



Rising Energy Costs and the Future of Hospital Work

Posted by [Gail the Actuary](#) on May 10, 2008 - 10:00am

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This is a talk given by Dan Bednarz to a group of nurses. The talk was given at the House of Delegates Meeting of the Pennsylvania Association of Staff Nurses & Allied Professionals (Pasnap) in Harrisburg, Pennsylvania on April 29, 2008.

Dan is a healthcare consultant who tries to get people in healthcare (including public health) to start thinking about peak oil and climate change issues and how to address them. In Dan's words, he is "a healthcare consultant building a consortium among public health and health care stakeholders and actors to address peak oil, climate change and related environmental issues". Dan posts on TOD under the name [Danb](#).

Hello, it's nice to be with you today. My intent is to give you a realistic take on the future of your profession by explaining why healthcare and nursing will be transformed by rising energy costs. Is there danger ahead? You bet. It's going to be difficult, probably life-changing for all Americans. Here's why: the scale of our energy predicament is enormous, unprecedented and grossly misunderstood by institutional leaders and most of the media.

I know some of you may be wondering, Energy scarcity? That's someone else's problem; put this guy in touch with geologists and politicians.

So let's step back for the big picture.

Overview

A few numbers to set the context:

- The amount of crude oil pumped out of the ground has been on a bumpy plateau since May of 2005. Until then oil production was steadily increasing about 2% a year--with periodic declines--and the world had a daily surplus, or emergency cushion. That surplus is gone, everything produced, supply, is immediately purchased, demand. Whether or not the world has reached "peak oil"--the point at which yearly total worldwide extraction cannot be increased--this 3 year plateau indicates that the era of cheap energy is over.
- Oil is now over \$100.00 a barrel. It was \$10.00 a barrel in November 1998.
- Oil powers 90% of all transportation and it is essential to food production and distribution; it is the primary ingredient in many products--think plastics, petrochemicals, and clothing. It is fair to say that all our institutions, especially medicine, are dependent upon oil, the lynchpin resource

that keeps the economy humming and allows it to grow.

- And it's not just oil that's getting scarce. Natural gas in Pittsburgh went up 30% on April 1st, to \$12.50 per MCF (thousand cubic feet); it was \$2.50 in 2001. Typically, the cost of natural gas drops after the winter but here we are facing higher prices during the summer.
- Coal is becoming scarce in many countries and more expensive here; its price has about doubled in the past year. It is our main source of electricity. In about 15 years the world may hit a peak in its production, and this combined with the fact that natural gas--the secondary source of electricity generation--simultaneously will be at or past its peak, poses a threat to our supply of electricity.
- To put a human face on this, a polling agency found in December 2007 that 12% of Americans planned to put their winter energy bills on their credit card--no wonder Christmas spending was down. An article in this past Saturday's New York Times details the rising number of people unable to pay their winter utility bills and now facing service cutoffs. Many hospitals in California are on the verge of bankruptcy; rising energy costs--in tandem with other increasing costs--could be a breaking point for them. Further, we are merely at the beginning of what some of you recognize as Jim Kunstler's poetic phrase "The Long Emergency."
- The total amount of energy the world gets from fossil fuels is predicted to peak in 2010, so we've probably got about two years before systemic disruptions and breakdowns become commonplace and then worsen. Even now we see the airlines struggling, food prices soaring, and we have a fiscal/financial crisis of unknown scope that is connected to the price of oil in numerous ways I cannot delve into today.

Energy in Hospitals

Now let's look at energy use in hospitals and then use the issue of record keeping, a biggie for nurses, as one small but significant example of how energy scarcity will shape the future of healthcare. Then we'll close with some comments on where medicine is heading and my claim that nursing stands to become a force in reforming the healthcare system.

The EPA estimates that hospitals use twice as much energy per square foot as do office buildings. Until recently hospital administrators have not paid attention to the cost of energy because they think--mistakenly--that it represents less than 2% of their operating expenses. Therefore, they have considered rising energy costs a nuisance, not a threat. However, a few weeks ago a former AMA (American Medical Association) official told me hospital administrators are getting worried about energy costs because sharp increases are eating into profits. For example, all energy costs in the US rose 17% in 2007, with the cost of oil climbing 57%. The first quarter of 2008 shows no change in this trend. How many years can our society--and hospitals--absorb these increases?

We should look a bit closer at that alleged 2% because it ignores hidden oil-related costs--also, this percentage is from 2005, when oil was \$48.00 a barrel. Virtually every item consumed in a hospital is to some extent connected to fossil fuels, primarily oil. In medicine petrochemicals are used to manufacture analgesics, antihistamines, antibiotics, antibacterials, rectal suppositories, cough syrups, lubricants, creams, ointments, salves, and many gels. Processed plastics made with oil are used in heart valves and other esoteric medical equipment. Petrochemicals are used in radiological dyes and films, intravenous tubing, syringes, and oxygen masks. This could be a much longer list.

Finally, as the cost of oil, natural gas and coal rise in tandem their impact is surpassing that 2% of operating expenses just mentioned.

Now let's consider our example of how nursing will be changed.

Recently, I read a report which estimates the amount of paperwork (communication, medication administration, admission, discharge, transfer, supplies, equipment, and so on) is so burdensome that the average nurse devotes only 31% of the workday to direct care.

The American Academy of Nursing is pushing for fully electronic records. I won't get into whether or not this will increase patient contact hours. What is salient is that this is a solution based on an increasing amount of energy flowing into hospitals. Indeed, all across our society planning takes for granted an ever increasing supply of cheap and uninterrupted energy. My colleague, Gail Tverberg, an actuary with a good deal of experience in the medical industry, has been studying the economic ramifications of peak oil and [notes](#):

I expect that electrical interruptions will become more common in the next 20 or 30 years. These may even become a problem early on, for a whole host of reasons, including lack of water for cooling, lack of fuel for power generation, and poor upkeep of the electrical grid. Healthcare providers would be wise to plan for the day when elevators and electronic records may not be available.

Wow. Imagine doing your work under these conditions. Needless to say, the healthcare professions have no inkling of--let alone are preparing for--this astonishing future. In fact, a recent study showed that the electricity used exclusively for medical records is rapidly increasing, by 400-800% in the past four years. Also, MRI usage is increasing, as are many technologies that rely on electricity. Add to this the inevitable shortages of other supplies and medicines that will simultaneously result from peak oil.

I would not be surprised if some of you are now thinking, "This is crazy; this simply cannot happen." To which I'd like to be confrontational and assert, fossil fuel costs will continue to rise and eventually the healthcare system will be forced to downsize--just as the Baby Boomers and (possibly) climate change effects--inundate the system. Let me just mention our perilous national economic status and note that some commentators are claiming that the government has in effect nationalized Wall Street by bailing out Bear Stearns. Further, anyone who thinks the health sector is recession or nationalization-proof is confusing health-care, which is indispensable, with the current system, which is unsustainable.

This is a lot to lay on you in a few minutes of exposition, and I'm tempted to apologize; however, nursing--unlike, say, public relations--is where the rubber meets the road. So let me make a few closing comments and then take your questions.

Summary

1. I feel safe observing that the vast majority of insurance companies, medical associations, HMOs and other hospital associations will resist facing the stark consequences of peak oil because they are benefiting from the status quo. On the other hand, those hospitals with a mission for stewardship of the earth and charitable activity are likely to be among the first to recognize the need for radical change in medical care.

2. In the same vein, it's obvious that nursing is not prospering even though it is in some ways the backbone of the system. Your profession's main themes for reforming the healthcare system

should center--I hate to use the word "should"--around radical resource conservation and efficiency, and the elimination of wasteful and environmentally harmful practices. In other words, reduce, reuse, recycle, and repair.

3. Simultaneously, there will be a political struggle for the soul of healthcare: We will look to other nations with decent health systems where three core values predominate: 1) no one goes bankrupt due to medical status; 2) no one is denied treatment for any reason, and 3) preventive and treatment medicine are integrated. This means one response to energy downturn leads to healthcare for all. The alternative to this is medicine becoming something for the wealthy few, with the rest of society receiving what amounts to triage--or, alternatively, home care or "folk medicine." In some respects these alternatives represent the familiar themes of the Jeffersonian/egalitarian and Hamiltonian/elitist traditions.

4. By forming a coalition with public health and even some of the growing number of doctors who favor a "single-payer" system, nursing can shape the transformation of our healthcare system.

Rather than elaborate, let me thank you and open the floor for discussion.



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