Measuring the impact of educational activities on healthcare information professional performance and decision-making practice patterns, including leadership, administration, and IT learners

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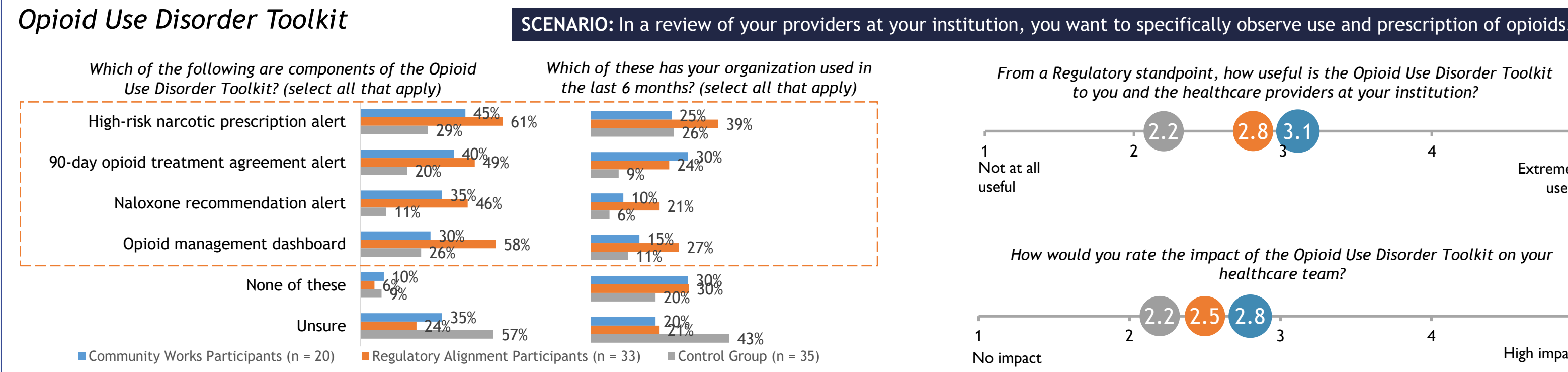Lauren Meeks

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CE Outcomes, LLC

PROBLEM AND GOAL

In 2020, the CernerCE team partnered with CE Outcomes, LLC to determine performance outcomes as it relates to Cerner educational activities/events and CEUs. One of the central tenets to national reaccreditation status is an understanding of the performance change of learners. However, as Cerner focuses primarily within the healthcare information space, there is no standard approach to measure performance change. Using a similar approach to clinician measurement, we established key professional scenarios to show how learners differed in their approach compared to a non-learner control. Here we present the results of two different educational programs from Cerner, Community Works and Regulatory Alignment.

METHODOLOGY

Cerner and CE Outcomes created a survey based on key performance measurements within the educational activity. Based around key workplace scenarios, the surveys were intended to measure learner application of knowledge, skills, attitudes, and barriers to implementation.

Surveys were pilot tested with Cerner users and email invitations were used to more widely collect data from learners of the two recent Cerner initiatives. To obtain a control group, the same questions were fielded to Cerner users who did not engage with either of the two initiatives.

Quantitative and qualitative analyses were conducted to understand differences between the learner groups and the control groups. Overall effect sizes using Cohen's d were conducted to capture the performance impact of the education.

STUDY DEMOGRAPHICS

	Community Works Participants (n = 20)	Regulatory Alignment Participants (n = 33)	Control Group (n = 35)
Degree			
MD/DO	7%	7%	11%
Nurse Practitioner	0%	0%	6%
Physician Assistant	0%	0%	0%
PharmD	0%	0%	6%
RN	62%	60%	66%
Other	31%	33%	11%
Position			
Program/Practice Administrator, or Practice Manager	15%	6%	0%
Information Technology	40%	49%	78%
Physician	10%	6%	9%
Medical Director/CMO	5%	9%	6%
Nurse, Nurse Coordinator, or Nurse Navigator	10%	18%	12%
Nurse Manager/Clinical Operations Director	10%	15%	3%
Advanced Practice Nurse or Nurse Practitioner	0%	0%	6%
Pharmacist	0%	0%	3%
Quality Director	-	25%	-
Other	15%	0%	3%

How would you rate the amount of customization your Cerner system currently has?
1 No customization — 2.7 — 2 — 3 — 3.8 4.1 — 4 — 5 Extremely customized

SELECTED RESULTS HIGHLIGHTS

Opioid Use Disorder Toolkit

SCENARIO: In a review of your providers at your institution, you want to specifically observe use and prescription of opioids.

Which of the following are components of the Opioid Use Disorder Toolkit? (select all that apply)

	Community Works	Regulatory Alignment	Control
High-risk narcotic prescription alert	45%	29%	61%
90-day opioid treatment agreement alert	40%	49%	20%
Naloxone recommendation alert	35%	46%	11%
Opioid management dashboard	30%	58%	26%
None of these	10%	9%	
Unsure	24%	35%	57%

Which of these has your organization used in the last 6 months? (select all that apply)

High-risk narcotic prescription alert	25%	26%	39%
90-day opioid treatment agreement alert	9%	24%	30%
Naloxone recommendation alert	10%	6%	21%
Opioid management dashboard	15%	11%	27%
None of these	30%	20%	30%
Unsure	20%	21%	43%

From a Regulatory standpoint, how useful is the Opioid Use Disorder Toolkit to you and the healthcare providers at your institution?
1 Not at all useful — 2.2 — 2.8 3.1 — 3 — 4 — 5 Extremely useful

How would you rate the impact of the Opioid Use Disorder Toolkit on your healthcare team?
1 No impact — 2.2 2.5 2.8 — 2 — 3 — 4 — 5 High impact

● Community Works Participants (n = 20) ● Regulatory Alignment Participants (n = 33) ● Control Group (n = 35)

CMS Reimbursement

SCENARIO: At a meeting with various internal stakeholders, your CEO mentions that she wants to see CMS reimbursement improve but isn't entirely sure how the organization can track that.

What workflow processes would you tell the CEO that you have implemented to maximize reimbursement? (open)

Provided solution	88%	69%
No solution	12%	31%

■ Regulatory Alignment (n = 33) ■ Control Group (n = 35)

"The implementation of more effective and streamlined clinical documentation processes for nurses, ancillary staff and providers to better capture the required quality and regulatory data."

"Participation in MIPS to avoid negative payment adjustment and PI program for the hospital"

"2 midnight rule, pre-auth and financial clearance, BCMA, HCC, Diagnosis assistant to name a few."

"Standard PI workflows - eRx, providing patients access to their EHR, sending TOC documents"

Telehealth

SCENARIO: Recent stay-at-home and safer-at-home efforts have led to an increase in your organization's priority related to telehealth.

Please rate the ability of your telehealth system in the following:

Ability of the patient to use the available tools	3.1	3.5
Expanding access to care	3.3 3.5	
Improving team-based care	2.5	3.3
Shifting to a value-based care model	2.7 3.0	

1 Unsure/no help — 2 — 3 — 4 — 5 Extremely helpful

● Community Works (n = 4) ● Control group (n = 15)

Confidence and Barriers

● Community Works (n = 20) ● Regulatory Alignment (n = 33) ● Control group (n = 35)

How confident are you in the following areas?

Implementing best practices for mitigating the opioid epidemic	2.8	3.2	
Implementing data and analytics to achieve desired outcomes for regulatory reporting	3.1	3.4	
Implementing real-time documentation within your organization	3.4	4.2	
Using new solution releases to optimize workflows at your organization	3.3 3.4		
Describing CMS quality reporting requirements and best practices for reporting compliance	2.7	3.9	
Implementing strategies for compliance with Promoting Interoperability, MIPS requirements, and other impactful 2020 Regulations	2.8	3.8	
Understanding the relationship between reimbursement models and regulation	2.8	3.3	

1 Not confident — 2 — 3 — 4 — Extremely confident 5

What are your top barriers or issues preventing you from aligning to regulations? [open]
BUY-IN   RESOURCES
TIME   ALIGNMENT ACROSS HOSPITALS
COST   CUSTOMIZATION

Did the Community Works Meeting address or help you overcome any of these barriers?
Yes, 35% No, 65%

What are your top barriers or issues preventing you from aligning to regulations? [open]
BUY-IN   WORKFLOWS
TIME   KNOWLEDGE
COST   LACK OF COMMUNICATION

Did the Regulatory Alignment Meeting address or help you overcome any of these barriers?
No, 21% Yes, 79%

OUTCOMES SUMMARY – COMMUNITY WORKS

Performance Impact

Specific performance improvements were shown when comparing learners to a demographically matched control, including:

✓ Improved recognition and use of the Opioid Use Disorder Toolkit
✓ Heightened perception of utility and impact of the Opioid Use Disorder Toolkit
✓ Heightened perception of the Cerner telehealth system to improve team-based care and allow patient use of available tools
✓ Greater confidence in implementing best practices for mitigating the opioid epidemic
✓ Increased ability to overcome barriers to implementing operational processes, including collaboration and cost justification

Overall, this activity led to a performance effect size of 0.27, indicating a performance shift of 19% compared to other Cerner users.
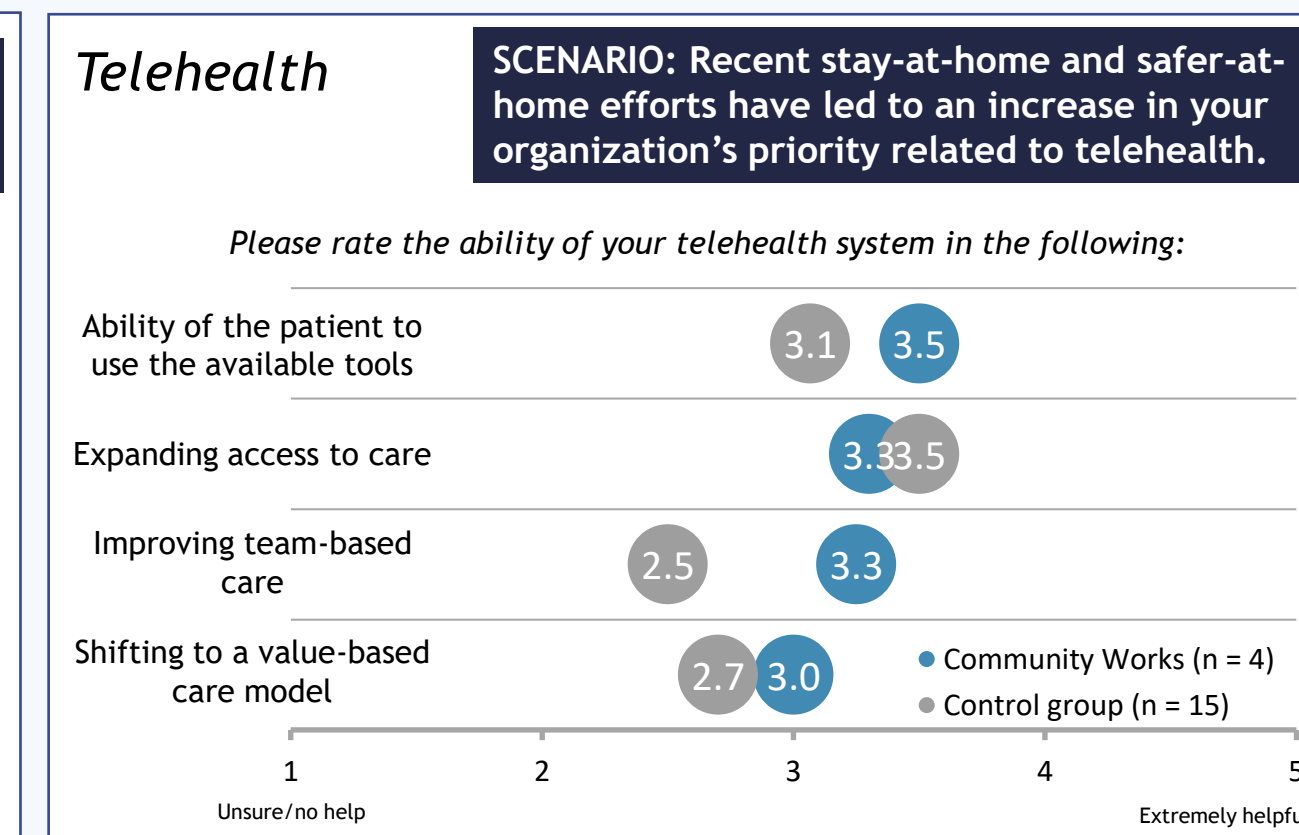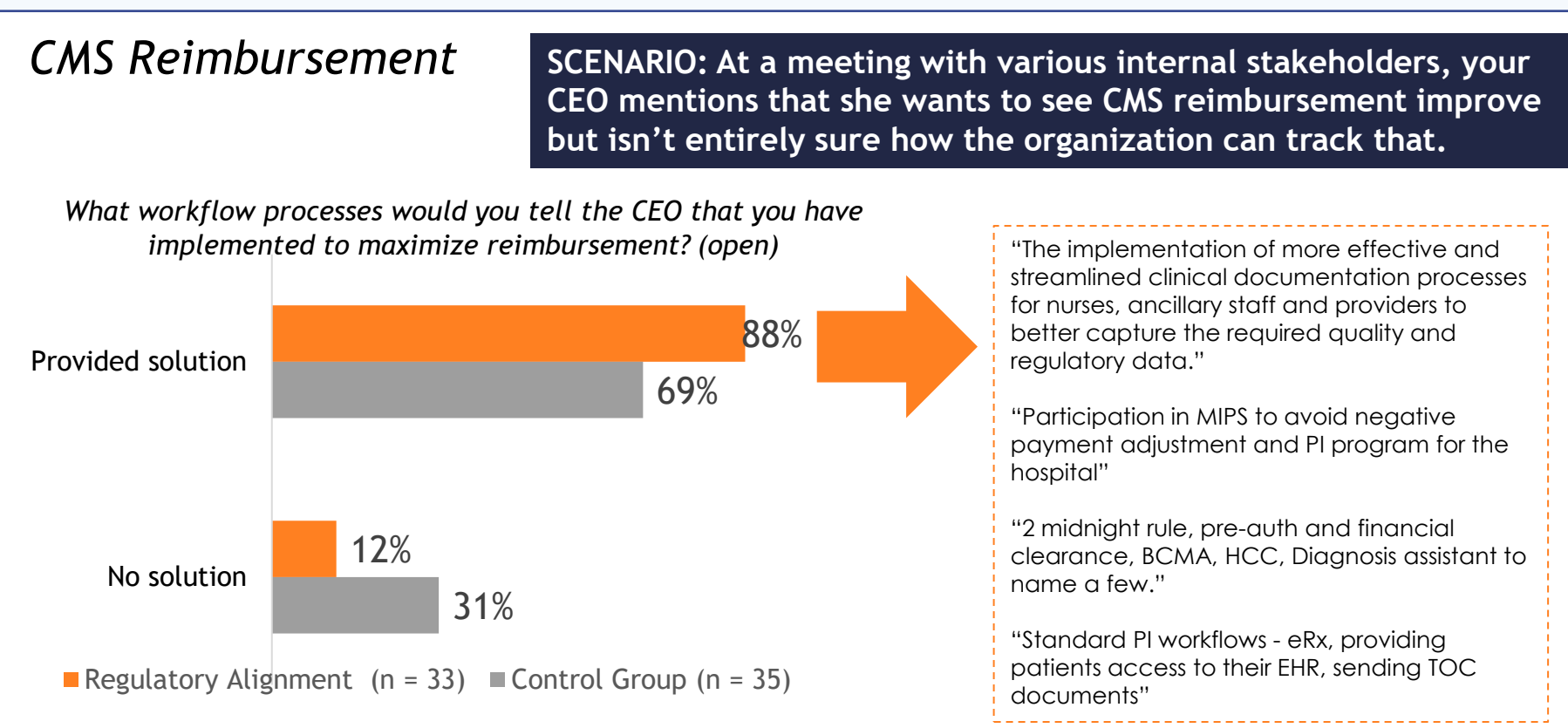
Cohen's d: 0.27

CONTROL   LEARNERS

OUTCOMES SUMMARY – REGULATORY ALIGNMENT

Performance Impact

Specific performance improvements were shown when comparing learners to a demographically matched control, including:

✓ Improved recognition and use of the Opioid Use Disorder Toolkit
✓ Heightened perception of utility and impact of the Opioid Use Disorder Toolkit
✓ Greater implementation of workflow processes to maximize CMS reimbursement
✓ Heightened perception of impact of Cerner platforms to meet needs for quality/regulatory reporting
✓ Greater confidence in ability to describe CMS reporting requirements, implementing compliance strategies, and understanding the relationship between reimbursement models and regulation
✓ Increased ability to overcome barriers to regulatory alignment

Overall, this activity led to a performance effect size of 0.48, indicating a performance shift of 32% compared to other Cerner users.
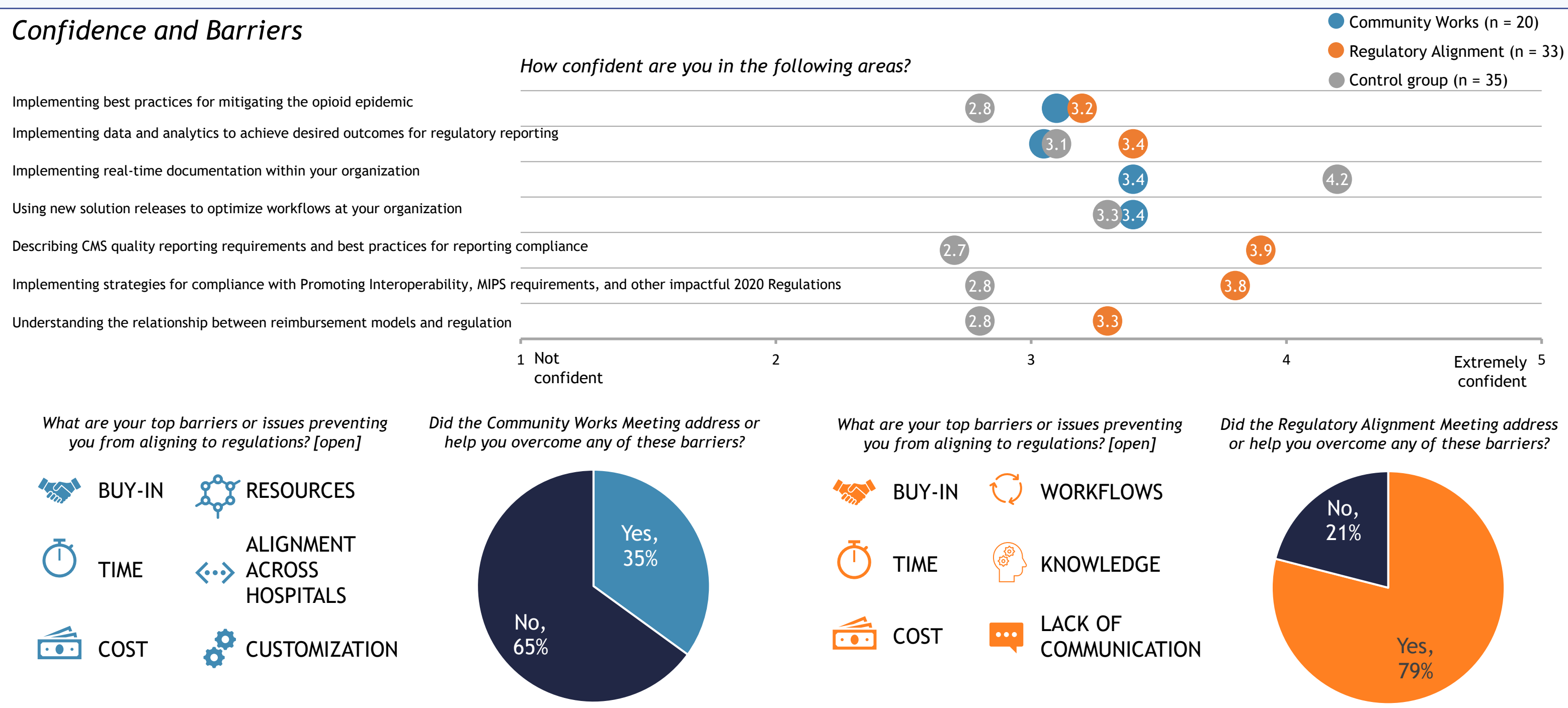
Cohen's d: 0.48

CONTROL   LEARNERS

CONCLUSIONS

In this assessment, we showed positive impact in several key and topical areas, including opioid awareness, CMS reimbursement, and telehealth. Further, we were able to identify specific topics for emphasis with future education programs for this audience. While intended to help with accreditation processes, leadership within Cerner has been using this assessment to discover key pain points for their end-users. This assessment has shown key Cerner stakeholders strategies to improve how they teach clinical process and workflow changes when using the digital tools to ultimately impact overall clinician performance and improve patient care.

Not only does this educational assessment show the effectiveness of these specific programs on healthcare information professional performance, but also how current methodology designed for clinicians can be applied to the assessment of other professional education. This may indicate the ability of the case scenario approach for other forms of professional education assessment as well, including MSLs/sales representatives, veterinary care, and law.

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