A10.
How to effectively use a PDSA cycle for sustainable improvement

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Hello!

Tricia Bolender

Faculty, Institute for Healthcare Improvement (IHI)

Karen Turner

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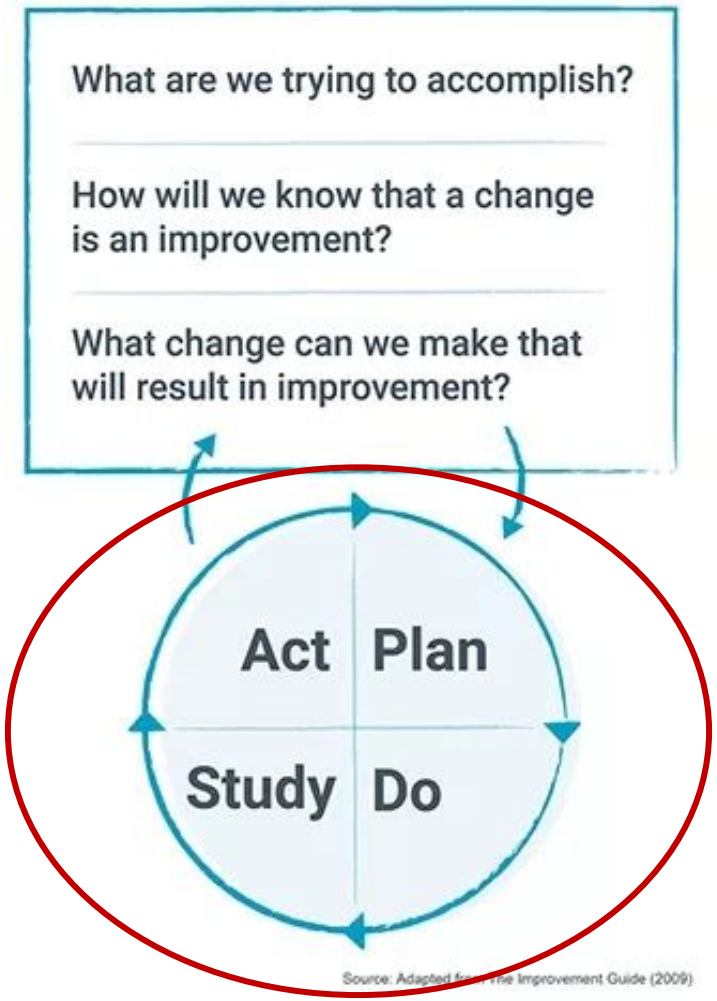
We have no conflicts of interest to declare.

Learning Objectives

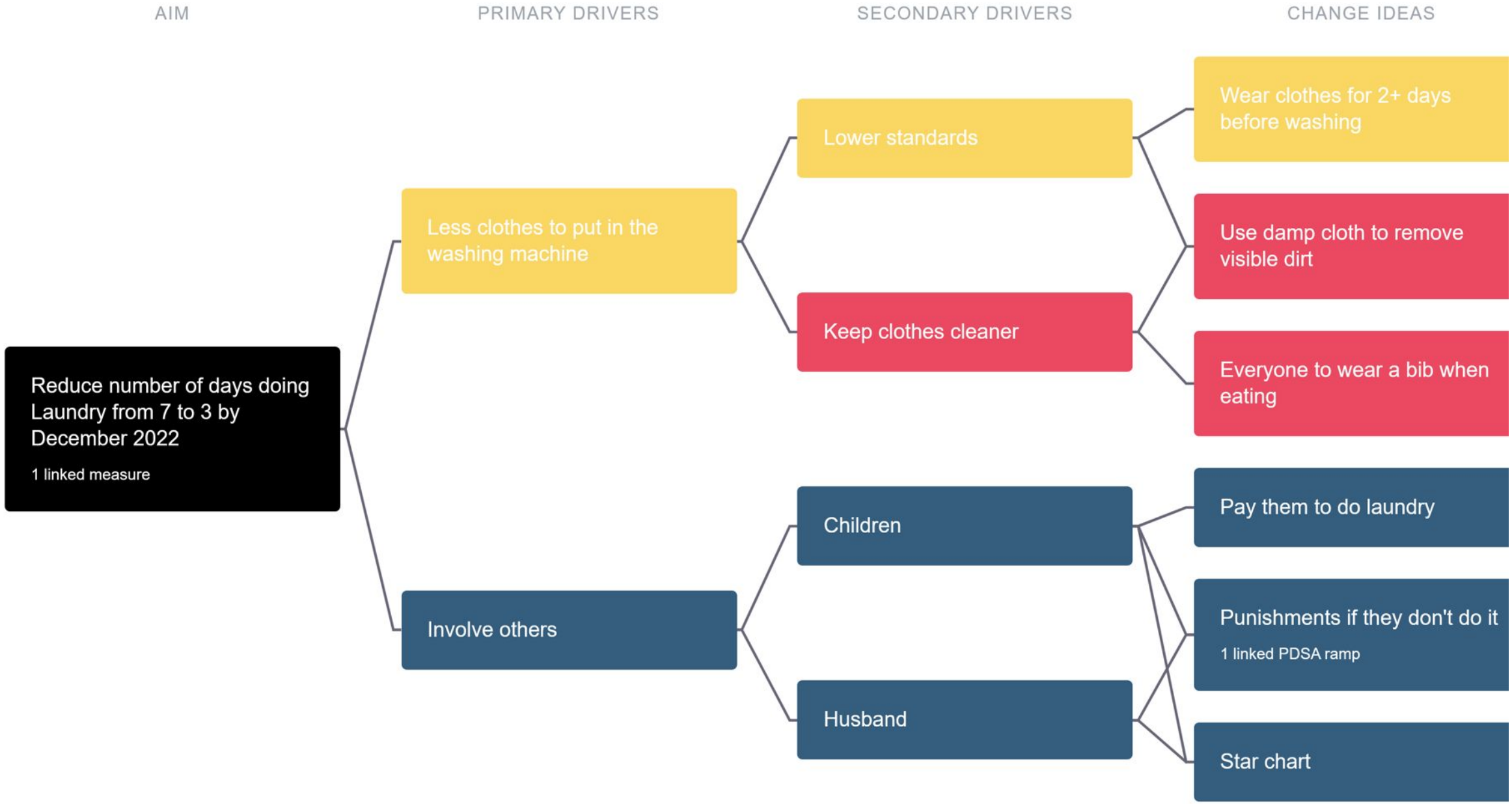
1. Understand rapid-cycle PDSA testing
2. Experience PDSAs in action
3. Emerge with concrete ideas to use PDSAs for sustainable improvement

What are PDSA's?

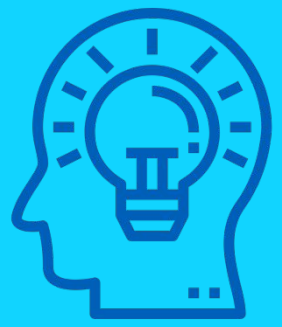
Where does it fit in the Model for Improvement

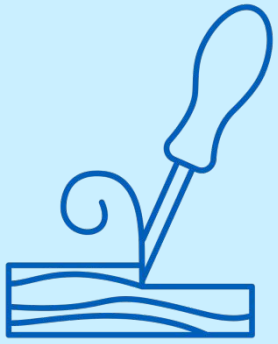


My problem….

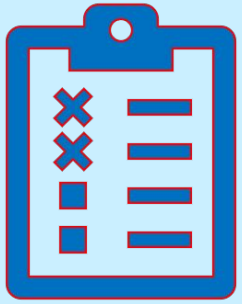

AIM
PRIMARY DRIVERS
SECONDARY DRIVERS
CHANGE IDEAS
Reduce number of days doing Laundry from 7 to 3 by December 2022
1 linked measure
Less clothes to put in the washing machine
Involve others
Lower standards
Keep clothes cleaner
Children
Husband
Wear clothes for 2+ days before washing
Use damp cloth to remove visible dirt
Everyone to wear a bib when eating
Pay them to do laundry
Punishments if they don't do it
1 linked PDSA ramp
Star chart

Why Test a Change?





Adapt changes to your setting



Start small, think big and learn fast

Minimise resistance when implementing

A cycle for learning and improvement

- Adapt?
- Adopt ?
- Abandon?
- Next cycle?

- Objective (why)
- Predictions (what do we think will happen)
- Plan to carry out the cycle (who, what, where, when)

- Complete the analysis of the data
- Compare data to predictions
- Summarize what was learned

- Carry out the plan
- Document problems and unexpected observations
- Begin analysis

Your turn: touch the tennis ball

Aim

Decrease the time it takes for 5 people to touch the tennis ball in alphabetical order from a baseline of X seconds to Y seconds in 6 attempts.

Measures

Outcome: Time in seconds for 5 people to touch the tennis ball (measured on phone stopwatch)

Balancing: Accuracy score for alphabetical order (1 to 5)

Rules

Must be done in alphabetical order

Each person can touch the ball once

A timekeeper (6th team member) will measure time taken from start to finish and record on flipchart paper

Let's get started

Split into groups of 6 and identify recorder/timekeeper

1. **Plan:** Players have 30 seconds to plan test (first test will be your baseline)
2. **Do:** Run your test and record time taken and note down observations
3. **Study:** Review the time taken and observe the situation; discuss with team what worked well & what didn't
4. **Act:** Decide how to adapt your approach before running another PDSA cycle; what will you adopt, adapt, abandon?

Reflections

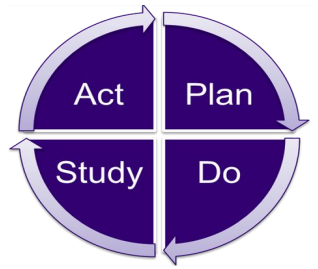
PDSA Example:
Getting patients out of bed for lunch

The Problem or Priority

What are we trying to accomplish?

How will we know if a change results in an improvement?

What changes can we make that will result in an improvement?



Problem statement:

- Patients admitted to hospital are at risk of deconditioning, acquiring pressure ulcers and becoming incontinent because they spend more time in bed.

Aim statement:

- By June 2026 we will increase the percentage of patients sitting out of bed for lunch from an average of 33% to 60% on Deming ward.

Outcome measure:

- % of patients sitting out of bed by 12 o'clock

Change Idea to test:

- Share daily count of patients sitting out of bed for lunch with all staff on ward.

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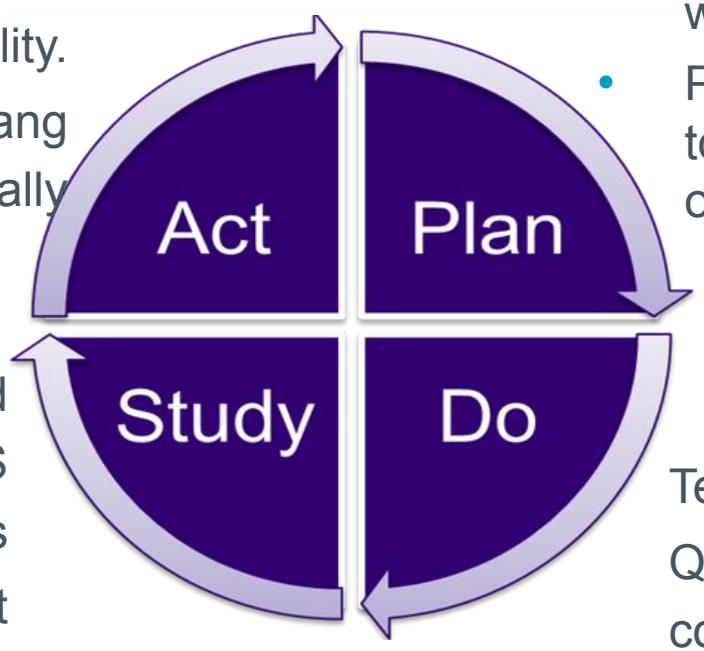
PDSA Example:
Sharing number of patients sitting out of bed

- Physiotherapist to share the number of patients out of bed for lunch on ward MS Teams chat
- Prediction: this will encourage staff to engage with project and number of patients out of bed will increase



Tests carried out for 1 week

Qualitative and quantitative data collected

Connection on ward sometimes limited and only handful of staff checked MS Teams

Those that were seeing the daily count of patients sitting out of bed said it was motivating, however this was a very limited number.

Adapt: Though there was no improvements on the number of patients sitting out of bed for lunch, staff liked the idea of having visibility.

Next cycle: print out poster and hang up on notice board to update manually

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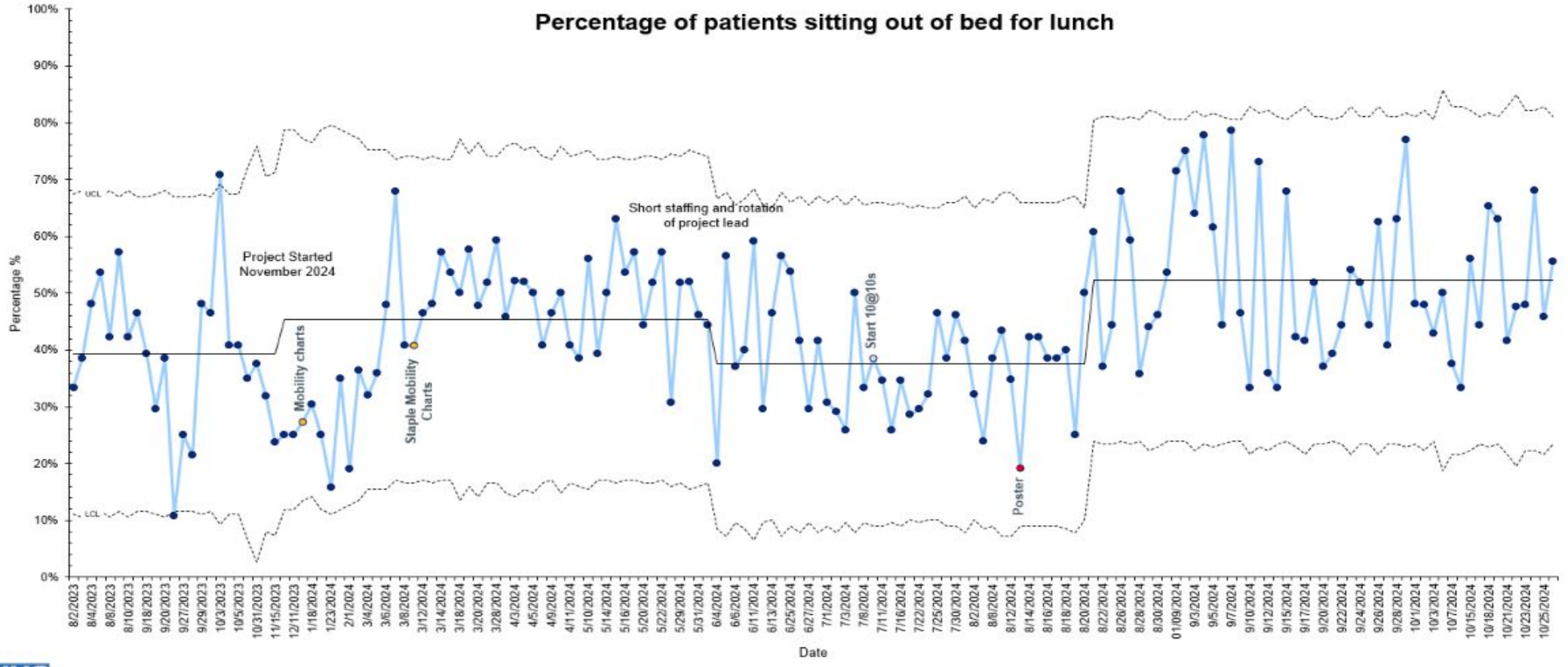
Impact


Percentage of patients sitting out of bed for lunch
Percentage %
Date
UCL
LCL
Project Started November 2024
Mobility charts
Staple Mobility Charts
Short staffing and rotation of project lead
Start 10@10s
Poster

Guide for scale of testing PDSA's

Current Situation		Staff Readiness to Make Change: Resistant	Indifferent	Ready
Low Confidence that current change idea will lead to Improvement	Cost of failure large	Very Small Scale Test	Very Small Scale Test	Very Small Scale Test
	Cost of failure small	Very Small Scale Test	Very Small Scale Test	Small Scale Test
High Confidence that current change idea will lead to Improvement	Cost of failure large	Very Small Scale Test	Small Scale Test	Large Scale Test
	Cost of failure small	Small Scale Test	Large Scale Test	Implement

(concept developed by Lloyd Provost)

Case Study:
From initial PDSA testing to sustainability & scale

cancers

MDPI

Article

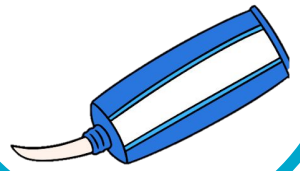
Preventing and Treating Pain and Anxiety during Needle-Based Procedures in Children with Cancer in Low- and Middle-Income Countries

Michael J. McNeil [1,2,*], Ximena Garcia Quintero [1], Miriam Gonzalez [1], Yawen Zheng [1], Cecilia Ugaz Olivares [3], Roxana Morales [3], Erica Boldrini [4], Débora Rebollo de Campos [4], Daiane Ferreira [4], Kamalina Coopasamy [5], Joliza Caneba [6], Maria Louisa Padernilla [6], Stefan Friedrichsdorf [7], Justin N. Baker [8] and Paola Friedrich [1]

Procedural pain in pediatric patients is common, underrecognized, and preventable!

Global Comfort Promise Bundle

1. Topical Anesthetics



- Lidocaine 2.5%/Prilocaine 2.5%
- Amethocaine 4%
- Lidocaine 4%

2. Comfort positioning

- Swaddling
- Skin-to-skin
- Facilitated tucking for infants
- Sitting upright for children

3. Age-Appropriate Distraction

- Favorite toy, comfort item
- Music, singing, screens.
- Breathing exercises; bubbles, pinwheels, tissues
- Books and stories.
- Distraction Apps

4. Breastfeeding or Sucrose

- Breastfeeding
- Sucrose 24%

5. Effective Communication

Praise and Reward

- Preparing the child
- Preparing caregivers
- Language to use
- Language to avoid
- Praise and Reward

Our Theory of Change (Driver Diagram) to reach our aim

Aim:

Reduce the **percentage of children with cancer** who experience **needlestick procedural pain** in **22 hospitals** from **18 countries** participating in the Global Comfort Promise Project **by 50%** from a baseline mean of **64%** between **July 2023 and June 2024**.

Primary Drivers

Secondary Drivers

Inputs & Infrastructure

Ensure Access to Materials & Clinical Space for Procedural Interventions

- Available and adequate supplies of materials
- Central location for procedural pain supplies easily located at point of intervention
- Adequate clinical space for procedural interventions

Reliable Delivery of Change Package

Adopt Standardized & Efficient Procedural Pain Process

- Standardized delivery of all five elements of Global Comfort Promise Bundle
- Reliable delivery of Global Comfort Promise Bundle, including coordination of timing
- Use of data for learning, improvement, and decision-making to improve reliability of process

Culture Change towards Collaboration, Communication, and Teamwork

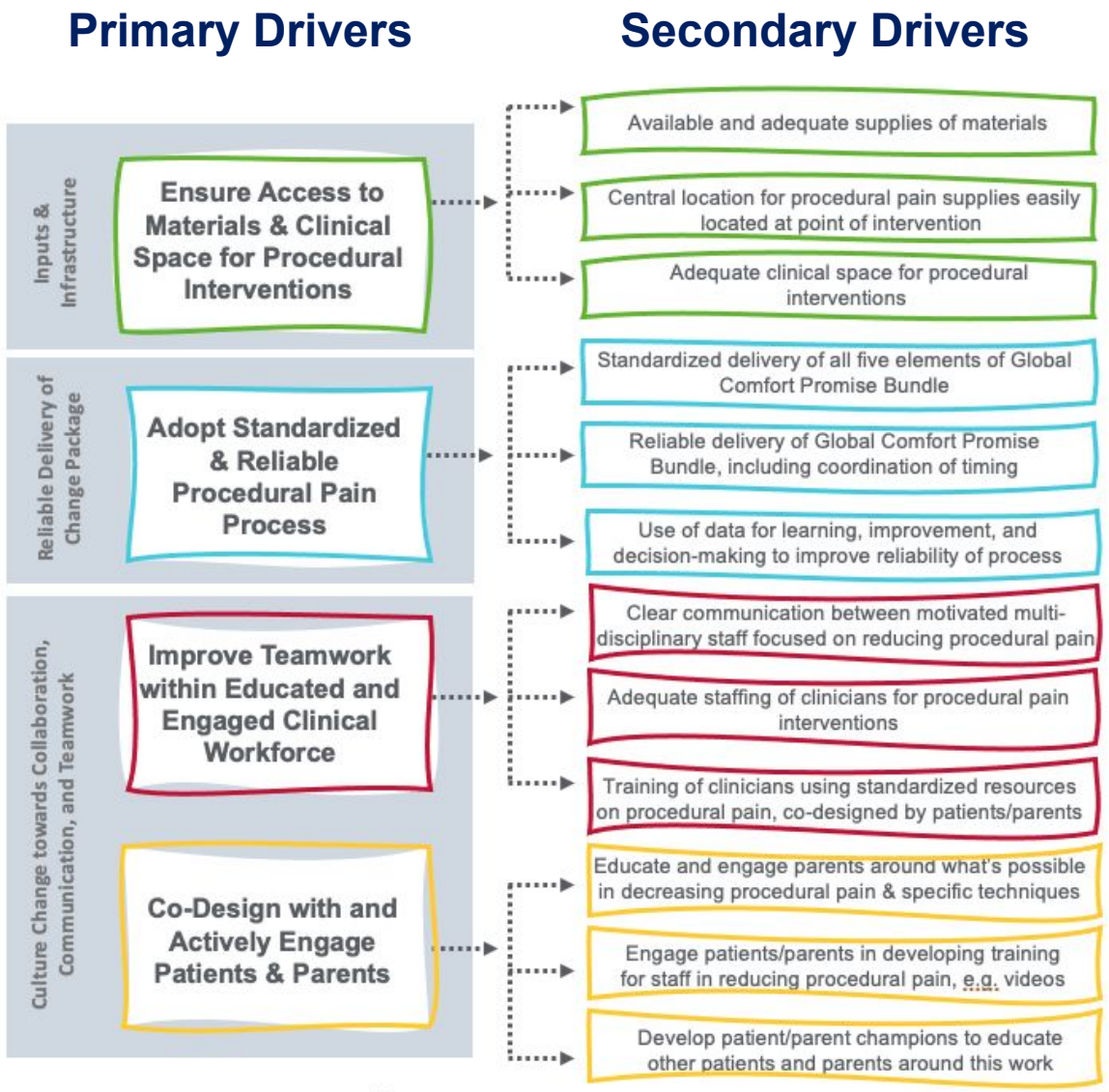
Improve Teamwork within Educated and Engaged Clinical Workforce

- Clear communication between motivated multi-disciplinary staff focused on reducing procedural pain
- Adequate staffing of clinicians for procedural pain interventions
- Training of clinicians using standardized resources on procedural pain, co-designed by patients/parents

Co-Design with and Actively Engage Patients & Parents

- Educate and engage parents around what's possible in decreasing procedural pain & specific techniques
- Engage patients/parents in developing training for staff in reducing procedural pain, e.g. videos
- Develop patient/parent champions to educate other patients and parents around this work

All PDSAs linked to this overall Theory of Change across drivers

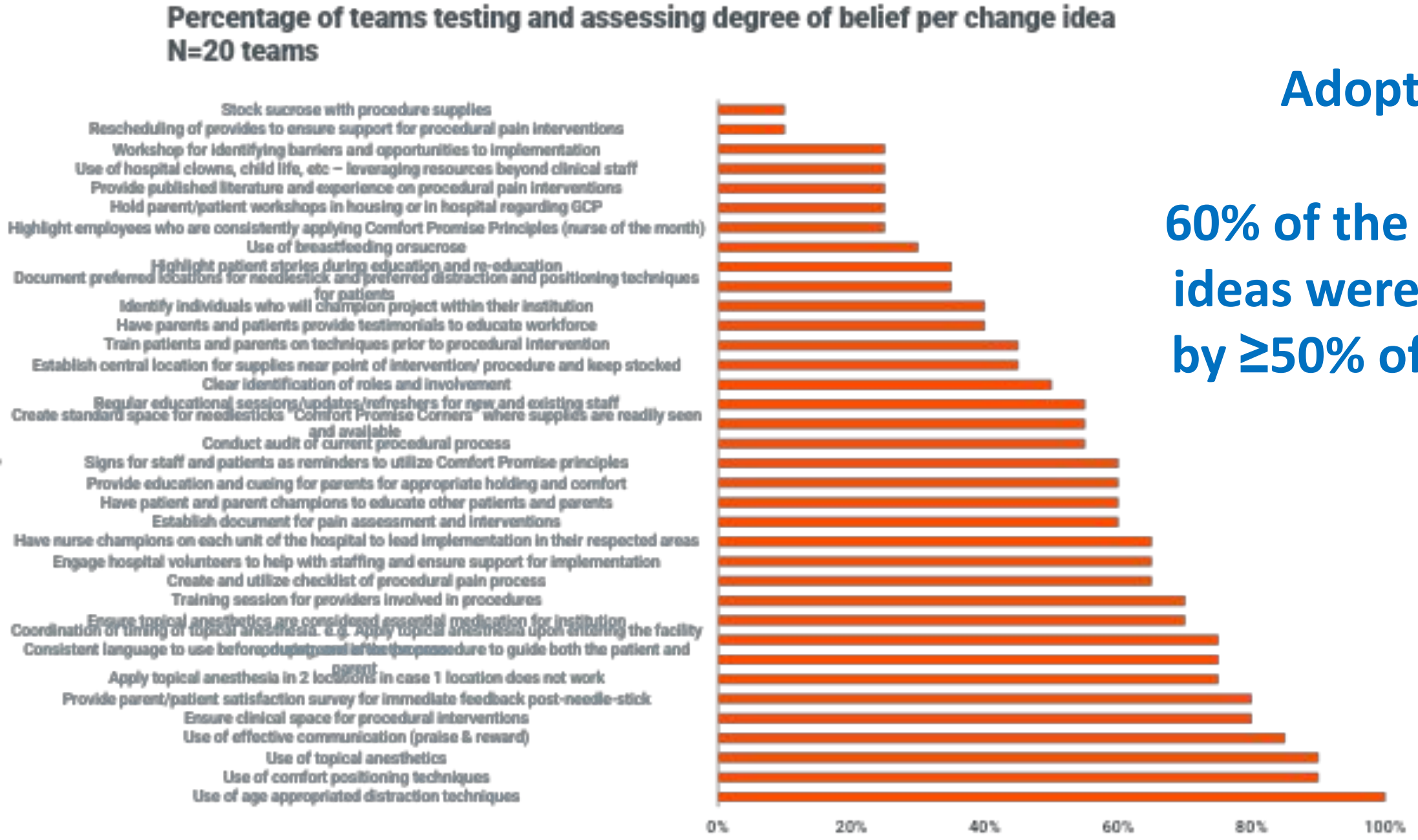


# of teams testing (Jun '24)	# of PDSAs tested (Jun '24)
17	29
19	95
20	32
12	30

186
PDSA cycles documented*

Most of the PDSAs have focused on adopting a standardized and reliable procedural pain process (the Comfort Promise bundle)

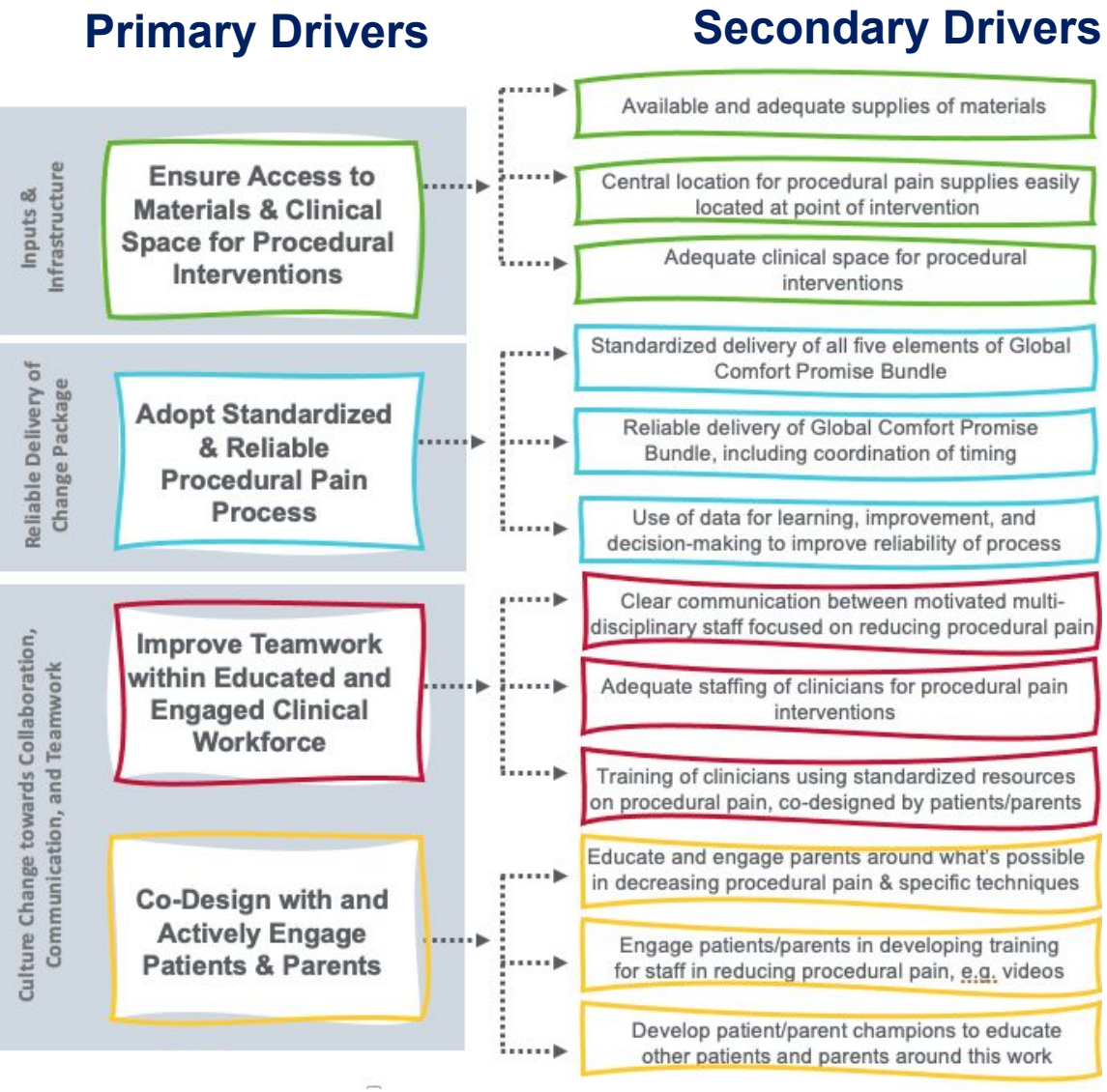
*On digital platform SimpleQI

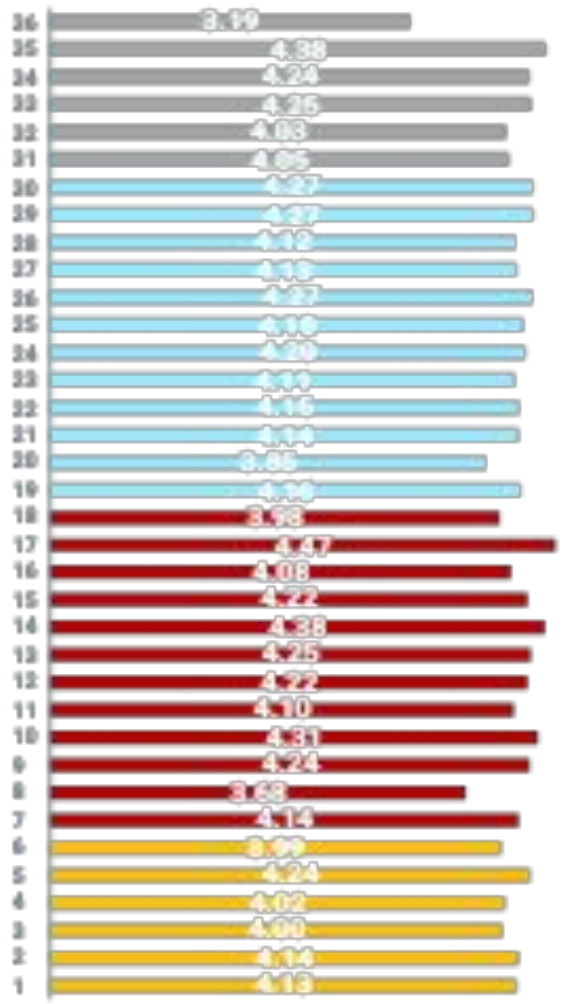


Adoption

60% of the change ideas were tested by ≥50% of teams

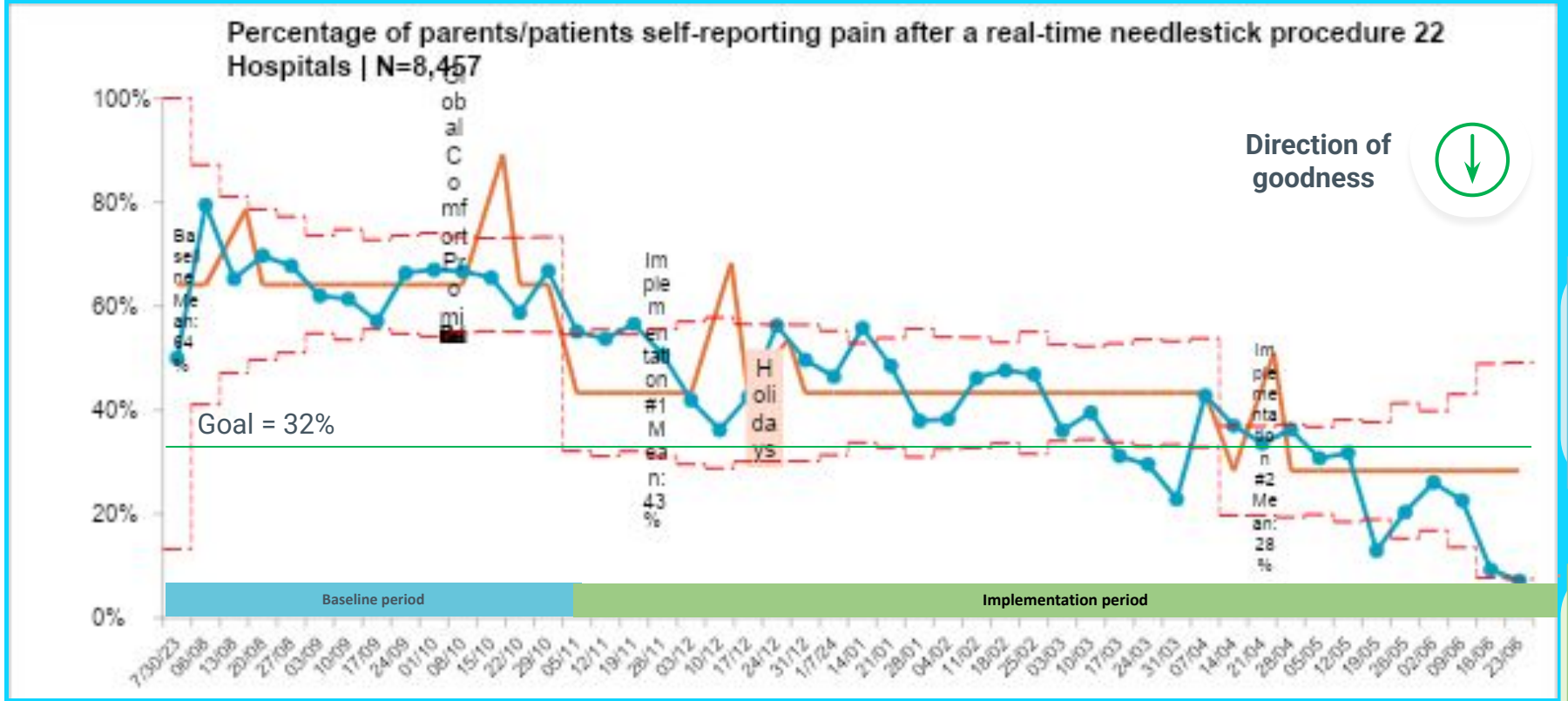
Through iterative rounds of PDSA testing, we analyzed degree of belief for specific change ideas





Analysis conducted June 2024 with responses from 20 out of 22 teams

From PDSAs to results...



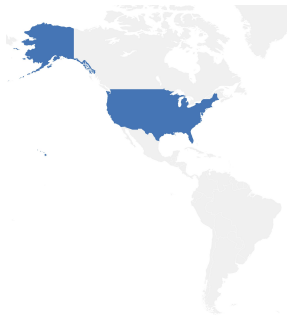
56% Reduction of Needle-based procedural pain from 64% to 28%

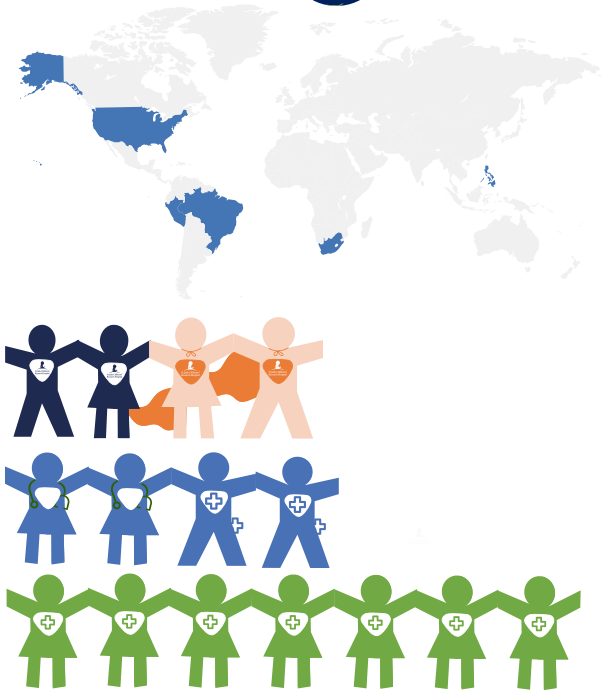
4,547 Pain-free procedures

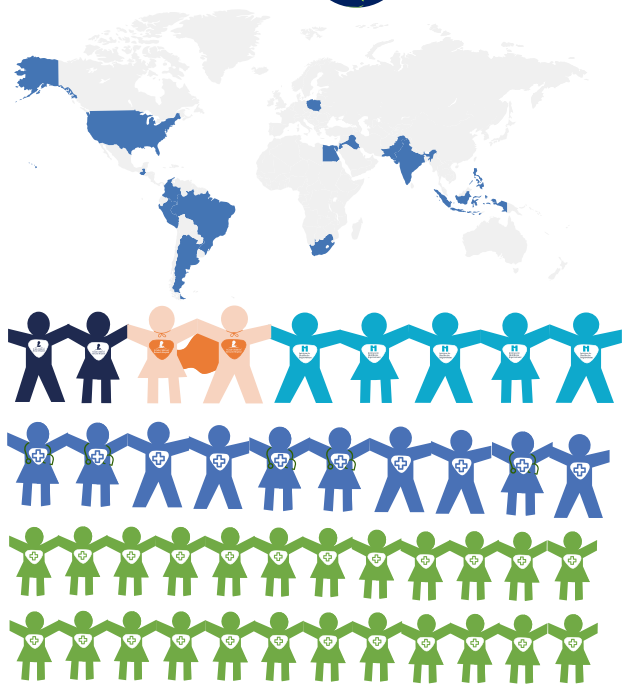
Last updated: July 31st, 2024

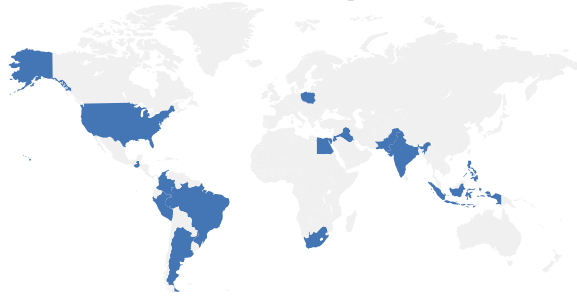
From results to sustainability and scale

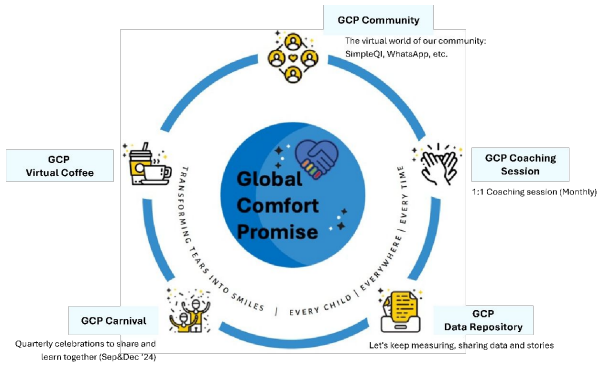
Timeline	Start	Pilot phase	Demonstration + Capability Building	Sustainability Moving from QI to QC
	2018	Jul 2021 – Jul 2022	Jul 2023 – Jun 2024	Jul – Dec 2024
Reach	1 Institutions in the United States	+4 Institutions in 4 Countries	+22 Institutions in 18 Countries	+22 Institutions in 18
Participants				











Funder

Improvement Team

St. Jude Coach

IHI Coach

Healthcare Professionals

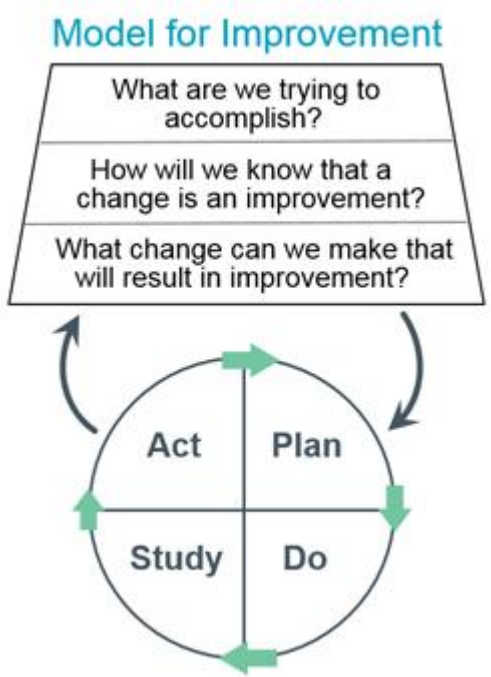
Let's get practical!

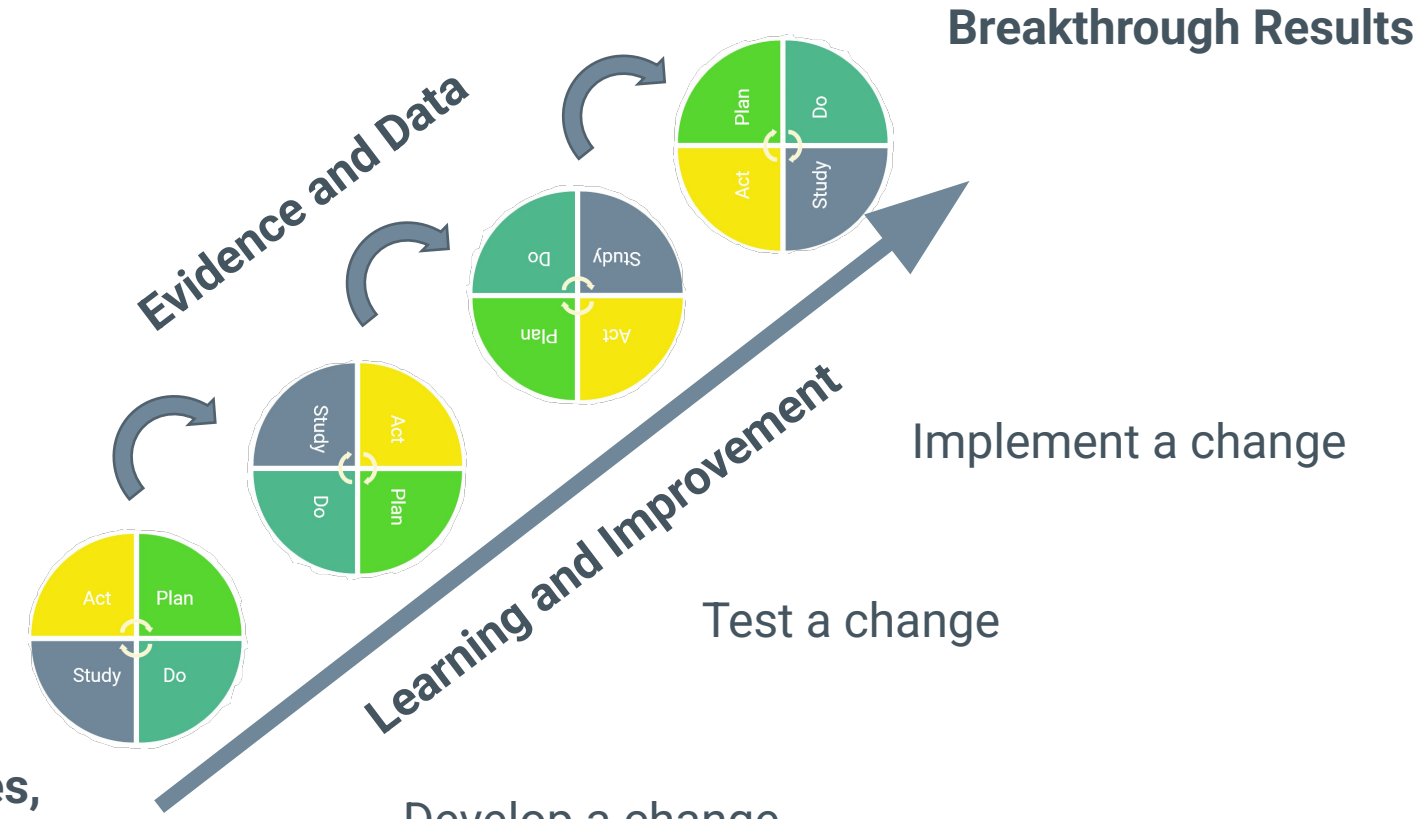
Our top tips for getting into (and staying in!) action.

Karen's Top Tip

START SMALL. THINK BIG. LEARN FAST.
INVOLVE OTHERS.

Start small & test your way up the PDSA ramp.





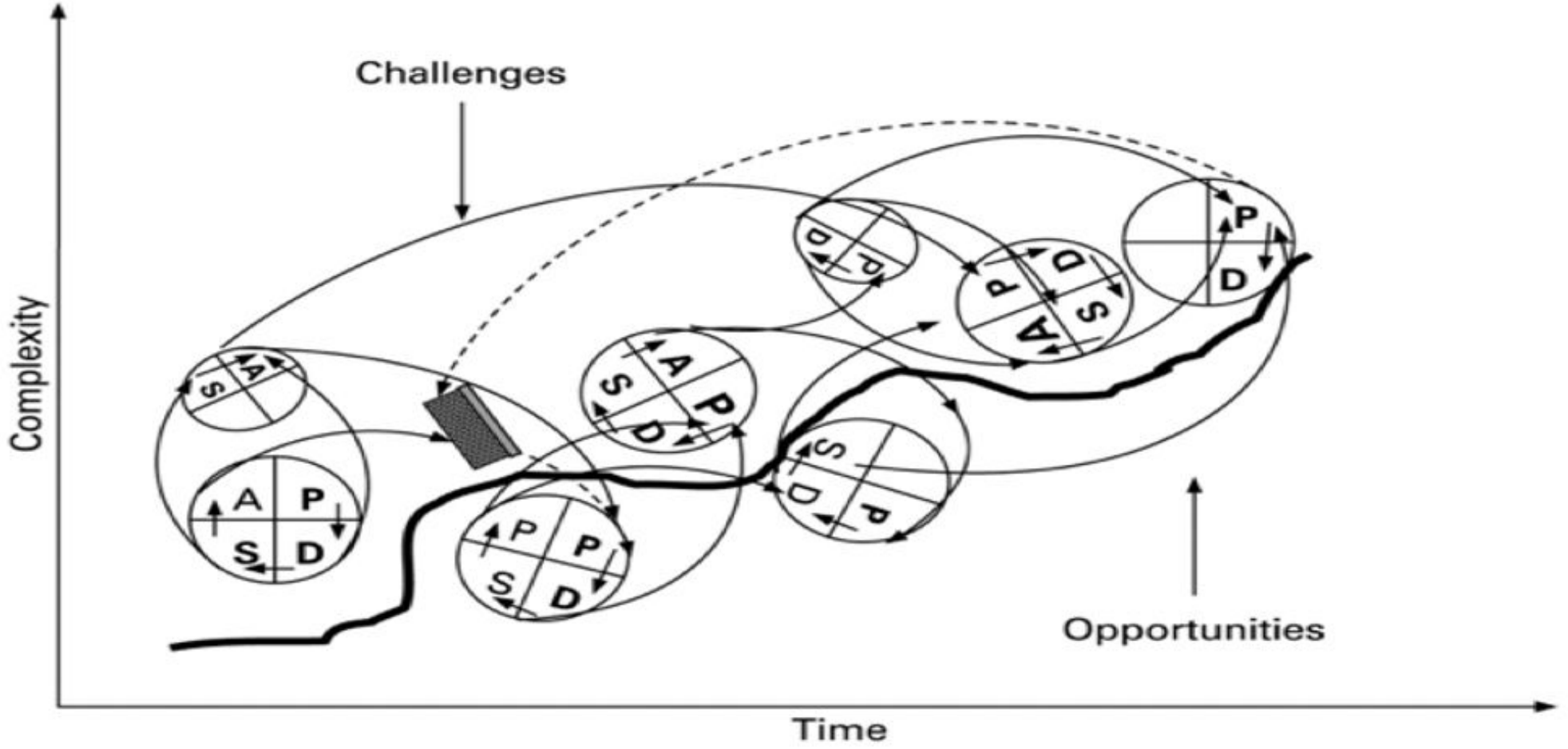
Tricia's Top Tip

BE WILLING TO GET UNCOMFORTABLE.

THERE'S NO SUCH THING AS FAILURE.

KEEP GOING.

Because let's get real... early PDSA tests



Source: A case study of translating ACGME, to a comprehensive curriculum improvement projects as the key component requirements into reality: systems quality practice-based learning and improvement, A M Tomolo, R H Lawrence and D C Aron, *Qual Saf Health Care*2009 18: 217-224

Getting into Action: Now What?

What's ONE PDSA you would like to do (in your work or in your life) by next Tuesday?

And if it's something you can't do by next Tuesday, that's your sign to make it even smaller!

Share with the person next to you.

- What PDSA will you test?
- When?
- Who will you involve?

What questions do you have?

Reflections?

THANK YOU!!

Feedback for us
(this is our PDSA! :)

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A10 How to effectively use a PDSA cycle for sustainable improvement

11:00 – 12:15pm (75 minutes)

Format: Workshop

Stream: Foundations

Content filters: Recommended for those new to quality improvement

The PDSA cycle (Plan-Do-Study-Act) is a framework for testing and implementing changes in healthcare processes. It is the bedrock of many quality improvement initiatives, but all too often used in isolation the PDSA method can lead to projects being reduced in scope with limited impact, longevity and scalability.

In this interactive workshop we will get back to basics on the power of the PDSA method when used correctly, and how it must be integrated into wider QI tools and methodology to ensure your projects have real world impact for patients and communities at scale.

Karen Turner Royal Free London NHS Foundation Trust; England

Tricia Bolender Institute for Healthcare Improvement (IHI); USA

Timing (75 min)

Section	Timing	Slides	Lead
Welcome & Intros	4 min	4, 5	Tricia
PDSAs: What it is (including audience participation)	15 min	6, 7, 8, 9, 10	Karen
Tennis Ball Activity	25 min including intro & debrief	12-13	Karen to introduce Both to support exercise Both to debrief
Implications: real-word setting	8 min	14, 15, 16, 17	Karen
Case Study: Linkage to sustainability & scale	8 min	18, 19, 20, 21, 22, 23, 24, 25, 26, 27	Tricia
Tips & Commitment (including share outs)	15 min	28, 29, 30, 31, 32	Both (interview style)