Published in final edited form as:
Health Aff (Millwood). 2011 August ; 30(8): 1420–1424. doi:10.1377/hlthaff.2011.0759.

Group Health's Initiative To Avert Opioid Misuse And Overdose Among Patients With Chronic Noncancer Pain

Claire E. Trescott,
Medical director of primary care services at Group Health, in Seattle, Washington

Randi M. Beck,
Chief of physical medicine and rehabilitation at Group Health

Michelle D. Seelig, and
Medical director for clinical knowledge development and support in the Department of Clinical Improvement and Prevention at Group Health

Michael R. Von Korff
Senior investigator at the Group Health Research Institute

Michael R. Von Korff: vonkorff.m@ghc.org

Abstract

Increased opioid prescribing for chronic pain that is not due to cancer has been accompanied by large increases in abuse and overdose of prescription opioids. This paper describes how Group Health, a Seattle-based nonprofit health care system, implemented a major initiative to make opioid prescribing safer. In the initiative's first nine months, clinicians developed documented care plans for almost 6,000 patients receiving long-term opioid therapy for chronic pain. Evaluation of the initiative's effects on care processes and trends in adverse events is under way.

Opioid drugs—including morphine, codeine, hydrocodone, oxycodone, and methadone—are a class of natural or synthetic analgesics that act on opiate receptors in the brain. Since the 1980s large increases in opioid prescribing for the management of chronic pain not due to cancer have taken place in the United States.[1–4] For example, in two large health plans, the percentage of adults receiving long-term opioid therapy for chronic noncancer pain doubled between 1997 and 2005, reaching 4–5 percent of all adult enrollees.[1]

Dramatic changes in opioid prescribing were fueled in part by advocacy and educational initiatives supported by the pharmaceutical industry,[5] in the absence of strong evidence from long-term randomized controlled trials supporting the effectiveness of long-term opioid therapy for chronic noncancer pain.[6] The magnitude and burden of patient suffering caused by chronic pain has been extensively documented by epidemiologic research.[7] However, the role that opioids should play in effective, safe, and compassionate management of chronic pain remains a contentious and controversial issue in clinical medicine.[8]

Regardless of the value of long-term opioid therapy in the management of chronic non-cancer pain, there is now a consensus that the rise in opioid prescribing for that pain, and the increased availability of opioids in US households, has been accompanied by alarming increases in prescription opioid abuse, diversion of opioids for nonmedical use, and fatal overdoses.[9] Recognition of the problem has been growing, and some actions have already been taken to address it. Information from drug abuse surveillance systems identified problems accompanying increased opioid prescribing.[10,11] In 2005 Gary Franklin, medical director of Washington State's Department of Labor and Industries, and coauthors called attention to the illness and death resulting from increased opioid prescribing.[12] This led to

Washington State's model guideline for opioid prescribing, originally published in 2007 and revised in 2010.[13]

The guideline, based on the limited scientific evidence available, offered recommendations to providers about prudent opioid prescribing and monitoring; advice to prescribers about obtaining specialist consultations for patients abusing opioids and for patients on high-dose regimens but not benefiting from opioid treatment; and resources for educating patients about the risks and potential benefits of long-term use of opioids for chronic noncancer pain.

More recently, this problem took center stage in national discussions. The White House Office of National Drug Control Policy declared in April 2011 that prescription drug abuse "is a major public health and public safety crisis"[9] and announced a plan of action to address the problem. The Office of National Drug Control Policy, the Food and Drug Administration, and the Drug Enforcement Agency jointly called for an initiative to stem the epidemic of prescription drug abuse, including education of health care providers and patients, enhanced monitoring of opioid prescribing, more effective methods for disposing of unused opioids, and strengthened law enforcement to reduce illegal distribution.

A Learning Health Care System Responds

As opioid prescribing increased over the years, leaders at Group Health—a consumer-governed, nonprofit health care system based in Seattle, Washington—grew increasingly aware of major problems arising in patient care related to opioids. This awareness came through Group Health's monitoring of patient care, through research on long-term opioid use being conducted at Group Health, and through public-domain research in other care settings. As a consequence, when the federal plan to control prescription drug abuse was announced, Group Health had already implemented a major initiative involving its primary care teams.

The initiative focused on 7,000 patients who were receiving long-term opioid therapy at low, medium, and high dosage levels. The aim was to reduce the risks of opioid abuse, misuse, and diversion for nonmedical use; overdose; and other adverse medical, psychological, and social effects. This initiative sought to standardize opioid prescribing for chronic noncancer pain and make such prescribing safer. The intent was to ensure compassionate, evidence-based care for patients with chronic noncancer pain, while not placing undue restrictions on clinically appropriate prescribing of prescription analgesics.

Group Health responded to the opioid problem as a "learning health care system."[14] In the Group Health context, the delivery system, research institute, and foundation share common goals, collaborating to improve the effectiveness, safety, and value of health care. Group Health makes the lessons it learns through such collaboration available to the public. Its response to the epidemic of prescription opioid abuse provides an example of how a learning health care system can serve its enrollees and the broader public, and how each of the organization's parts contribute to reaching a common goal.

Synergies Of Practice And Research

The Group Health delivery system had first begun to strengthen its guidance on opioid prescribing in 2005. The goal was to reduce the risks of opioid misuse and abuse among patients who were using these medications as a long-term treatment for chronic pain. Around the same time, Group Health investigators also initiated federally funded research to study trends in and consequences of increased opioid prescribing. This research, which was published in peer-reviewed journals, helped inform the national discussion regarding long-term opioid prescribing for chronic noncancer pain.[1,15–19]

For example, in 2010 Group Health researchers published the first study linking prescribed opioid dosage to marked increases in overdose risk among patients undergoing long-term opioid therapy. The study showed that patients receiving medically prescribed opioids might have direct, dose-related increases in the risk of drug overdose.[20] In an editorial accompanying the Group Health article, Tom McLellan, then at the White House Office of National Drug Control Policy, and Barbara Turner, executive deputy editor of the *Annals of Internal Medicine*, observed, "The threat to patient safety is too great to allow current pain management and opioid-prescribing practices to remain as they are."[21]

Group Health was not alone in calling attention to the problem. In 2008 the Centers for Disease Control and Prevention reported that almost 14,000 Americans were dying of drug overdoses involving prescription opioids each year.[22] Clinicians were also expressing concerns about problems they were observing with increased prescribing of opioids.[8,23]

Clinical leaders in primary care and rehabilitation medicine at Group Health reached a consensus that further action was needed to ensure safe opioid prescribing practices for patients with chronic noncancer pain. The Group Health Foundation, responding to the converging interests of the delivery system and the research institute in finding a solution to this problem, provided grant support for the development of an online clinician education program on chronic pain management and opioid prescribing. The program was adapted from a program developed in 2007 and widely implemented by the Department of Veterans Affairs, starting in 2008. This online educational program was one part of Group Health's broader initiative to standardize long-term opioid prescribing for patients with chronic noncancer pain.

The Group Health Initiative

In 2009 Group Health laid plans for a Rapid Process Improvement Workshop to address the problems surrounding the use of prescription opioids. The workshop was intended to draw on the knowledge, skills, and resources of all parts of Group Health—delivery system, research institute, and foundation—to standardize opioid prescribing in ways that would improve patient safety without placing undue restrictions on clinically appropriate prescribing. Participants included representatives from primary care, physical and rehabilitation medicine, pharmacy, nursing, behavioral health, and clinical informatics.

In preparation for the workshop, Group Health developed a detailed guideline for opioid prescribing. The guideline drew on Washington State's model guideline,[13] along with input from leaders in primary care, physical and rehabilitation medicine, clinical improvement, pharmacy, legal affairs, and other relevant departments to define new care processes that could be implemented in Group Health's primary care clinics. Attendees at the workshop were to analyze the proposed guideline and to define care processes for implementation—using what are known as lean management techniques,[24] focused on increasing efficiency and eliminating waste.

The workshop took place in June 2010, and implementation of the practice changes that its participants recommended began in September 2010. Among the key changes were designating one physician as responsible for the management of long-term opioid therapy for each patient receiving opioids for ninety days or more. For each of these patients, an individualized care plan was developed with active engagement of the patient. Patients' expectations for the safe use of opioids were discussed using a standardized treatment agreement. Patients received education on the risks and potential benefits of long-term opioid use and gave informed consent regarding this treatment, which was documented in the electronic health record. Prescription refill processes were modified to avert problems when patients sought a refill on short notice and to keep patients from running out of

medication over a weekend by ensuring that one-month refills were written for twenty-eight days, rather than thirty. Periodic monitoring visits were carried out by the prescribing clinician, with the guideline specifying minimum numbers of monitoring visits to be completed per year based on dosage level and patient risk factors, such as a history of substance abuse or severe psychological problems. Periodic urine drug screening by the prescribing clinician was recommended for patients on higher-dose regimens or with significant risk factors for opioid abuse.

Implementation included giving prescribing clinicians tools in the electronic health record to support the guideline. These tools included standardized patient education materials describing the risks of long-term opioid therapy, a treatment agreement form, an online calculator for estimating morphine equivalent dose developed for the Washington State model guideline, and a care-plan template in the electronic health record. For clinicians needing support for patients with complex problems, specialty consultations were available from staff members in physical and rehabilitation medicine and in behavioral health.

Performance measures were established for monitoring progress in the guideline's implementation, including the number and percentage of patients receiving long-term opioid therapy who had a care plan documented in the electronic health record. Implementation was supported by vigorous advocacy from leaders of Group Health's medical staff.

To initiate the process, the delivery system gave primary care clinicians who were treating patients with chronic pain a list of their patients receiving long-term opioid therapy. The initiative was implemented starting with patients who were receiving an average daily dose of 120 mg or more of morphine equivalents, but expanding to all patients using opioids as a long-term treatment for chronic noncancer pain.

Clinicians developed care plans for their patients using the standardized template in the electronic health record. Care plans recorded the treatment goals, medication regimen, frequency of monitoring visits, requirements for urine drug screening when applicable, and documentation of informed-consent discussions with patients concerning potential risks and benefits. The delivery system also trained primary care clinicians to serve as expert consultants within their clinics. Group Health implemented the online clinician education program clinic by clinic, followed by group discussions among clinicians at each primary care clinic about standardizing the management of prescription opioids.

Between September 2010, when Group Health launched its initiative, and May 2011, almost 6,000 patients on long-term opioid therapy at all dosage levels—85 percent of the targeted patient population—met with their clinician to develop care plans that were documented in the electronic health record. That number increased steadily during this period. In contrast, before the initiative began, few chronic pain patients had care plans documented in their records; this tended to undermine both the coordination of care and the management of medication.

Learning From Experience

The Group Health initiative drew on expert guidelines, contributions from all parts of Group Health, and the available scientific evidence to improve the management of long-term opioid therapy for chronic noncancer pain. Timely evaluation of the initiative's effects is essential so that participants can learn from experience and adjust guidelines and care processes based on research results. An initial evaluation of the Group Health initiative is under way. It will first examine trends in the standardization of care processes, including the timeliness of monitoring visits, the use of urine drug screening, and the extent to which patients receive excess supplies of opioids or uncoordinated opioid prescriptions from multiple prescribers.

After that, it will assess trends in the rates of adverse events, including diagnosed abuse of prescription opioids and overdoses with prescription opioids.

The Group Health Research Institute has sought federal grant support for research comparing Group Health and another health plan in terms of long-term opioid therapy trends and risks, before and after the implementation of Group Health's initiative. Such research can contribute to knowledge about the effectiveness of these kinds of initiatives to increase the safety of opioid prescribing for chronic noncancer pain.

Benefits Of 'Learning' Health Systems

The response of a "learning" health care system to the crisis of prescription drug abuse exemplifies how collaboration among a health care delivery system, scientists conducting publicly supported research within the health plan, and an affiliated health care foundation can serve patients and the broader public interest.

In the specific case of prescribing opioids for the long-term management of chronic non-cancer pain, it is too early to tell whether practice changes such as those implemented at Group Health will improve patient outcomes, reduce risks, or increase health care value. Major uncertainties remain about how to standardize opioid prescribing practices most effectively and safely. Therefore, timely evaluation of program effects is essential so that we can learn from experience and make adjustments to guidelines and care processes based on the results of evaluative research.

By linking efforts to improve care with research assessing the effects of changes in practice, patients benefit directly. The general public also benefits through increased knowledge of how to provide safe and effective care.

Acknowledgments

This work was supported by grants from the Group Health Foundation, the National Institute of Drug Abuse (R01 DA022557), and the National Institute of Aging (R01 AG034181). Michael Von Korff receives support from grants to the Group Health Research Institute from Johnson & Johnson for developing a risk score for chronic pain prognosis and a study of acetaminophen use.

NOTES

1. Boudreau D, Von Korff M, Rutter CM, Saunders K, Ray GT, Sullivan MD, et al. Trends in long-term opioid therapy for chronic non-cancer pain. Pharmacoepidemiol Drug Saf. 2009; 18(12):1166–75. [PubMed: 19718704]
2. Caudill-Slosberg MA, Schwartz LM, Woloshin S. Office visits and analgesic prescriptions for musculoskeletal pain in US: 1980 vs. 2000. Pain. 2004; 109(3):514–9. [PubMed: 15157714]
3. Braden JB, Fan MY, Edlund MJ, Martin BC, DeVries A, Sullivan MD. Trends in use of opioids by non-cancer pain type 2000–2005 among Arkansas Medicaid and HealthCare enrollees: results from the TROUP study. J Pain. 2008; 9(11):1026–35. [PubMed: 18676205]
4. Zerzan JT, Morden NE, Soumerai S, Ross-Degnan D, Roughhead E, Zhang F, et al. Trends and geographic variation of opiate medication use in state Medicaid fee-for-service programs, 1996 to 2002. Med Care. 2006; 44(11):1005–10. [PubMed: 17063132]
5. Meier, B. Pain killer: a "wonder" drug's trail of addiction and death. Emmaus (PA): Rodale Press; 2003.
6. Von Korff M, Kolodny A, Deyo RA, Chou R. Long-term opioid therapy reconsidered. Ann Intern Med. Forthcoming.
7. Croft, P.; Blyth, FM.; van der Windt, D. The global occurrence of chronic pain: an introduction. In: Croft, P.; Blyth, F.; van der Windt, D., editors. Chronic pain epidemiology: from aetiology to public health. Oxford: Oxford University Press; 2010. p. 9-18.

8. Katz MH. Long-term opioid treatment of nonmalignant pain: a believer loses his faith. Arch Intern Med. 2010; 170(16):1422–4. [PubMed: 20837826]
9. White House Office of National Drug Control Policy. Epidemic: responding to America's prescription drug abuse crisis [Internet]. Washington (DC): The Office; 2011. [cited 2011 Jul 19]. http://www.whitehousedrugpolicy.gov/publications/pdf/rx_abuse_plan.pdf
10. Zacny J, Bigelow G, Compton P, Foley K, Iguchi M, Sannerud C. CPDD taskforce on prescription opioid non-medical use and abuse: position statement. Drug Alcohol Depend. 2003; 69(3):215–32. [PubMed: 12633908]
11. Von Korff M, Deyo RA. Potent opioids for chronic musculoskeletal pain: flying blind? Pain. 2004; 109(3):207–9. [PubMed: 15157679]
12. Franklin GM, Mai J, Wickizer T, Turner JA, Fluton-Kehoe D, Grant L. Opioid dosing trends and mortality in Washington State workers' compensation, 1996–2002. Am J Ind Med. 2005; 48(2): 91–9. [PubMed: 16032735]
13. Agency Medical Directors' Group. Opioid dosing guideline for chronic non-cancer pain [Internet]. Olympia (WA): The Group; 2010. [cited 2011 Jul 28]. Available from: http://www.agencymeddirectors.wa.gov/opioiddosing.asp
14. Larson, EB.; Greene, S. Research networks: fulfilling the potential of the learning healthcare system through emerging research networks. In: Olsen, L.; McGinnis, JM., editors. Redesigning the clinical effectiveness research paradigm: innovation and practice-based approaches. Washington (DC): National Academies Press; 2010. p. 307-22.
15. Von Korff M, Saunders K, Thomas Ray G, Boudreau D, Campbell C, Merrill J, et al. De facto long-term opioid therapy for noncancer pain. Clin J Pain. 2008; 24(6):521–7. [PubMed: 18574361]
16. Saunders KW, Dunn KM, Merrill JO, Sullivan M, Weisner C, Braden JB, et al. Relationship of opioid use and dosage levels to fractures in older chronic pain patients. J Gen Intern Med. 2010; 25(4):310–5. [PubMed: 20049546]
17. Sullivan MD, Von Korff M, Banta-Green C, Merrill JO, Saunders K. Problems and concerns of patients receiving chronic opioid therapy for chronic non-cancer pain. Pain. 2010; 149(2):345–53. [PubMed: 20334974]
18. Von Korff M, Merrill JO, Rutter CM, Sullivan M, Campbell CI, Weisner C. Time-scheduled vs. pain-contingent opioid dosing in chronic opioid therapy. Pain. 2011; 152(6):1256–62. [PubMed: 21296498]
19. Weisner CM, Campbell CI, Ray GT, Saunders K, Merrill JO, Banta-Green C, et al. Trends in prescribed opioid therapy for non-cancer pain for individuals with prior substance use disorders. Pain. 2009; 145(3):287–93. [PubMed: 19581051]
20. Dunn K, Saunders K, Rutter C, Banta-Green C, Merrill J, Sullivan M, et al. Opioid prescriptions for chronic pain and overdose: a cohort study. Ann Intern Med. 2010; 152(2):85–92. [PubMed: 20083827]
21. McLellan AT, Turner BJ. Chronic noncancer pain management and opioid overdose: time to change prescribing practices. Ann Intern Med. 2010; 152(2):124.
22. Paulozzi LJ, Xi Y. Recent changes in drug poisoning mortality in the United States by urban-rural status and drug type. Pharmacoepidemio Drug Saf. 2008; 17(1):997–1005.
23. Ballantyne JC. Pain medicine: repairing a fractured dream. Anesthesiology. 2011; 114(2):243–6. [PubMed: 21239973]
24. Womack JP, Jones DT. Lean consumption. Harv Bus Rev. 2005; 83:58–68. [PubMed: 15768676]

Biographies

Claire E. Trescott is medical director of primary care services at Group Health.

Claire Trescott and coauthors describe here a Practice Innovation: an initiative undertaken by Group Health—a Seattle-based, nonprofit health care system—to make the prescribing of opioids safer for patients with noncancer chronic pain. Opioid drugs are a class of natural or synthetic analgesics such as morphine and oxycodone.

A large expansion in the use of opioids since the 1980s has been accompanied by abuse and overdosing. To fight misuse, Group Health has standardized opioid prescribing for chronic noncancer pain without placing undue restrictions on clinically appropriate prescribing. The initiative is being evaluated, and the Group Health Research Institute will have report the results of that evaluation.

Claire Trescott is medical director of primary care services at Group Health. Her medical degree is from Wayne State University School of Medicine.

Randi M. Beck is chief of physical medicine and rehabilitation at Group Health.

Randi Beck is chief of physical medicine and rehabilitation at Group Health. She has a medical degree from Loyola University of Chicago’s Stritch School of Medicine.

Michelle D. Seelig is medical director for clinical knowledge development and support at Group Health.

Michelle Seelig is medical director for clinical knowledge development and support in the Department of Clinical Improvement and Prevention at Group Health. She received a master’s degree in health science from the University of California, Los Angeles, and a medical degree from Mount Sinai School of Medicine.

Michael R. Von Korff is a senior investigator at the Group Health Research Institute.

Michael Von Korff is a senior investigator at the Group Health Research Institute. He earned a doctor of science degree in health operations research from the Johns Hopkins Bloomberg School of Public Health, where he also completed a postdoctoral fellowship in mental disorder epidemiology.