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# Medical Research Cuts Have Immediate Health Effects

By Sarah Bacon



Aly Song/Reuters

I have always been an athlete. Running, swimming, and skiing give me mental clarity and a lot of joy. So it was shattering to get a diagnosis two months ago, at the age of 37, that meant my lungs were slowly being replaced by cysts.

Lymphangiomyomatosis (LAM) is a lung disease seen only in women. It affects around 1,500 in the U.S. alone, and is often initially misdiagnosed as asthma. Due to uncontrollable proliferation of smooth muscle cells, cysts develop within the lung, gradually destroying it. As breathing becomes more difficult, women with the disease go on oxygen tanks. There is no cure. Ultimately, many require lung transplants.

Treatment comes in the form of slowing the disease progression. The only tangible hope in that realm comes from National Institutes of Health-funded research using an experimental drug called rapamycin. Other treatment and coping strategies are ad hoc at best, ranging from hormonal therapies to herbs, acupuncture, and dietary changes. Traditionally, rapamycin was used to prevent organ rejection after transplantation, but through the efforts of biomedical researchers across the

country and NIH facilitation, the drug was recently approved for the treatment of LAM patients to slow progression.

Now, with research funding at an all time low, the odds of continued development are not in our favor. The sequester is essentially slowly killing me and millions of patients still looking for cures.

This week my doctor, a lung disease specialist at Columbia University, marched on Washington in the Rally for Medical Research to protest the sequester-induced 5 percent budget cut to the NIH. She and busloads of scientists flooded the mall in opposition to the funding cuts to critical biomedical research that could potentially cure disease. Due to the sequester, Columbia University Medical Center is slated to lose 19 million research dollars for the fiscal year 2013; the losses will be even greater in 2014.

My doctor's research grant, which in any other fiscal year would have been awarded, is now in jeopardy of not being funded. She is poised to begin a trial that could radically alter the treatment of LAM, having identified a molecular pathway through research on mice that kills the cells that spur destructive cyst growth. While the number of people affected by LAM makes the trials necessarily too small to qualify for NIH funding directly, even the smaller, potentially transformative trials like this one will have increasing difficulty receiving funding because nongovernmental income sources will now be besieged by all manner of researchers whose NIH grants have taken hits.

On March 1, when the sequester was enacted, NIH (the world's largest supporter of biomedical research) lost 5.3 percent of its 2013 budget, or \$1.6 billion out of \$31 billion. In 2014 the NIH will lose 8.2 percent -- and more will be sliced from the budget annually in years going forward. Medical research pays great dividends both in terms of jobs created and economic growth in the pharmaceutical industry. According to the federal government, every \$1 of NIH funding generates \$2.20 in economic growth.

But, cures aside -- and they are paramount -- the reduction of health care costs down the road will be the greatest gift to society from medical research. According to OECD Health Data from 2012, each year the U.S. spends about \$445 per person on medical research versus \$8,233 per capita on health care costs. The sequestration cuts research by \$22 per patient while, due to the lack of advances in both clinical and basic research, health care costs will continue to rise.

The Columbia delegation met with staffers for New York State representatives Nita Lowey and Charles Rangel, who acknowledged that efforts to end sequestration are at an impasse because of the deeply partisan nature of Washington. The staffers encouraged the scientists in the room to -- instead of pursuing lifesaving research -- spend their time mobilizing their sick patients to reach out to their own representatives and push NIH funding increases. Patient advocacy is essential, but are we not better served if our researchers stick to research, our doctors to doctoring, and our legislators to addressing funding?

According to the American Heart Association, NIH-supported research over the last 40 years has "contributed to the discovery of 153 new FDA-approved drugs, vaccines or new indications for current drugs." A budget analysis by Senator Tom Harkin, sponsor of the Budget Control Act, says that sequestration measures will result in approximately 700 fewer research grants in 2013 than in 2012. The sequester not only puts patients around the world in need of breakthrough therapies at risk, but

deters young U.S. scientists from entering the field. Would you become a public sector researcher if you were constantly scrambling for funding?

The former Director of the NIH, Elias Zerhouni, said the sequester will create a "generational gap" in researchers and clinical findings. Pharmaceutical executives from Merck and Genentech have decried the sequester as undermining "America's health, global competitiveness, and economic growth." Research America, a nonprofit education and advocacy group arguing in support of scientific research, said, "The timeliness and effectiveness of the drug approval process at the Food and Drug Administration will also be negatively impacted by the sequester."

After the march this week, my doctor wrote to me, "I am very pleased to have gone although I am going to have to face reality in that the funding may not come back." My heart sank. The sequester isn't just undercutting economic growth in America's biomedical sector and critical advances in scientific and medical research. It's eating away at the hope of patients fighting for their lives.

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