Economic benefits of medical innovation undervalued, study says

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Health care policymakers concerned about improving the management of health risks should view the pace of medical innovation as an important “lever of influence,” says Julian Reif, a professor of finance and of economics at Illinois.

A new analysis co-written by a University of Illinois expert in health care economics concludes that increases in the pace of medical innovation reduce overall physical risks to health, and thus function in a manner similar to an expansion of or improvement in the efficiency of health

insurance markets.

Policymakers concerned about improving the management of health risks should view the pace of medical innovation as an important "lever of influence," says Julian Reif, a professor of finance and of economics at Illinois.

"With the Affordable Care Act, policymakers in the U.S. have focused on improving health insurance access and design. While those are certainly worthy goals, medical innovation policy may have an even greater impact on reducing health risks," said Reif, also a faculty member of the Institute of Government and Public Affairs and the Center for Business and Public Policy. "We spend 17 percent of our economy on health care and regulate many aspects of it. Going forward, it is important for the U.S. to provide an environment conducive to continued innovation in the medical sector."

Economists tend to think of medical innovation as a valuable but risky good, one that yields health benefits for the sick but ultimately increases the financial risk for the healthy through higher medical costs, Reif said. But according to the paper, this perspective doesn't account for how innovation can lower the risks of a currently healthy person contracting a life-altering disease in the future.

Just like buying auto insurance reduces the financial risk of car accidents, medical technology reduces the physical risk of illness, Reif said.

"The key point of the paper is that we ought to start thinking of medical innovation as a form of insurance," he said. "It generates value even for someone who is not sick because it reduces the risk of falling ill."

One of the examples Reif and co-authors Darius Lakdawalla of the

University of Southern California and Anup Malani of the University of Chicago use in the paper is Parkinson's disease.

"You may not have Parkinson's, but there's a chance in any given year that you may develop it or some other similar life-altering illness," Reif said. "But unlike with a car, you can't go out and buy some sort of financial contract to get rid of this health risk. It's a risk that you face every year and there's nothing you can do about it without an advance in medical technology."

For the risk-averse, medical technology reduces those risks and generates insurance value, Reif said.

"This is similar to the value generated by auto insurance," he said. "People are willing to pay a little extra to avoid the risk of paying large bills if they wreck their car. Likewise, people are willing to pay a bit more to avoid the risk of falling ill. Which is why our framework shows that there's a really good reason why we might want to invest more money in researching cures for severe diseases, because they generate a lot of insurance value that is not being captured by traditional cost-benefit analyses."

But then the question is, how much more value?

"What we find is that it depends a lot on the type of disease the medical technology is addressing," Reif said. "The numbers are going to be vastly different from mild diseases to severe diseases."

If you come out with a new lotion to treat a mild skin rash whose physical risks are "not huge," the insurance value of that innovation is still present "but it's basically trivial and small enough to ignore," Reif said.

But treatment for severe diseases like Parkinson's, HIV or Alzheimer's disease might be undervalued by "300, 400 or 500 percent," Reif said.

"With severe diseases, now you're talking about very large risks, and we find that the insurance value of treatments for these diseases is very large," he said.

The policy implications of the paper suggest that "encouraging medical innovation may actually reduce risk more efficiently than giving people health insurance," Reif said.

"And of course, they are complementary – you can give people health insurance and encourage medical innovation at the same time," he said. "Medical technology reduces physical risk, and health insurance reduces financial risk. But the physical insurance value of medical technology is often larger than the financial insurance value created by health care insurance. That suggests that medical technology, on its own, may do more to reduce health risk than financial health care insurance."

More information: "The Insurance Value of Medical Innovation," www.nber.org/papers/w21015

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