Building the Case for Prevention through Design Presentation—Kaiser Permanente

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Good afternoon. When I see all of these engineers, architects, etc., who manage their process so carefully, then compare it to health care, our industry seems to be a lot more chaotic. I will give you a little background on our scale. We operate in nine states and the District of Columbia within eight regions, Northern California, Southern California, Colorado, Georgia, Hawaii, the Mid-Atlantic States, Ohio, and Oregon/Washington. In some regions, Kaiser Permanente (KP) owns and operates hospitals. In others, we work with facilities operated by other organizations.

We are investing $24 billion in a capital improvement plan. We are in a current building program where the 2,700 people in my group are managing billions of dollars in projects, and we try to design these projects from the standpoint of safety. We are very serious about our designs. We actually talk to architects, frontline workers, infection control personnel, and safety people. We conduct in-depth panels of all of the detailed processes of a hospital, and we're trying to incorporate a lot of information into the designs. If you want to design an exam room, our teams go through and see how a room is supposed to work. Then we use that as a model we share with all of our partners. We believe this is rare for health care.

We spend a lot of time looking for products that are environment-, patient-, and worker-safe. We try to find the sweet spot in that balance. We're impassioned about worker health and safety because of our history; we were founded as industrial safety advisors for Kaiser Steel. In addition to that, we've been passionate about keeping people at work. They say the difference in our designs is that we focus more on workplace safety than any other health care organization.

With our labor management partnership (our working with the unions), one of the main focuses is to make KP a safe place to work. Of the 14 industries with the highest numbers of occupational injuries/illnesses, three are in health care. Hospitals have the greatest number of occupational injuries/illnesses. Nursing and residential care facilities are number two (Bureau of Labor Statistics, 2006). We at KP have a way of thinking about safety by design. One of the interesting things about the health care industry is that you cannot motivate our workers to put their own safety above patient safety. It's a testament to the caliber of people who work in health care, but it also means that a 150 lb. nurse will injure herself trying to stop a 300 lb. patient from falling. You cannot motivate someone in health care to put their safety above the patient safety. And that's all right. We found that if you put the things together in context you can do both. You have to motivate the workers that their health and safety is part of the overall goal of healing. We are motivating people to change processes, equipment, layout, etc., to reduce clinical error; reduce fatigue; reduce infections; reduce slips, trips, and falls; reduce toxic materials; and reduce moving injuries.

We try to create a business case for something that reduces injuries. For expensive equipment, such as ceiling lifts installed in patient rooms, getting the business case through was difficult. As we come forward with recommendations like that, we found that if you evaluate all the benefits, the workforce injury reductions can pay for it. For some changes the only way we can come up with the economic argument is to look at benefits to all three groups (patients, employees, and the environment). For instance, using digital radiology rather than the traditional silver film, results in benefits for patients, employees, and the environment. It saves water, it saves money, and it's better for people. The initial costs for implementing digital radiology are high. Computer terminals, imaging equipment, and staff training are expensive, but the long-term savings can justify the initial outlay (Freiherr, 1996). Patients benefit from the elimination of repeat films, which reduces their exposure to and dose of radiation. The radiology technologist becomes more productive and efficient by being able to easily produce a quality film that has optimal contrast and density, includes all anatomical

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areas of interest, and delivers the lowest patient dose possible. By comparison, a portable chest film that is too dark or too light necessitates a repeat, thus doubling radiation exposure to the patient and consuming more film, chemistry, and technician time. The film then has to be developed and transported to the physician, which means critical time can elapse from the initial order. After the film is read and is no longer needed, its storage becomes an issue.

With digital technology, radiology departments have become more productive, as they don't have to spend time processing or transporting film. In addition, they are being environmentally friendly and saving money by reducing the need for film, contrast agents, and storage mechanisms. Hard disks or optical disks can be used for archiving, rather than individual patient files. An electronic image can be stored, transmitted, reproduced, or manipulated to enhance diagnostic details, all without ever printing out a hard copy. In addition, researchers have found that digital imaging, with its improved image processing, requires less contrast agent to generate a diagnostically useful image, which, once again, saves money and stress on the environment (Huda, 1996).

We collaborate with a lot of groups—the Green Guide for Health Care/LEED for Health Care; the Centers for Disease Control and Prevention (CDC); Health Care Without Harm; the American Institute of Architects; the U.S. Department of Defense (DOD); the Department of Energy (DOE); Hospitals for a Healthy Environment; the Center for Health Design; the National Institute for Occupational Safety and Health (NIOSH); the Institute for Healthcare Improvement (IHI).

In the past two years this is what we've achieved: The average injury rate has gone down by 37%. In California, we had a 42% reduction in workers' compensation claims and a 46% reduction in patient handling claims. Thousands of injuries and millions of dollars in expenses have been avoided through the Workplace Safety programs. It was in the annual incentive plan. It became so much a part of the organization that "you're not going to get your bonus if this doesn't happen" gave our efforts a bump.

We build hospitals with a list of 150 recommendations for design changes to eliminate illnesses and injuries. We believe that we need to give these out to all of you, and then we all have to share these ideas. A lot of the recommendations don't cost anything to implement. From 1995–2007, construction costs per square foot for an average hospital in California went from $200 to $625. We were able to keep our construction costs 13% lower than the average through standardization and getting it right at the beginning (not as much need to retrofit). If you put down a set of objectives and have implementation power, you can keep your costs low.

The next step that we need is a social movement—a global health and safety initiative. We need open source sharing, guidelines for group purchasing, and research. We're trying to come up with a simple, repeatable system and then we're sharing it. We're trying to create an open source movement for the sharing of best practices. We're going to begin by populating the sharing database with our findings and materials. The second thing we need is guidelines for purchasing for sustainability. There are large group purchasing organizations that go green/non-toxic. Thank you.

References

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