Conflict of Interest

Kurt Hegmann, MD MPH

Has no real or apparent conflicts of interest to report.

Steven Wiesner, MD

Has no real or apparent conflicts of interest to report.

Agenda

- Background on treatment variability
- Reasoning and use of clinical decision support (CDS) tools
- Kaiser Permanente's (KP) implementation process
- Results from KP's implementation

Learning Objectives

- Recognize current challenges to the adoption/consistent use of evidence-based practices

- Describe the process of deploying clinical decision support (CDS) tools within a large-scale, EHR system

- Discuss physician perspectives of CDS tools

- Quantify longitudinal trends in usage and loss work time after CDS integration

The Problem

- 40% of waste in health care spending from improper/over-treatment

- $355 billion per year in waste on improper/over-treatment

- Cost variations are independent of patients health status, income, and price differences
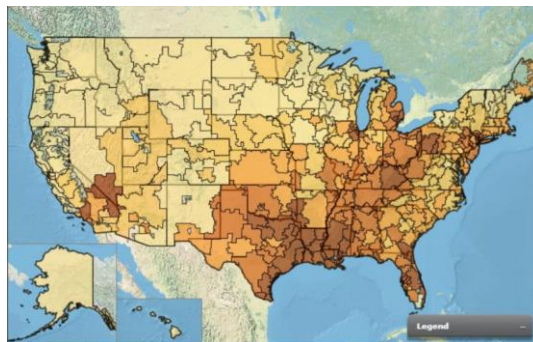
Medicare reimbursements per enrollee, adjusted for price, age, sex, and race

Berwick and Hackbarth, JAMA 2012;
Sutherland et al. NEJM, 2009

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Practicing Physicians Struggle to Stay Current with Best Practice Guidelines

- ~2 million scientific articles published annually

- 8-9% growth in the number of publications per year (exponential)

- 17 years = the time lag between research to practice

Bornmann, JAIST, 2015; Morris et al., JRSM 2011

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Polling Question 1

Approximately, how many RCT papers are published each day?

1. 10
2. 20
3. 50
4. 100

https://live.eventbase.com/polls?event=himss2018&polls=4267

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Number of Published Randomized Controlled Trials (RCT)
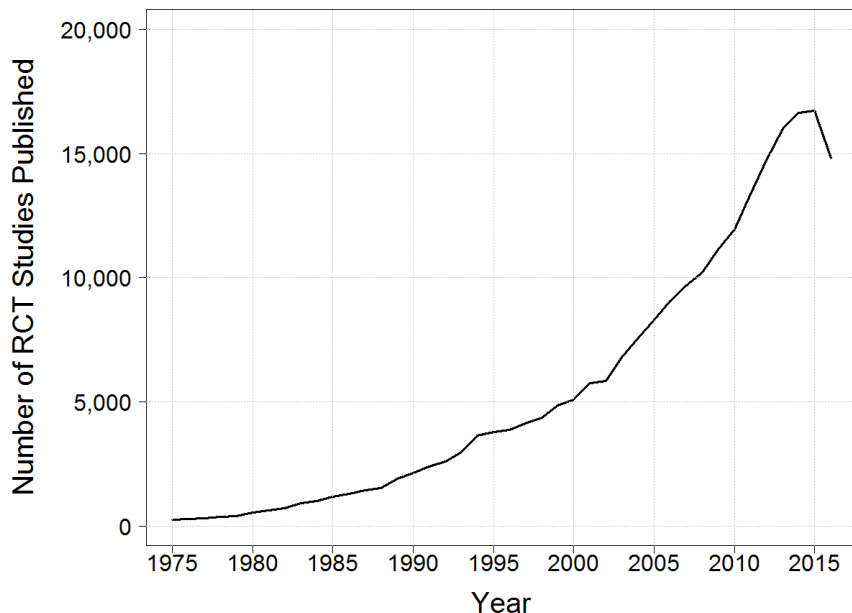
Just to keep up….

In 2015, a physician would have to read 46 RCT papers a day

Does not even include non-RCT research

http://dan.corlan.net/medline-trend.html

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Clinical Decision Support Tools to Reduce Variations in Health Care

- Studies have shown **Clinical Decision Support (CDS) tools improve**:

    - Preventive services

    - Appropriate care

    - Clinical and cost outcomes

Murphy, YJBM, 2014

What is Clinical Decision Support?

- Many clinical users do not know the term "clinical decision support"
- CDS can contain:
  - Prescriptive/predictive analytics
  - Treatment guidelines/algorithms
  - Formulary
  - Documentation templates
  - Condition specific order sets
  - Alerts/reminders

HealthIT.gov: "What is Clinical Decision Support" 2013

Kaiser Permanente Overview

- Founded in 1945, Kaiser Permanente (KP) is one of the nation's largest not-for-profit health plans, with 208,975 employees serving 11.7 million members.

  - 39 Hospitals

  - 680 Medical Offices

  - 21,275 Physicians

  - 54,072 RNs

8 Regions (9 states)

11

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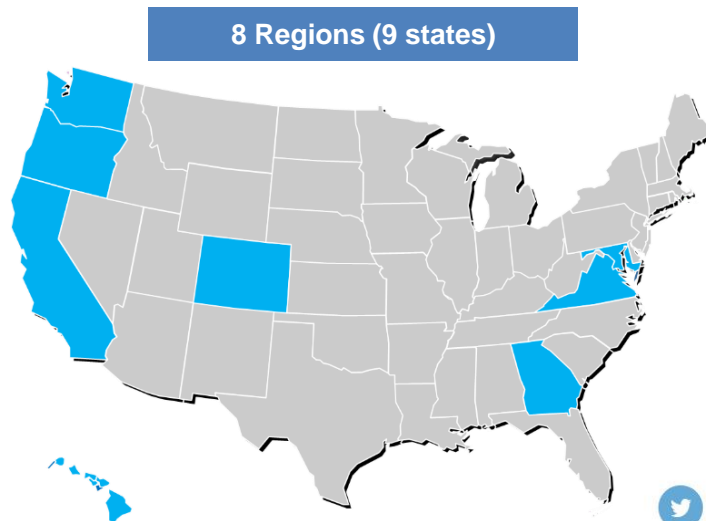
KP Clinicians' Request for CDS

- Ground up request for tools

- Main pain point

  - Clinicians did not know how to handle requests for "time off" from work, school, and other activities

  - 30% to 70% difference in prescribing time off across KP departments

- Practicing clinicians request real-time (while interacting with the patient) clinical support tools

Need for Enterprise-Wide Solution

- Individual with functional limitations (including work disability) contribute a disproportionate share of health care costs

- Use of "disability management" across departments needed

Gifford, "Temporarily Disabled Workers Account For A Disproportionate Share Of Health Care Payments" Health Affairs, 2017

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Implementing CDS within KP's EHR

1. Past

Listen to stakeholders

Needs assessment

Garner support

CDS development

2. Present

Review results

Continued training

Gathering perspectives

3. Future

Expansion

Enhancements

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Listened to All Stakeholders

- Treating clinicians (physicians, psychologists and NPs)

- Employer representative

- Labor representatives

- Benefit administrators (Worker Compensation carriers, Third Party Administrators, Case Managers)

- Our members/patients who requested disability documentation

Bringing Stakeholders Together: Medical Providers

- Core work group of Northern California (NCAL) Permanente Medical Group clinicians from the following specialties

  - Occupational Medicine

  - Physical Medicine and Rehabilitation

  - Mental Health

  - Adult Primary Care

  - Pediatrics

  - OB-GYN

  - Orthopedics

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Surveyed KP's NCAL Clinicians

Three key questions:

1. What is your understanding of disability management to assure clinically appropriate and timely safe return to activities following an injury or illness?

2. What enhancements would you like to see to allow you to efficiently provide accurate return to activity recommendations throughout the patient's healing?

3. What other resources would be helpful to improve your patients' clinical and functional outcomes?

Polling Question 2

KP's disability mgmt training includes all items except?

1. A web-based training module

2. Physician champions

3. Nurses completing "work slips"

4. Real-time duration guidelines

https://live.eventbase.com/polls?event=himss2018&polls=4268

CDS Recommendations to Senior Management Based on Survey Feedback

- Disability management education and training
  - Except for two specialties (PMR and Occ Health) very few clinicians had any training
- Develop a disability documentation tool that can be efficiently completed within the EHR
- Provide readily accessible, "in-the-moment" clinical management tools, including disability duration guidelines
- On the ground clinical content experts/physician champions

Garner Support from Senior Leadership

- National KP Integrated Disability Management (IDM) Program training module

- Activity prescription form (ARx) embedded within the EHR with direct linkage source

- Integrated Disability Management Physician Advisor (IDM PA) in each region

Selecting Vendor and Contracting

- In 2008 National IDM team explores various third party vendors.

- Requirements:

  – Direct **clinical** and **disability** duration content at the point of care

  – Ease of use by the clinician and the case manager

  – Vendor to work directly with KP's National IT Department

- Independent analysis by third-party evaluator assisted in KP's choice of ReedGroup's MDGuidelines

Selecting Vendor and Contracting

- Original contract signed in 2008

- Specified clinical information collected and managed by KP

- Utilization exceeded expectations and cost structure budgeted

- Revisions to contract and a 4-year extension

Development of CDS

- ARx-v2 was an enhancement to ARx-v1, which was only used in two regions.

- ARx-v1:

  – Lacked easy transferability to other regions

  – Did not include disability duration or clinical guidance

- ARx-v2 was a national build with easy transferability to all regions

  – Reduced cost and manpower as each region did not need to recreate the wheel

  – Still allowed for regional flexibility and fine tuning

Training Occupational Health and Beyond

- The National KP Integrated Disability Management (IDM) Program developed resources:
  - Video trainings on how to use the ARx-v2
  - Instructions on how to use the MDGuidelines
  - PowerPoint decks which can be used by disability management physician champions are included
- Resources available to clinicians and case managers in all regions within KP

Training Occupational Health and Beyond

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Rollout: Go Live Dates

Northern California — Nov. 2011
Southern California — Dec. 2011
Hawaii — Jan. 2012
Northwest — Jul. 2012
Georgia/Colorado — Dec. 2012
Mid-Atlantic — Early 2013
Washington — TBD

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Enhancements

ARx Screen Shot: Link to MDGuidelines

- Jump to disability and treatment recommendations

Enc Dx - Select max of 4	F/U Dx?	MMN Off	
☑ DIABETES MELLITUS TYPE	☐	2 Days	▲
☐ SPRAIN OF ANKLE [845.00A	☐	Multiple	
			▼

Prescriptive Analytics

MDGuidelines

Search for a topic or medical code...

| DURATION VIEWS | ICD MAPPING | CROSSWALKS | DART | FORMULARY | ATM |

Primary Diagnosis   G56.00 Carpal tunnel syndrome, unspecified upper limb

| Physiological View | Population View | Case View | Summary |

★ — Medical treatment, carpal tunnel syndrome.

Duration in Days

Job Class ❓	Minimum	Optimum	Maximum
Sedentary	0	7	21
Light	0	7	21
Medium	0	14	28
Heavy	0	21	42
Very Heavy	0	28	63

★ — Surgical treatment, open or endoscopic carpal tunnel release.

Duration in Days

Job Class ❓	Minimum	Optimum	Maximum
Sedentary	1	7	42
Light	3	14	42
Medium	14	21	56
Heavy	21	32	84
Very Heavy	28	48	91

ARx Screen Shots: Print Out Example 1

Work

OAKMD, OAKTHREE OAK (M.D.)
ONCB
3801 Howe Street
Oakland CA 94611-5312
Main: 752-1000X0000

Patient Name: Mrn Rename,H Ww
Encounter Date: 6/20/2012

Please see below for this health care provider's directives and information relating to this encounter.

Work Status Report

Date onset of condition:
Next Appointment Date: 10 Days

DIAGNOSIS: DIABETES MELLITUS TYPE 1, UNCOMPLICATED. [250.01A]
Reason for Off Work: Uncontrolled Symptoms

Off Work
This patient is placed off work from 6/20/2012 through 6/21/2012

ARx Screen Shots: Print Out Example 2

This patient is placed on modified activity at work and at home from 6/22/2012 through 6/25/2012.

If modified activity is not accommodated by the employer then this patient is considered temporarily and totally disabled from their regular work for the designated time and a separate off work order is not required.

This patient's activity is modified as follows:

- Stand: Intermittently (up to 50% of shift).
- Walk: Intermittently (up to 50% of shift).
- Bend at the waist: Occasionally (up to 25% of shift).
- Torso/spine twist: Occasionally (up to 25% of shift).
- Climb ladders: Not at all.
- Use of scaffolds/work at height: Not at all.
- Lift/carry/push/pull no more than 20 pounds.

Full Duty:
The patient was evaluated and deemed able to return to work at full capacity on 6/26/2012

This form has been electronically signed and authorized by OAKMD, OAKTHREE OAK (M.D.)

This form contains your private health information that you may choose to release to another party; please review for accuracy

Increased Usage Year Over Year
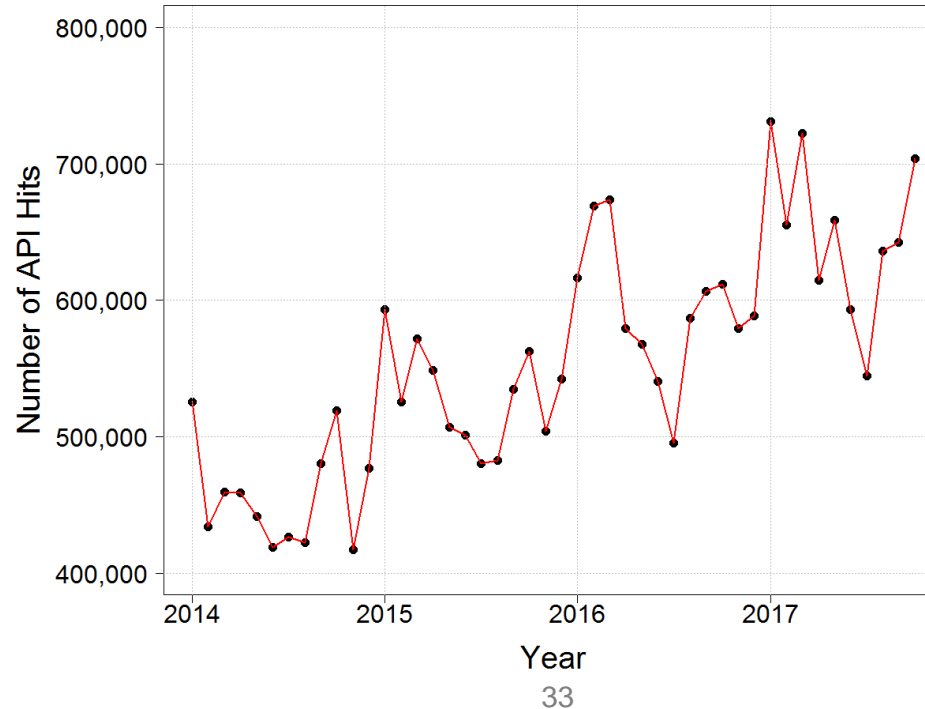
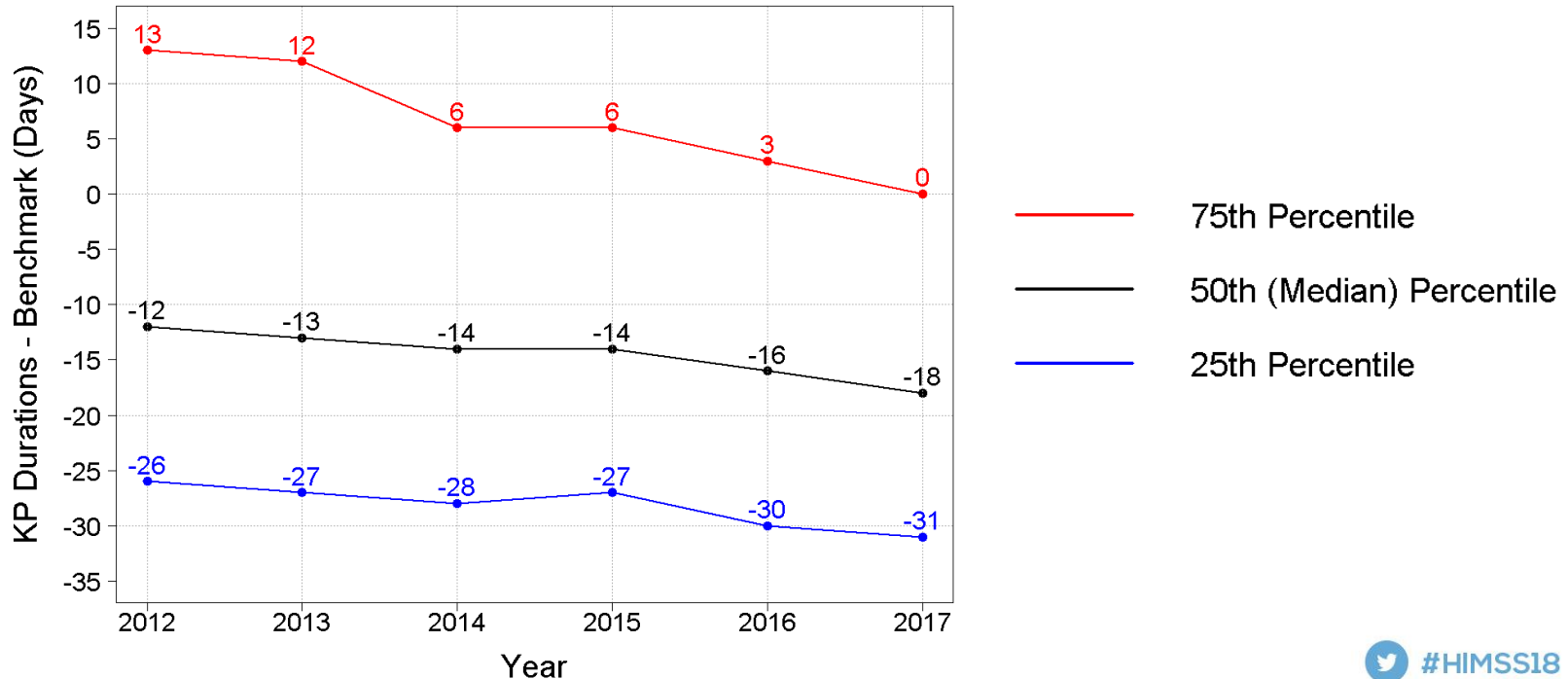# Improved Healing Time and Reduced Costs

From 2012 – 2017:

In 2016:

182,090
Patients Analyzed

72%
Patients BEAT MDGuidelines' Population Benchmark

14 Days
Average Days SHORTER than MDGuidelines' Population Benchmark

$59MM
Costs AVOIDED by returning patients to activity.

34

Decreased RTW Durations Through Time

Future Work and Enhancements

- By mid-2018, all regions will have access to updated ARx-v3

- As of 2018, all regions have access to enhanced MDGuidelines content, data, and tools

  – Formulary content

  – Algorithms

  – ACOEM guidelines

Summary

- ARx-v2 implementation dependent on regional Permanente Medical Group support

- Significant documentation efficiencies created with ARx-v2

- Improved disability management/return to activity with ARx-MDGuidelines linkage

- Disability management education is the foundation

  – Having a physician champion is critical

  – Expanded video development for training use

Questions?

- Please fill out online session evaluation.

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required for charts, graphs, etc.