The economic value of health gains associated with education interventions

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EXECUTIVE SUMMARY

Roughly 600,000 people a year fail to graduate from high school each year. These people will, on average, die approximately 9.2 years younger than those who managed to garner a high school diploma. Education improves health through a variety of mechanisms. These include both direct effects (e.g., improved health knowledge leading to reductions in smoking) and indirect effects (e.g., improved earnings, allowing the better educated person to move into a safer neighborhood). One can reasonably expect that much of the health gains among those with a high school diploma (relative to those without one) arises as a result of the additional education. Some of the difference in health by educational attainment may also be attributable to harsh childhood environmental conditions, such as abuse or exposure to lead paint, which simultaneously affect health and educational attainment. Some may also be attributable to innate characteristics, such as personality traits or cognitive deficits.

Those children that respond to educational interventions often do so despite attending failing schools and facing harsh circumstances. Such students may therefore be those that are either the most exceptional or the least exposed to harsh environmental conditions. Under the assumption that these factors cancel each other out, I examine the association between educational attainment and: 1) health expenditures, 2) reductions in morbidity and mortality, and 3) public and private health insurance utilization. I examine these effects using a large comprehensive health dataset covering the US non-institutionalized civilian population, the Medical Expenditure Panel Survey.
I find that, despite improvements in health, improving educational attainment increases medical expenditures. This occurs in part because life expectancy increases and in part because access to health care improves. These increases in health and life expectancy, however, have a value themselves, totaling at least $80,000 per year of perfect health gained. The net present value of an increase in attainment from 11th grade to high school graduation is approximately $83,000. The net present value of improving all 600,000 high school dropouts in 2004 by one grade is $41.8 billion. The gains in health achieved via class size reductions and preschool programs appear to have a value that exceeds the cost of such interventions by over 100% to 300%.

When students are advanced from 11th grade dropouts to high school graduates, the public sector saves approximately $3,000 in lifetime medical expenses from disenrollment in public plans. However, total savings increase dramatically when more than one year of education is gained due to a given educational intervention, with 17% of adults who completed fewer than 12 years of education using public insurance, but only 7% of college graduates using public insurance. For every student who would otherwise have dropped out in the 10th grade but who goes on to graduate from high school, the government saves $8,000. Reduced public insurance utilization resulting from education interventions can be reasonably expected to offset the cost of such interventions by as much as 23%.

Thus, while education interventions reduce costs associated with public health insurance programs sufficiently to partially offset their costs, they more than pay for most programs from the societal perspective.