



California's
Controlled
Substance
Utilization
Review and
Evaluation
System

CURES 2.0

**Survey of
California
Physicians' and
Pharmacists'
Experience
with and
Attitudes about
CURES 2.0**

November 2017

California's Controlled Substance Utilization Review and Evaluation System (CURES 2.0)

Survey of California Physicians' and Pharmacists' Experience with and Attitudes about CURES 2.0

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EXECUTIVE SUMMARY

In 2013, California enacted a new law that provided dedicated funding for California's Controlled Substance Utilization, Review and Evaluation System (CURES), authorized an update and expansion of the CURES database and functionality, and mandated CURES registration for pharmacists and controlled substance prescribers. As part of a comprehensive evaluation of these updates (collectively known as "CURES 2.0"), a statewide, representative survey of California physicians and pharmacists was conducted to assess attitudes and beliefs about CURES and controlled substance use, and to identify areas for further improvement of CURES.

The survey was conducted with cooperation from the California State Board of Pharmacy, the Medical Board of California, and the Osteopathic Medical Board of California. The overall survey response rate was 24% (n = 1904). Comparison of aggregate data on responders and non-responders indicated that responders appear to be representative of California physicians and pharmacists.

Response patterns were broadly similar for pharmacists and physicians. Compared to physicians, pharmacists generally expressed more positive attitudes about CURES, were more likely to register for and use CURES, were more concerned about prescription drug abuse, and expressed a greater sense of professional obligation to use CURES. Pharmacists reported near perfect compliance with mandatory CURES registration (which took effect a few months prior to survey deployment), compared to approximately 82% compliance among DEA-licensed physicians. An additional 12% of physicians reported that they planned to register within the next 3 months. Physicians most frequently cited the time required to register and lack of importance as reasons for not registering; technical problems with CURES were rarely cited as a reason for not registering.

Thirty-one percent of physicians and 20% of pharmacists reported a recent decrease in the number of controlled substances they prescribed and dispensed, respectively. Survey data indicated that access to data from CURES, increased professional awareness of controlled substance risks and benefits, and new clinical guidelines all played major roles in decreasing prescribing and dispensing.

Twenty-eight percent of physicians indicated that they check CURES for least 50% of the patients to whom they prescribe controlled substances. Thirty-six percent of pharmacists indicated that they check CURES for at least 50% of the controlled substance prescriptions they dispense. Sixty percent of physicians and 80% of pharmacists agreed that CURES was helpful. Thirty-two percent of physicians and 59% of pharmacists agreed that CURES was easy to use. Among physicians and prescribers who had used both CURES 1.0 and CURES 2.0, more than 90% rated CURES 2.0 as the same or better than CURES 1.0 across all categories. Forty-seven percent of physicians and 40% of pharmacists reported a need for additional training on how to

use CURES. The most commonly identified needs for additional training related to the new advanced features of CURES 2.0, such as peer-to-peer messaging.

A substantial majority of physicians (81%) and pharmacists (91%) felt that their peers should check CURES when prescribing or dispensing a controlled substance, respectively. Nineteen percent of physicians and 36% of pharmacists felt that their peers ought to be using CURES 100% of the time when prescribing or dispensing controlled substances. In contrast, only 23% of physicians felt that physicians should be required to check CURES when prescribing. The corresponding value for pharmacists was 39%, indicating that nearly two-fifths of pharmacists supported mandatory CURES use for pharmacists. Over two-thirds of pharmacists (69%) agreed that checking CURES was considered standard of care, compared to 40% of physicians.

When asked to give open-ended suggestions or comments, many physicians and pharmacists felt that CURES was not relevant to their practice, particularly those who did not practice in California. Some physicians who rarely prescribed controlled substances and pharmacists who worked in hospital settings also felt that CURES was not relevant to their practice. Finally, several pharmacists recommended improving the accuracy and timeliness of CURES data, including adding data from federal pharmacies in California.

INTRODUCTION AND BACKGROUND

Prescription Drug Monitoring Programs (PDMPs) are considered an important, but under used, tool for combating the ongoing epidemic of prescription opioid abuse and overdose.^{1,2}

Preliminary evidence suggests that PDMP use may be associated with changes in prescribing behaviors;³⁻⁵ however, important knowledge gaps remain around PDMPs. Each state has a separate PDMP, so the administration, technical details, strengths, and weakness of PDMPs vary widely across states. Thus, to a large extent, the strengths, weaknesses, and effectiveness of PDMPs must be evaluated on a state-by-state basis, because suggestions for improving PDMPs in one state may not be applicable to PDMPs in other states.

On the other hand, all PDMPs share the same general characteristics and so findings related to general PDMP attributes (e.g., ease of registration and use, data accuracy and timeliness) do likely generalize across states. In addition, social and professional norms (i.e., physicians' and pharmacists' beliefs and attitudes about PDMPs) are also likely to be an important determinant of PDMP use and effectiveness, but these concepts have so far been relatively unexplored. Most prior research on barriers to PDMP use has focused on state-specific technical and logistical barriers (e.g., website design, registration processes, etc).⁶⁻⁹

California has the nation's oldest prescription drug monitoring program. CURES was established in 1939. An electronic interface that prescribers and pharmacists could search in real time was implemented in 2009, but the CURES program was de-funded in 2011 due to state budget cuts. In September 2013, California enacted a new law to update CURES. This law (SB-809) provided a dedicated funding source for CURES. It also required CURES to streamline the registration process and mandated registration for dispensers and DEA-licensed prescribers. The bill did not specifically define all of the features that needed to be part of the CURES upgrade. Nevertheless, as part of the upgrade, CURES personnel added the following new features: streamlined electronic registration process, automatic alerts for certain high risk prescribing practices, ability to send peer-to-peer messages within CURES, ability to flag patient-provider agreements in CURES, and ability for CURES users to identify delegates who can initiate CURES patient reports. The bundle of upgrades authorized by SB-809 is collectively referred to as "CURES 2.0." The current CURES home page can be accessed at the following web address:

<https://oag.ca.gov/cures>.

To evaluate the impacts of CURES 2.0, a representative, statewide survey of California physicians and pharmacists was conducted by University of California, Davis researchers in collaboration with the California Department of Public Health. The survey focused on physicians and pharmacists because these two professions comprise over 80% of all CURES users and because they represent the two primary categories of CURES users, prescribers and dispensers. Surveys were completed between August 2016 and January 2017. Data collection started after California implemented mandatory CURES registration (July 1, 2016), in order to ensure that all

respondents had a chance to register for CURES prior to the survey. The primary survey goals were as follows:

- To assess attitudes and beliefs about controlled substance misuse and abuse among California physicians and pharmacists
- To assess compliance with mandatory CURES registration
- To evaluate the impact of changes made as part of CURES 2.0
- To evaluate beliefs, attitudes, and social and professional norms related to using CURES
- To elicit suggestions and identify priority areas for further improvement of CURES

This report provides a detailed account of the survey methodology and a descriptive account of survey results. More detailed analysis of predictors of intent to use CURES and of the responses to an open-ended survey question will be published separately. The intended audience for this report includes the California Departments of Justice and Public Health, California state licensing and regulatory boards, California physicians and pharmacists, as well as researchers and public health officials in other states.

FUNDING AND ACKNOWLEDGEMENTS

This survey was funded by the Harold Rogers Prescription Drug Monitoring Program (BJA cooperative agreement 2015-PM-BX-K001 awarded to the California Department of Justice) and the Prevention for States program (CDC cooperative agreement 1U17CE002747 awarded to the California Department of Public Health). Neither funding agency had any input into the design or conduct of this survey, or into the analysis of results. The final decision about what to publish in this report rested solely with the listed report authors.

The authors gratefully acknowledge the advice, cooperation and in-kind support provided by staff from the California State Board of Pharmacy, the Medical Board of California, and the Osteopathic Medical Board of California, without which this survey would not have been possible.

METHODS

Survey development

This survey was developed and conducted by the University of California Davis in collaboration with the California Department of Public Health, and with cooperation from the California State Board of Pharmacy, the Medical Board of California (MBC), and the Osteopathic Medical Board of California (OMBC).

Survey questions assessed the following topics: demographics and prescribing / dispensing practice patterns, concern about prescription drug misuse and abuse, beliefs about CURES effectiveness, CURES registration status, barriers to CURES registration and use, beliefs about professional norms, social norms, and moral obligations regarding CURES, questions about

specific features of CURES 2.0, need for additional training on how to use CURES, and comparing CURES 2.0 versus CURES 1.0. Survey questions were informed in part by reviewing previously published PDMP surveys.⁶⁻⁹ Questions for allopathic and osteopathic physicians were identical; questions for pharmacists were very similar to questions for physicians, but asked about dispensing or managing rather than prescribing controlled substances. In order to reduce respondent fatigue, skip logic was used so that, to the extent possible, prescribers only answered questions relevant to their practice. For example, physicians who reported not having a DEA license (and so were not eligible to register for CURES) did not answer questions about CURES, and physicians who reported not being registered for CURES did not answer questions about how often they checked CURES. An open-ended question asking “Is there anything else you would like to tell us about CURES? (e.g., problems, recommendations)” was also included. The survey was web-based and was hosted by Qualtrics (Provo, UT), an online survey program. The complete physician and pharmacist surveys are shown in Appendix A and B, respectively.

Survey questions were reviewed by the study team and approved by the 3 regulatory boards. Community physicians and pharmacists not related to the study pilot tested the survey to identify any ambiguous questions and technical problems with the web interface. This project was reviewed by the University of California Davis Institutional Review Board and deemed to be program evaluation rather than human subjects research.

Sampling strategy

The survey sample was all pharmacists and allopathic physicians with licenses expiring on November 30, 2016 and all osteopathic physicians with licenses expiring on December 31, 2016. Licenses in California must be renewed every 2 years and expire at the end of the licensee’s birth month; for osteopathic physicians, licenses must be renewed every 2 years and expire 6 times a year based on licensee birth month. Therefore, the sample comprised a quasi-random sample of one-twenty-fourth of all California pharmacists ($n = 1626$) and allopathic physicians ($n = 5701$) and one-twelfth of all California osteopathic physicians ($n = 577$).

Initial survey invitations were mailed from each regulatory board between August and October, 2016 and were included in the same envelope as the licensee’s license renewal paperwork. One or two additional reminders were sent by mail from the survey team; an additional reminder letter was mailed from each regulatory board using envelopes showing that board’s return address. Allopathic physicians also received several email reminders. The OMBC and the State Board of Pharmacy do not maintain licensee email addresses and so could not send out email reminders. All survey materials included the logos of both the University of California Davis and the applicable regulatory board. A detailed timeline of the survey reminder schedule for each survey is shown in Appendix C. All surveys were closed on January 31, 2017. Licensees were advised that participation was voluntary and that their individual responses would not be shared with the regulatory boards. All surveys were completed on the web. Respondents could access the survey by typing in a short web address, scanning a QR code on their cell phone, or clicking on a survey link on the appropriate regulatory board’s web page. Licensees were required to type

in their license number before starting the survey. This approach prevented licensees from taking the survey multiple times, restricted respondents to licensees in the sample, and allowed us to keep track of respondents in order to avoid sending reminders to licensees who had already completed the survey.

Statistical analysis

All surveys opened with 2 items assessing respondents' concern about prescription drug misuse and abuse. Because physicians without a DEA license were screened out after these 2 items, physicians who completed these 2 survey items were considered responders for purposes of calculating overall survey response rate. To assess for response bias, the demographic and training characteristics of responders and non-responders were compared using aggregate data obtained from each regulatory board. Descriptive statistics (means and standard deviations for continuous measures, proportions for ordinal and Likert-type items) were calculated for each survey item. Responses from allopathic and osteopathic physicians were combined for all analyses; differences between allopathic and osteopathic physicians were not investigated.

Path analysis

A subset of items was also used to conduct a *path analysis* to identify factors associated with physicians' and pharmacists' intent to use CURES during the next 3 months. Path analysis is a statistical method for modeling and evaluating causal associations between variables.¹⁰ Full details of this analysis will be published elsewhere, and so are not repeated in this report.

Qualitative analysis

Responses to the open-ended survey question were analyzed using content analysis followed by thematic analysis. For the content analysis, two investigators independently reviewed responses to identify content categories that emerged from the data. Investigators met weekly to discuss provisional categories, refine definitions, and discuss challenging cases. Codes were developed and reviewed jointly to ensure coding consistency while minimizing investigator bias. Disagreements were resolved by discussion, resulting in a final list of 18 codes. Both investigators independently coded responses using the final list of codes and compared results until they could apply codes reliably with high levels of agreement on a 5% sample of all open-ended responses. The remaining responses were each coded by one investigator; both investigators reviewed all comments where coding was considered ambiguous. The prevalence of each content category was assessed separately for physicians and pharmacists; the final list of codes was identical for both groups of respondents. Open-ended responses varied in length from a few words to a few paragraphs; therefore, coding categories were exhaustive but not mutually exclusive. For example, if a single response mentioned three different categories, that response was assigned to all three categories.

For the thematic analysis, investigators reviewed responses for each code to identify categories and themes that occurred within the responses. Crosscutting categories and themes were identified and discussed. Based on this analysis, codes were collapsed into larger themes.

RESULTS AND DISCUSSION

Response rate and sample representativeness

The survey received 1904 responses, for an overall response rate of 24%. As shown in Table 1, the response rate for pharmacists was substantially higher than rates for physicians. Detailed comparison of survey responders versus non-responders is shown in Table 2. Overall, characteristics for responders and non-responders were similar. Compared to non-responders, responders were older and more likely to be white or Asian / Pacific Islander. Physician responders were more likely to report psychiatry or emergency medicine as their primary specialty and to have a California address of record. Pharmacist responders were more likely to have a BS degree than a PharmD degree; this difference likely reflects the age difference between responders and non-responders, because PharmD became the required entry-level pharmacist degree in 2003.

Table 1. Survey response rates

Item	Pharmacists	MBC	OMBC	All physicians	Total
Responses	498	1289	117	1406	1904
Invitees ^a	1626	5701	577	6278	7904
Response rate (%)	30.6	22.6	20.3	22.4	24.1

^aPharmacy and MBC samples included licensees with out of state addresses. OMBC sample included only licensees with California addresses.

A major strength of this survey was collaboration with and support from the State Board of Pharmacy, OMBC, and MBC. Cooperation from these boards made it possible to survey a representative, statewide sample of physicians and pharmacists, to achieve a higher response rate than prior web-based surveys of prescription drug monitoring programs,^{8,11} and to compare characteristics of responders and non-responders to assess sample representativeness and possibility of response bias. As shown in Table 2, physician responders were slightly more likely to report specialties that commonly prescribe controlled substances (e.g., emergency medicine, psychiatry, internal medicine, family medicine, and anesthesiology). However, responders and non-responders were otherwise similar, suggesting that the sample is likely to be representative of California pharmacists and physicians despite a response rate that is lower than traditional paper surveys delivered by U.S. mail.

Table 2. Comparison of responder and non-responder characteristics.

Item Response	Physicians				Pharmacists ^f				
	Responders n = 1406		Non-Responders n = 4872		Responders n = 497		Non-Responders n = 1119		
Gender (n, %) ^a					Gender (n, %)				
Male	908	64.6	3152	64.7	Male	207	41.7	439	39.2
Female	498	35.4	1719	35.3	Female	290	58.4	680	60.8
Mean age, Years (SD) ^b	56.7	(13.0)	52.7	(14.1)	Mean age, Years (SD)	48.9	(13.6)	44.8	(13.8)
Foreign medical graduate (n,%) ^c	289	22.4	1065	24.1					
Race and ethnicity (n, %) ^d					Degree type (n, %) ^g				
White	672	47.8	1843	37.8	PharmD	332	66.8	868	77.6
Black	40	2.8	126	2.6	BS	165	33.2	251	22.4
Asian/Pacific Islander	389	27.7	1571	32.2					
Hispanic	40	2.8	226	4.6	Pharmacy school (n, %)				
Other	16	1.1	26	0.5	Foreign school	61	12.3	89	8.0
Decline to state	198	14.1	764	15.7	US school	436	87.7	1030	92.1
Missing	51	3.6	316	6.5	California school	251	50.5	644	57.6
Primary specialty (n, %) ^e									
Internal medicine	186	13.2	589	12.1					
Family medicine	175	12.4	503	10.3					
Psychiatry	116	8.3	250	5.1					
Emergency medicine	93	6.6	185	3.8					
Anesthesiology	78	5.5	228	4.7					
OBGYN	55	3.9	207	4.2					
Pediatrics	84	6.0	295	6.1					
Pain medicine	10	0.7	23	0.5					
Radiology	53	3.8	241	4.9					
Current license	1390	98.9	4450	91.3					
California address ^c	1123	87.1	3419	77.5	California address	444	89.2	974	86.4

^a1 missing value; ^bweighted average of osteopathic and allopathic physician data; ^cReported for allopathic physicians only (1,289 responders; 4,412 non-responders); ^dCategories not mutually exclusive; ^eCategories are mutually exclusive; only results for the most common specialty categories are shown; ^fData missing for 10 pharmacists; ^gPharmD became the required entry-level degree in 2003.

Respondent characteristics

All California pharmacists were required to register for CURES by July 1, 2016. According to California's mandatory CURES registration law (SB-809), only physicians authorized to prescribe controlled substances (i.e., physicians who are licensed in California and who have a DEA license assigned to a California address) are required to register for CURES. Of the physicians surveyed, 91% (n = 1275) reported having a DEA license to prescribe controlled substances, and 78% (n = 995) of physicians with a DEA license reported currently prescribing controlled substances in their practice. Physicians who self-reported not having a DEA license did not answer any further survey questions, because they are not eligible to register for or use CURES. The survey did not prompt physicians to specify whether their DEA license was assigned to an address in California. Thus, it is not possible to determine exactly how many physician respondents had DEA licenses associated with a California address and so were required to register for CURES under SB-809.

Analysis of answers to the open-ended survey question indicated that a large proportion of the 22% of physicians who reported not prescribing controlled substances were retired or not in active clinical practice. Nineteen percent of all physician respondents commented that they felt CURES was not relevant to their practice, and about half of these responses indicated that this lack of relevance was due to the physician being retired or working outside of California.

Table 3 shows respondent demographics (excluding physicians who reported not having a DEA license to prescribe controlled substances). Physician respondents were predominantly male and white; pharmacist respondents were predominantly female. Pharmacists were 47% Asian and 42% white. Physicians were slightly older than pharmacists.

Table 3. Respondent demographics

Item Response	Physicians n = 1275 ^a		Pharmacists n = 482	
	n	%	n	%
Gender				
Male	734	63.9	193	43.3
Female	407	35.4	251	56.3
Other	8	0.7	2	0.4
Did not respond	126		36	
Ethnicity				
Not Hispanic or Latino	1034	93.0	421	97.7
Hispanic or Latino	78	7.0	10	2.3
Did not respond	163		51	
Race and Ethnicity				
American Indian or Alaskan Native	6	0.5	4	0.9
Asian	272	24.6	206	47.1
Black or African American	34	3.1	9	2.1
Hawaiian or Pacific Islander	14	1.3	5	1.1
White	694	62.7	184	42.1
Other	86	7.8	29	6.6
Did not respond	169		45	
	Mean	SD	Mean	SD
Respondent age (years)	55	12.9	49	13.4
Did not respond (n)	152		45	
Years in practice	23	13.2	21	13.7
Did not respond (n)	139		37	

^aPhysicians who reported having a DEA license

Table 4 shows physician-reported specialty and pharmacist-reported practice location. The most common physician specialties were adult primary care (i.e., internal medicine and family medicine) and surgical specialties. The most common pharmacist practice location was chain pharmacy (31%), followed by hospital (26%). Nine percent of pharmacists reported not being involved in patient care. Twelve percent of pharmacists noted in the open-ended survey question that CURES was not relevant to their practice, and many of these specified that CURES was not relevant to their practice because they only dispensed controlled substances in the hospital setting.

Table 4. Practice specialties and dispensing sites of survey respondents

Item Response	Physicians n = 1275 ^a		Pharmacists n = 482	
	n	%	n	%
Specialty				
Anesthesiology and pain medicine	81	7.2		
Emergency medicine	98	8.7		
Pediatrics	94	8.3		
Adult primary care	454	40.1		
Psychiatry	110	9.7		
Surgical specialty	166	14.7		
Other	128	11.3		
Did not respond	144			
Dispensing Site				
Chain pharmacy			137	30.8
Hospital			116	26.1
Independent pharmacy			67	15.1
Mass merchandiser			3	0.7
Supermarket			21	4.7
Other patient care practice			60	13.5
Other non-patient care			41	9.2
Did not respond			37	

^aDemographic counts available for physicians who reported having a DEA license

Prescribing and dispensing practices

The survey included several items designed to gauge how often respondents prescribed or dispensed controlled substances. Based on respondents' description of their clinical practice patterns, physicians who reported prescribing any controlled substances were estimated to prescribe to a mean of 55 patients per month (median=35, interquartile range 22-65). Pharmacists were estimated to dispense or manage a mean of 760 controlled substance prescriptions per month (median=522, IQR 196-1044).

Respondents were also asked about changes in their prescribing and dispensing practices over the past 3 months. As shown in Table 5, 31% of physicians and 20% of pharmacists reported prescribing / dispensing fewer controlled substances, respectively. Very few respondents indicated that they had prescribed / dispensed more controlled substances over the past 3 months.

Table 5. How have your prescribing / dispensing practices changed in the last 3 months?

Item Response	Physicians n = 1275 ^a		Pharmacists n = 482	
	n	%	n	%
Prescribe (dispense) far fewer controlled substances	137	11.6	24	5.4
Prescribe (dispense) fewer controlled substances	231	19.6	65	14.7
No change	800	68.0	321	72.5
Prescribe (dispense) more controlled substances	8	0.7	31	7.0
Prescribe (dispense) far more controlled substances	0	0.0	2	0.5
Did not respond	99		39	

^aPhysicians who reported having a DEA license.

Respondents who reported any change in practice were then asked about the reasons for this change (Table 6). For physicians, increased professional awareness of risks and benefits was by far the most commonly cited reason for changes in prescribing, and was endorsed by 65% of physicians who reported a recent change in their prescribing practices. Other common reasons cited by physicians were new clinical guidelines (47%) and increased patient awareness of risks and benefits (37%). The majority of pharmacists (55%) also cited increased professional awareness. For pharmacists, information from CURES was the most common reason endorsed for changes in their dispensing practices (63%); only 25% of physicians endorsed this factor. Other commonly cited reasons pharmacists endorsed for changing dispensing habits were increased professional awareness of risks and benefits (55%) and new clinical guidelines (35%). Among physicians who endorsed “other” reasons, most cited either increased concern about opioid risks or working in a setting that did not involve controlled substance prescribing. *These results suggest that access to CURES has a major effect on pharmacist dispensing practices, and that increased professional awareness of risks and benefits plays a major role in decreased prescribing /dispensing for both physicians and pharmacists.*

Table 6. What factors led you to change your prescribing / dispensing practices [Check all that apply]?

Item Response	Physicians n = 376 ^a		Pharmacists n = 122 ^a	
	n	%	n	%
Change in practice location or patient mix	90	24.1	36	28.8
Increased professional awareness of risks, benefits, and other solutions	243	65.2	67	54.9
New clinical guidelines and recommendations	175	46.9	43	35.2
CURES providing greater access to patient prescription drug history	94	25.2	77	63.1
Increased patient awareness of risks and benefits	136	36.5	38	31.1
Medico-legal ramifications	103	27.6	14	11.5
Other	55	14.8	14	11.5

^aRespondents who reported a change in their prescribing or dispensing habits were eligible to answer this question.

Attitudes about use, misuse, and abuse of controlled substances

The first two survey items assessed respondents' attitudes about prescription drug misuse and abuse. Table 7 shows that 87% of physicians and 93% of pharmacists reported being at least moderately concerned about prescription drug misuse and abuse in California; 44% of physicians and 62% of pharmacists were extremely concerned about prescription drug misuse and abuse in California. Overall, respondents were slightly less concerned about prescription drug misuse in their local community compared to the state overall, and pharmacists were substantially more concerned about prescription drug misuse and abuse than physicians.

Table 7. How concerned are you about prescription drug misuse and abuse among patients in:

Item Response	Physicians n = 1401 ^a				Pharmacists n = 482 ^a			
	California		Practice Community		California		Practice Community	
	n	%	n	%	n	%	n	%
Not concerned at all	42	3.0	65	4.7	2	0.4	9	1.9
Slightly concerned	137	9.8	230	16.5	34	7.1	60	12.6
Moderately concerned	603	43.4	570	41.0	148	30.8	147	30.9
Extremely concerned	609	43.8	525	37.8	296	61.7	260	54.6
Did not respond	10		11		2		6	

^aAll respondents were eligible to answer these items, including physicians who reported that they did not have a DEA license.

The survey also included items about the perceived benefits and risks of controlled substances in California (Figures 1 and 2). Physicians and pharmacists provided similar estimates about perceived benefits and risks for California overall. Based on the responses shown in Figures 1 and 2, the mean estimate for both physicians and pharmacists was that about one-third of patients taking controlled substances in California misused or abused them, whereas fewer than 60% of patients taking controlled substances in California benefited from them

Figure 1. Percent of California patients perceived to misuse or abuse controlled substance medications

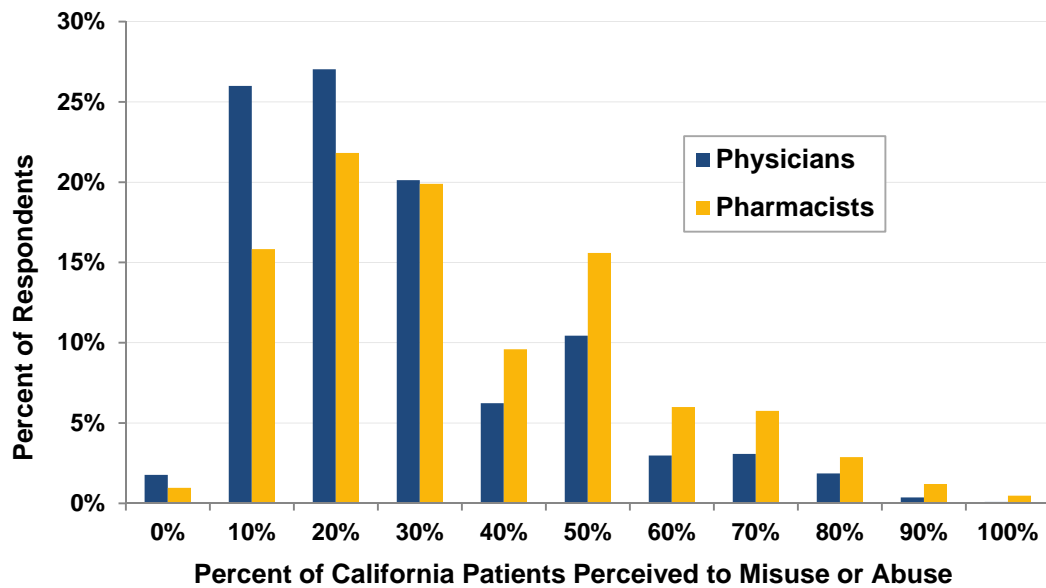
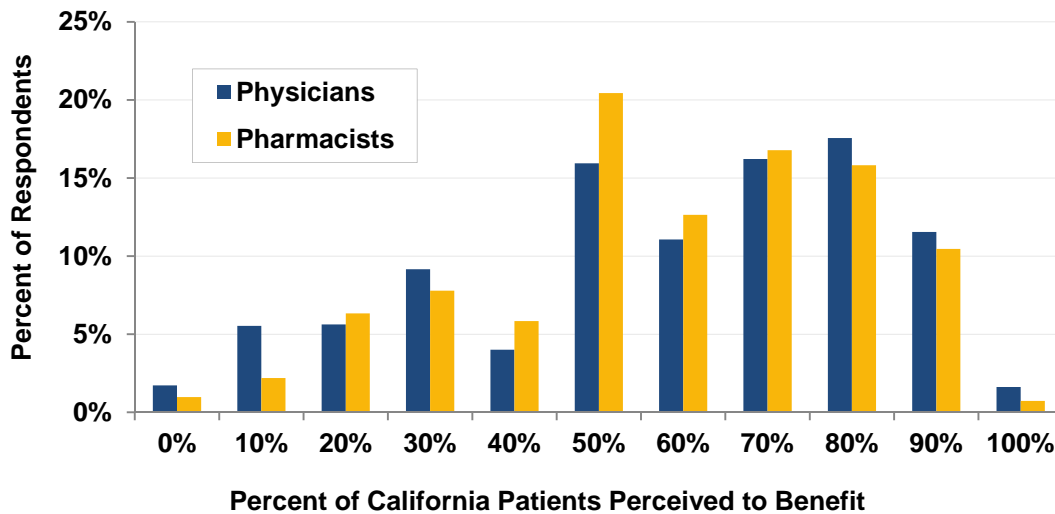


Figure 2. Percent of California patients perceived to benefit from controlled substance medications



Respondents were then asked these same questions specifically about their own patients. Both physicians and pharmacists estimated that the rate of misuse and abuse was substantially lower among their patients compared to all California patients (Figures 3 and 4). This difference may indicate that respondents think their own patients have lower risk of misuse or abuse, or that respondents consider themselves to have safer or more cautious prescribing habits than typical physicians and pharmacists in California.

Figure 3. Physicians: What percent of your own patients (compared with California patients) taking controlled substance medications do you feel misuse or abuse them?

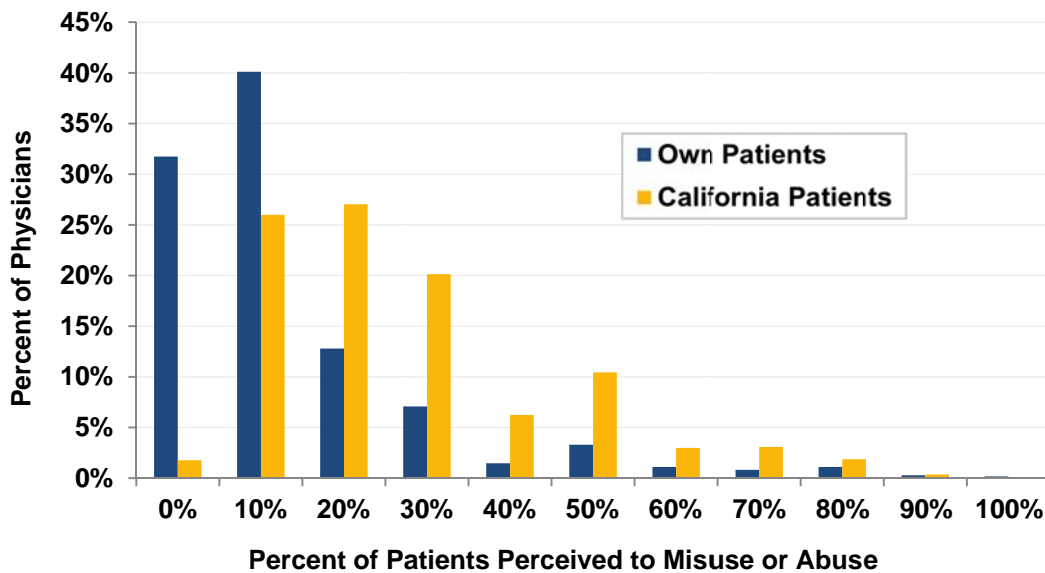
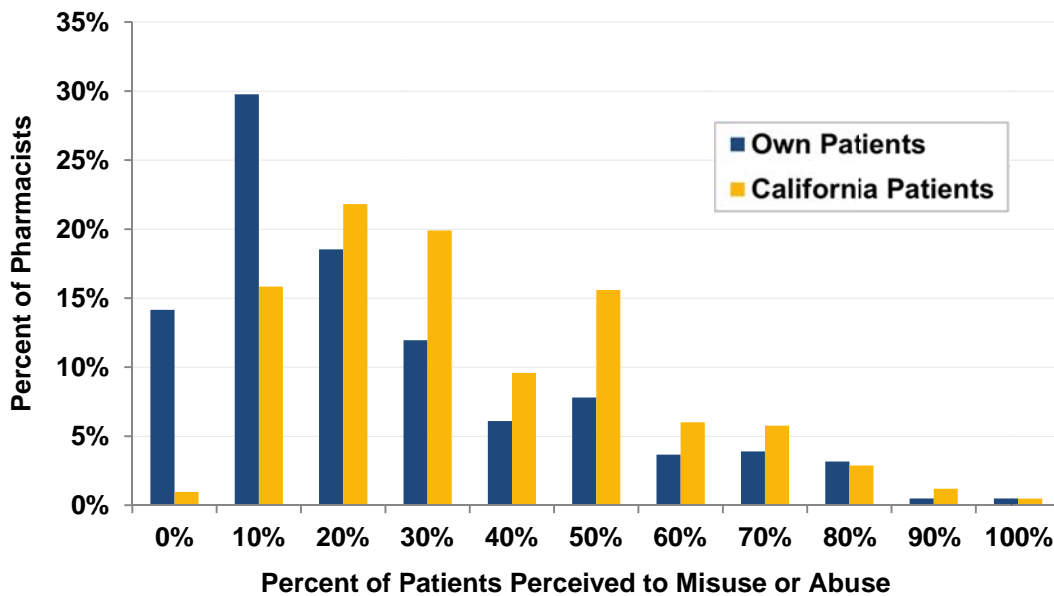
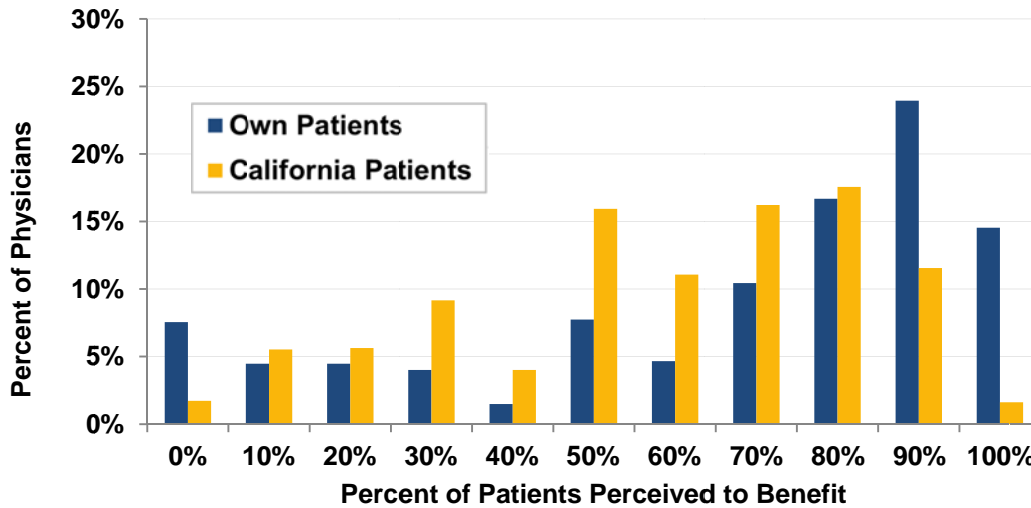


Figure 4. Pharmacists: What percent of your own patients (compared with California patients) taking controlled substance medications do you feel misuse or abuse them?



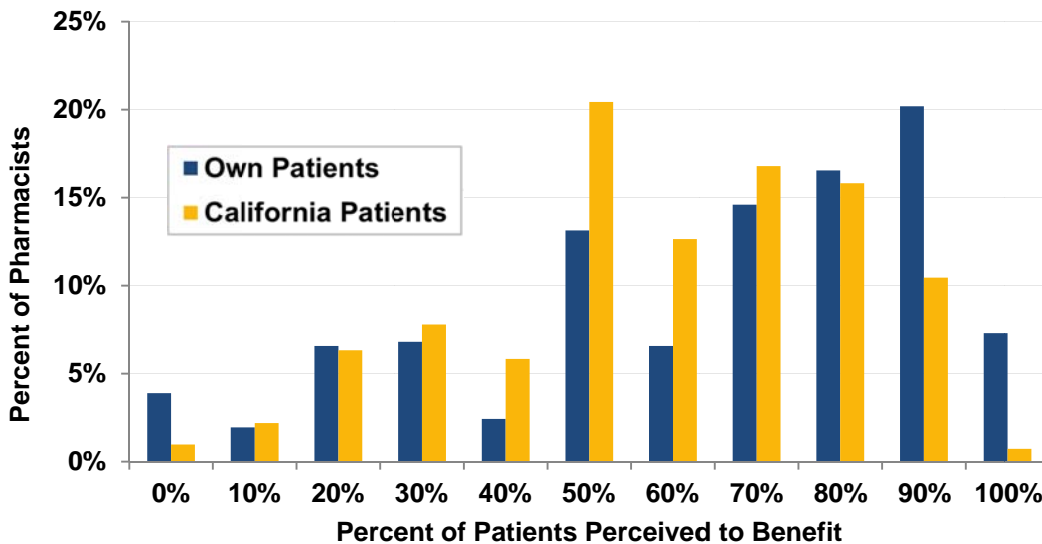
When asked about patient benefit, physicians estimated that a higher proportion of their patients benefited from controlled substances compared to the state average (Figure 5).

Figure 5. Physicians: What percent of your own patients (compared with California patients) taking controlled substance medications do you feel benefit from them?



In contrast, pharmacists estimated that a lower proportion of their patients benefited compared to the state average (Figure 6). This difference between pharmacists and physicians may be due to the fact that physicians have more detailed clinical information on their patients (compared to pharmacists) or that physicians are more inclined to presume that prescriptions they write are helping their patients.

Figure 6. Pharmacists: What percent of your own patients (compared with California patients) taking controlled substance medications do you feel benefit from them?



Awareness of CURES and CURES registration requirement

Tables 8 and 9 show rates of awareness of CURES and CURES registration status, respectively. Nearly all pharmacists and 92% of physicians reported that they had heard of CURES. Among respondents who were required to register for CURES, 82% of physicians and 96% of pharmacists reported that they were either registered or in the process of registering for CURES. Only 18 pharmacists were not registered or in the process of registering, and 16 of these reported that they were likely or very likely to register for CURES in the next 3 months. Of the 231 physicians who were not registered, 70% reported that they were likely or very likely to register for CURES in the next 3 months. *These results indicate that pharmacists have near perfect compliance with mandatory CURES registration. In contrast, only about 82% of DEA-licensed physicians reported compliance with mandatory CURES registration, though 94% of physicians were either registered or indicated that they were likely to register in the next 3 months.*

Table 8. Have you heard of CURES?

Heard of CURES?	Physicians n = 1275 ^a		Pharmacists n = 482	
	n	%	n	%
Yes	1156	92.0	464	98.5
No	101	8.0	7	1.5
Did not respond	18		11	

^aPhysicians who reported having a DEA license.

Table 9. Are you registered for CURES?

CURES Registration	Physicians n = 1275 ^a		Pharmacists n = 482	
	n	%	n	%
Yes	988	78.7	445	94.7
No	128	10.2	11	2.3
Registration in process	37	2.9	7	1.5
Do not know	103	8.2	7	1.5
Did not respond	19		12	

^aPhysicians who reported having a DEA license.

Tables 10 and 11 show additional information for respondents who had not yet registered for CURES, or who did not know their registration status. Among non-registered physicians, the majority (71%) were not aware that CURES registration was mandatory for DEA-licensed physicians. Separately, 71% of non-registered physicians reported that they were likely to register for CURES in the next 3 months. Among DEA-licensed physicians who were not registered and who reported being unlikely or very unlikely to register for CURES in the next 3

months, nearly half had addresses outside of California (46%; n = 31 of 68). Many physicians with addresses outside California likely also have DEA licenses with non-California addresses, and so are not covered by the mandatory CURES registration requirement.

Table 10. Are you aware that registering for CURES is mandatory for...?

CURES Registration	Physicians ^a n = 231		Pharmacists ^a n = 18	
	n	%	n	%
Yes	65	28.8	8	52.9
No	161	71.2	9	47.1
Did not respond	5		1	

^aRespondents who reported they had not registered, or did not know if they were registered, were eligible to answer this item.

Table 11. How likely are you to register for CURES within the following month?

Item Response	Physicians ^a n = 231		Pharmacists ^a n = 18	
	n	%	n	%
Extremely unlikely	35	15.5	1	6.3
Unlikely	33	14.6	1	6.3
Likely	76	33.6	5	31.3
Extremely likely	82	36.3	9	56.3
Did not respond	5		2	

^aRespondents who reported they had not registered, or did not know if they were registered, were eligible to answer this item.

Past and future CURES use

Table 12 shows how long respondents reported having used CURES. Based on the timing of survey administration, those who had been using CURES for 7 months or more likely registered at least a few months prior to implementation of mandatory registration on July 1, 2016. Overall, pharmacists reported having used CURES for longer than physicians. Over half (54%) of pharmacists reported using CURES for more than a year, and 70% reported using CURES for 7 months or more. In contrast, only 33% of physicians reported using CURES for more than a year, and 49% of physicians reported using CURES for 7 months or more. Forty percent of physicians indicated they had been using CURES for 6 months or less, suggesting that physicians were more likely to register at or near the mandatory registration deadline. *These results indicate that pharmacists have been using CURES longer than physicians and were more likely to have registered for CURES before mandatory registration went into effect.*

Table 12. How long have you been using CURES?

Item Response	Physicians ^a n = 988		Pharmacists ^a n = 445	
	n	%	n	%
Less than 3 months	287	29.4	70	15.8
4 to 6 months	210	21.5	61	13.7
7 months to 1 year	158	16.2	75	16.9
More than 1 year	321	32.9	238	53.6
Did not respond	12		1	

^aRespondents who reported they had registered were eligible to answer this item.

Table 13 indicates respondents' expected likelihood of using CURES at least once in the next 3 months. Overall, pharmacists were much more likely than physicians to report planned use of CURES in the next 3 months. Some of this difference may be due to physicians' and pharmacists' different roles regarding controlled substances.

Table 13. How likely are you to use CURES at least once in the next 3 months?

Item Response	Physicians ^a n = 1025		Pharmacists ^a n = 452	
	n	% ^b	n	%
Extremely unlikely	233	23.1	93	20.7
Unlikely	238	23.6	76	16.9
Likely	240	23.8	75	16.7
Extremely likely	296	29.4	205	45.7
Did not respond	18		3	

^aRespondents who reported they had registered, or were in process, were eligible to answer this item.

Barriers to CURES registration and use

Table 14 describes barriers to registration among physicians and pharmacists who were not already registered for CURES. Most physicians reported that they knew how to register for CURES; however, 29% indicated that they had more important things to do than registering for CURES and only 19% reported that the registration process takes little time, indicating *that lack of importance and time required for registration were the most commonly reported barriers to registration for physicians*. In contrast, only 13% of physicians reported encountering technical problems when trying to register. Given the small number of pharmacists not registered for CURES, it is difficult to draw meaningful conclusions about barriers to registration among pharmacists.

Table 14. Please indicate the extent to which you agree with the following:

Item Response	Physicians ^a		Pharmacists ^a	
	n = 231		n = 18	
	n	% ^b	n	% ^b
I have other problems that are more important than registering for CURES	65	29.4	7	43.8
I know how to go about registering for CURES	123	55.1	7	43.8
Every time I try to register for CURES, something goes wrong	29	13.2	6	37.6
Registering for CURES takes little time	41	18.7	4	35.1
I don't have access to a computer or the internet where I practice	10	4.4	2	12.5

^aRespondents who reported they had not registered, or did not know if they were registered, were eligible to answer this item.

^bPercent of respondents indicating they 'somewhat agree' or 'strongly agree' with item.

For respondents who reported being registered for CURES, the survey included several items related to the logistics of accessing and checking CURES. Table 15 shows results for items related to accessing CURES. Overall, physicians reported more difficulty accessing CURES than did pharmacists. For example, 43% of physicians rated registering for CURES as “difficult” or “very difficult” compared to 32% of pharmacists. Other than CURES registration, pharmacist and physicians indicated that remembering security questions was the most common barrier to accessing CURES, with 31% of physicians and 29% of pharmacists indicating that remembering passwords was difficult or very difficult. In the open-ended question, 7% of all physician respondents and 5% of all pharmacist respondents commented on barriers to accessing CURES, such as difficulties with registration and the time required to access CURES.

Table 15. How difficult are the following in CURES?

Item Response	Physicians n = 1025 ^a		Pharmacists n = 452 ^a	
	n	% ^b	n	% ^b
Registering for CURES	427	42.8	145	32.3
Logging in to CURES	275	28.3	55	12.53
Resetting your password	291	30.4	105	23.92
Remembering security questions	301	31.4	128	28.96

^aRespondents who reported they had registered, or were in process, were eligible to answer this item.

^bPercent of respondents indicating item was 'difficult' or 'very difficult'.

Table 16 shows results of items designed to assess non-logistical barriers to using CURES. One quarter (25%) of pharmacists and nearly one-third (32%) of physicians agreed or strongly agreed that CURES was not relevant to their practice. Pharmacists who were practicing in a hospital, a non-clinical setting, or some “other patient care practice” (see Table 4 above) were more likely to agree or strongly agree that CURES was not relevant to their practice than pharmacists working in retail settings (i.e., chain, supermarket, independent or mass merchandiser). Compared to pharmacists, physicians were more likely to agree that CURES was not easy to use, and to agree that they did not know how to use CURES. Very few physicians (9%) and pharmacists (2%) agreed that CURES is not helpful.

Table 16. Please indicate the extent to which you agree with the following:

Item Response	Physicians n = 988 ^a		Pharmacists n = 445 ^a	
	n	% ^b	n	% ^b
CURES is helpful	594	60.1	356	80.0
CURES is not relevant to my practice	302	30.6	108	24.2
CURES is easy to use	320	32.4	264	59.3
I don't know how to use CURES	194	19.7	31	6.9
CURES is checked by someone else in the office	107	10.8	60	13.5
I have limited or no access to CURES while I practice	112	11.3	45	10.1

^aRespondents who reported they had registered for CURES were eligible to answer this item.

^bPercent of respondents indicating they 'agree' or 'strongly agree' with item.

Patterns of CURES use

Table 17 shows frequency of CURES use reported by respondents. Pharmacists reported using CURES more often than physicians. Only 30% reported that they had never used CURES during the past 3 months, and 48% indicated that they used CURES at least daily. In comparison, 44% of physicians reported that they never used CURES, and only 14% reported using CURES at least

daily. These results are consistent with the general finding that pharmacists are more likely to register and use CURES than are physicians.

Table 17. On a typical day when you prescribe (dispense or manage) medications, how many times do you use CURES to look up a patient’s controlled substance medication history?

Item Response	Physicians n = 1025 ^a		Pharmacists n = 452 ^a	
	n	%	n	%
Never	431	44.5	129	29.6
Less than once a day	398	41.1	98	22.5
1-2 times a day	104	10.7	120	27.5
3-5 times a day	24	2.5	36	8.3
6+ times a day	11	1.1	53	12.2
Did not respond	57		16	

^aRespondents who reported they had registered for CURES, or that their registration was in process, were eligible to answer this item.

The survey included several items asking respondents the percentage of time they checked CURES when prescribing or dispensing a controlled substance, for those who report checking CURES at least once in the last 3 months. Figure 7 shows these results graphically for physicians and pharmacists. For physicians, 28% indicated that they check CURES for least 50% of the *patients* to whom they prescribe controlled substances. For pharmacists, 36% indicated that they check CURES for at least 50% of the controlled substance *prescriptions* they dispense or manage. Although the question did not distinguish between short-term and long-term opioid use, the pattern of CURES use reported by physicians is likely below what would be observed when CURES use becomes mandatory for prescribers in 2018.

Figure 7. When a controlled substance was prescribed, for what percentage of patient visits (physicians) or prescription fills (pharmacists) did you review CURES information (last 3 months)?

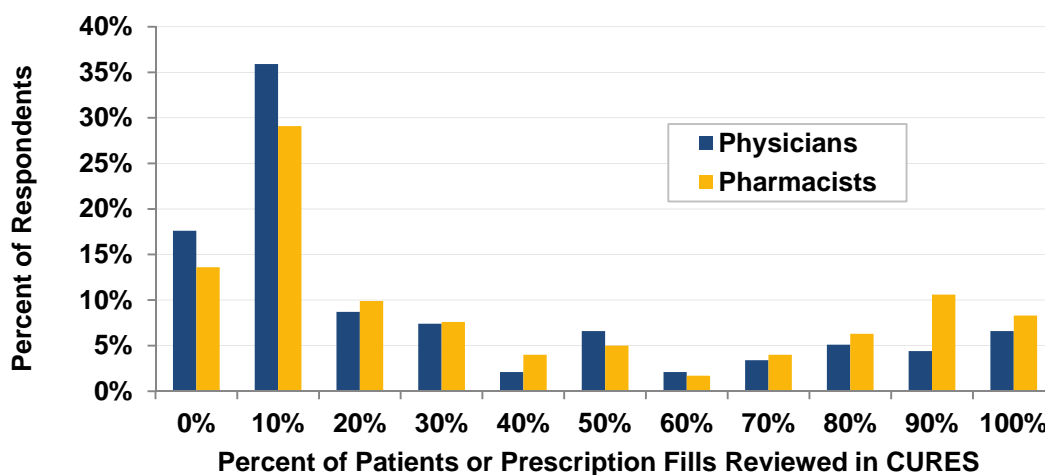
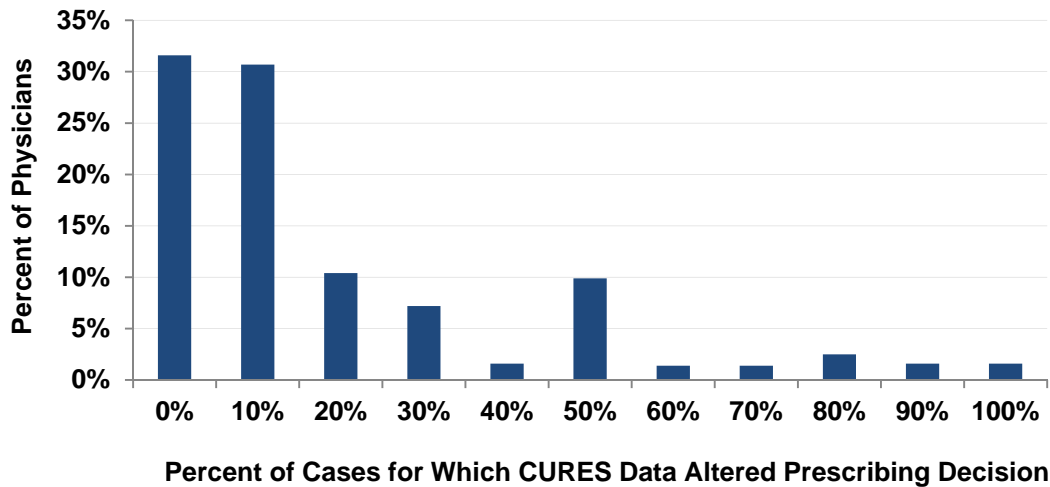


Figure 8 shows physician responses to items asking them to indicate the proportion of time that checking CURES altered their prescribing decision.

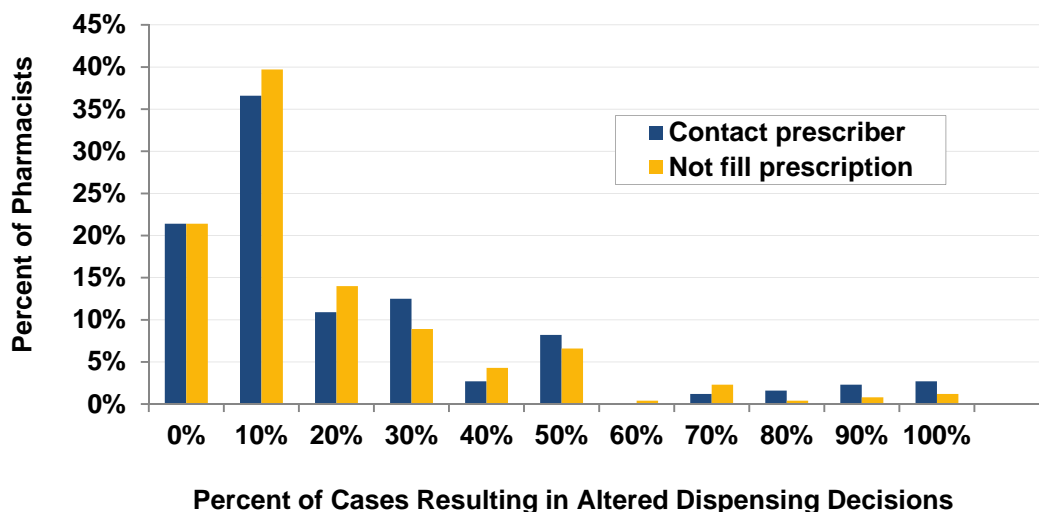
Figure 8. What percent of the time did the information you obtained from CURES alter your prescribing decision (during the past 3 months)?



Overall, results suggest that checking CURES regularly but infrequently caused physicians to change their prescribing decisions. Two-thirds (68%) of physicians reported changing a prescribing decision at least once during the past 3 months based on information they obtained from CURES; however, 63% of physicians reported that checking CURES only affected their prescribing decision in 10% or fewer of the times when they checked CURES. On the other hand, 18% indicated that information obtained from CURES affected their prescribing decision at least 50% of the time that they checked CURES. Of note, these responses do not account for how often physicians checked CURES. In the open-ended response item at the end of the survey, 4% of physicians indicated that CURES should be checked based on physician or pharmacist judgement about the patient. Thus, some physicians likely checked CURES only when they did not know a patient or when they suspected prescription drug misuse or observed unusual patient behavior. It is likely that physicians who reported changing prescribing decisions 50% or more of the time did not check CURES for every patient to whom they prescribed controlled substances, and only checked CURES when they already had a high suspicion for prescription drug misuse.

Figure 9 shows analogous survey results for pharmacists, who were asked to estimate the proportion of time that checking CURES caused them to either contact the prescriber for more information, or to refuse to dispense a controlled substance.

Figure 9. Percent of cases for which pharmacists reviewed patient information in CURES (past 3 months) and altered dispensing decisions.



Response patterns were qualitatively similar to physician responses; 86% and 79% of pharmacists reported that checking CURES caused them to contact the prescriber or refuse to dispense a prescription, respectively, at least once in the prior 3 months. On the other hand, 42% of physicians and 61% of pharmacists reported that checking CURES caused them to contact the prescriber or refuse to dispense, respectively, in 10% or fewer of the times when they checked CURES. As with the physicians, these responses do not account for how often pharmacists checked CURES, so pharmacists who reported contacting the prescriber in most of the cases likely checked CURES only when they had a high suspicion for prescription drug misuse.

Attitudes about the usefulness of CURES

Table 18 lists the reasons that respondents cited for checking CURES. More than three-quarters of physicians and pharmacists endorsed checking CURES prior to prescribing or dispensing a controlled substance in order to look for “doctor shopping.” Many respondents also reported checking CURES in order to monitor patients on controlled substances or to improve their communication with patients. Respondents who answered “other” were given the opportunity to type in additional reasons. Many respondents used this open-ended response to note that they do not practice in California or that they work only in inpatient settings. Other reasons provided by respondents included checking on new patients who request controlled substances, evaluating the status of supposedly missing or unfilled prescriptions, helping patients who cannot remember their medications, and to review the fill dates of prior prescriptions.

Table 18. What are your reasons for checking CURES? [Check all that apply]

Item Response	Physicians n = 988 ^a		Pharmacists n = 445 ^a	
	n	%	n	%
To check on patients prior to dispensing or managing a controlled substance	418	78.0	277	89.4
To look for evidence of “drug seeking”	465	86.9	257	82.9
To monitor patients on controlled substances	365	68.1	246	79.4
To improve my communication with patients regarding controlled substances	258	48.1	187	60.3
Other	35	3.5	28	9.0

^aRespondents who reported they had registered for CURES were eligible to answer this item.

The survey included multiple items related to respondents’ attitudes and beliefs about CURES. Table 19 shows items about the usefulness of CURES for various functions. Overall, pharmacists were more likely to report that CURES was useful or very useful than were physicians. Nearly 90% of pharmacy respondents indicated that CURES was useful or very useful for informing clinical decisions, for identifying “doctor shopping” or “pharmacy shopping,” and for identifying patients who misuse or abuse prescription drugs. Physician responses in these categories ranged from 62% to 76%. A majority of pharmacists indicated that CURES was useful or very useful for helping manage patients with pain and for building trust with patients. In comparison, 46% of physicians felt that CURES was useful or very useful for helping them to manage patients with pain, and 37% felt that CURES was useful or very useful for helping them to build trust with patients. In the open-ended item at the end of the survey, 7% of all physician respondents and 4% of all pharmacist respondents noted that CURES was a useful or valuable tool. In contrast, 2% of physician respondents and 0.4% of pharmacist respondents used the open-ended item to convey skepticism that CURES was useful for curbing prescription drug abuse.

Table 19. How useful to you is CURES for the following:

Item Response	Physicians n = 1025 ^a		Pharmacists n = 452 ^a	
	n	% ^b	n	% ^b
Helping manage patients with pain	412	45.5	271	64.5
Helping build trust with patients	333	36.7	243	58.0
Informing decisions to prescribe, dispense, or manage controlled substances	556	61.6	363	86.4
Identifying patients filling prescriptions from multiple doctors and/or pharmacies	685	75.5	374	88.6
Identifying patients who misuse or abuse controlled prescription drugs	672	74.1	370	87.7

^aRespondents who reported they had registered for CURES, or that their registration was in process, were eligible to answer this item.

^bPercent of respondents indicating they 'useful' or 'very useful' with item.

Feedback on CURES 2.0

An important survey goal was to get feedback about changes made as part of CURES 2.0, in order to identify what is working well and to identify areas for further improvement. Respondents who reported having used the prior version of CURES were asked to compare CURES 2.0 to the prior version. As shown in Table 20, more than 90% of respondents rated CURES 2.0 as the same or better across all categories. For overall ease of use, 43% of physicians and 47% of pharmacists rated CURES 2.0 as an improvement over the prior system. For patient activity reports, 36% of physicians and 52% of pharmacists reported that CURES 2.0 was an improvement over the prior system.

Table 20. Compared to the old website, how would you rate the CURES website on the following characteristics:

Item Response	Physicians ^a n = 276						Pharmacists ^a n = 216					
	Worse		About the same		Better		Worse		About the same		Better	
	n	%	n	%	n	%	n	%	n	%	n	%
Overall ease of use	25	9.1	132	47.8	119	43.1	12	5.6	102	47.2	102	47.2
Login process	16	5.8	163	58.8	98	35.4	8	3.7	125	57.6	84	38.7
Patient activity reports	27	9.8	151	54.7	98	35.5	10	4.6	94	43.3	113	52.1
Help desk support	19	7.3	181	69.1	62	23.7	11	5.2	141	66.8	59	28.0

^aRespondents who reported they had used the previous version of CURES were eligible to answer this item.

Respondents were also asked about several specific features that were new to CURES 2.0: the ability to send secure peer to peer messages within CURES, the ability to designate delegates to access CURES on one's behalf, automatic alerts for high risk patients, and the ability to flag patients with whom a physician has signed a controlled substance agreement ("compact"). As shown in Table 21, most respondents had never heard of these new features. Only 3% of pharmacists reported having used each of these new features at least once. Similarly, very few physicians reported having used the messaging function (2%), the ability to flag controlled substance agreements (3%), the delegate function (5%), or the automatic alerts (5%) at least once.

Table 21. Are you aware of the following new features in CURES?

Item Response	Physicians n = 988 ^a		Pharmacists n = 452 ^a	
	n	% ^b	n	% ^b
Sending secure peer-to-peer messages about specific patients	755	77.7	308	70.6
Giving delegates the ability to access to CURES on your behalf	665	68.5	331	76.3
Automatic alerts for high risk patients	721	74.3	319	73.3
The ability to flag patients who have patient-provider agreements	671	69.1	Not Applicable	

^aRespondents who reported they had registered for CURES were eligible to answer this item.

^bPercent of respondents indicating they never heard of the feature.

When asked whether they felt they needed additional training or education about CURES, 47% of physicians and 40% of pharmacists responded affirmatively. The most commonly identified need for additional training related to the new advanced features of CURES 2.0. As shown in Table 22, physicians most commonly indicated needing additional training or education about flagging patients with controlled substance agreements (63%), sending secure messages (54%), and running patient activity reports (57%). Pharmacists most commonly indicated needing additional training about how automatic reports are generated (68%), sending secure messages (76%), and using the delegate feature (55%).

Table 22. What would you like additional training on? [Check all that apply]

Item Response	Physicians n = 949 ^a		Pharmacists n = 205 ^a	
	n	% ^b	n	% ^b
Registering for CURES	158	24.7	29	13.2
CURES passwords and security questions	134	20.9	33	15.0
Running patient activity reports	362	56.6	108	49.1
Identifying and using CURES delegates from my account	301	47.0	121	55.0
Sending secure messages	345	53.9	167	75.9
How automatic reports are generated	317	49.5	149	67.7
Flagging patients who have patient-provider agreements	400	62.5	Not Applicable	
Other topics	58	9.1	15	6.8

^aRespondents who indicated a need for additional training or education about CURES (or skipped the item) were eligible to answer this item.

^bPercent of respondents identifying the topic as needed.

Professional attitudes and beliefs related to CURES

Respondents who reported being registered for CURES had similar responses related to social norms, or respondents' beliefs about their colleagues' use of CURES. Both physicians (Figure 10) and pharmacists (Figure 11) tended to think that the proportion of their colleagues using CURES at least weekly was lower than the proportion of their colleagues who *ought* to be using CURES weekly. In other words, respondents felt that some of their colleagues who should be using CURES regularly were not doing so.

Figure 10. Physicians: What percentage of your colleagues do you feel are (or ought to be) using CURES at least weekly?

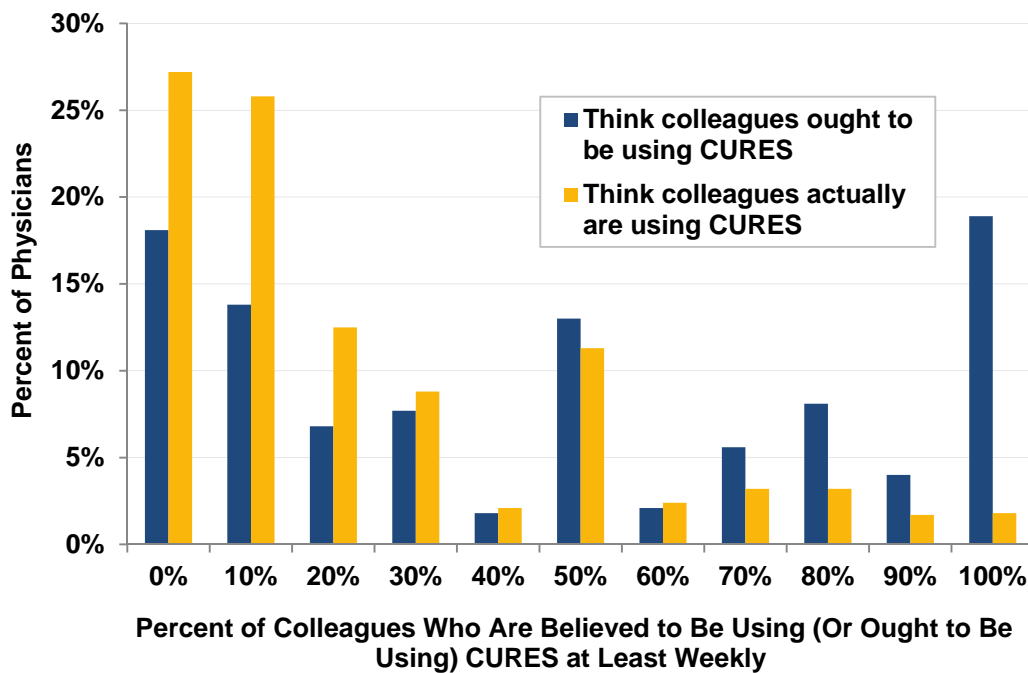


Figure 11. Pharmacists: What percentage of your colleagues do you feel are (or ought to be) using CURES at least weekly

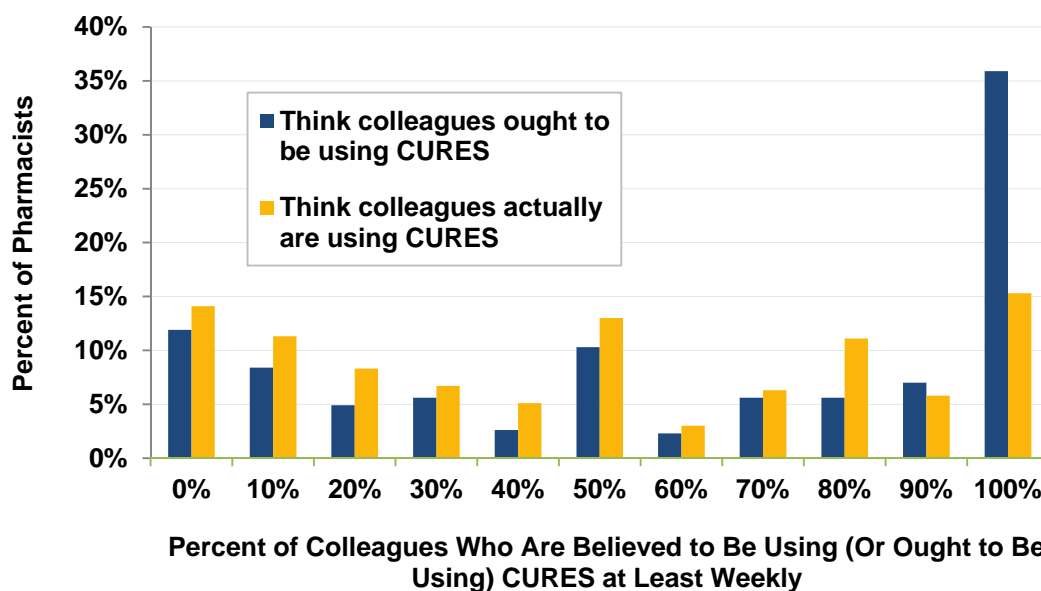


Table 23 summarizes information from Figures 8 and 9 and shows that, on average, pharmacists’ estimates of the proportion of their colleagues *using* CURES were higher than physicians’ estimates (means = 49% and 24%, respectively). Similarly, pharmacists had higher estimates than physicians for proportion of their colleagues who *ought* to be using CURES (means = 62% and 47%, respectively). As shown in Figures 8 and 9, 19% of physicians and 36% of pharmacists felt that their colleagues ought to be using CURES 100% of the time when prescribing or dispensing controlled substances.

Table 23. What percent of your colleagues do you feel... ?

Item Response	Physicians n = 1275 ^a		Pharmacists n = 482 ^b	
	Mean %	SD %	Mean %	SD %
Use CURES at least weekly	23.8	25.9	48.9	35.3
Ought to be using CURES at least weekly	46.5	37.3	61.6	38.1

^aOf 1275 total DEA-licensed physicians eligible to answer this question, question 1 (n = 1100) and question 2 (n = 1088).

^bOf 482 total pharmacists, question 1 (n = 432) and question 2 (n = 429).

The questions in Table 24 relate to beliefs about CURES use and regulation. A *substantial majority* of physicians (81%) and pharmacists (91%) agreed that their colleagues should check CURES when prescribing or dispensing a controlled substance, respectively. In contrast, only 23% of physicians felt that physicians should be required to check CURES when prescribing. The corresponding value for pharmacists was 39%, indicating that about two-fifths of pharmacists supported mandatory CURES use

for their colleagues. The survey did not directly ask pharmacists about requirements for physicians (or vice versa). In the open-ended question, 3% of pharmacists commented that prescribers should use CURES more often.

Table 24. Should physicians / pharmacists...

Item Response	Physicians n = 1275 ^a		Pharmacists n = 482 ^a	
	n	% ^b	n	% ^b
Check CURES when prescribing / dispensing a controlled substance?	728	80.6	367	91.3
Be <i>required</i> to check CURES when prescribing / dispensing a controlled substance	218	22.6	152	39.2

^aTotal DEA-licensed physicians and pharmacists eligible to answer.

^bPercent of respondents who answered “yes” to this item

While the survey was being administered, California passed a new law that, when implemented, will require physicians (and other prescribers) to use CURES when prescribing controlled substances (SB-482). Some survey reminders to physicians mentioned this new law in order to increase physician survey response rates. To evaluate whether passage of the new law (or the survey reminders mentioning the new law) affected results, we analyzed survey responses to the items in Table 24 based on the date that physician respondents took their survey. Seventy-six percent of physicians who took the survey before the Governor signed SB-482 agreed that physicians should check CURES prior to prescribing a controlled substance, compared to 83% of physicians who took the survey after the Governor signed SB-482. Only 19% of physicians who took the survey before the new law was signed agreed that physicians should be required to check CURES prior to prescribing a controlled substance, compared to 25% of physicians who took the survey after the new law was signed. Thus, we found no evidence of a “backlash” by physicians in response to SB-482. In contrast, physicians who took the survey after the new law was signed were more likely to agree that physicians should be required to check CURES before prescribing controlled substances.

Table 25 shows results for survey items relating to respondents’ professional and moral obligations to use CURES. Pharmacists indicated greater obligations to use CURES than did physicians, though a majority of physicians did agree that they had a professional responsibility to check CURES and that checking CURES when prescribing controlled substances is the right thing to do. *Over two-thirds of pharmacists (69%) agreed that checking CURES was considered standard of care, compared to 40% of physicians.* In contrast relatively few respondents agreed with negatively worded items on this topic.

Table 25. Please indicate the extent to which you agree with the following...^a

Item Response	Physicians n = 1275 ^a		Pharmacists n = 482 ^a	
	n	% ^b	n	% ^b
I have a professional responsibility to check CURES when prescribing /dispensing controlled substances	623	52.6	353	77.6
Checking CURES when prescribing / dispensing controlled substances is the right thing to do	710	60.0	368	80.7
Using CURES when prescribing / dispensing controlled substances is considered standard of care	446	37.9	310	68.7
Prescribing / dispensing controlled substances without checking CURES would be morally wrong	190	16.2	142	31.5
Checking CURES when prescribing /dispensing controlled substances is NOT a necessary part of my job	290	24.7	59	13.1

^aPhysicians who reported having a DEA license (valid denominator n per item ranged from 1171-1184) and pharmacist respondents (valid denominator n per item ranged from 451-456) were eligible to answer this item.

^bPercent of respondents indicating they “agree” or “strongly agree” with item.

Content analysis of responses to the open-ended survey question

Table 26 shows results of the content analysis performed on a single open-ended survey question, “Is there anything else you would like to tell us about CURES (e.g., problems, recommendations)?” Sixty-three percent (n = 597 of 1275) of DEA-licensed physicians and 56% (n = 270 of 482) of pharmacists provided responses to the question. Thus, responses were received from approximately half (49%, n=867 of 1757) of all survey respondents who were eligible to answer the open-ended question.

For both physicians and pharmacists, the most common response category was “relevance,” indicating that respondents felt that CURES was not relevant to their practice. Many of the comments in this category indicated that the respondent was retired or no longer working in California. However, many other respondents indicated that they felt CURES was not relevant to them because they rarely prescribed controlled substances or because the respondents were confident that none of their patients were “doctor shopping” or misusing controlled substances. Several physicians commented that they only checked CURES for new patients. After “relevance,” the second most common category for pharmacists was “data.” Thirty-four pharmacists (7% of all pharmacist respondents) complained about the quality and accuracy of CURES data, with several indicating that they felt CURES data accuracy should be improved and/or that the time lag between dispensing prescriptions and data showing up in CURES reports was too long. This category of responses also included comments about the lack of Veterans Health Administration or out of state prescriptions in CURES. Pharmacists typically dispense many more controlled substances than physicians, which likely explains why pharmacists were more attuned to the need for improved CURES data quality than were

physicians. For physicians, the second most common categories included difficulty accessing (7%) or using (8%) CURES, along with positive statements indicating that CURES had value or was useful to physicians (7%). Comments about difficulty using CURES most often related to the amount of time needed to access CURES and run patient reports while working in clinic.

Table 26. Definitions and frequency of content codes derived from the open-ended survey question^a

Code	Definition	Physicians n =1275 ^b		Pharmacists n =482	
		n	%	n	%
Access	Problems with registration, login, password or security questions, help desk, customer service	85	6.7	27	5.4
Difficulty	Difficulty using CURES, including time consuming, website not user friendly, difficult to generate reports,	99	7.8	14	2.8
Regulation	Loss of physician autonomy, micromanaging patient care, social control by state/ medical board / DOJ, red tape	39	3.1	5	1.0
Relevance	CURES not relevant to respondent due to various reasons, including out of state, retired, specialty, practice patterns, or patient population	240	18.8	61	12.1
Data	Limitations related to CURES data, including timeliness of data, absence of out of state prescriptions, other data quality problems	32	2.5	34	6.8
Laws	Comments about whether CURES should or should not be legally required, either laws for mandatory CURES registration or mandatory CURES use	47	3.7	8	1.6
Value	Positive statements about CURES indicating that it is valuable, helpful, or useful in some way	87	6.8	22	4.4
Skepticism	Statements that CURES is not effective or not useful for curbing drug abuse	19	1.5	2	0.4
Training	Statements about needing training or help to use CURES or better use CURES	21	1.6	8	1.6
Misinform	Statements that are factually incorrect	2	0.2	1	0.2
Suggestion	Concrete suggestions for making CURES better not covered in other categories	51	4.0	31	6.2
Care	Comments that CURES impacts quality of care or patient care	27	2.1	2	0.4
Pharmacist	Comments about how pharmacists should use CURES (physicians only)	11	0.9	0	n/a
Prescriber	Comments about how prescribers / physicians should use CURES (pharmacists only)	0	n/a	16	3.2
Judgment	Comments that using CURES should be based on physician/pharmacist judgment	55	4.3	5	1.0
Aware	Comments that person is not aware of CURES or doesn't know how to use it	21	1.6	3	0.6
Cost	Cost of CURES license fee; productivity costs that mention money	3	0.2	4	0.8
Misc	Any response that does not fit in any of the above categories	58	4.5	46	9.1
None	Respondent left question blank	671	52.6	270	53.7

^aResponses could be counted in multiple categories.

^bPhysicians who reported having a DEA license were eligible to answer this question

Qualitative analysis of responses to the open-ended survey question

Forty-nine percent (n=867) of sample respondents (n=1757) answered the open-ended question, “Is there anything else you would like to tell us about CURES? (e.g., problems, recommendations).” A qualitative analysis of responses revealed four major themes illustrating attitudes and perceptions of CURES among physicians and pharmacists: (1) cost of using CURES (2) interference with professionalism (3) shifting responsibility and (4) benefits and future direction of CURES. These four major themes are explained in detail in the sections below. Overall, responses from physicians and pharmacists were similar with some exceptions. Pharmacists expressed more positive perceptions of CURES, but were more likely than physicians to report limitations including timeliness and accuracy of data as well as lack of inclusion of data from federal pharmacies in California, such as Veterans Health Administration pharmacies. The qualitative analysis also collected general and specific recommendations that respondents gave for increasing the use and utility of CURES among California physicians and pharmacists.

Cost of using CURES

Costs of using CURES comprise the time required to routinely access and enter patient information as well as the actual monetary cost associated with registration. Both groups of participants expressed that using CURES requires a significant amount of time which reduces the quality of the patient/customer interaction and thus negatively impacts the quality of care provided. A few physicians also expressed a decreased willingness to prescribe opioids due perceived barriers.

“...checking CURES has to fit efficiently into a busy primary care workflow, or else providers will burn out and choose not to prescribe opioids to anyone, even if indicated. The decision to prescribe opioids to patients is already a challenging process.” (Physician)

“I strongly disagree that pharmacists be required legally to check CURES before dispensing because it is a legal burden. Pharmacists should be encouraged and fully trained without a fee to use CURES, but not required.” (Pharmacist)

“CURES is a great resource, but too much CURES will interfere with clinical care. Time should be spent with the patient, not with the database.” (Physician)

Interference with professionalism

While physicians were slightly more likely to express lack of autonomy, professional judgement, and relevance as reasons for not mandating the use of CURES, pharmacists also shared concerns about relevance; some pharmacists who worked in hospital settings indicated that CURES was not relevant to their daily work. Many physicians reported that CURES was irrelevant to their

practice for a variety of reasons including: prescribing patterns, trust and established relationship with patients, medical specialty, pharmacy practice location, and the fact that they use professional judgement. Physicians who rarely, if ever, prescribe controlled substances believed that they should be exempt from using CURES along with pharmacists who work outside of retail settings.

“I work in an inpatient setting. CURES, for the most part, is irrelevant to my practice. Perhaps I need further training on how it applies to my work.” (Pharmacist)

“An astute physician knows when to check with CURES or prior colleagues treating his patients...” (Physician)

“As it is I generally only use it CURES when someone is demonstrating drug seeking behavior.” (Physician)

Shifting responsibility

Perceptions of who should be responsible for consulting CURES were contingent on one’s role in health care. Many physicians hold pharmacists accountable for using CURES because pharmacists dispense medications. At the same time, some pharmacists shifted responsibility to physicians, noting that physicians have the prescription writing privileges and so have greater responsibility for preventing prescription drug misuse.

“I think all prescribers of controlled substances should be required to check CURES before they write prescriptions. The sole responsibility of should not be with pharmacists.” (Pharmacist)

“Pharmacists should check on all patients and send notice to us [physicians].” (Physician)

“Unless MDs are forced to buy in you are making me the policeman... unless there are consequences for the MD by the Medical Association nothing will ever change.” (Pharmacist)

“Pharmacy involvement should be greater in monitoring patients that reflect misuse.” (Physician)

Benefits of CURES and future directions

While both groups reported various concerns regarding CURES, they also expressed many benefits and suggestions for improving the process. An appreciation for the underlying philosophy of CURES was evident in the open-ended responses.

“CURES is a wonderful contribution to help identify patients who are ‘doctor shopping’ for opioids (Physician).

“CURES is very helpful in ensuring honesty from patients in the patient-pharmacist relationship.” (Pharmacist)

A variety of recommendations was suggested by both physicians and pharmacists and includes: increased training and advertisement around CURES, data updates in real time, and expansion to include out-of-state patient information. Some of these recommendations (e.g., the ability to save commonly-used patient searches) actually already exist in CURES 2.0, while others (e.g., including out-of-state prescriptions and decreasing data lag time) would require new state legislation.

“CURES should be part of a network like insurance DUR system, so without logging in pharmacists get prompted about prescriptions filled at other places.” (Pharmacist)

“Great program. Needs to be promoted more along with further training. Would be good if there were an incentive for less than conscience physicians to use the program.” (Physician)

“Some of the chains [pharmacies] have firewalls when it comes to resetting passwords and when trying to reset on a mobile device it does not work. Fixing this problem would be very helpful.” (Pharmacist)

General recommendations made in open-ended responses

- Offer incentives to encourage physicians and pharmacists to use CURES
- Promote CURES to increase awareness and visibility
- Provide additional CURES training
- Improve usability of CURES (including use on mobile devices)

Specific recommendations made in open-ended responses:

- Provide access to out-of-state prescription information
- Store patient names in memory bank to save time on repeat patient searches
- Alert pharmacists when patients get prescriptions filled at other pharmacies
- Update data in real time (currently CURES has a 1-week submission lag time).
- Track and report over-prescribers
- Link registered aliases and legal name changes
- Track identify theft and fraud in conjunction with prescriptions drugs

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Appendix A CURES MBC survey

Q52 How concerned are you about prescription drug misuse and abuse among:

	Not concerned at all (0)	Slightly concerned (1)	Moderately concerned (2)	Extremely concerned (3)
Patients in California (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patients in the community where you practice (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2 Do you currently have a DEA license to prescribe controlled substances?

- Yes (1)
- No (0)

If No Is Selected, Then Skip To End of Survey

Q4 Do you currently prescribe controlled substances in your practice?

- Yes (1)
- No (0)

Q8 Now we would like you to think about the last 3 months.

Q9 On average, how many days a week do you see patients?

Q10 On average, how many patients do you see per day?

Display This Question:

If Do you currently prescribe controlled substances in your practice? Yes Is Selected

Q11 On average, for how many of the patients that you see per day do you prescribe a controlled substance?

Q5 Now we'd like to ask you some questions about California's Controlled Substance Utilization Review and Evaluation System (CURES). CURES is California's online, computer-based system for monitoring the prescribing of all Schedule II, III and IV controlled substances dispensed in California. Have you heard of CURES?

- Yes (1)
- No (0)

Q7 Are you registered for CURES?

- Yes (1)
- No (2)
- Registration in process (3)
- Do not know (4)

Q12 Are you aware that registering for CURES is mandatory for DEA-licensed physicians?

- Yes (1)
- No (0)

Q13 How likely are you to register for CURES within the following month?

- Extremely unlikely (1)
- Unlikely (2)
- Likely (3)
- Extremely likely (4)

Q14 Please indicate the extent to which you agree with the following:

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I have other problems that are more important than registering for CURES. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to go about registering for CURES. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Every time I try to register for CURES, something goes wrong. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Registering for CURES takes little time. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't have access to a computer or the internet where I practice. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you registered for CURES? Yes Is Selected

Q34 How long have you been using CURES?

- Less than 3 months (1)
- 4 to 6 months (2)
- 7 months to 1 year (3)
- More than 1 year (4)

Q17 How likely are you to use CURES at least once in the next 3 months?

- Extremely unlikely (1)
- Unlikely (2)
- Likely (3)
- Extremely likely (4)

Q15 How difficult are the following in CURES?

	Very difficult (5)	Difficult (4)	Average (3)	Easy (2)	Very easy (1)
Registering for CURES (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Logging in to CURES (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resetting your password (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Remembering security questions (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you registered for CURES? Yes Is Selected

Q16 Now we would like you to think about the last 3 months. On a typical day when you see patients, how many times do you use CURES to look up a patient's controlled substance medication history?

- Never (1)
- Less than once a day (5)
- 1-2 times a day (2)
- 3-5 times a day (3)
- 6+ times a day (4)

Q18 Please indicate the extent to which you agree with the following:

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly Agree (5)
CURES is helpful (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CURES is not relevant to my practice (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CURES is easy to use (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't know how to use CURES (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CURES is checked by someone else in the office (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have limited or no access to CURES while I practice (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If We would like you to think about the last 3 months. On a typical day when you see patients, how m... Never Is Not Selected
And Are you registered for CURES? Yes Is Selected

Q19 What are your reasons for checking CURES? [Check all that apply]

- To check on patients prior to prescribing a controlled substance. (1)
- To look for evidence of "drug seeking." (5)
- To monitor patients on controlled substances. (2)
- To improve my communication with patients regarding controlled substances. (7)
- Other (6) _____

Display This Question:

If We would like you to think about the last 3 months. On a typical day when you see patients, how m... Never Is Not Selected

And Are you registered for CURES? Yes Is Selected

Q20 Thinking about the past 3 months, for what percentage of patient visits that resulted in a prescription for controlled substances did you review CURES information?

- 0% (0)
- 10% (1)
- 20% (2)
- 30% (3)
- 40% (4)
- 50% (5)
- 60% (6)
- 70% (7)
- 80% (8)
- 90% (9)
- 100% (10)

Display This Question:

If Thinking about the past 3 months, for what percentage of patient visits that resulted in a prescr... 0% Is Not Selected

And We would like you to think about the last 3 months. On a typical day when you see patients, how m... Never Is Not Selected

And Are you registered for CURES? Yes Is Selected

Q21 Consider the patient visits for which you have reviewed CURES in the past 3 month period. For what percent of these cases did the information you obtained from CURES alter your prescribing decision?

- 0% (0)
- 10% (1)
- 20% (2)
- 30% (3)
- 40% (4)
- 50% (5)
- 60% (6)
- 70% (7)
- 80% (8)
- 90% (9)
- 100% (10)

Display This Question:

If Are you registered for CURES? Yes Is Selected

Q28 How useful to you is CURES for the following:

	Very Useful (4)	Useful (3)	A little useful (2)	Not useful at all (1)
Helping manage patients with pain (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helping build trust with patients (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Informing decisions to prescribe controlled substances. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identifying patients filling prescriptions from multiple doctors and/or pharmacies (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identifying patients who misuse or abuse controlled prescription drugs (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q27 Are you aware of the following new features in CURES?

	Never heard of it (0)	Heard of it, but never use it (1)	Used it at least once (2)
Sending secure peer-to-peer messages about specific patients (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Giving delegates the ability to access to CURES on your behalf (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to flag patients who have patient-provider agreements (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Automatic alerts for high risk patients (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you registered for CURES? Yes Is Selected

Q31 Did you use the previous version of CURES in your practice?

- Yes (1)
- No (0)

Display This Question:

If Did you use the previous version of CURES in your practice? Yes Is Selected

And Are you registered for CURES? Yes Is Selected

Q32 Compared to the old website, how would you rate the new CURES website on the following characteristics?

	Much worse (-2)	Somewhat worse (-1)	About the same (0)	Somewhat better (1)	Much better (2)
Overall ease of use (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Login process (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patient Activity Reports (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Help Desk support (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q29 Do you feel that you need additional training or education about CURES?

- Yes (1)
- No (0)
- Don't know (2)

Display This Question:

If Do you feel that you need additional training or education about CURES? Yes Is Selected
Or Do you feel that you need additional training or education about CURES? Don't know Is Selected

Q30 What would you like additional training on? [Check all that apply]

- Registering for CURES (1)
- CURES passwords and security questions (2)
- Running patient activity reports (3)
- Identifying and using CURES delegates from my account (4)
- Sending secure messages (5)
- How automatic reports are generated (6)
- Flagging patients who have patient-provider agreements (7)
- Other topics (8) _____

Q33 Now we would like to ask you some general questions about monitoring patient's controlled substance medications using systems such as CURES.

Q54 Should physicians check CURES prior to writing a prescription for a controlled substance?

- Yes (1)
- No (0)
- Don't know (2)

Q55 Should physicians be required to check CURES prior to writing a prescription for a controlled substance?

- Yes (1)
- No (0)
- Don't know (2)

Q56 What percentage of your colleagues do you think use CURES at least weekly?

- 0% (1)
- 10% (2)
- 20% (3)
- 30% (4)
- 40% (5)
- 50% (6)
- 60% (7)
- 70% (8)
- 80% (9)
- 90% (10)
- 100% (11)

Q57 What percentage of your colleagues do you feel ought to be using CURES at least weekly?

- 0% (1)
- 10% (2)
- 20% (3)
- 30% (4)
- 40% (5)
- 50% (6)
- 60% (7)
- 70% (8)
- 80% (9)
- 90% (10)
- 100% (11)

Q35 I have a professional responsibility to check CURES when prescribing controlled substances.

- Strongly agree (5)
- Agree (4)
- Neither agree nor disagree (3)
- Disagree (2)
- Strongly disagree (1)

Q36 Checking CURES when prescribing controlled substances is the right thing to do.

- Strongly agree (5)
- Agree (4)
- Neither agree nor disagree (3)
- Disagree (2)
- Strongly disagree (1)

Q37 Using CURES when prescribing controlled substances is considered standard of care.

- Strongly agree (5)
- Agree (4)
- Neither agree nor disagree (3)
- Disagree (2)
- Strongly disagree (1)

Q38 Prescribing controlled substances without checking CURES would be morally wrong.

- Strongly agree (5)
- Agree (4)
- Neither agree nor disagree (3)
- Disagree (2)
- Strongly disagree (1)

Q39 Checking CURES when prescribing controlled substances is NOT a necessary part of my job.

- Strongly agree (1)
- Agree (2)
- Neither agree nor disagree (3)
- Disagree (4)
- Strongly disagree (5)

Q40 Now we would like to ask you some questions regarding your prescribing practices more generally.

Q41 How have your prescribing practices changed in the last 3 months?

- I prescribe FAR FEWER controlled substances (-2)
- I prescribe FEWER controlled substances (-1)
- No change (0)
- I prescribe MORE controlled substances (1)
- I prescribe FAR MORE controlled substances (2)

If No change Is Selected, Then Skip To End of Block

Q42 What factors led you to change your prescribing practices? [Check all that apply]

- Change in practice location or patient mix (1)
- Increased professional awareness of risks, benefits, and other solutions (3)
- New clinical guidelines and recommendations (4)
- CURES providing greater access to patient prescription drug history (6)
- Increased patient awareness of risks and benefits (7)
- Medico-legal ramifications (8)
- Other reason (10) _____

Q44 What percent of patients in California taking controlled substance medications do you feel:

	0% (1)	10% (2)	20% (3)	30% (4)	40% (5)	50% (6)	60% (7)	70% (8)	80% (9)	90% (10)	100% (11)
Misuse/Abuse them (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benefit from them (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q43 What percent of your patients taking controlled substance medications do you feel:

	0% (1)	10% (2)	20% (3)	30% (4)	40% (5)	50% (6)	60% (7)	70% (8)	80% (9)	90% (10)	100% (11)
Misuse/Abuse them (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benefit from them (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q45 Is there anything else you would like to tell us about CURES? (e.g., problems, recommendations)

Q46 Which gender do you identify with?

- Male (0)
- Female (1)
- Other (2) _____

Q47 Please indicate your age in years:

Q51 Please indicate whether you consider yourself

- Hispanic or Latino (1)
- Not Hispanic or Latino (2)

Q48 Which one of the following groups do you most identify with?

- American Indian or Alaskan Native (1)
- Asian (2)
- Black or African American (3)
- Native Hawaiian or Other Pacific Islander (4)
- White (5)
- Other (please specify) (6) _____

Q49 How long have you been practicing in years:

Q50 Please choose the specialty that best describes your current practice:

- Allergy and Immunology (24)
- Anesthesiology (1)
- Colon and Rectal Surgery (2)
- Dermatology (3)
- Emergency Medicine (4)
- Family Medicine (5)
- Internal Medicine (general) (6)
- Internal Medicine (subspecialty) (7)
- Medical Genetics (25)
- Neurology (8)
- Neurosurgery (26)
- Nuclear Medicine (27)
- Obstetrics and Gynecology (9)
- Ophthalmology (10)
- Orthopaedic Surgery (17)
- Otolaryngology (28)
- Pathology (29)
- Pain Medicine (11)
- Pediatrics (general) (12)
- Pediatrics (subspecialty) (30)
- Physical Medicine and Rehabilitation (31)
- Plastic Surgery (14)
- Preventive Medicine (32)
- Psychiatry (15)
- Radiology (13)
- Surgery (general) (34)
- Surgery (subspecialty) (35)
- Thoracic and Cardiac Surgery (33)
- Urology (16)

Q51 As part of the effort to understand prescribing practice and CURES usage, some of your colleagues have volunteered to participate in a follow up survey. May we contact you in the future regarding your prescribing practices and usage of CURES?

- Yes (1)
- No (0)

If No Is Selected, Then Skip To End of Survey

Q58 Thank you for your participation. Please provide your email address so we may contact you at a later date.

Appendix B CURES pharmacist survey

Q52 How concerned are you about prescription drug misuse and abuse among:

	Not concerned at all (0)	Slightly concerned (1)	Moderately concerned (2)	Extremely concerned (3)
Patients in California (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patients in the community where you practice (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8 Now we would like you to think about the last 3 months.

Q9 On average, how many days a week do you dispense or manage medications?

Q10 On average, how many prescriptions do you dispense or manage per day?

Q11 On average, how many controlled substance prescriptions do you dispense or manage per day?

Q5 Now we'd like to ask you some questions about California's Controlled Substance Utilization Review and Evaluation System (CURES). CURES is California's online, computer-based system for monitoring the dispensing of all Schedule II, III and IV controlled substances dispensed in California. Have you heard of CURES?

- Yes (1)
- No (0)

Q7 Are you registered for CURES?

- Yes (1)
- No (2)
- Registration is in process (3)
- Don't know (4)

Q12 Are you aware that registering for CURES is mandatory for pharmacists?

- Yes (1)
- No (0)

Q13 How likely are you to register for CURES within the following month?

- Extremely unlikely (1)
- Unlikely (2)
- Likely (3)
- Extremely likely (4)

Q14 Please indicate the extent to which you agree with the following:

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I have other problems that are more important than registering for CURES. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to go about registering for CURES. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Every time I try to register for CURES, something goes wrong. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Registering for CURES takes little time. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't have access to a computer or the internet where I practice. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you registered for CURES? Yes Is Selected

Q34 How long have you been using CURES?

- Less than 3 months (1)
- 4 to 6 months (2)
- 7 months to 1 year (3)
- More than 1 year (4)

Q17 How likely are you to use CURES at least once in the next 3 months?

- Extremely unlikely (1)
- Unlikely (2)
- Likely (3)
- Extremely likely (4)

Q15 How difficult are the following in CURES?

	Very difficult (5)	Difficult (4)	Average (3)	Easy (2)	Very easy (1)
Registering for CURES (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Logging in to CURES (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resetting your password (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Remembering security questions (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you registered for CURES? Yes Is Selected

Q16 Now we would like you to think about the last 3 months. On a typical day when you dispense or manage medications, how many times do you use CURES to look up a patient's controlled substance medication history?

- Never (1)
- Less than once a day (5)
- 1-5 times a day (2)
- 6-9 times a day (3)
- 10+ times a day (4)

Q18 Please indicate the extent to which you agree with the following:

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly Agree (5)
CURES is helpful (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CURES is not relevant to my practice (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CURES is easy to use (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't know how to use CURES (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CURES is checked by someone else in the office (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have limited or no access to CURES while I practice (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If On a typical day when you dispense or manage medications, how many times do you use CURES to look... Never Is Not Selected

And Are you registered for CURES? Yes Is Selected

Q19 What are your reasons for checking CURES? [Check all that apply]

- To check on patients prior to dispensing or managing a controlled substance. (1)
- To look for evidence of "drug seeking." (5)
- To monitor patients on controlled substances. (2)
- To improve my communication with patients regarding controlled substances. (7)
- Other (6) _____

Display This Question:

If On a typical day when you dispense or manage medications, how many times do you use CURES to look... Never Is Not Selected

And Are you registered for CURES? Yes Is Selected

Q20 Thinking about the past 3 months, for what percentage of controlled substance fills did you review CURES information?

- 0% (6)
- 10% (7)
- 20% (8)
- 30% (9)
- 40% (10)
- 50% (11)
- 60% (12)
- 70% (13)
- 80% (14)
- 90% (15)
- 100% (16)

Display This Question:

If On a typical day when you dispense or manage medications, how many times do you use CURES to look... Never Is Not Selected

And Thinking about the past 3 months, for what percentage of controlled substance fills did you review... 0% Is Not Selected

And Are you registered for CURES? Yes Is Selected

Q21 Consider the prescriptions for which you have reviewed CURES in the past 3 month period. For what percent of these prescriptions did the information you obtained from CURES prompt you to...

	0% (1)	10% (2)	20% (3)	30% (4)	40% (5)	50% (6)	60% (7)	70% (8)	80% (9)	90% (10)	100% (11)
contact the prescriber for more information? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
not to fill the prescription? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you registered for CURES? Yes Is Selected

Q28 How useful to you is CURES for the following

	Very Useful (4)	Useful (3)	A little useful (2)	Not useful at all (1)
Helping manage patients with pain (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helping build trust with patients (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Informing decisions to dispense or manage controlled substances (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identifying patients filling prescriptions from multiple doctors and/or pharmacies (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identifying patients who misuse or abuse controlled prescription drugs (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q27 Are you aware of the following new features in CURES?

	Never heard of it (0)	Heard of it, but never use it (1)	Used it at least once (2)
Sending secure peer-to-peer messages about specific patients (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Giving delegates the ability to access CURES on your behalf (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Automatic alerts for high-risk patients (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you registered for CURES? Yes Is Selected

Q31 Did you use the previous version of CURES in your practice?

- Yes (1)
- No (0)

Display This Question:

If Did you use the previous version of CURES in your practice? Yes Is Selected

And Are you registered for CURES? Yes Is Selected

Q32 Compared to the old website, how would you rate the new CURES website on the following characteristics?

	Much worse (-2)	Somewhat worse (-1)	About the same (0)	Somewhat better (1)	Much better (2)
Overall ease of use (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Login process (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patient Activity Reports (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Help Desk support (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q29 Do you feel that you need additional training or education about CURES?

- Yes (1)
- No (0)
- Don't know (2)

Display This Question:

If Do you feel that you need additional training or education about CURES? Yes Is Selected

Or Do you feel that you need additional training or education about CURES? Don't know Is Selected

Q30 What would you like additional training on? [Check all that apply]

- Registering for CURES (1)
- CURES passwords and security questions (2)
- Running patient activity reports (3)
- Identifying and using CURES delegates from my account (4)
- Sending secure messages (5)
- How automatic reports are generated (6)
- Other topics (8) _____

Q33 Now we would like to ask you some general questions about monitoring patient's controlled substance medications using systems such as CURES.

Q51 Should pharmacists check CURES prior to dispensing or managing a controlled substance?

- Yes (1)
- No (0)
- Don't know (2)

Q52 Should pharmacists be required to check CURES prior to dispensing or managing a controlled substance?

- Yes (1)
- No (0)
- Don't know (2)

Q54 What percentage of your colleagues do you think use CURES at least weekly?

- 0% (1)
- 10% (2)
- 20% (3)
- 30% (4)
- 40% (5)
- 50% (6)
- 60% (7)
- 70% (8)
- 80% (9)
- 90% (10)
- 100% (11)

Q56 What percentage of your colleagues do you feel ought to be using CURES at least weekly?

- 0% (1)
- 10% (2)
- 20% (3)
- 30% (4)
- 40% (5)
- 50% (6)
- 60% (7)
- 70% (8)
- 80% (9)
- 90% (10)
- 100% (11)

Q35 I have a professional responsibility to check CURES when dispensing or managing controlled substances.

- Strongly agree (5)
- Agree (4)
- Neither agree nor disagree (3)
- Disagree (2)
- Strongly disagree (1)

Q36 Checking CURES when dispensing or managing controlled substances is the right thing to do.

- Strongly agree (5)
- Agree (4)
- Neither agree nor disagree (3)
- Disagree (2)
- Strongly disagree (1)

Q37 Using CURES when dispensing or managing controlled substances is considered standard of care.

- Strongly agree (5)
- Agree (4)
- Neither agree nor disagree (3)
- Disagree (2)
- Strongly disagree (1)

Q38 Dispensing or managing controlled substances without checking CURES would be morally wrong.

- Strongly agree (5)
- Agree (4)
- Neither agree nor disagree (3)
- Disagree (2)
- Strongly disagree (1)

Q39 Checking CURES when dispensing or managing controlled substances is NOT a necessary part of my job.

- Strongly agree (1)
- Agree (2)
- Neither agree nor disagree (3)
- Disagree (4)
- Strongly disagree (5)

Q40 Now we would like to ask you some questions regarding your dispensing and managing practices more generally.

Q41 How have your dispensing or managing practices changed in the last 3 months?

- I dispense/manage FAR FEWER controlled substances (-2)
- I dispense/manage FEWER controlled substances (-1)
- No change (0)
- I dispense/manage MORE controlled substances (1)
- I dispense/manage FAR MORE controlled substances (2)

If No change Is Selected, Then Skip To End of Block

Q42 What factors led you to change your prescribing practices? [Check all that apply]

- Change in practice location or patient mix (1)
- New professional standards and protocols where I practice (2)
- Increased professional awareness of risks, benefits, and other solutions (3)
- New clinical guidelines and recommendations (4)
- Increased law enforcement activity (5)
- CURES providing greater access to patient prescription drug history (6)
- Increased patient awareness of risks and benefits (7)
- Medico-legal ramifications (8)
- Other reason (10) _____

Q43 What percent of patients in California taking controlled substance medications do you feel:

	0% (1)	10% (2)	20% (3)	30% (4)	40% (5)	50% (6)	60% (7)	70% (8)	80% (9)	90% (10)	100% (11)
Misuse/Abuse them (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benefit from them (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q44 What percent of your patients taking controlled substance medications do you feel:

	0% (1)	10% (2)	20% (3)	30% (12)	40% (13)	50% (14)	60% (15)	70% (16)	80% (17)	90% (18)	100% (19)
Misuse/Abuse them (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benefit from them (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q45 Is there anything else you would like to tell us about CURES? (e.g. problems, recommendations)

Q46 Which gender do you identify with?

- Male (0)
- Female (1)
- Other (2) _____

Q47 Please indicate your age in years:

Q50 Please indicate whether you consider yourself

- Hispanic or Latino (1)
- Not Hispanic or Latino (2)

Q48 Which one of the following groups do you most identify with?

- American Indian or Alaskan Native (1)
- Asian (2)
- Black or African American (3)
- Native Hawaiian or Other Pacific Islander (4)
- White (5)
- Other (please specify) (6) _____

Q49 How long have you been practicing in years:

Q50 Please identify the choice that best describes your primary practice site?

- Independent pharmacy (1)
- Chain pharmacy (2)
- Hospital (3)
- Supermarket (4)
- Mass merchandiser (5)
- Other patient care practice (6)
- Other (non patient care) (7)

Q51 As part of the effort to understand clinical practice and CURES usage, some of your colleagues have volunteered to participate in a follow up survey. May we contact you in the future regarding your clinical practice and usage of CURES?

- Yes (1)
- No (0)

If No Is Selected, Then Skip To End of Survey

Q57 Thank you for your participation. Please provide your email address so we may contact you at a later date.

Appendix C. Timeline of survey deployment and reminders

	Medical Board	Pharmacy Board ^a	Osteopathic Board ^a
Initial fliers mailed	8/10/2016	9/6/2016	10/6/2016
Email #1 sent	8/23/2016	--	--
Post card #1 mailed	8/27/2016	9/26/2016	--
SB-482 signed ^b		9/27/2016	
Tri-fold reminder #1	--	--	10/19/2016
Email #2 sent	10/18/2016	--	--
Reminder letter mailed from Board of Pharmacy	--	10/12/2016**	--
Postcard #2 mailed	--	--	12/5/2016
Email #3 sent	11/9/2016	--	--
Email #4 sent	11/16/2016	--	--
Email #5 sent	11/30/2016	--	--
Reminder letter mailed from MBC	11/21/2016	--	--
Reminder letter mailed from OMBC	--	--	12/19/2016
Survey closed	1/31/2017	1/31/2017	1/31/2017

^aEmail reminders were not possible for Pharmacy Board and OMBC.

^bSB-482, a state law mandating eventual CURES use by prescribers, was signed during the survey period. Some physician reminders sent out after this date mentioned SB-482 in order to encourage participation.