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Should We Strive for Zero Risk?

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History tends to repeat itself in the most peculiar ways. This summer my 5-year-old daughter, Vera, broke her left arm in a playground accident eerily similar to my own some 30 years ago. Pain and tears were the same, and so were a make-shift cast made from a children's book cover and a rushed trip to the emergency room. My husband and I took Vera to the ER at the Yale-New Haven Children's hospital. Years ago, my parents took me to the ER at the City Clinical Hospital #1, in my birth town of Almaty, Kazakhstan (former USSR).

In the ER, my daughter's and my experiences started to diverge. Vera was put on a morphine drip. The procedure was attended to by multiple health care professionals and included a painfully long process of selecting a sticker (Vera settled on one featuring Dora the Explorer). Then she was taken away for a set of X-rays and, upon return, we watched "Toy Story Two" for six straight hours (to prevent possible aspiration from a popsicle she had eaten at the playground). She was seen by numerous other professionals, put under general anesthesia, and given a cast and another set of X-rays in the room. She was taken for a final set of X-rays to "make sure everything was peachy," before we could go home. My husband and I got a bill for thousands of dollars, including \$700 for the second and \$800 for the third sets of X-rays, and praised the lord for our very generous insurance plans. My daughter's arm healed well and she does not remember any pain.

In the ER decades ago and continents away, I was seen by one health care professional who decided I did not need X-rays or pain medicine. He quickly manipulated my visibly disfigured arm while I was busy complying with his order to "scream as loud as you can, kid, as loud as you can," and he put a cast on in as little as 30 minutes. My arm healed well and I do not remember any pain.

Having seen the extremes of health care, and being an economist, I cannot help but think about the costs of minimizing risks. There are billable direct costs, which, as we all know, tower over the future of our health care system. There are also indirect costs which, in my view, are more sinister because they escape the watchful electronic eye of even the most sophisticated cost accounting systems. While the direct costs of six hours in the ER or of multiple sets of X-rays are accounted for and billed to insurance companies, who gets billed for health care that **COULD HAVE BEEN** delivered elsewhere had an equal amount of society's resources been applied for

another purpose? Had we, as a society, decided to redirect the \$1,500 spent on my daughter's second and third sets of X-rays toward, for example, free flu shots, how many lives could have been saved? At the cost of \$800 for the final X-ray, what was the actual return on investment for eliminating that last tiny little risk of "things" not ending up "peachy"? While we are doing everything we can to eliminate certain risks, what other potentially larger risks are being overlooked?

In sociological research, this phenomenon is known as the "zero-risk bias." Studies show that people tend to prefer approaches that result in a full elimination of some risks to approaches that reduce all risks, even when the latter would result in a greater OVERALL reduction of risk. For example, when asked to choose between a) fully eliminating 5 percent of the risk of disease X, b) fully eliminating 7 percent of the risk of disease Y, and c) reducing risk of disease X by 4 percent and reducing the risk of Y by 4 percent, many will choose option b). While clearly inefficient, the zero-risk bias is common in many policy areas from occupational safety, to environmental protection, to national security.

In medical care, the zero-risk philosophy seems to be the golden standard of patient care. As evident from the fairly recent debate over breast cancer screenings for women over 40, a large number of people perceive the debate as a standoff between abstract cost-effectiveness theories and real human lives—an emotional argument that is easily relatable for all and deeply personal for many. Yet, what is hidden behind the photos of beautiful young women whose lives were saved by early screening are the lives of real people whose faces we will never know and who may have been helped had health care resources been used in a cost-effective manner.

It is my wish for the New Year and for years to come that we become more aware of the zero-risk bias, so that our health care system can become more effective and accessible for all.