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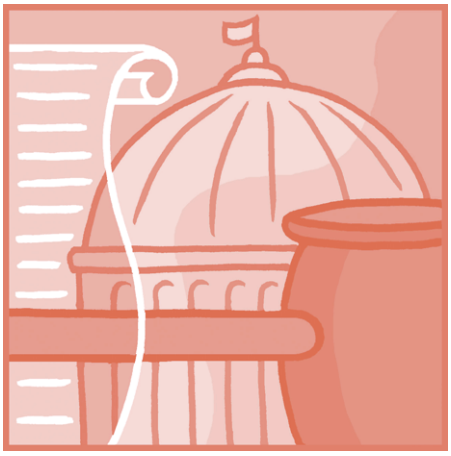

The Public Health Crises of Chronic Pain and Addiction

Rules and Values: A Coordinated Regulatory and Educational Approach to the Public Health Crises of Chronic Pain and Addiction

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Chronic pain and opioid addiction are 2 pressing public health problems, and prescribing clinicians often lack the skills necessary to manage these conditions. Our study sought to address the benefits of a coalition of an academic medical center pain faculty and government agencies in addressing the high unintentional overdose death rates in New Mexico.

New Mexico's 2012–2013 mandated chronic pain and addiction education programs studied more than 1000 clinicians. Positive changes were noted in precourse and postcourse surveys of knowledge, self-efficacy, and attitudes.

Controlled substance dispensing data from the New Mexico Board of Pharmacy also demonstrated safer prescribing. The total morphine and Valium milligram equivalents dispensed have decreased continually since 2011. There was also a concomitant decline in total drug overdose deaths. (*Am J Public Health*. 2014;104:1356–1362. doi:10.2105/AJPH.2014.301881)

PAIN IS A MAJOR PUBLIC health issue.[1–3] Chronic pain affects an estimated 100 million Americans, which is more than the number of citizens suffering from cancer, diabetes, and all vascular diseases combined.[1] Chronic pain costs up to $635 billion per year in medical treatment and lost productivity.[1,4]

Prescription opioid abuse is also a major public health issue.[5] The 2010 National Survey on Drug Use and Health estimated that 35 million Americans (13.7%) adults age 12 years and older had used a pain reliever nonmedically at least once in their lifetime.[6] This is an 18% increase since 2002. In November 2011, the national *Morbidity and Mortality Weekly Report* reported 36 450 deaths from drug overdoses in 2008.[7] New Mexico and West Virginia have had the highest rates of drug overdose death in the United States since 2008. Almost every county in New Mexico has a higher drug overdose death rate than the rate for the entire United States (12.1 per 100 000), with 2 counties (Rio Arriba and Mora) in New Mexico having overdose death rates (67.4 per 100 000 and 65.0 per 100 000) at 5 times the national rate[7,8] (Figure 1).

During the 1990s, the undertreatment of pain, especially among disadvantaged groups, was first identified as a deficiency in medical practice and education.[9] In response, academic medical centers, state medical boards, and accrediting agencies stressed the need for pain to be routinely assessed and effectively treated, which led pharmaceutical companies to aggressively market opioids and other drugs for the treatment of chronic pain.[10] Over the past decade there has been a growing recognition that the pendulum may have swung too far, creating an unprecedented epidemic of nonmedical use of opioids, with deleterious effects and—most notably—overdose deaths.[5,11] Primary care clinicians who manage the majority of patients with chronic noncancer pain and addiction struggle with access to specialty care for these patients and often lack the knowledge and confidence of best practices in pain and addiction treatment.[12–18]

State and federal legislators and public health officials faced with the exponential and unprecedented misuse of prescription drugs have sought to control the problem in large part through the passing of new statutes and regulations governing the prescribing practices of physicians and other health care professionals. Unfortunately, these and other rules-based approaches could frequently have the unintended consequence of interfering with the physician–patient relationship and undermining practitioners' ability to follow the Hippocratic Oath to "treat patients according to my ability and judgment."[19]

While additional training and consultation is often a component of these new state laws, New Mexico realized that the number of specialists available to provide these services is insufficient to meet the need and thus chose to adopt continuing education as a cornerstone of its public health policy. A unique coalition of the University of New Mexico Health Sciences Center (UNMHSC; the

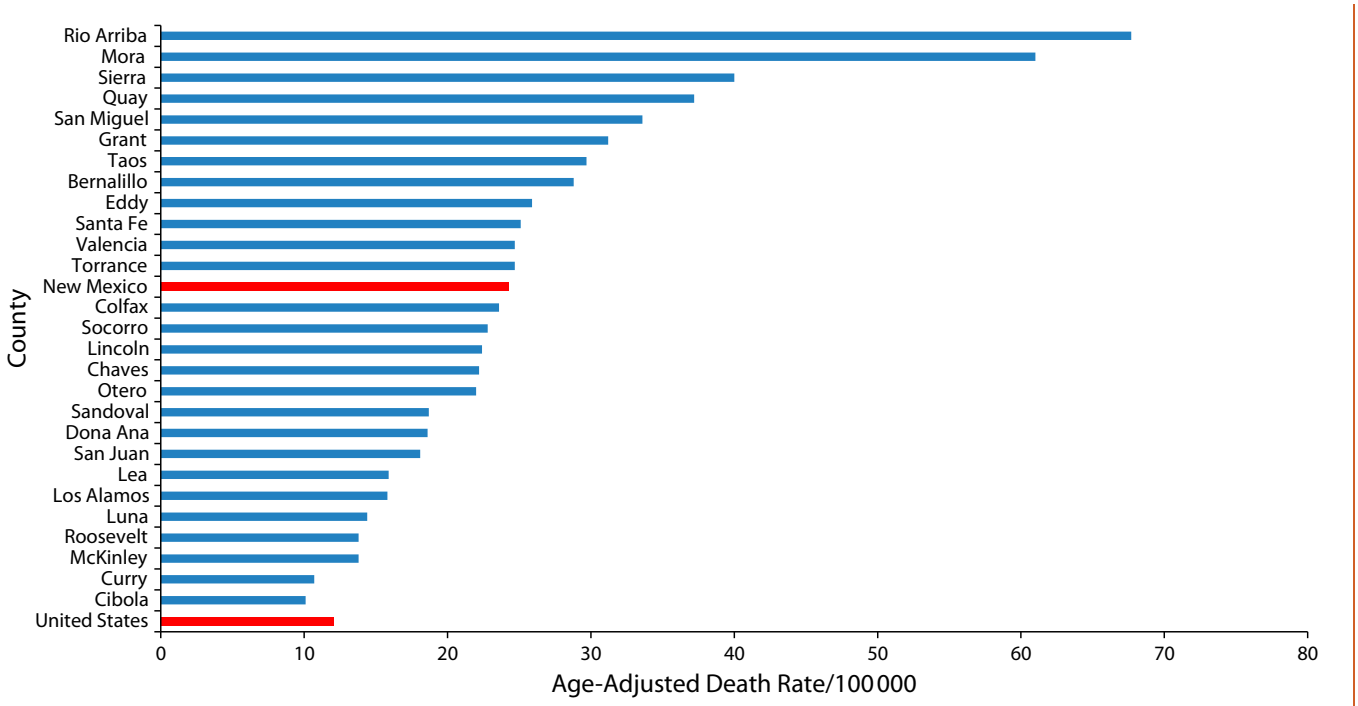


FIGURE 1—Drug overdose death rates by County: New Mexico, 2008–2012, and US, 2010.

only academic medical center in the state); the New Mexico Department of Health; the New Mexico Medical, Nursing, and Pharmacy Boards; Project ECHO (Extension for Community Healthcare Outcomes) Institute; and the New Mexico Veterans Affairs Health Care System adopted a values-based educational approach as a primary intervention utilized to improve practitioner management of both pain and addiction.

During the 2012 New Mexico State Legislative Session, Senate Bill 215 was adopted, which revised the Pain Relief Act of April 5, 1999, and required all health care professional licensing boards to mandate continuing medical education (CME) training in the treatment of chronic pain.[20] The bill also mandated the development of a Governor's Prescription Drug Misuse and Overdose Prevention and Pain Management Advisory Council. The Governor's Council included representation from the major stakeholders in the coalition.

The New Mexico Medical Board (NMMB) developed a working committee composed of New Mexico Medical Board members and UNMHSC pain specialists. With input from the public, the committee determined the optimal number of CME hours that physicians and physician assistants should receive. The committee recognized that the epidemic of unintentional opioid overdoses and prescription medication misuse represented a true public health emergency, and that emergency, like other public health crises such as infectious disease outbreaks, warranted an immediate response focused on practitioner education.[21]

The New Mexico Medical Board committee developed a consensus on the CME topics to be covered in these trainings:

- a basic awareness of the epidemic of chronic pain as well as opioid abuse, addiction, and diversion;
- management of pain with non-opioid medications;
- Safer opioid prescribing;
- identification and management of patients at risk for addiction; and
- current state and federal rules and regulations including rules regarding use of the prescription monitoring program (PMP).[22]

On August 10, 2012, the NMMB developed Rule 16.10.14, requiring physicians and physician assistants to complete 5 hours of CME in pain and addiction between November 1, 2012, and June 30, 2014. Additionally, the NMMB mandated that all physicians and physician assistants sign up with the New Mexico Board of Pharmacy PMP and check the PMP each time a new prescription for chronic opioids is written and every 6 months thereafter.

Through the collaboration of the Governor's Prescription Drug Misuse and Overdose Prevention and Pain Management Advisory Council, a number of health care professional licensing boards—including the nursing, pharmacy, podiatry, and dentistry, as well as the New Mexico Department of Health

(for certified nurse-midwives)—in New Mexico have now followed the NMMB in mandating emergent, time-sensitive pain and addiction CME as well as pain-and-addiction CME requirements as part of their individual board's renewal cycle.

Members of the faculty from the UNMHSC Pain Center, Project ECHO Pain, and the New Mexico Veterans Affairs Health Care System, all of whom are experienced pain practitioners and medical educators, developed a half-day course designed specifically to fulfill the requirements of the NMMB. These courses are a means of bringing academic expertise and specialist consultation to address the public health crises of unintentional overdose and chronic pain in New Mexico.

THE CONTINUING MEDICAL EDUCATION COURSE

The CME course is designed to satisfy the New Mexico Medical Board 5-hour requirements on pain management. Topics included in the course are

- an overview of the prescription opioid crisis nationally and statewide,
- safe opioid prescribing,
- the use of nonopioid medications in pain management,
- pediatric and adolescent pain diagnosis and treatment,
- opioid misuse and addiction, and
- federal and state regulations pertaining to pain prescribing, including the new state law.

In addition to didactic presentations, the course allows participants to choose to attend 2 of 4 workshops offered relating to

- pediatric and adolescent pain,
- safe opioid prescribing,
- treatment of the patient who is misusing opioids, and
- treatment of the patient with pain and psychiatric comorbidities.

The course has been publicized through mass mailing to physicians, physician assistants, and advanced practice nurses. To facilitate attendance for practicing clinicians across the state, the course was held on Saturday mornings at 6 different times and dates and varying locations in New Mexico including the Raymond G. Murphy VA Medical Center, the University of New Mexico Health Sciences Center, Las Cruces in Southern New Mexico, and Santa Fé in Northern New Mexico. The course received logistical support from the University of New Mexico School of Medicine CME office and was funded only through modest participation fees, with no funding from external or commercial sources.

METHODS

To assess the success of the educational intervention in improving practice, UNMHSC faculty conducted a research study. The short-term objectives for the study were to determine whether the course would result in improved knowledge, self-efficacy, and attitudes for the course participants regarding pain management and opioid or benzodiazepine prescribing when treating patients with pain and addiction. Longer-term objectives were to consider the association between educational efforts such as the 1-day course, the policy and regulatory initiatives for pain and opioids, and the prescribing patterns of New Mexico clinicians including adoption of best practices recommended in the course. The broader public health goal of these efforts in education and regulation was to achieve a reduction in prescription opioid deaths in the state.

During the informed consent process, we explained the voluntary and anonymous nature of the study to the participants and assured them that their participation in the study had no bearing on their completion of the course or receipt of continuing education credit for the course. Clinicians were surveyed before and after the 5-hour course by way of 3 different surveys: a 10-item multiple-choice pain and opioid knowledge questionnaire, a 10-item self-efficacy survey, and a 12-item attitude survey.

Several course faculty members developed the 10-item chronic pain multiple choice knowledge questionnaire based on the course content. These knowledge items, as well as the 10-item self-efficacy survey, have been used with community clinicians from New Mexico who participate in the University of New Mexico Project ECHO[23,24] Chronic Pain Program.

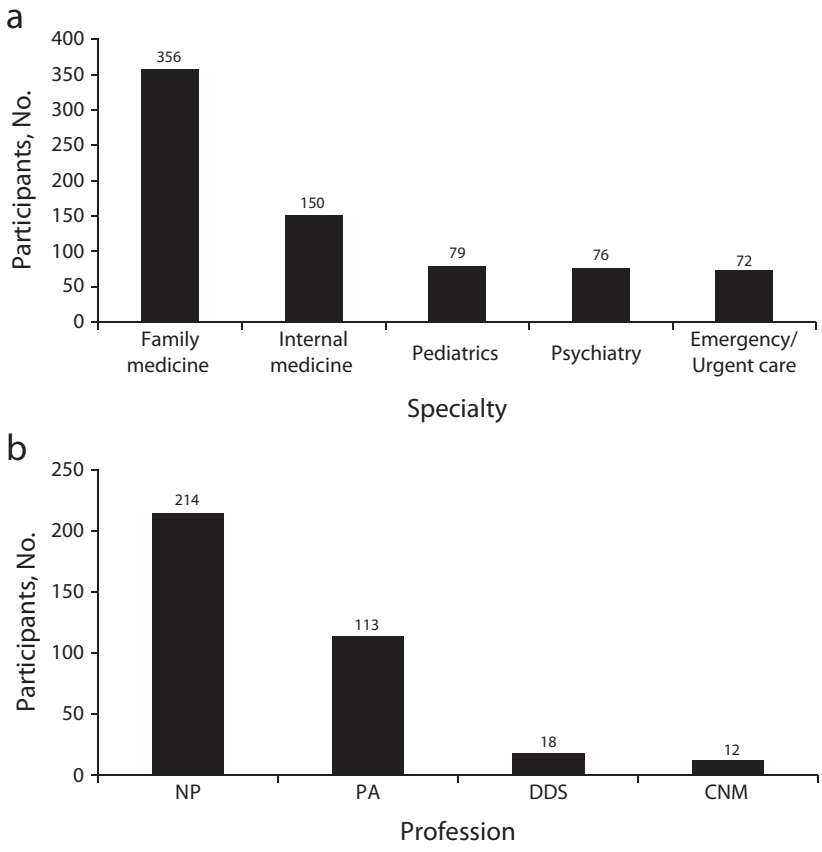
The KnowPain 12-Attitude Survey, developed originally as the KnowPain-50 Survey[25] and then revalidated in short form by the University of Washington with support from University of New Mexico, was implemented to assess change in clinician attitudes in caring for patients with pain and addiction.

We collected surveys from 6 courses held between November 3, 2012, and May 18, 2013: 4 in Albuquerque (the most populated urban center of the state), 1 in Las Cruces (Southern New Mexico), and 1 in Santa Fé (Northern New Mexico). A pre–post design was used to compare participants' knowledge, perceived competence in chronic pain management, and attitudes toward caring for patients with pain and addiction at both the beginning and end of the course.

RESULTS

Cumulatively, 1090 clinicians attended the 6 courses. One percent of the attendees opted out of participating in the study. The participants included 733 (67%) physicians (i.e., MD or DO) and 327 (30%) midlevel clinicians (i.e., nurse practitioner or physician assistant). The remaining 30 (3%) participants included various health care professionals (e.g., DDS, certified nurse-midwife). Most physician participants were trained in primary care specialties of family medicine and internal medicine; these are the clinicians who provide the majority of pain management in New Mexico. Pediatricians, psychiatrists, and emergency clinicians represented the next largest group of participants (Figure 2).

Survey results comparing pre- and postcourse scores demonstrated



Note. CNM = certified nurse-midwife; DDS = doctor of dental surgery; NP = nurse practitioner; PA = physician assistant.

FIGURE 2—Most represented University of New Mexico Pain Center Course participants by (a) physician specialty (n = 733) and (b) profession for nonphysician clinicians (n = 357): November 3, 2012–May 18, 2013.

a significant positive change in knowledge, self-efficacy, and attitudes on the Knowledge Survey, the Self-Efficacy Survey, and the KnowPain-12 Survey with large effect sizes of 1.04, 1.06, and 1.10 for each pre–post comparison (Table 1). There were also promising trends in terms of the broader public health objectives the consortium sought to achieve through the combined policy and educational initiative. Although there were slight increases in the total numbers of opioid prescriptions filled since 2008, the total morphine milligram equivalents (MME) of opioids dispensed continually decreased since the peak in July–December 2011. In addition, the amount of opioid MME per prescription also continued to decline since July–December 2011 (Table 2). This decline was accompanied by a shift in prescribing pattern of opioid analgesics with a decline in high-dose opioid prescriptions (>100 MME/day) from a high of 14.3% of all opioid analgesic prescriptions filled in 2010 to 12.1% in 2013. The lower doses of opioid analgesics (up to 40 MME/day) have increased from 49.5% of all opioid prescriptions filled in 2010 to 56.9% in 2013.

The total Valium milligram equivalents of benzodiazepines dispensed also continued to decline since the peak in January–June 2011 and dropped to levels from 2008 PMP data for 2 years; a reduction in benzodiazepine prescriptions filled also was documented. The University of New Mexico CME course underscored that the vast majority of overdose deaths combined opioids with alcohol, benzodiazepines, or other substances of abuse. The NMMB requires practitioners to check the PMP for other controlled substances being prescribed to the patient. These data suggest that practitioners have heeded this warning as benzodiazepine prescriptions also decreased over the past 2 years (Table 2).

A long-term goal of this educational intervention is to reduce prescription opioid related deaths in the state of New Mexico. During 2012, there was a decline in the total drug overdose death rate from 25.9 per 100 000 in 2011 to 24.0 per 100 000 in 2012 and a decrease in the number of deaths from 521 in 2011 to 485 in 2012. Several additional years of data from the New Mexico Department of Health will be needed to assess the relationship between the educational intervention and prescription opioid overdose deaths (Bureau of Vital Records and Health Statistics, New Mexico Department of Health, Underlying Cause of Death).

DISCUSSION

We report here on 1 state's response to the crises of prescription opioid misuse and overdose through a legislatively mandated CME program designed to have a positive public health impact on

TABLE 1—Chronic Pain 1-Day Survey Summary: New Mexico, November 3, 2012–May 18, 2013

Measure	Precourse Mean	Postcourse Mean	Difference				
			No.	Mean (SD)	Student *t*	*P*	Effect Size (d)
Knowledge Survey							
Test score (10 possible)	7.04	8.78	1075	1.74 (1.68)	34.01	< .001	1.04
Percent score (100% possible)	70.4	87.8	1075	17.4 (16.8)	34.01	< .001	1.04
Self-Efficacy Survey							
Overall rating (7 possible)	4.56	5.47	1073	0.91 (0.85)	34.80	< .001	1.06
Percent rating (100% possible)	65.2	78.1	1073	12.9 (12.2)	34.80	< .001	1.06
KnowPain-12 Survey							
Overall rating (6 possible)	4.23	4.66	1052	0.44 (0.39)	35.63	< .001	1.10
Percent rating (100% possible)	70.5	77.8	1052	7.3 (6.6)	35.63	< .001	1.10

Note. Overall rating: tests for significance. Scores were adjusted to be unidirectional for the overall analysis, with the higher number being the ideal direction of improvement.

prescribing patterns state-wide. The results demonstrate that an innovative coalition of an academic medical center, the state department of health, the medical and pharmacy licensing boards, the Project ECHO Institute, and the state legislature can develop a mandated CME requirement that significantly impacts the knowledge, attitudes, and self-efficacy of practitioners with regard to best practices in pain management and opioid prescribing.

Additionally, there are early but encouraging trends that this combined rules- and values-based approach has contributed to a reduction in the quantity of opioid medications prescribed after a 5-year steady increase in those prescriptions in New Mexico. The New Mexico Board of Pharmacy data suggest that New Mexico clinicians are adopting the best practices of prescribing lower doses of opioids, because higher doses of opioids are associated with increased morbidity and overdose deaths, especially in chronic pain patients.[26] The data are preliminary to claim that the efforts of the coalition will achieve the public health goal of reducing overdose deaths involving opioids, which are frequently combined with benzodiazepines and alcohol.

The study has important limitations. It is possible that other factors have contributed to the decline in opioid prescribing in New Mexico. Media attention has focused on the New Mexico prescription opioid crisis as well as prescribers who have been sanctioned by the Medical Board for excessive opioid prescribing.[27] These news stories could certainly have influenced the opioid prescribing patterns of clinicians. The UNMHSC course was only one of several educational programs offered to meet the CME requirement, although it should be noted that several of the core faculty of the UNMHSC Pain

TABLE 2—Prescriptions of Opioid Analgesics and Benzodiazepines: New Mexico Prescription Monitoring Program Data, 2008–2013

Time Period	Opioid Prescriptions Filled, No.	Total MME of Opioids Dispensed, No.	Opioid MME per Prescription, No.	Benzodiazepine Prescriptions Filled, No.	Total VME of Benzodiazepines Dispensed, No.
2008 January–June	748 518	835 798 584	1117	330 192	208 790 533
2008 July–December	748 716	838 432 412	1120	334 092	215 025 059
2009 January–June	782 970	872 458 043	1114	352 051	230 144 820
2009 July–December	783 379	920 667 804	1175	355 856	234 702 614
2010 January–June	803 663	980 218 843	1220	366 773	247 186 367
2010 July–December	778 050	985 578 313	1267	351 687	243 520 952
2011 January–June	809 523	972 977 485	1202	355 233	247 584 917
2011 July–December	880 838	1 039 292,508	1180	380 106	263 125 880
2012 January–June	863 768	998 153 444	1156	365 219	252 794 005
2012 July–December	886 416	969 522 667	1094	362 415	250 480 873
2013 January–June	896 925	926 180 808	1033	358 570	229 931 101

Note. MME = morphine milligram equivalents; VME = Valium milligram equivalents.

Management course, members of the Medical and Pharmacy Boards, and the Governor's Advisory Council also participated in several of these other programs.

Even with these limitations, the coalition has produced positive public health benefits. The key prescribing parameters associated with opioid overdoses and deaths are all trending downward, including

- the number of opioid and benzodiazepine prescriptions filled,
- the total MME of opioids and Valium milligram equivalents of benzodiazepines dispensed,
- the number of opioids included in any single prescription, and
- the opioid MME per prescription dispensed.

These changes in prescribing patterns may represent clinician adoption of "best practices" in pain and addiction that were taught in the educational intervention. In 2013, the Federation of the State Medical Boards developed a new "Model Policy for Use of Opioid Analgesics in the Treatment of Chronic Pain," which identifies the same objectives taught in the UNMHSC course on pain and addiction.[28]

A comparison of the New Mexico Medical Board CME regulations with other states shows that the New Mexico coalition has attained these public health goals without the restriction of physician autonomy seen in other states.[29] No other state has an academic medical center so integrally involved in the formulation and implementation of the CME requirement on pain management. We would argue that the participation of UNMHSC helped steer the legislative process to include a primarily educational focus as part of its regulatory trajectory. The intent of the New Mexico coalition is to avoid the "chilling effect" noted in other states, especially among primary care clinicians treating legitimate chronic pain patients with opioid analgesics because of legal and regulatory ramifications.[13,30] The New Mexico Board of Pharmacy prescribing data thus far suggest that clinicians are not refusing to prescribe opioids for chronic pain, but instead are prescribing them more safely and responsibly.

There are 5 unique aspects of the New Mexico policy and educational initiative that may account for these positive outcomes.

First—and we think the most important—is the statutory requirement that pain CME include education on addiction. Studies have found that practitioners have inadequate training in each of these 2 areas. The fact that there is insufficient communication and coordination between the pain and addiction communities,[31,32] and that failure of public health and subject-matter experts to provide clear and consistent guidance on the management of the co-occurring disorders of pain and addiction, leaves clinicians with mixed messages.[33]

Second, physicians are not the only practitioners who prescribe the opioids that are misused and abused. Currently California, Iowa, Massachusetts, Tennessee, and West Virginia require CME specific to chronic pain (http://www.fsmb.org). However, New Mexico is the only state requiring CME training on chronic pain and safe opioid prescribing for all practitioners with DEA registration.

Third, unlike several other states that target only primary care physicians, no medical or surgical specialty in New Mexico is exempt from the CME requirement.

Fourth, only New Mexico requires pain CME with each license renewal. California, for example, requires only a 1-time, 12-hour requirement on Pain Management and End of Life Care (combined).

Fifth, Tennessee is the only other state that requires both the querying of the PMP and the taking of the CME, but whereas Tennessee requires an annual PMP inquiry for each patient, New Mexico mandates that inquiry every 6 months.[29]

It is our contention in this article that the opioid prescribing behaviors of health care professionals can be positively affected by mandated education without mandating prescription limits. We have described the beneficial outcomes achieved by a coalition of the boards of medicine and pharmacy, the state legislature, an academic medical center, and Project ECHO Pain in mandating a 5-hour CME course covering best practices in chronic pain and addiction management. The course improved clinician knowledge, attitudes, and self-efficacy, and there is emerging evidence that these improvements have translated into real-world, positive changes in practitioner prescribing. It is our hope that these changes will, in time, stem the tragic tide of opioid deaths in New Mexico and provide other states with an effective alternative in their own efforts to combat the chronic pain, addiction, and prescription opioid crises. ■

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Contributors

J. G. Katzman developed the concept and the design for the study. J. G. Katzman and C. M. A. Geppert were the primary authors of the article. J. G. Katzman, M. Landen, L. Loring, and S. M. Jenkusky are all members of the New Mexico Governor's Prescription Drug Misuse and Overdose Prevention and Pain Management Advisory Council. J. G. Katzman, G. D. Comerci, and C. M. A. Geppert developed the Pain and Addiction course curriculum. G. D. Comerci, S. Kalishman, M. Landen, and S. M. Jenkusky contributed to the article preparation. S. Arora, S. Kalishman, L. Loring, and M. Landen performed the data analysis. L. Marr, C. Camarata, D. Duhigg, J. Dillow, E. Koshkin, and D. E. Taylor developed the course curriculum and administered the research survey.

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Human Participant Protection

The institutional review board of the University of New Mexico Health Sciences Center approved this study.

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