For a WEB EXTRA link to a podcast interview with Douglas Staiger, see dartmed.dartmouth.edu/su10/we03.

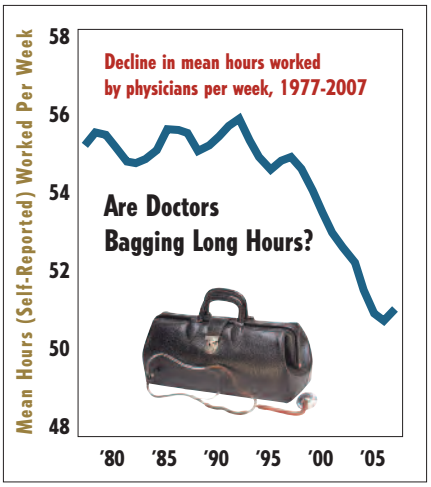
**More Medicare enrollees are getting new joints, reports the *Dartmouth Atlas of Health Care*; from 2000-01 to 2005-06, hip replacements rose 15%, knees 48%, and shoulders 67%.**

# Doctors' hours are dropping

After decades of working exceptionally long hours, U.S. physicians have steadily shortened their workweek in recent years. A study led by Dartmouth economist Douglas Staiger, Ph.D., found that doctors today are working an average of 51 hours a week, a substantial decline from the 55 hours a week they worked throughout the 1980s and 1990s.

**Trends:** The four-hour change is "very unusual for an occupation," Staiger says. To analyze trends in physician hours, he and his colleagues used three decades of data from a monthly U.S. Census Bureau survey. They were "really surprised at how broad-based the decline was," Staiger says. All groups of physicians —men, women, younger doctors, older doctors, residents, and nonresidents—saw a substantial decline in hours.

The average hours worked by nonresident doctors declined from 53 hours a week in 1997 to 50 hours a week in 2007. Residents' hours dropped even more, from 66 to 59 hours a week over the same period, due to limits placed on resident workhours in 2003. Hours worked by nonresident physicians over the age of 45 showed the smallest change, dropping from 51 to 49 hours a week from 1997 to 2007.




**This graph shows the drop for physicians overall.**

The researchers found a strong correlation between the number of hours worked and physician fees. Inflation-adjusted fees were constant during the early 1990s but dropped by 25% from 1995 to 2006. "When fees go down, that last hour of work is less rewarding," financially and in other ways, Staiger explains. The decline in fees was associated with the rise of managed care in the mid-1990s and with increased competition in the health-care arena. Staiger also says that changes such as increased scrutiny of doctors by insurance companies could be "having as large of an effect as the fees per se" on the number of hours worked, though he doesn't have data to prove that connection.

**"When fees go down, that last hour of work is less rewarding."**

**Forecasts:** The supply of physicians is a hot topic in academic and policy circles. How many doctors will the country need, and how many will it have? The impact of the decline in hours isn't clear. Usually, Staiger says, physician supply forecasts "assume that physician hours will remain at their traditionally high levels." But the three-hour drop for nonresidents is roughly equivalent to cutting 36,000 physicians from the workforce. So the study, which was published in the *Journal of the American Medical Association*, could be seen as evidence that a doctor shortage truly is just around the corner. (For more about the physician supply debate, see dartmed.dartmouth.edu/sp09/f03.)

But Staiger notes that the survey used for the study did not include information about doctors' specialties. The most important issue, he says, is not simply the raw number of physicians but "getting the right kinds of physicians to the right parts [of the country] to serve the right population." KATHERINE VONDERHAAR

## Healthy communication

Dartmouth researchers reported that communication between mothers and daughters plays a large role in determining whether young women receive the HPV vaccination. They surveyed almost 1,000 female undergraduates to determine their knowledge of HPV, their perceptions of HPV risk, and the openness of their communication with their mothers. Just under half (49%) had received at least one shot in the three-shot vaccine series. "The mother's approval of HPV vaccination, mother-daughter communication about sex, and daughter's perceptions of vulnerability to HPV were positively associated with vaccination status," the researchers wrote in *Pediatrics*.

## Water proof

Tens of millions of people use drinking water containing levels of arsenic—a known carcinogen—above the maximum recommended by the World Health Organization. Now, DMS researchers have reported that arsenic might trigger a cell signaling pathway called Hedgehog that is associated with several cancers. Patients exposed to arsenic had high levels of Hedgehog signaling. "Our study provides for the first time evidence that links activation of the Hedgehog pathway with arsenic exposure," they wrote in the journal *Cancer Research*.