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# The Effects of Medicare Payment Subsidies to Teaching Hospitals

## Abstract

The Medicare program is the nation's largest single source of funds for graduate medical education. The program pays teaching hospitals for the direct costs of their residency programs and, since 1983, has paid for some of the indirect costs of graduate medical education. The rationale for, and extent of, the payments for indirect costs have been debated for years; recently, Congress has reduced the payments as it attempts to rein in Medicare costs. This Issue Brief reviews the status and recent history behind indirect medical education (IME) payments, and summarizes research that investigates how hospitals have responded to the incentives created by these and other supplemental payments.

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# LDI *Issue Brief*

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Leonard Davis Institute of Health Economics

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## *The Effects of Medicare Payment Subsidies to Teaching Hospitals*

Editor's Note: The Medicare program is the nation's largest single source of funds for graduate medical education. The program pays teaching hospitals for the direct costs of their residency programs and, since 1983, has paid for some of the indirect costs of graduate medical education. The rationale for, and extent of, the payments for indirect costs have been debated for years; recently, Congress has reduced the payments as it attempts to rein in Medicare costs. This Issue Brief reviews the status and recent history behind indirect medical education (IME) payments, and summarizes research that investigates how hospitals have responded to the incentives created by these and other supplemental payments.

### *What do IME payments cover, and why?*

In 1983, Medicare began paying hospitals prospectively, by diagnosis-related group (DRG), for each admission. At the time, policymakers were concerned that teaching hospitals would receive far less Medicare revenue than under the previous, cost-based system. IME payments were instituted to compensate for the higher costs in teaching hospitals—even after the additional costs of medical education were taken into account.

- Medicare still pays for a portion of the direct costs of residency training, including salaries of medical residents and faculty, and hospital overhead. In 1998, Medicare payments for direct medical education totaled \$2.2 billion. Hospitals received an average of \$24,000 per eligible resident.
- IME payments cover teaching hospitals' costs not directly associated with residency training. Indirect expenses stem from relatively intense use of diagnostic services by residents, decreased productivity of nurses and other staff who help teach residents, and use of expensive medical technology for research and educational purposes. In 1998, IME payments totaled \$3.7 billion. Hospitals received an average of \$48,000 per eligible resident.
- Congress also viewed IME payments as a proxy for other unmeasured factors presumed to drive up costs in teaching hospitals, such as greater illness severity or treatment intensity, which were not fully captured in the DRG system. Policymakers sought to preserve access to care in teaching hospitals, which many believe provide unique and important services to Medicare beneficiaries.

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### *IME payments encouraged hospitals to add residents and close beds*

As originally formulated, IME payments were calculated as a percentage add-on to a hospital's basic DRG payment. The formula used a measure of teaching intensity, the resident-to-bed ratio, to arrive at the IME adjustment. Originally, the DRG payment was increased 11.6% with every 10% increase in the number of residents per hospital bed.

- The amount of the adjustment has been controversial, because it was twice the amount indicated by health services researchers at the time. Although the percentage was revised downward three times since 1983, a teaching hospital's Medicare price still increased with residents and decreased with hospital beds. Until 1997, this adjustment was open-ended, and encouraged hospitals to add residents and close beds.
- The Balanced Budget Act of 1997 (BBA) reduced the IME adjustment by nearly 30% over four years. It also capped the resident-to-bed ratio at each hospital's 1996 level, thereby eliminating the financial incentive to hire more residents or close beds. Legislation in 1999 and 2000 delayed the BBA reductions, freezing the IME adjustment at 6.5% (per 10% increment in the resident-to-bed ratio) in 2001 and 2002, but lowering it to 5.5% in 2003.
- IME payments remain a key source of funds for certain teaching hospitals. About 5% of teaching hospitals receive more than \$100,000 for each resident hired. For these "teaching-intensive" hospitals, loss of the IME adjustment might result in bankruptcy.

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### *Study examines how hospitals responded to IME incentives and other payment policies*

Nicholson and colleagues studied whether hospitals increased their residency positions or closed beds in response to the IME policy. They also studied the effects of the Disproportionate Share Hospital (DSH) program, another Medicare payment instituted in 1986.

- The DSH program provided another adjustment to a hospital's DRG payment, designed to cover the costs of hospitals that serve the indigent. Hospitals with high proportions of Medicaid and low-income Medicare admissions are eligible for add-ons to the DRG payments for all Medicare patients. Currently, 38% of general acute care hospitals receive DSH payments (63% of teaching hospitals and 31% of non-teaching hospitals) totaling \$4.5 billion in 1998.
  - The DSH calculation provides hospitals with incentives to admit more Medicare and Medicaid patients, but it penalizes them for admitting uninsured patients and providing charity care. Hospitals with high levels of uncompensated care may not meet the DSH threshold for the proportion of all patient days accounted for by low-income insured patients only.
  - To investigate how hospitals responded to Medicare price incentives, the investigators used panel data on hospitals from 1984 (the first year IME was implemented) to 1991. More than 3900 acute care hospitals were studied, including more than 900 teaching hospitals. A separate analysis included data from 1986 to 1993 to examine the effects of the DSH policy.
  - The study also examined the effect of both the IME and DSH policy on Medicare admissions, and on the use of registered nurses in hospitals. If residents and RNs are substitutes in the production of hospital care, then IME policy might lead to reductions in RN staffing; if nurses are complements to residents, perhaps because nurses are required to help train residents, then IME policy might lead to an increase in RN staffing.
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### *Hospitals responded to IME and DSH policies, but only slightly*

Adjusting for other factors, the authors found some effects of IME and DSH policies.

- Between 1984 and 1991, IME payments were associated with an increased number of residents; the investigators estimate that the policy accounted for a 6% increase in residents employed by US hospitals. Thus, hospitals appear to have responded slightly to the IME financial incentive. One possible reason for the small effect is that residency programs are controlled by medical schools, while the teaching hospital received the IME payment.
- Between 1984 and 1989, IME payments were associated with a decrease in staffed beds; the investigators estimate that the policy accounted for a 3% decrease in staffed beds per admission.
- IME payments were not associated with changes in the use of registered nurses. This indicates that, in general, residents do not substitute for RNs.
- Neither IME nor DSH payments, singly or combined, were associated with changes in the number of Medicare admissions. The lack of an association between the price hospitals receive for treating Medicare patients and the number of Medicare patients treated is not surprising since hospitals do not have direct control over physicians' admissions decisions.
- Medicare DSH policy was associated with a small but measurable change in the types of hospital admissions. The investigators estimate that, from 1986 to 1993, DSH policy accounted for a 3% increase in Medicaid admissions and a 0.7% decrease in charity care admissions. This translates into 164,000 more Medicaid admissions and 23,000 fewer charity care admissions per year than would otherwise occur.

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### *Predicting the effects of IME payment changes*

The investigators used these results to predict the effects of the BBA changes to IME policy.

- When the BBA is fully implemented, teaching hospitals will receive \$13,400 less for each resident hired, \$2,800 less for each bed closed, and 3.8% less for each Medicare patient admitted.
- The investigators predict that the number of residents employed will decrease by only 1.6%, the number of beds will increase by less than 1%, and Medicare admissions will decrease by 1.3%.
- As expected, hospitals thus far have not responded to the BBA by substantially scaling back residency training. Between 1996 and 2000, the number of first-year residency positions offered increased by 0.2%.

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### ***POLICY IMPLICATIONS***

The Medicare IME and DSH programs provided hospitals with inadvertent incentives, such as to employ more residents, or reduce charity care. This study analyzes the effect of these incentives on hospital behavior, and can help predict the effects of ongoing and future policy changes.

- The BBA of 1997 corrected most of the flaws of the IME program by capping a hospital's resident-to-bed ratio. However, the level of the IME adjustment remains controversial. The Medicare Payment Advisory Commission estimates that teaching intensity could support an adjustment of 3.2%, far below the mandated 5.5% in 2003. However, the Commission acknowledges that this "subsidy" beyond teaching intensity is a major factor in keeping teaching hospitals' total profit margins above zero. Because of the reliance of teaching hospitals on IME payments, bills are pending before the House and Senate to freeze the adjustment at 6.5%.

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## **POLICY IMPLICATIONS**

*Continued*

- If Congress provides supplemental payments to teaching hospitals because of their role in providing public goods such as charity care and medical research, it should consider whether the Medicare IME adjustment is the best vehicle for achieving this objective. As currently implemented, teaching hospitals are not accountable for how they use these funds.
- The BBA of 1997 reduced Medicare DSH payments by 5%, but did not revise the formula used to disburse the funds. Therefore, the policy still penalizes hospitals for admitting uninsured patients. These flaws could be corrected by capping a hospital's DSH payments at the current level, and revising the payment formula to include measures of uninsured patients and charity care. The Medicare Payment Advisory Commission has suggested such a formula, and outlined the data that would be necessary to implement it.

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*This Issue Brief is based on the following article: S. Nicholson & D. Song. The incentive effects of the Medicare indirect medical education policy. Journal of Health Economics, November 2001, vol. 20, pp. 909-933. See also S. Nicholson. Medicare Hospital Subsidies: Money In Search of Purpose. American Enterprise Institute, forthcoming.*

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