In this issue of the American Journal of Emergency Medicine appears an informative Australian study conducted by Rickard and colleagues. Upon reading their article, 2 thoughts occurred to this reader. First and foremost, the authors deserve kudos for their successful execution of a prospective prehospital analgesia trial—an all-too-rare finding in the emergency medical service literature. Second, the study is noteworthy for its assessment of both a novel delivery route and its focus on the potent opioid fentanyl.

The study’s details, including its (largely unavoidable) methodological imperfections, warrant inspection and consideration by those responsible for prehospital care. In fact, I look forward to having the article in the public domain so that it can be discussed at our residency’s journal club; the work effectively illustrates both capabilities and challenges of prehospital research. There are, though, broader questions than those entailed in the deconstruction of this particular study. Thus, the discussion here foregoes detailed review of the Australians’ work in favor of addressing fentanyl’s place in out-of-hospital care.

Fentanyl is quite familiar to emergency medicine specialists, with their widespread acceptance of the agent dating back to the late 1980s [1]. Much of fentanyl’s supporting emergency department (ED) data addresses its administration for procedural sedation; but it has also been found useful for ED analgesia and sedation in multiple trauma, abdominal pain, and pediatric populations [2-6].

Fentanyl’s abilities to deliver potent analgesia with relative safety and ease of titration have not gone unnoticed by those seeking useful drugs for the prehospital setting. Some of the initial studies, comprising retrospective reviews focusing primarily on safety issues, were done in Boston a decade ago. Early on, our air and ground critical care transport service—with guidance and consultation from emergency medicine and anesthesiology specialists—established a protocol allowing for fentanyl administration by a nonphysician crew. Although the selection of such a potent opioid was a departure from standard prehospital practice at the time, the combination of efficacy and safety rendered fentanyl quite an attractive option. Indeed, initial analyses including adult and pediatric trauma patients found that fentanyl was indeed safe and effective in the doses dictated by our protocols (1-3 μg/kg, with up to 5 μg/kg in divided doses over longer transports) [7-9].

Since the initial reports of fentanyl’s use in the field, other investigators have confirmed and extended the results of earlier studies. Perhaps most notably, Kanowitz et al assessed fentanyl’s safety and efficacy in a cohort of 2129 prehospital patients [10]. They found a substantial improvement in pain scores (from a mean of 8.4 down to 3.7) and a near-zero risk of major adverse effects: a recovery intervention was required in only 1 patient. More recent assessments of fentanyl-associated pain control and safety continue the unbroken string of favorable prehospital performance of the drug [11,12].

Fentanyl is certainly not the only choice—or even the only opioid choice—for provision of safe and effective prehospital analgesia. For instance, fentanyl’s short duration...
of action would likely render it suboptimal in a hemodynamically stable young patient with an isolated orthopedic injury. In such a case, morphine’s longer duration of action would render it preferable—not least because of delays in posttransport ED analgesia administration that remain all too common even in 2007 [13]. Overall, though, any shortcomings of fentanyl have not prevented prehospital experts’ labeling the drug as a preferred agent for rapid, reliable, and safe pain relief [14].

If fentanyl is to be part of the prehospital pharmacopeia, by what route should it be given? The previously mentioned studies involve its administration by the intravenous (IV) route. And just as IV analgesia is best in the ED setting, it is best in the prehospital arena... if vascular access is available [15]. Among the favorable features of IV administration are rapid effect, ease of titration, reliable pharmacokinetics, and maintenance of nil per os status. Not all patients have an IV, though; and in some cases, obtaining access is necessarily (if not unavoidably) delayed or even impossible. Therein lies the impetus for searching out alternative routes of medication delivery. Nonswallowed oral delivery mechanisms such as the fentanyl lozenge or buccal tablet may prove useful, but there is also attractiveness in the intranasal approach espoused by Rickard et al [16,17].

Nebulized morphine therapy has been described since the 1980s, with at least one hospital-based report finding it performed favorably when compared with IV morphine given by patient-controlled analgesia pump [18,19]. Inhaled fentanyl has also been described as useful; but again, extant data address its employment in high-level inpatient care areas [20,21]. As of 2007, then, supporting evidence for intranasal morphine or fentanyl use in the ED or prehospital settings remains sparse.

What is the ultimate implication of the study of Rickard et al? Or, to echo a query likely to be voiced when our journal club reviews this study: “So what?” The answer depends on how long a view one takes. In the short term, although there is clear attractiveness to the authors’ described intranasal route, it is premature to conclude that intranasal fentanyl delivery is here to stay. The authors note that their study is not without shortcomings, and even the best (single) trial does not establish a standard of care. That said, the work of our Australian colleagues adds to the state of the evidence, bolstering other investigators’ suggestions that intranasal fentanyl is well suited to the out-of-hospital arena [6]. Thus, even if the place for intranasal fentanyl remains uncertain, the work by Rickard et al reflects well on their service and represents a move in the right direction for prehospital pain research.