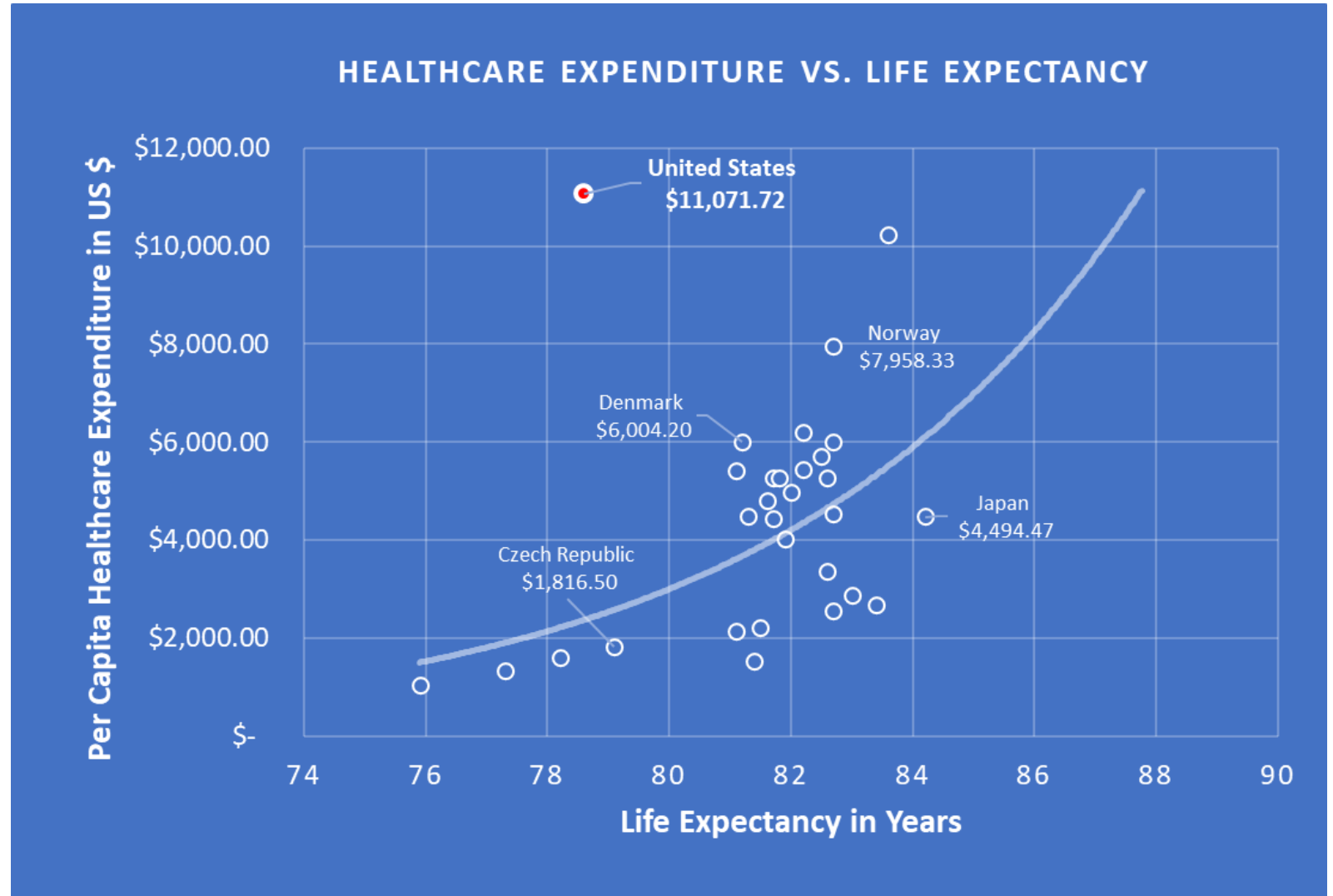
- Compared to similar countries, we spend much more per person
- And have worse outcomes



OECD, 2020 Health Statistics Data, www.oecd.org

Background

- Compared to similar countries, we spend much more per person
- And have worse outcomes



OECD, 2020 Health Statistics Data, www.oecd.org

What can we do?

- Yes this is important, but how can I, as one provider, fix this?
- Isn't this just a healthcare policy problem?

~20-30% of wasted spending is related to low-value clinical decisions



We will need clinicians trained to understand value to lead future systems changes



High-Value Care Resources

- Choosing Wisely Initiative
 - >100 pediatric specific recommendations
- AAP Guidelines (and other professional pediatric organizations)
- High-value Practice Academic Alliance
 - PedsValue subgroup

Deimplementation Science

- Increasing focus on deimplementation science as a method to understand strategies to tackle waste and overuse

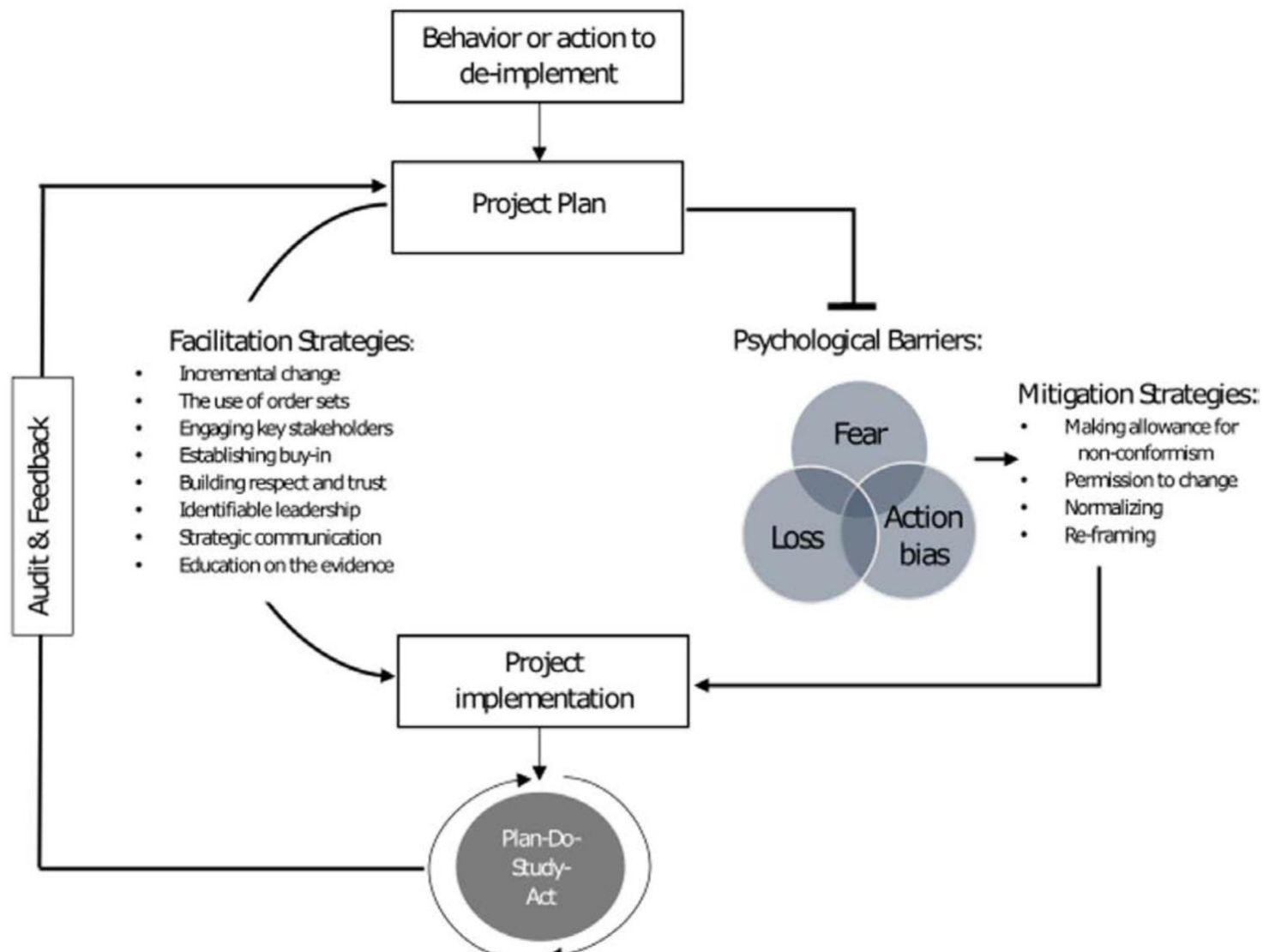
Unpacking the complexities of de-
implementing inappropriate health
interventions

Wynne E. Norton* and David A. Chambers

Challenges to Deimplementation

Behavioral and Psychological Aspects of the Physician Experience with Deimplementation

Corrie E. McDaniel, DO*; Samantha A. House, DO, MPH†; Shawn L. Ralston, MD, MS*



Educational Strategies and Tools

- Cost Calculators
- Case Conferences that focus on risks of overuse
- Simulating conversations with families about value
- Incorporating value into QI education / projects for residents

Informal and Hidden Curriculum

- How can we shape informal and hidden curricula?
- Build Infrastructure around value
- Faculty development

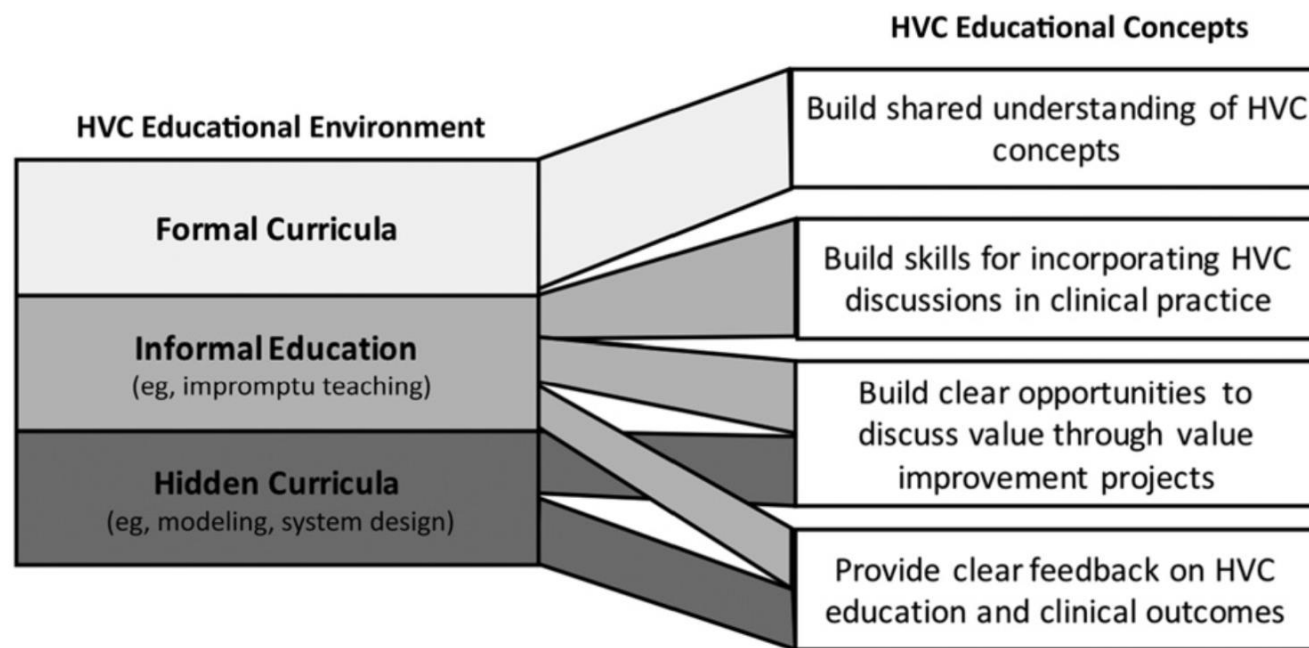


FIGURE 1 Multilevel educational interventions and their relationship to formal, informal, and hidden curricula. HVC, high-value care.

Culture of Value

Swimming Upstream: Creating a Culture of High-Value Care

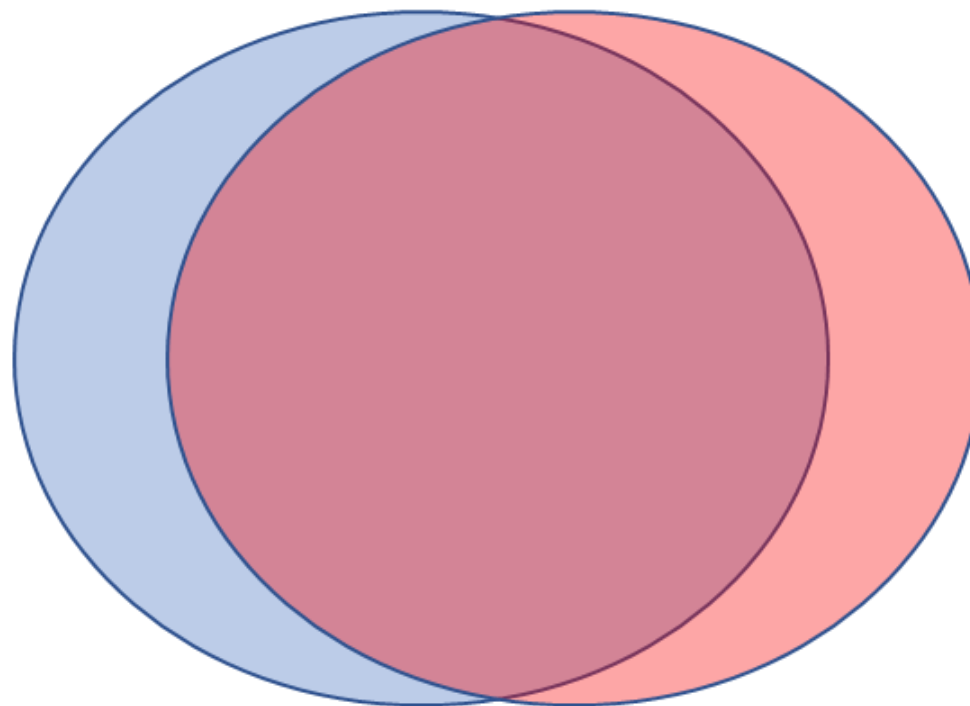
Reshma Gupta, MD, MSHPM, and Christopher Moriates, MD

- 4 principles
 - Build will to change
 - Create infrastructure to support value improvement
 - Expose physicians to value-based payment models
 - Demonstrate commitment to shared goals

Overlap between QI and VI

Value improvement

Quality improvement



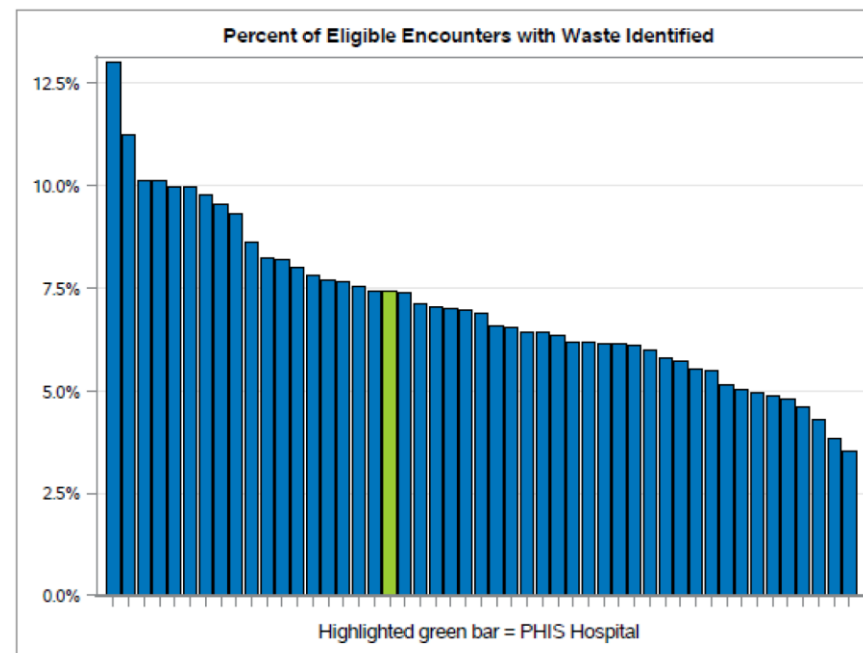
PHIS Low-Value Care Calculator

Original Investigation | Pediatrics

Development and Use of a Calculator to Measure Pediatric Low-Value Care Delivered in US Children's Hospitals

Samantha A. House, DO, MPH; Matthew Hall, PhD; Shawn L. Ralston, MD, MS; Jennifer R. Marin, MD, MSc; Eric R. Coon, MD, MS; Alan R. Schroeder, MD; Heidi Gruhler De Souza, MPH; Amber Davidson, RHIT, CCS, CCS-P; Patti Duda, BS; Timmy Ho, MD, MPH; Marquita C. Genies, MD, MPH; Marcos Mestre, MD; Mario A. Reyes, MD

30 low value care
measures compared
across PHIS hospitals



Is pediatrics a low-cost specialty?

- Child healthcare spending in the US is more than the GDP of Portugal
- 56% rise in pediatric healthcare spending from 1999-2013

