

2. Cummings SR, San Martin J, McClung MR, et al. Denosumab for prevention of fractures in postmenopausal women with osteoporosis. *N Engl J Med* 2009;361:756-65.
3. Smith MR, Egerdie B, Hernández Toriz N, et al. Denosumab in men receiving androgen-deprivation therapy for prostate cancer. *N Engl J Med* 2009;361:745-55.
4. Black DM, Delmas PD, Eastell R, et al. Once-yearly zoledronic acid for treatment of postmenopausal osteoporosis. *N Engl J Med* 2007;356:1809-22.
5. Neer RM, Arnaud CD, Zanchetta JR, et al. Effect of parathyroid hormone (1-34) on fractures and bone mineral density in postmenopausal women with osteoporosis. *N Engl J Med* 2001;344:1434-41.
6. Russell RGG, Watts NB, Ebetino FH, Rogers MJ. Mechanisms of action of bisphosphonates: similarities and differences and their potential influences on clinical efficacy. *Osteoporos Int* 2008;19:733-59.
7. Siris ES, Selby PL, Saag KG, Borgström F, Herings RMC, Silverman SL. Impact of osteoporosis treatment adherence on fracture rates in North America and Europe. *Am J Med* 2009;122:Suppl 2:S3-S13.
8. Khosla S, Burr D, Cauley J, et al. Bisphosphonate-associated osteonecrosis of the jaw: report of a task force of the American Society for Bone and Mineral Research. *J Bone Miner Res* 2007;22:1479-91.
9. Lenart BA, Lorich DG, Lane JM. Atypical fractures of the femoral diaphysis in postmenopausal women taking alendronate. *N Engl J Med* 2008;358:1304-6.
10. McClung MR, Lewiecki EM, Cohen SB, et al. Denosumab in postmenopausal women with low bone mineral density. *N Engl J Med* 2006;354:821-31.
11. Khosla S, Westendorf JJ, Oursler MJ. Building bone to reverse osteoporosis and repair fractures. *J Clin Invest* 2008;118:421-8.

Copyright © 2009 Massachusetts Medical Society.

Heroin Prescription and History

Virginia Berridge, Ph.D.

In this issue of the *Journal*, Oviedo-Joekes et al.¹ report on the results of the North American Opiate Medication Initiative (NAOMI) trial comparing methadone with injectable diacetylmorphine (the active ingredient in heroin) for the treatment of heroin addiction. These data from North America point to a conclusion that has been widely supported, although not without controversy, by similar recent studies in Europe.² The results of this trial may be added to those from Germany, the Netherlands, Spain, and Switzerland. Switzerland has 10 years of experience in the prescription of heroin, and in a November 2008 referendum, 68% of voters were in favor of its continued prescription.

The prescription of heroin is rigidly controlled, and some commentators have asked whether a less restrictive and more clinical approach might make a difference to the proportion of drug users who are treated with heroin.³ Guidance on the prescription of heroin published by Britain's National Treatment Agency for Substance Misuse in 2003 stressed that the drug should be prescribed as a last resort and under the medical control of a specialist.⁴ The prescription of heroin is now recognized in some European countries as the optimal treatment for patients for whom options are running out and in whom methadone maintenance has not worked, and it keeps the user in contact with drug services.

What Ashton and Witton have called a "role reversal" from killer drug to medical treatment is historically paradoxical.⁵ The emerging consensus

is that heroin is a treatment for a limited number of illicit-drug users who do not do well with other medicines. Historically, however, heroin was the main "drug of choice" for treatment. In the 1920s and earlier in Britain, it was the treatment or maintenance drug for compliant middle-class addicts, those who accepted the authority of the doctor to prescribe to them. The prescription of heroin was the basis of the so-called British system, which operated until the 1960s.⁶ This was not the case in the United States. The inability to conduct the NAOMI trial in the United States reflects a historically different attitude toward the medical prescription of heroin to addicts; this prohibition dates back to the implementation of the 1914 Harrison Narcotics Act before World War I. Doctors were prosecuted thereafter if they prescribed heroin for addicts.⁷ The cross-national difference in heroin prescribing and the continued prescription of heroin in Britain owed much to the power of the British medical profession and to the low number of mainly middle-class addicts in the United Kingdom who took heroin. The person with control of the drug and the sort of person who was addicted were important.

Contextual issues like these, not the intrinsic properties of the drug itself, affected different national responses to treatment and to the prescription of heroin; these issues also affected the change toward the use of methadone in the 1960s and 1970s. The switch from abstinence from illicit-drug use as the only legal option to the use of methadone took place under the influence of re-

searchers Dole and Nyswander in New York.⁸ In the United States, methadone was associated with the ethos of a “medical” drug, whereas heroin was not.⁸ In the United Kingdom in the 1970s, the change came from prescribing heroin to prescribing methadone. That switch was also legitimated by a trial carried out by researchers Mitcheson and Hartnoll in the drug-dependence unit at London’s University College Hospital.⁹ They found that, as compared with the prescription of heroin, the prescription of methadone was a more confrontational method of treating addicts. It could force change even if it also brought greater involvement in the black market for heroin. It is recognized that the evidence from this trial, which is widely cited as the motivating force behind a switch from prescribing heroin to prescribing methadone on a short-term basis, was pushing at an already open door. It legitimated a change that was already under way, which the psychiatrists who ran the clinics wanted. The drug-dependence units had filled up with long-term heroin users. As Stimson and Oppenheimer noted in their classic study of the period, this switch provided a rationale for clinic staff who longed for a therapeutic, rather than a shopkeeping, function.¹⁰ Professional interests again drove change.¹¹

This episode of research and its effect on practice 30 years ago tell us something significant. The rise and fall of methods of treatment in this controversial area owe their rationale to evidence, but they also often owe more to the politics of the situation — to the context within which the evidence is received and to the interests that are prepared to support or oppose it. In Britain, the prescription of heroin is taking place on a small scale. However, it is more costly than methadone, which matters in a cost-conscious centralized health system, and few patients are receiving these prescriptions. Meanwhile, the “harm reduction” consensus about maintenance treatment overall is being questioned, primarily in relation to methadone. As in the 1970s, clinic staff long for change, this time away from what one drug-treatment worker called “methadone, wine, and welfare.” Researchers have pointed out that most illicit-drug users say they want to stop taking drugs. Conservative politicians have championed abstinence from illicit-drug use, and the media has asked why the treatment budget is so large if addicts just continue to take drugs. Hence, a re-

definition of the purpose of treatment and the nature of recovery is under discussion in the drug-treatment field. The consensus favoring maintenance with methadone as the major treatment option may shift.

The treatment of addiction is a controversial matter, and practices that were once managed by specialists in-house and that were the subject of clinical discussion or publication in medical journals are now more open to a sometimes uncomprehending public gaze. Results such as those reported in the NAOMI trial matter, but they do not operate in a vacuum. Countries have responded very differently to the findings reported so far. Switzerland and the Netherlands have integrated the prescription of heroin into their medical systems, while Germany and Spain have hesitated. In the mid-1990s, the Australian government discontinued a heroin trial. Will the “homegrown” results from the NAOMI trial have more impact in North America than the results from Europe? We will now wait to see what political or professional factors will support or oppose the conclusions of this study in its home territory, and whether the historical legacy of heroin will matter.

No potential conflict of interest relevant to this article was reported.

From the London School of Hygiene and Tropical Medicine, University of London, London.

1. Oviedo-Joekes E, Brissette S, Marsh DC, et al. Diacetylmorphine versus methadone for the treatment of opioid addiction. *N Engl J Med* 2009;361:777-86.
2. Fischer B, Oviedo-Joekes E, Blanken P, et al. Heroin-assisted treatment (HAT) a decade later: a brief update on science and politics. *J Urban Health* 2007;84:552-62.
3. Reuter P. Ten years after the United Nations General Assembly Special Session (UNGASS): assessing drug problems, policies and reform proposals. *Addiction* 2009;104:510-7.
4. Injectable heroin (and injectable methadone): potential roles in drug treatment. London: National Treatment Agency, May 2003.
5. Ashton M, Witton J. Role reversal. *Drug Alcohol Findings* 2003;9:16-23.
6. Berridge V. *Opium and the people: opiate use and drug control policy in nineteenth and early twentieth century England*. London: Free Association Books, 1999.
7. Musto D. *The American disease: origins of narcotic control*. 3rd ed. New York: Oxford University Press, 1999.
8. Mold A. *Heroin: the treatment of addiction in twentieth century Britain*. DeKalb: Northern Illinois University Press, 2008.
9. Hartnoll R, Mitcheson M, Battersby A, et al. Evaluation of heroin maintenance in controlled trial. *Arch Gen Psych* 1980;37:877-84.
10. Stimson G, Oppenheimer E. *Heroin addiction: treatment and control in Britain*. London: Tavistock, 1982.
11. Berridge V, Thom B. Research and policy: what determines the relationship? *Policy Stud* 1996;17:7-18.

Copyright © 2009 Massachusetts Medical Society.