mal-weight participants with diabetes despite the higher prevalence of hypertension in the overweight and obese group (Table 1).

When we reanalyzed the data and included statistical adjustment for hypertension rather than systolic blood pressure, the findings remained unchanged. Total (hazard ratio [HR], 2.11; 95% CI, 1.54-2.89), cardiovascular (HR, 1.54; 95% CI, 0.91-2.63), and noncardiovascular (HR, 2.35; 95% CI, 1.57-3.52) mortality adjusted for age, race, sex, education, waist circumference, hypertension, total and high-density lipoprotein cholesterol, and smoking status were higher in normal-weight vs overweight and obese participants with incident diabetes.

An alternative explanation for our findings, as pointed out by Yano and colleagues, is that not accounting for renal function may have resulted in residual confounding because renal impairment is associated with lower body mass index, frailty, and higher mortality.[1] Despite this established association, we were unable to account for renal function in our analysis because measures to represent renal function were not universally available across the cohort studies.

We acknowledge this limitation of our epidemiological pooled study design. While we attempted to carry out sensitivity analyses excluding participants who died within the first 2 years of follow-up (an indicator of frailty) and adjusting for covariates associated with renal impairment (eg, blood pressure), residual confounding may persist.

The higher than expected incidence of diabetes at a lower body weight among Asians is established.[2,3] Our primary analysis included the small number (n=50) of Asian participants primarily (99%) from the Multi-Ethnic Study of Atherosclerosis. Only our sensitivity analysis presented in Table 3 excluded Asian participants to investigate whether our results changed, which they did not. We agree that additional research in larger samples of Asians is needed.

Dr Jornayvaz cites pertinent information about differential mortality associated with common types of diabetes control medications and differential prescription patterns based on body weight (ie, metformin more commonly prescribed in overweight and obese patients and sulfonylureas more common in normal-weight adults).

While it is possible that they may have played a role in our unexpected finding, we demonstrated in a sensitivity analysis in Table 3 that even when we relied on diabetes diagnosis by fasting glucose only (excluding individuals taking diabetes control medications), our findings did not change.

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Conflict of Interest Disclosures: The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

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Continuing Education in Opioid Prescribing

To the Editor: I understand that Drs Nelson and Perrone[1] were expressing an opinion in their Viewpoint about the opioid risk evaluation and mitigation strategy (REMS) when they characterized continuing medical education (CME) providers as "ostensibly independent." However, I believe that opinions should be based on the best available information.

Accredited CME providers are required to meet rigorous standards designed to ensure actual—not ostensible—independence. Providers must comply with the Accreditation Council for Continuing Medical Education (ACCME) Standards for Commercial Support[2] when offering any accredited activities, including those related to the REMS for long-acting and extended-release opioid analgesics.

The Standards require CME providers to design activities that are independent, free from commercial bias, and based on valid content. Providers must ensure that all content-related decisions are made free of the control of commercial interests. The ACCME believes that CME can receive commercial support from industry without receiving any advice or guidance, either nuanced or direct, on the content of the activity or on who should deliver that content.

First implemented in 1992, the Standards were updated in 2004. Accredited CME providers have more than 20 years of experience managing the boundary issues created by commercial support. The Standards have become a national model. The Accreditation Council for Pharmacy Education has adopted them, and the fields of optometry, nursing, osteopathy, family medicine, physician assistants, and dentistry base their accreditation standards on the Standards.

The Food and Drug Administration (FDA) developed the blueprint for prescriber education[3] containing the core educational messages and requires opioid manufacturers to offer grants to accredited continuing education (CE) providers to produce education based on the blueprint. The FDA has explicitly stated that manufacturers are prohibited from having any input or influence over educational design or curriculum.

The blueprint says that "accrediting bodies and CE providers will ensure that the CE activities developed under this

REMS will be in compliance with the standards for CE of the Accreditation Council for Continuing Medical Education (ACCME) or another CE accrediting body."

I appreciate that the FDA recognizes the value and independence of accredited education and chose to leverage the continuing education system to carry out this important public health initiative. As with all accredited CME, the ACCME expects that REMS-related CME will serve the public interest.

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To the Editor: The Viewpoint by Drs Nelson and Perrone[1] raised concerns about the industry-sponsored education requirement proposed by the new REMS from the FDA. Both education and research into pain and addiction treatment remain underfunded, with serious consequences.

We acknowledge a potential bias when industry funds CME, but this is the current system of prescriber education in the United States. Unfortunately, government and industry are currently the only 2 viable funding sources that exist, and despite the need of 100 million patients in the United States in chronic pain,[2] there remain serious gaps in undergraduate and postgraduate medical education in pain and addiction medicine and a paucity of non–industry-funded mid-career education.

We are disappointed that the authors did not advocate for pragmatic solutions to the " . . . epidemic of opioid misuse, abuse, addiction, and mortality" via advocacy for alternative sources of funding for research and professional education commensurate with the public health issues they are addressing.

Going beyond REMS requirements, we support mandatory education for prescribers of all controlled substances, including opioids, to serve the best interests of patients and the general public. Although there is concern that some physicians may no longer prescribe opioids because of educational requirements, the real danger is clinicians continuing to prescribe them without adequate knowledge.

This is true of methadone and benzodiazepines, both of which contribute to deaths.[3,4] The core issue remains inadequate medical school and residency education on how to safely use all scheduled drugs.

REMS may help save lives if the right messages are conveyed; however, the effect may not match the need in addressing the opioid epidemic in the United States. Despite the fact that REMS education will be funded by industry, for better or worse, it stands as the best idea to come forward because for now it is the only idea to come forward.

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Additional Information: Dr Grabois is president and Dr Webster is president-elect of the American Academy of Pain Medicine.

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In Reply: We concur that the ACCME has made great strides in reducing commercial bias in medical education. The concern that we raised for independence is related to the unique CME mechanism proposed in the REMS for extended-release and long-acting (ER/LA) opioid analgesics.

Although the Blueprint for Prescriber Continuing Education Program defines the expected content of a CME program,[1] it uses language that is open to interpretation. For example it states "prescribers should understand how to assess patients for treatment with ER/LA opioids" and "prescribers should be familiar with how to initiate therapy, modify dose, and discontinue use of ER/LA opioids."

Given the lack of detail offered to support these broad concepts, and the lack of direct FDA oversight of the content of the educational program,[2] the potential for creative messaging remains. The REMS approval letters sent to the drug companies call for an independent audit that assesses the content to ensure that it covers all elements of the Blueprint but does not mention an assessment of its accuracy or balance.[2] Because payment for next year's project is contingent on client satisfaction with this year's program, sub-

conscious bias may exist even for CME providers that abide by the strict ACCME guidelines.

Drs Grabois and Webster call for a mandatory rather than voluntary educational requirement, and we agree. Although the intent of our Viewpoint was not to advocate for a new mechanism of funding for research and education, we agree that this needs to be addressed.

One potential solution is the compulsory endowment of educational grant funds from pharmaceutical companies into a centralized distribution center that is managed by FDA or another autonomous entity. These resources can be fairly distributed through a managed process that includes ACCME-approved providers but removes any incentive to unintentionally produce a program that pleases a sponsor. We are confident that parallel models exist that could accomplish the same goals.

The ultimate priorities of the REMS educational program are to maximize the safety of opioid analgesics in both the patient and public health domains while ensuring that patients in pain receive appropriate relief. Although these goals may seem inherently divergent, we hope the newly introduced ER/LA REMS program will succeed in striking a sensible balance in opioid analgesic prescribing. Despite the competing perspectives of advocates on either side, we are sure that this sensible balance can be attained with proper oversight.

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RESEARCH LETTER

Trends in the Earnings of Health Care Professionals in the United States, 1987-2010

To the Editor: Understanding trends in physician earnings is important given health care cost growth and proposed Medicare physician fee reductions.[1] National surveys find that annual physician incomes increased 24% between 1982 and 1989[2] and decreased 7.1% between 1995 and 2003.[3]

Other surveys suggest that physician incomes increased only slightly since 2004.[4] However, little is known about how growth in physician earnings compares with other health professionals. Comparing physicians and other health professionals is necessary to assess whether physician labor earnings have outpaced or lagged behind earnings growth of other workers in the health care sector.

Methods. We estimated annual earnings and hourly wages of physicians and other health professionals from the Current Population Survey (CPS), a nationally representative monthly survey of approximately 60 000 households. The CPS data are collected by personal and telephone interviews. Respondents must be older than 15 years, noninstitutionalized, and outside of the armed forces.[5] The CPS data were exempt from institutional review board review.

We used data from the March CPS from 1987 to 2010 on occupation, hours worked, self-reported earnings by source, and other demographic information (eg, age, sex). Response rates based on the American Association of Public Opinion Research's standard definitions were high (93.3% across years).

Earnings were defined as total annual labor income plus business income net of expenses, and excluded income from ownership of facilities or medical technologies. Wages were computed by dividing annual earnings by the annual number of hours worked. We reported median earnings and wages because survey earnings were capped by the US Census to protect identities (cap of $150 000 from 1995-2002, $200 000 from 2002-2009, and $250 000 in 2010). Occupation was self-reported as physician or surgeon, dentist, pharmacist, nurse, physician assistant, or health care and insurance executive. Physician specialty was unavailable. We limited analysis to workers who were older than 35 years because the majority of physicians under this age are in training.[6]

Unadjusted median earnings were computed over multiple years to smooth data fluctuations (1987-1990, 1991-1995, 1996-2000, 2000-2005, and 2006-2010). We estimated a median regression model for each occupation that adjusted for age, sex, race, and state of residence.

We estimated percentage growth in earnings and wages between each period, and report growth rates from 1987-1990 to 1996-2000 and from 1996-2000 to 2006-2010. We tested the statistical significance of trends using 95% confidence intervals around the estimated growth rates. Dollar values were normalized to 2010 dollars according to the consumer price index. We used a significance threshold of .05 using a 2-sided test. Stata version 11.2 (StataCorp) was used for statistical analyses.

Results. Our sample included 30 556 respondents across all years who reported working as health professionals, including 6258 physicians (20.5%). Physician earnings fluctuated over the study period (TABLE).

During 1987-1990, median earnings for physicians were $143 963 (interquartile range, 96 718-175 850) compared with $157 751 (IQR, 101 279-203 281) during 2006-2010 ($13 788 increase or growth of 9.6%; $P < .001$). Other health professionals experienced larger growth in earnings from 1987-1990 to 2006-2010 (eg, pharmacists earnings increased by $30 938 or 44.0%; $P < .001$).