

Adapting Clinical Guidelines for the Digital Age: A Multi-Stakeholder Approach

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Objectives



- Understand the limitations with the current clinical guidelines process
- Review the outcome of a CDC-led multi-stakeholder Kaizen event
- Solicit participant feedback on our approach to solving the defined problem



Limitations of the current approach to clinical guidelines

POPULATION / PUBLIC HEALTH ACTIONS & ACTIVITIES

CLINICAL
DECISION
SUPPORT

CLINICAL
QUALITY
MEASUREMENT

DO

STUDY

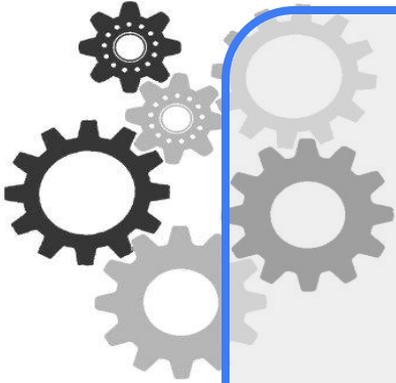
PLAN

ACT

CLINICAL
GUIDELINES
DEVELOPMENT

DESIRED
CLINICAL / HEALTH
ACTIONS

IMPLEMENTATION, MONITORING, & EVALUATION



GOAL of the GUIDELINES:

Ensure most up-to-date scientific evidence is followed AND results in desired outcomes

Breast Cancer CURF

Guideline Information for Providers



Prescribing Saves Lives

...can be challenging for healthcare providers as well as patients. In response to the new [Guideline for Prescribing Opioids for Chronic Pain](#).

...have died from prescription opioids.¹ These new recommendations focus on

[cines:](#)

[aged 65 and older:](#)

The guideline new recommendations focus on the... healing. The guideline is not intended for patient...

Use nonopioid therapies

Use nonpharmacologic therapies (such as exercise and cognitive behavioral therapy) and nonopioid pharmacologic therapies for chronic pain. Don't use opioids routinely for chronic pain. When opioids are used, combine them with nonpharmacologic therapy, as appropriate, to provide greater benefits.

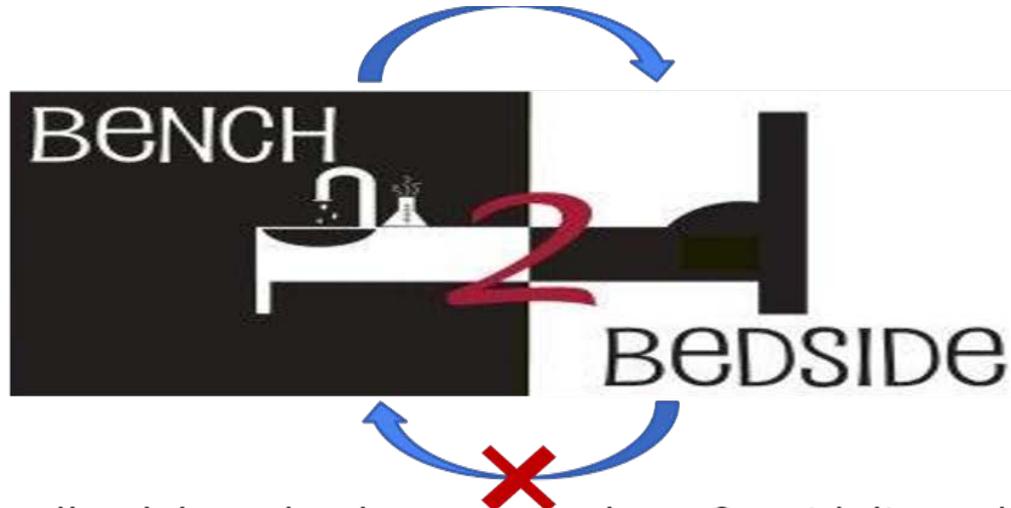
The following... on consensus and expert opinion (Level C):

ers

Problem



Takes too long to apply research knowledge to patient care (average of 17 years)

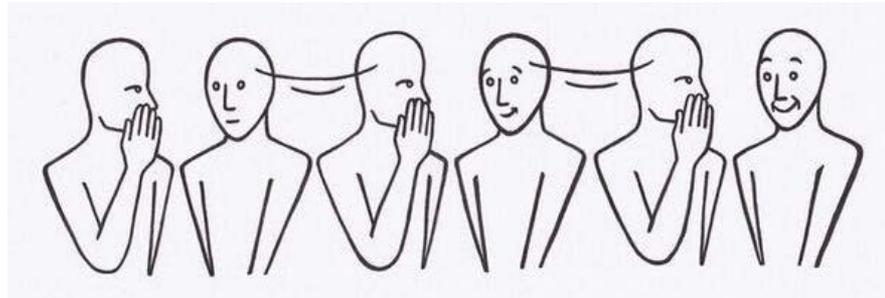


No feedback loop back to researchers & guidelines developers

Clinical Decision Support & The Telephone Game

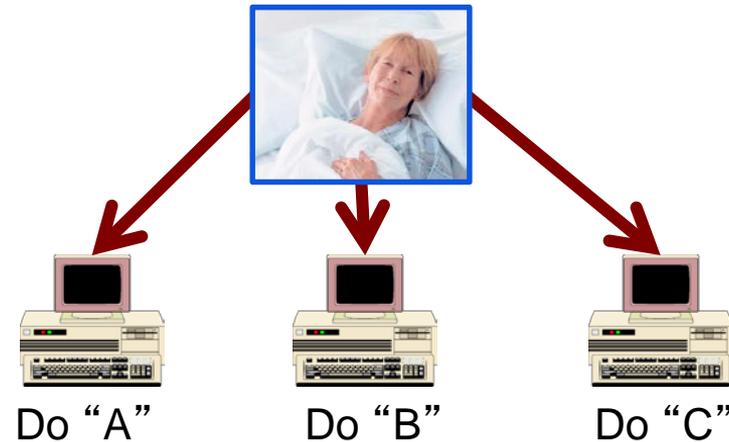
Guidelines → Translation → CDS tools → Translation → Patient Care

- Narrative guidelines must be translated into actionable formats *before* integrated into tools
- Risks associated with translation process:
 - Additional lag time
 - Inconsistent, variable, potentially inaccurate interpretation and application



Risk of Ad Hoc Transformation

- Knowledge engineers at 3 sites were asked individually to create CDS tools from guidelines for workup of breast tumor
- Submitted standardized patients to clinical decision support tools
- Outcome: **Different recommendations** were given for the same patient



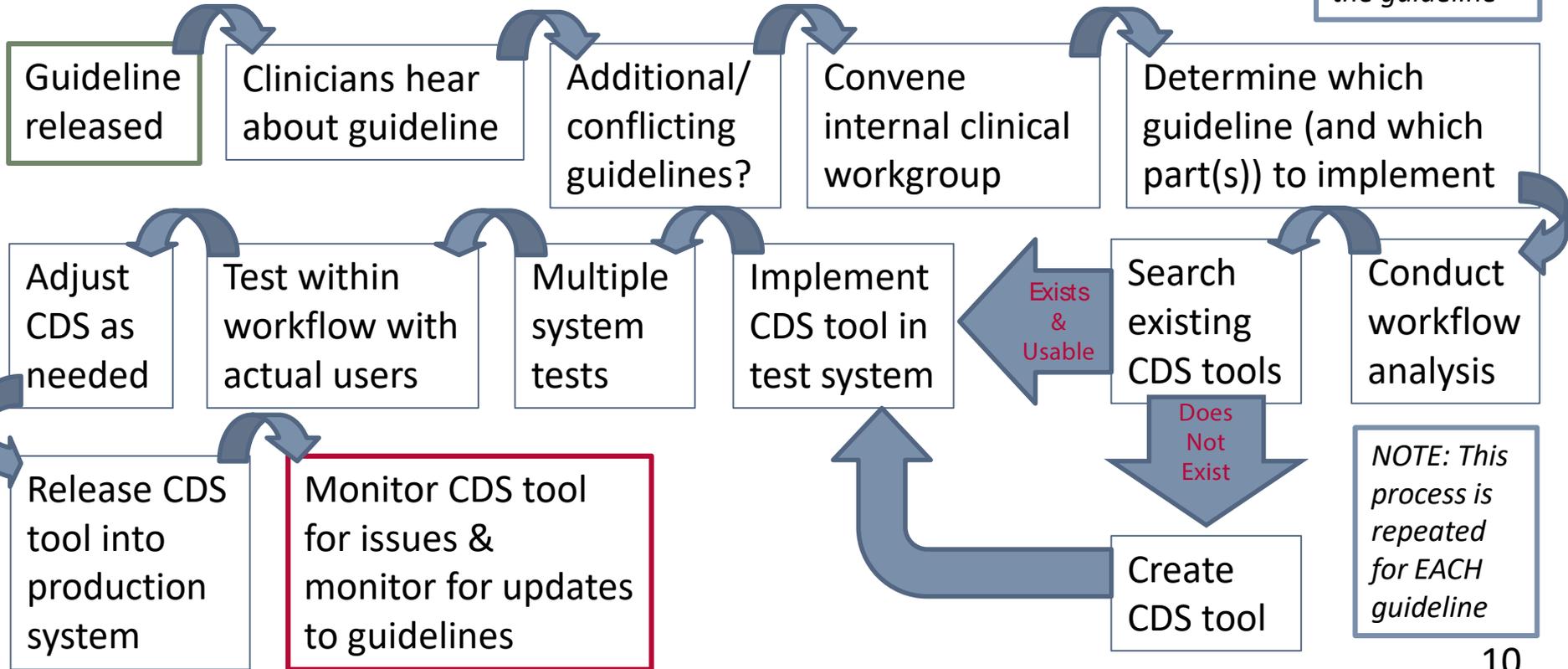
Levels of Knowledge



Knowledge Level	Description	Example
L1	Narrative guideline	Published guideline for a specific disease that is written in the format of a peer-reviewed journal article
L2	Semi-structured	Flow diagram, decision tree, or other similar format that describes recommendations for implementation
L3	Structured	Standards-compliant specification encoding logic with data model(s), terminology/code sets, value sets that is ready to be implemented
L4	Executable	CDS that is implemented and used in a local execution environment (e.g., CDS that is live in an electronic health record (EHR) production system)

Translating To Practice: Health System Example

*ASSUMPTION:
Health system
will implement
the guideline*



Adapting Clinical Guidelines for the Digital Age

Problem: Long Lag Time



Average of 17 years for scientific evidence to apply in patient care

Reason: Playing the “Telephone Game”



Translating guidelines for practice can be slow, inaccurate, or inconsistent

Solution: Developing Tools and Guidelines Together



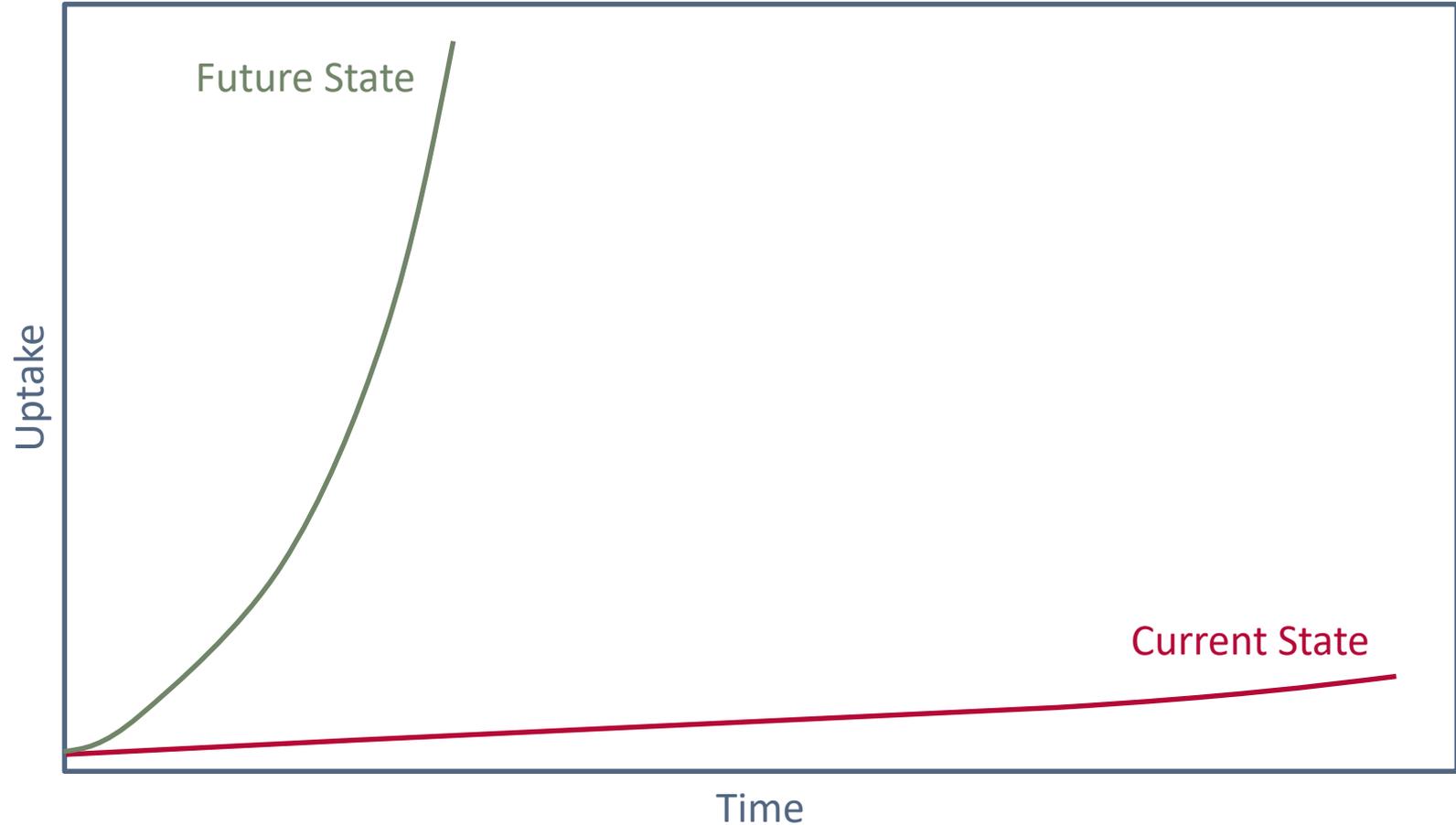
Can help evidence apply to patient care more easily, quickly, accurately, and consistently

CDC's Kaizen Event on Adapting Clinical Guidelines for the Digital Age

Leadership Buy-In

- **Executive Sponsor: Chesley Richards**
 - CDC Deputy Director for Public Health Scientific Services
 - Director of the Office of Public Health Scientific Services (OPHSS)
- **Buy-in Considerations:**
 - Data showing previous successful use of Kaizen method (CMS, ONC)
 - Having been a clinician, easily seeing the application to patient care and how much more effectively guidelines could reach practice
 - Receiving overwhelmingly affirmative feedback on the initiative from CDC Director, who immediately understood the potential positive impacts to patient care
 - Potential to dramatically increase uptake of CDC guidelines and decrease implementation time

Conceptual Graph of Potential Guideline Uptake



The Pre-Work

- **Agency-wide CDC CDS Workgroup** – Established September 2016



Request for Information (RFI) – Issued December 2016 and Closed January 2017

Listening Session at Health Information Management Systems Society (HIMSS) Annual Conference, February 19-23, 2017 in Orlando, FL

- **Key Themes:**

1. **Redesign** approaches to *developing and disseminating recommendations and incorporate feedback loops*
2. Develop a **long term strategy** to for creating needed agency infrastructure and practices that *transcend siloes & can apply to emergency response and “routine” guidelines*

- **Pre-Kaizen Planning Session** – November 14-15, 2017

The Game Plan

改善 KAI=Change
改善 ZEN=Good
改善 KAIZEN
(Continual Improvement)

- **Holistic Goal:**

Make it easy for clinicians to do the right thing by applying guidelines in practice more easily, quickly, accurately, and consistently

- **High-level Steps:**

- ✓ Completed [CDC multi-stakeholder Kaizen event](#) (February 5-9, 2018)
- 🔄 In Progress Post-Kaizen implementation (testing & refining)
- Open Socialize and scale the resulting tested and refined process



CDC Kaizen Event: Stakeholder Groups

- Guideline authors
- Health IT developers
- Communicators
- Clinicians
- Patients / Patient Advocates
- Medical Societies
- Public Health Organizations
- Evaluation experts



- Standards experts
- Clinical decision support developers
- Clinical quality measure developers
- Policy or technical support for implementation

CDC Kaizen Event: Scope & Value Streams



SCOPE:

- **START:** Guidelines Creation / Summarizing the Evidence
- **END:** Evaluation

VALUE STREAMS (Focus Areas):

- Guidelines Creation / Summarizing the Evidence
- Informatics Framework for Guideline Translation
- Dissemination Tools and Communication Methods
- Translation and Implementation Support
- Evaluation



Summary of Kaizen Outcome



LINEAR

CURRENT STATE

Guidelines

10s-100s of translations

CDS

100s-1000s of translations

Patient Care

Communications
Informatics
Implementation
Evaluation (maybe)

NON-LINEAR

PROPOSED FUTURE STATE

Guidelines
Informatics
Communications
Implementation
Evaluation

Concurrent guideline development and translation & upfront planning

Local Implementation

Patient Care

Applying to Guidelines: What Being a “Pilot” Means

MATRIXED APPROACH	Guideline Creation/ Updates	Informatics	Dissemination & Communication	Translation & Implementation	Evaluation
Core Pilot Activities	Develop algorithm, flow diagram, or decision tree based on the narrative recommendation(s)	Codify each of the items within the algorithm, flow diagram, or decision tree	Planning up front on where CDS tools will be disseminated as well as identifying target audience(s), communication channels, etc. post-publication	Provide implementation insights as recommendations are crafted and codified as well as implement CDS tools at the local level	Plan evaluation in advance and ensure it is incorporated throughout each aspect of the process as well as across the overall process
SME Level and Timing of Effort	Heaviest involvement early in the process, including working side by side with scientists developing the recommendations if begin prior to guideline publication		Involvement throughout, but most heavily immediately prior to and after publication	Involvement throughout but most heavily in local pilot implementation	Involvement throughout, including creating feedback loops to guideline authors

ALL PERSPECTIVES REPRESENTED UP FRONT AND THROUGHOUT THE PROCESS

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The findings and conclusions in this report are those
of the authors and do not necessarily represent the
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and Prevention.



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