



DEPARTMENT OF  
**Family Medicine and  
Community Health**  
UNIVERSITY OF WISCONSIN  
SCHOOL OF MEDICINE AND PUBLIC HEALTH

# Systems Consultation: A Novel Implementation Strategy for Adopting Clinical Guidelines for Opioid Prescribing in Primary Care

Randall Brown MD, PhD, DFASAM

Associate Professor

University of Wisconsin School of Medicine & Public Health

Dept of Family Medicine and Community Health



The Center for Health  
Enhancement Systems Studies  
UNIVERSITY OF WISCONSIN-MADISON

# Special Thanks To:

- National Institute on Drug Abuse (1R34DA036720-01A1; 1K01DA039336-01 )
- UWHealth Primary Care Clinics
- Advisory panel

Jane Ballantyne, MD

Paul Batalden, MD

Roger Chou, MD

Perry Fine, MD

David Gustafson, PhD

Jonas Lee, MD

Dennis McCarty, PhD

Beth Potter, MD

John Frey, MD

- Research team: Randall Brown, Bri Deyo, Aleksandra Zgierska, Bobbie Johnson, Esra Alagoz, Nora Jacobson Jim Robinson, Wen-Jan Tuan, Lynn Madden

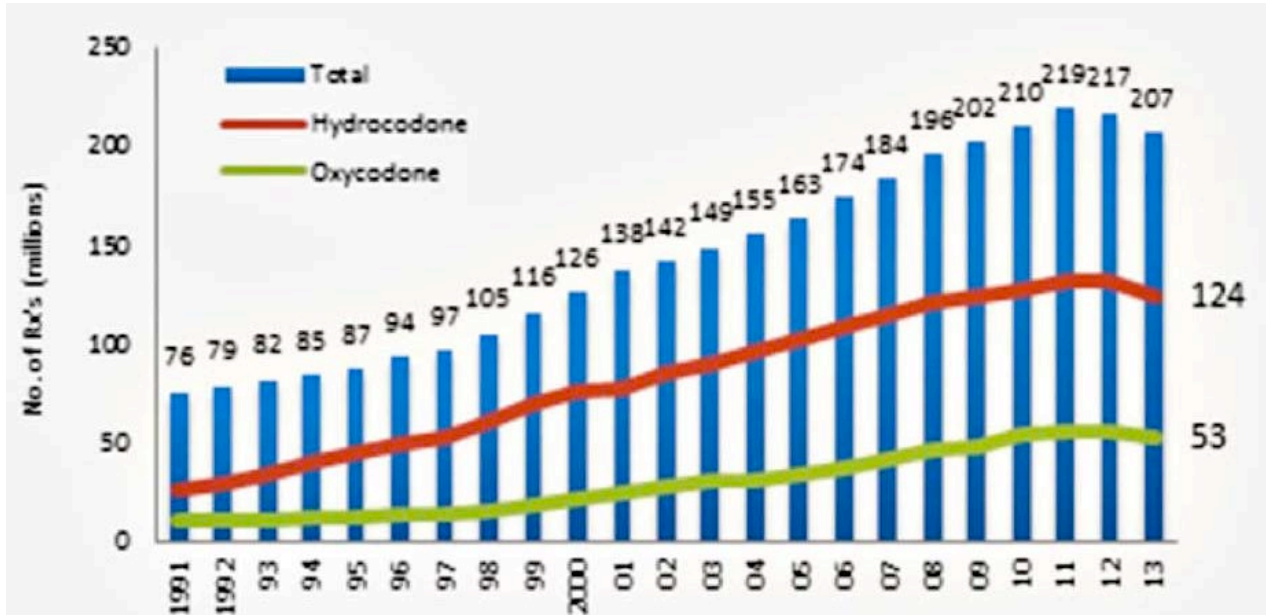
# Declaration

No financial COI

# Aims of the Project

- Goal is to improve patient safety by instituting a set of universal precautions for opioid prescribing in primary care based on leading clinical guidelines
- R34 grant mechanism is specifically for testing the feasibility, acceptability, and preliminary effectiveness of novel implementation strategies in preparation for larger trials

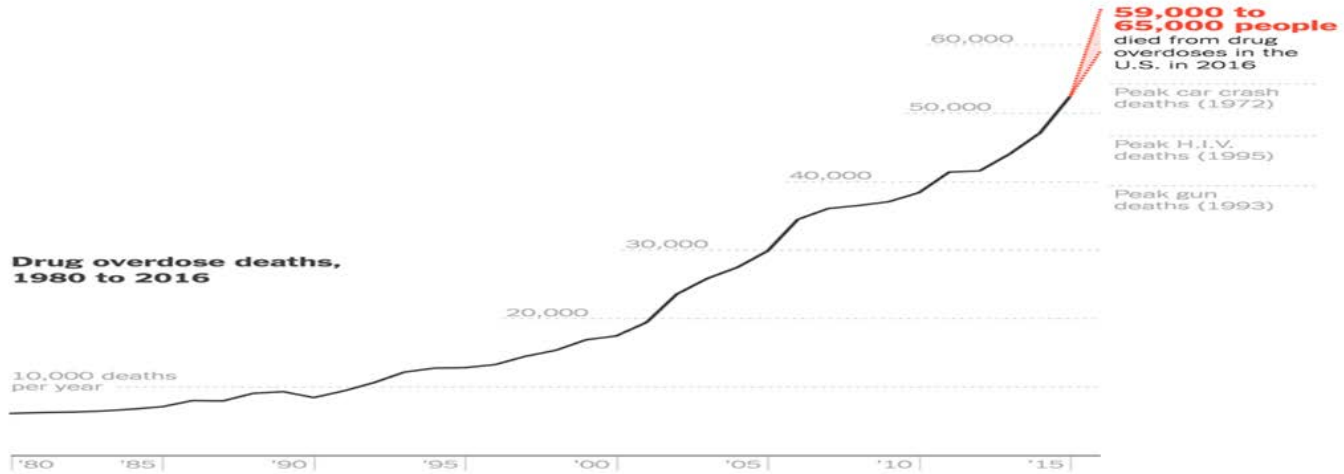
# Background & Motivation Part 1



Source: Opioid Prescriptions Dispensed by US Retail

Pharmacies. IMS Health, Vector One

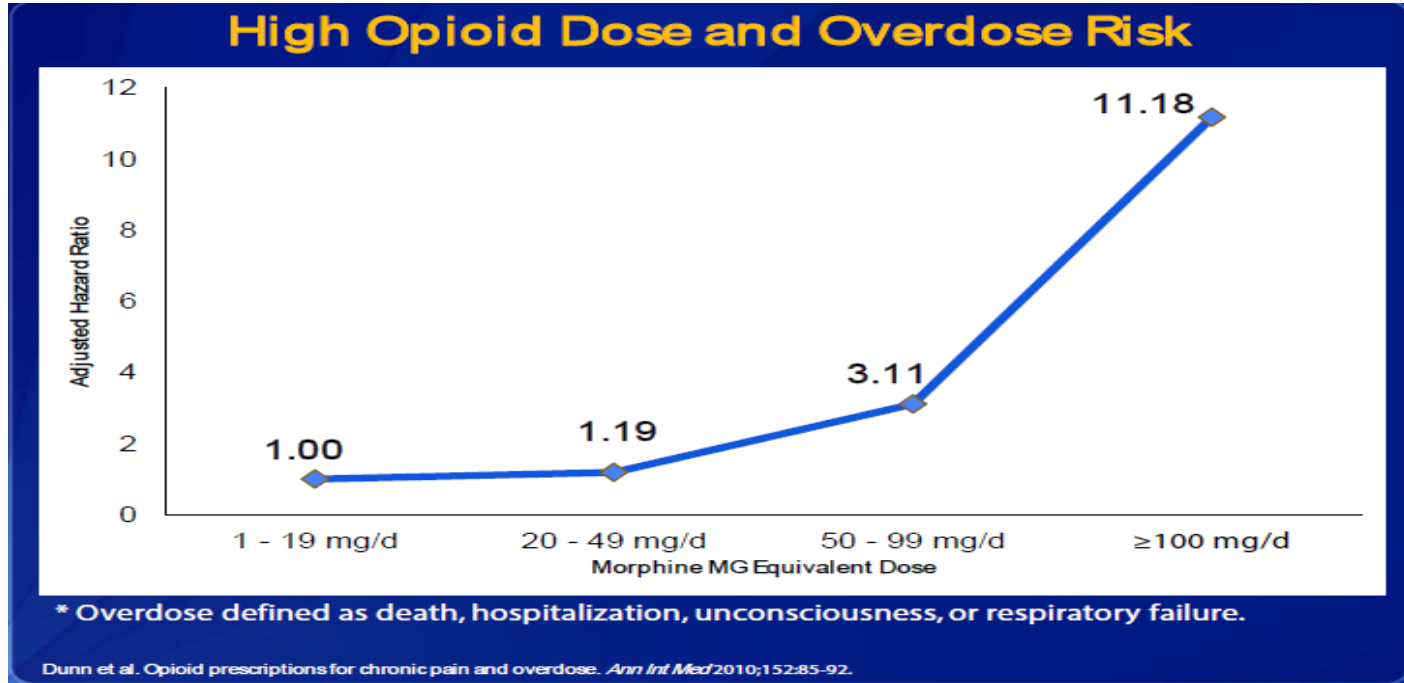
# Background & Motivation Part 2



Opioid prescribing rates may be on the decline, but overdose rates are at all-time highs.

Source: New York Times infographic, June 5, 2017

# Background & Motivation Part 3



Risk of overdose is directly correlated with morphine equivalent daily dose (Dunn et al., 2010).

# “Addiction Rare in Patients Treated with Narcotics”

[CITATION] [Addiction rare in patients treated with narcotics.](#)

**J Porter, H Jick** - [The New England journal of medicine, 1980](#) - [ncbi.nlm.nih.gov](#)

1. *N Engl J Med.* **1980** Jan 10;302(2):123. Addiction rare in patients treated with narcotics.

**Porter J, Jick H.** PMID: 7350425 [PubMed - indexed for MEDLINE]. Publication Types: Letter. MeSH Terms. Humans; Narcotics/adverse effects; Narcotics/therapeutic use\*; Opioid-Related Disorders/epidemiology\*. Substances. Narcotics.

☆ [🔗](#) [Cited by 1011](#) [Related articles](#) [All 3 versions](#) [Web of Science: 503](#)



# Study of Addiction in Hospital Patients

## To the Editor:

Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients<sup>1</sup> who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients,<sup>2</sup> Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

Jane Porter

Hershel Jick, M.D.

Boston Collaborative Drug Surveillance Program Boston University Medical Center, Waltham, MA  
02154

# Clinical guidelines



ELSEVIER

The Journal of Pain, Vol 10, No 2 (February), 2009; pp 113-130  
Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

## Opioid Treatment Guidelines

### Clinical Guidelines for the Use of Chronic Opioid Therapy in Chronic Noncancer Pain

Roger Chou,<sup>1</sup> Gilbert J. Fanciullo,<sup>2</sup> Perry G. Fine,<sup>3</sup> Jeremy A. Adler,<sup>4</sup> Jane C. Ballantyne,<sup>5</sup> Pamela Davies,<sup>6</sup> Marilee I. Donovan,<sup>7</sup> David A. Fishbain,<sup>8</sup> Kathy M. Foley,<sup>9</sup> Jeffrey Fudin,<sup>10</sup> Aaron M. Gilson,<sup>11</sup> Alexander Kelter,<sup>12</sup> Alexander Mauskop,<sup>13</sup> Patrick G. O'Connor,<sup>14</sup> Steven D. Passik,<sup>15</sup> Gavril W. Pasternak,<sup>16</sup> Russell K. Portenoy,<sup>17</sup> Ben A. Rich,<sup>18</sup> Richard G. Roberts,<sup>19</sup> Knox H. Todd,<sup>20</sup> and Christine Miaskowski,<sup>21</sup> FOR THE AMERICAN PAIN SOCIETY–AMERICAN ACADEMY OF PAIN MEDICINE OPIOIDS GUIDELINES PANEL

## CDC Guideline for Prescribing Opioids for Chronic Pain – United States, 2016

*Recommendations and Reports* / March 18, 2016 / 65(1);1-49



*On March 15, 2016, this report was posted online as an MMWR Early Release.*

**Please note:** An erratum has been published for this report. To view the erratum, please click [here](#).

Deborah Dowell, MD<sup>1</sup>; Tamara M. Haegerich, PhD; Roger Chou, MD<sup>1</sup> ([View author affiliations](#))

Consensus is emerging around guidelines, with CDC  
guidelines leading the way

# Multidisciplinary workgroup

Clinical guideline writers (Chou, Fine, Ballantyne)

Primary care physicians (Frey, Lee, Potter)

Systems engineering / implementation research (Gustafson, Batalden)

Addiction and drug policy (McCarty)

# Integrated Group Process (Gustafson et al., 1993)

1. Choose participants
2. Develop a straw model through telephone interviews
3. Convene the group and revise the straw model
4. Design case scenarios
5. Enumerate the model
6. Identify sources of conflict
7. Average the smaller differences
8. Report the group's judgment

# Checklist-based implementation guide

- Review and discuss the Treatment Agreement and have the patient sign it.
- If checking the PDMP produced warnings, document details in the patient's chart and discuss with the patient.
- Screen the patient for opioid misuse risk using the DIRE assessment tool, if this has not been done. Positive results warrant further assessment.
- Screen the patient for the risk for substance use disorders, if this has not been done. Positive results warrant further assessment.
- Screen the patient for depression using a validated tool such as PHQ2 or PHQ9, if this has not been done. Positive results warrant further assessment.
- Check the patient's medication list for opioid/benzodiazepine co-prescribing. If present, discuss strategies for tapering benzodiazepine and/or opioid dose.
- Order a urine drug test and discuss a plan for future monitoring of opioid therapy using urine drug testing.
- Assess pain using the Brief Pain Inventory tool. If it is above 8 with doses near 100 MEDD, consider other therapeutic options (physical therapy, behavioral health consultation, acupuncture, etc.) or referral to a pain specialist.



# Implementation Strategy: Systems Consultation

- Based on an organizational coaching model proven cost-effective in a randomized trial of 201 addiction treatment organizations (Gustafson et al., 2013) and used by ~ 4000 organizations nationwide

Addiction



RESEARCH REPORT

doi:10.1111/add.12117

## Which elements of improvement collaboratives are most effective? A cluster-randomized trial

David H. Gustafson<sup>1</sup>, Andrew R. Quanbeck<sup>1</sup>, James M. Robinson<sup>2</sup>, James H. Ford II<sup>1</sup>, Alice Pulvermacher<sup>1</sup>, Michael T. French<sup>3</sup>, K. John McConnell<sup>4</sup>, Paul B. Batalden<sup>5</sup>, Kim A. Hoffman<sup>4</sup> & Dennis McCarty<sup>4</sup>



The Center for Health  
Enhancement Systems Studies  
UNIVERSITY OF WISCONSIN-MADISON

# Key features of implementation strategy

- The implementation guide produced via the integrated group process was central to the approach
- We trained and deployed physician peer coaches/consultants to work with clinics in implementing the guide
- We used evidence-based implementation tools from systems engineering (e.g., flowcharting, Plan-Do-Study-Act change cycles) to modify workflows and facilitate adoption of the guide

# Coaching model

The usual approach to organizational change in healthcare:  
surveillance, scolding, etc.

Our approach: self determination theory

Competence

Relatedness

Autonomous motivation

Perspective, empathy, and homophily



# Implementation approach

Create a detailed flowchart of Rx refill process and monitor incoming requests

Compare patient's chart to checklist and set up appointments to take steps towards risk minimization

Select new opioid patients carefully, and set a clinic-wide expectation to limit dose to 100 MEDD

Use skill and clinical judgment in dealing with inherited and/or high-dose patients

# Methods

- The study compares 4 intervention clinics to 4 control clinics in a randomized matched-pairs design.
- Each systems consultation team worked with clinics on implementing the guidelines during a 6-month intervention comprised of 3 monthly site visits and 3 telephone / videoconferences.
- Quantitative outcomes are reported using difference-in-differences analysis.
- Qualitative methods included ethnographic field techniques, focus groups, and interviews.

# Feasibility

- From a pool of 13 clinics, we randomly approached 7 clinics to recruit 4 intervention clinics (3 clinics declined, 2 citing “lack of time” and 1 “leadership turnover”).
- Baseline prescribing rates (% of patients on long-term opioid therapy): 1.4% in control clinics, 1.2% in intervention clinics
- Each clinic designated a project team consisting of 6-8 staff members, each with at least 1 primary care physician, RN, MA/LPN, and administrative staff member.
- All 4 clinics completed all scheduled activities over 6 months, and attendance at intervention meetings was 83%.

# Effectiveness (6 months)

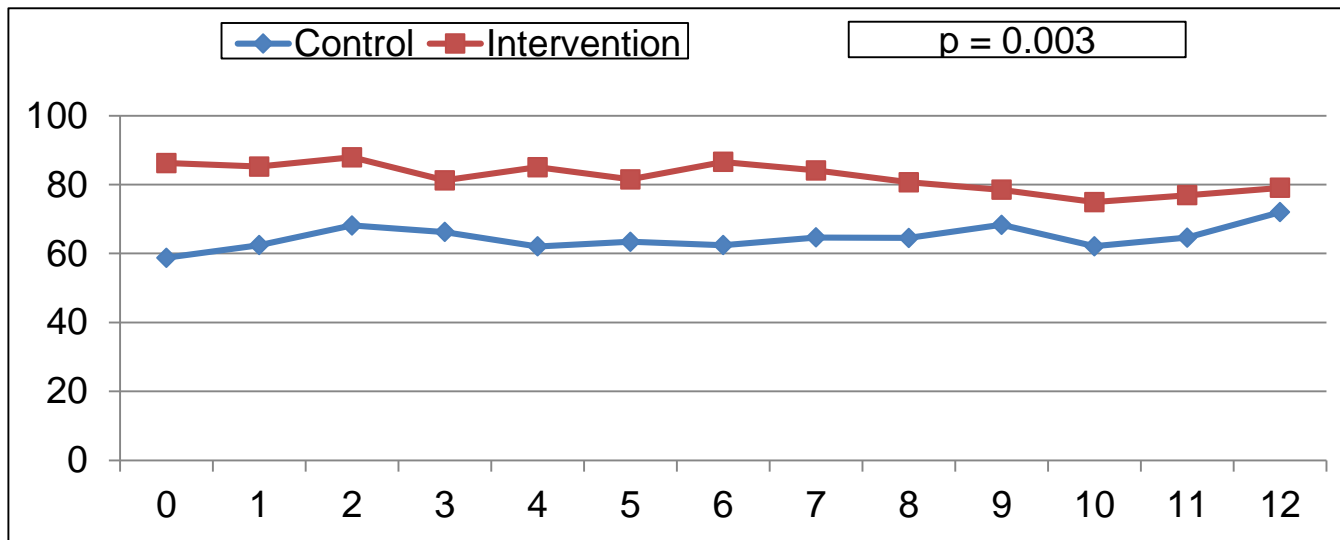
	% of Patients w/ Consist. Opioids	% w/ MH Screen	% w/UDT	% w/ Tx Agmt	Avg. MEDD	% w/ MEDD = 120+	% w/ Benzo.
Slope of Control Clinics	0.000	0.029	0.011	0.029	0.245	-0.002	0.001
p-value	0.152	0.020	0.025	0.009	0.646	0.249	0.654
Slope of Intervention Clinics	0.000	0.058	0.041	0.059	-0.337	-0.004	-0.001
p-value	0.011	0.009	0.009	0.010	0.449	0.045	0.637
Slope of Intervention minus Control	0.000	0.029	0.029	0.030	-0.581	-0.001	-0.002
p-value	0.237	0.024	0.011	0.012	0.425	0.624	0.019

# Maintenance (12 months)

	% of Patients w/ Consist. Opioids	% w/ MH Screen	% w/UDT	% w/ Tx Agmt	Avg. MEDD	% w/ MEDD = 120+	% w/ Benzo.
Slope of Control Clinics	0.000	0.016	0.012	0.031	0.431	0.000	0.001
p-value	0.007	0.002	0.001	0.000	0.078	0.942	0.291
Slope of Intervention Clinics	0.000	0.033	0.018	0.036	-0.830	-0.003	0.002
p-value	0.001	0.001	0.002	0.001	0.004	0.004	0.136
Slope of Intervention minus Control	0.000	0.017	0.005	0.005	-1.261	-0.003	0.001
p-value	0.975	0.003	0.153	0.146	0.003	0.018	0.353

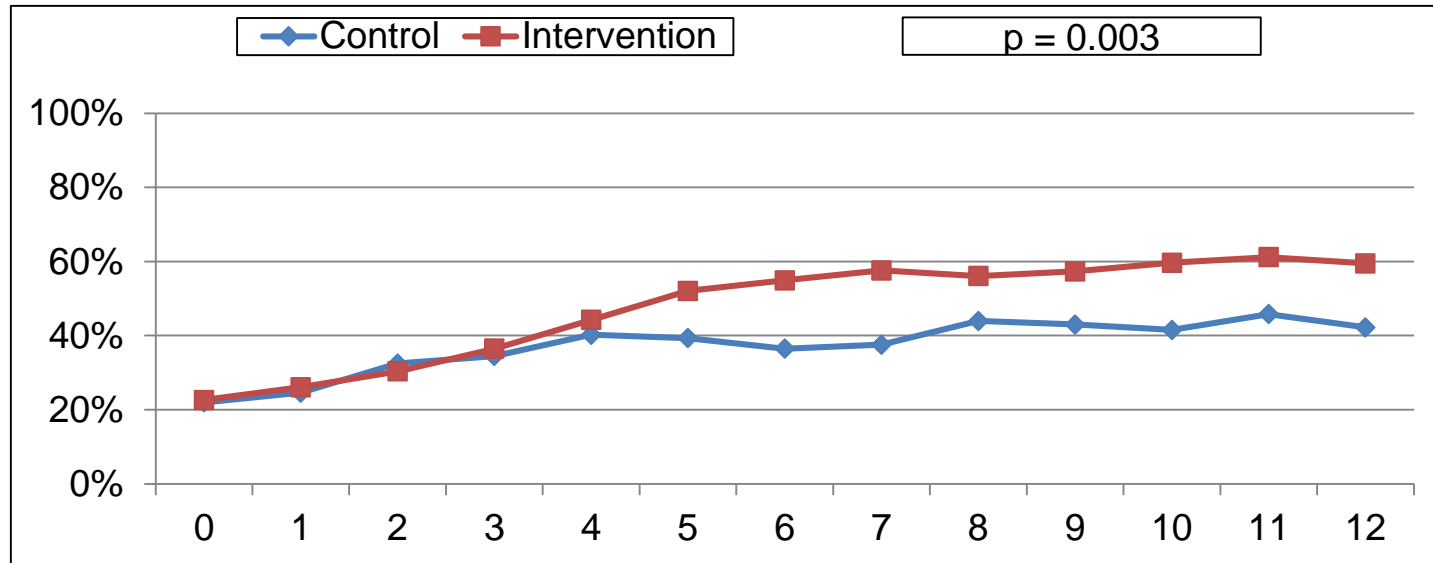
# Average MEDD of Consistent Opioid Users by Intervention Month

Average opioid MEDD has decreased significantly for intervention clinics. MEDD for control clinics has increased, but not significantly so. The difference between intervention and controls is significant.



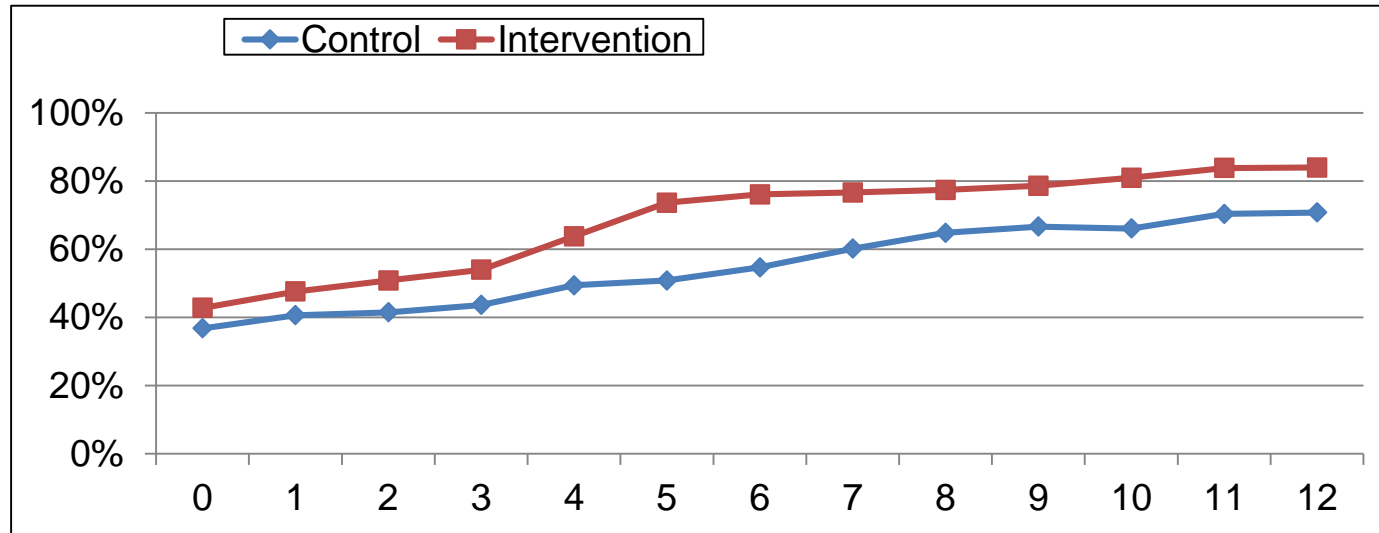
# Percent Consistent Opioid Users with Mental Health Screen by Intervention Month

MH screening outcomes for intervention and control clinics both show significant improvement. Rate of improvement for intervention clinics is significantly greater.



# Percent Consistent Opioid Users with Treatment Agreement by Intervention Month

Tx Agmt outcomes for intervention and control clinics both show significant improvement. There is somewhat greater improvement for intervention clinics.



$p = 0.146$

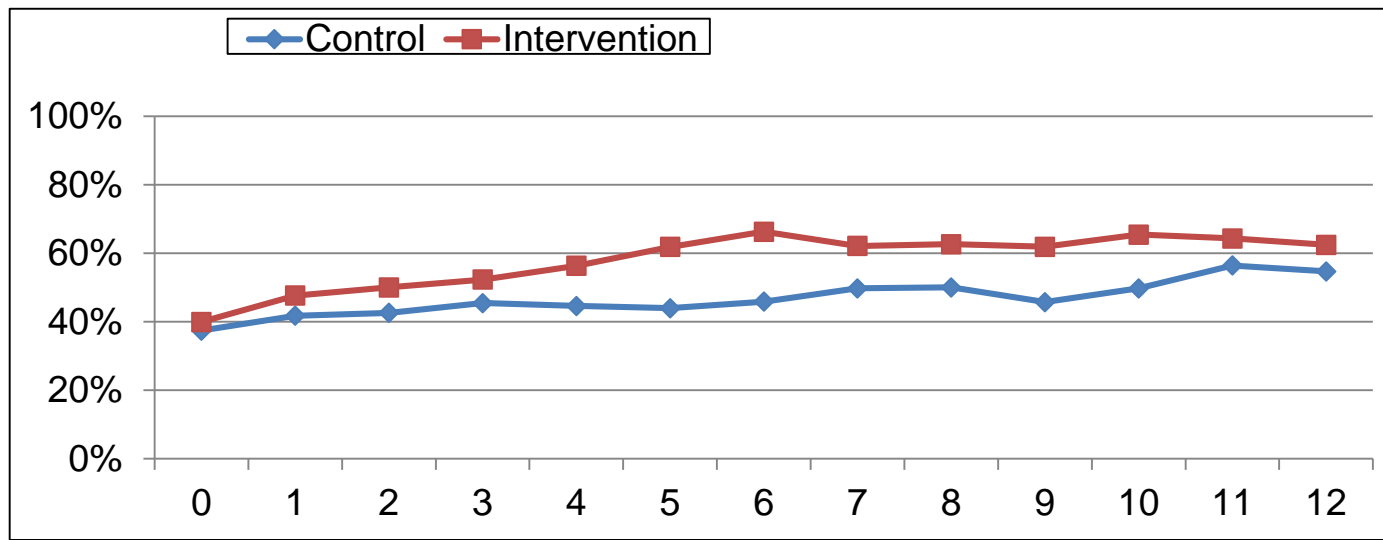


# Percent Consistent Opioid Users with Urine Drug Screen by Intervention Month

UDT outcomes for intervention and control clinics both show significant improvement.

There is somewhat greater improvement for intervention clinics.

$p = 0.153$



# Qualitative results – key adaptations

- Our implementation strategy morphed into a “team coaching” model to mirror the structure of primary care work teams
- Lunch hour is the only time this kind of teamwork can be done (the four-hour meeting is a non-starter in primary care)
- We leveraged workflows employed for other chronic conditions that are hallmarks of primary care, including hypertension and diabetes.

# Acceptability

- More than 80% of staff respondents agreed or strongly agreed with the statements:
  - “I am more familiar with guidelines for safe opioid prescribing”
  - “My clinic’s workflow for opioid prescribing is easier”
- The approach seemed to provide the kind of help that primary care clinics want and need (Heard at the last site visit: “You’re leaving already?”)

# Limitations

- Relatively small sample of clinics (4), staff (28), and patients (~500) in a single health system
- Pragmatic study design
- Secular trends were evident

# For More Information



Abstract

Background

Methods

Results

Discussion



Conclusion

Declarations

References

Research | [Open Access](#) | Open Peer Review

## A randomized matched-pairs study of feasibility, acceptability, and effectiveness of systems consultation: a novel implementation strategy for adopting clinical guidelines for Opioid prescribing in primary care

Andrew Quanbeck  , Randall T. Brown, Aleksandra E. Zgierska, Nora Jacobson, James M. Robinson, Roberta A. Johnson, Brienna M. Deyo, Lynn Madden, Wen-Jan Tuan and Esra Alagoz

*Implementation Science* 2018 13:21

<https://doi.org/10.1186/s13012-018-0713-1> | © The Author(s). 2018

Received: 25 September 2017 | Accepted: 16 January 2018 | Published: 25 January 2018





# Translating Research Into Practice

## Practical implications: primary care

- The opioids crisis developed over a generation, and there's no quick fix in sight
- Nevertheless, progress can be made when clinical guideline writers, primary care physicians, and implementation scientists work to tackle the problem together
- Actively seeking to understand diverse perspectives- in a systematic way- is key!

# Thank you!

Randall Brown

University of Wisconsin-Madison

[rtbrown@wisc.edu](mailto:rtbrown@wisc.edu)