The psychology of color in acute healthcare design

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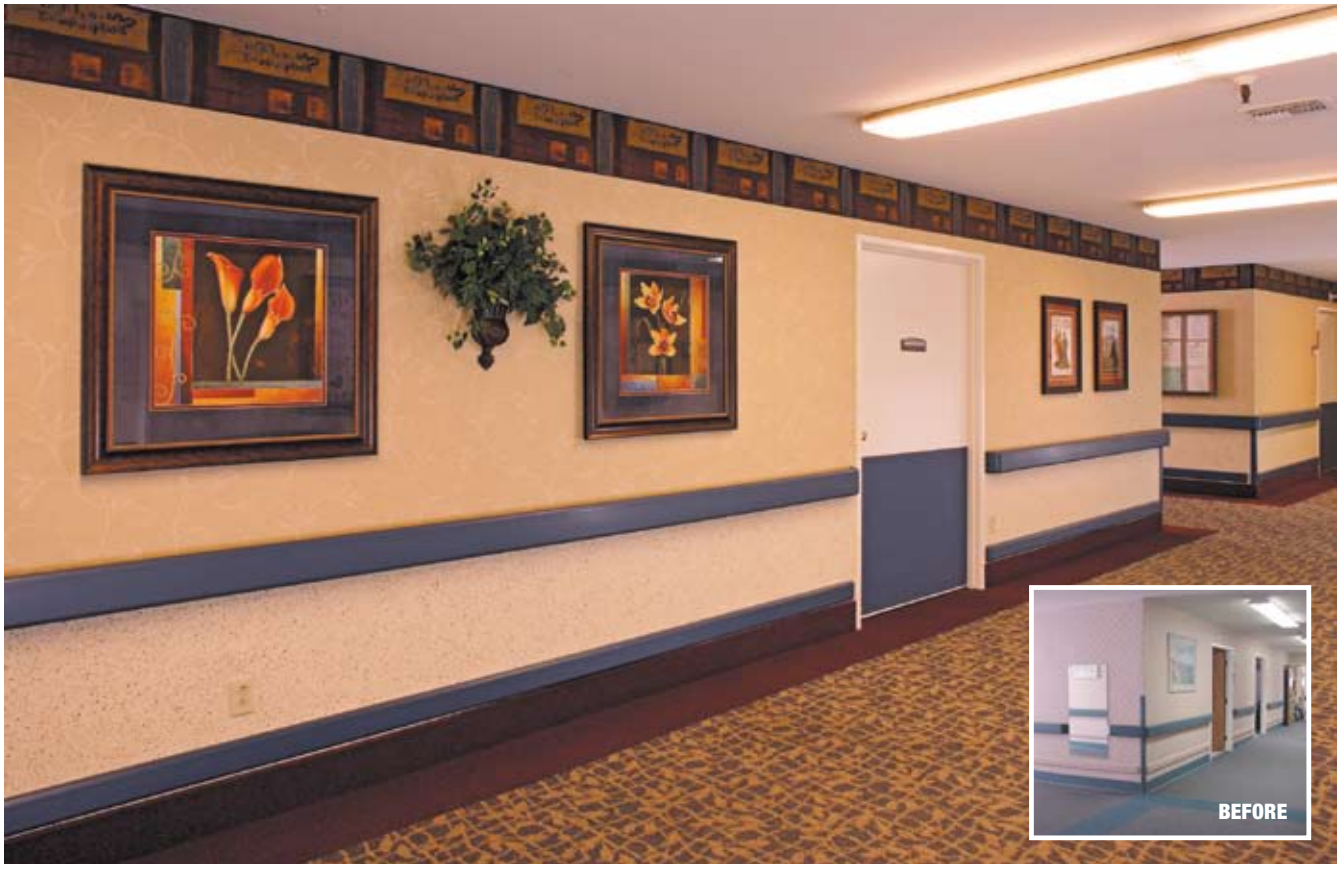

Figure 1. This before and after shot illustrates the transformative power of a lighter color on a long corridor.

Did you ever wonder why surgical scrubs are predominantly khaki green? I've seen a few in blue and pink, but the majority is one or the other shade of khaki green. It seems that at the turn of the century, before the invention of the electric light bulb, surgeries were often performed in basement rooms with walls covered completely in white tile. There were clerestory windows at the ground level just outside of the surgery room where the morning light would shine in, hit the white tiled walls and bounce all over the room, illuminating the space enough for the surgeon to see successfully in his endeavor. However, on the sunniest days the natural light would be so bright that it would create a blinding glare that shined directly into the surgeon's eyes. As it was unusual in the early days of mass-produced textiles to find any garment that was dyed a shade other than black, brown, or khaki, khaki it was.

Khaki continued to be handed down throughout the years as the optimal color to keep the glare of natural light from bouncing off surrounding surfaces, thus blinding the surgeon. It has more recently been discovered, however, that whatever color the doctor is wearing also reflects back onto the patient, and in the case of khaki, makes him appear more green and thus, more sickly. Old habits and low budgets have perpetuated the acceptance of this color to this day, regardless of its pros and cons.

Color is nothing more than light traveling through space at different speeds. Color can be warm and yellow-based, like reds, oranges, and golds, or cool and blue based, like blues, greens, and violets. We, as humans, have an involuntary, physiological reaction to color. This has been proven through various university studies, such as one in which a person is surrounded in a particular pure pigment (color) and then

Figure 2. This before and after shot illustrates the transformative power of a lighter color on a long corridor.

technologically monitored as to the physiological, involuntary reaction to it while doing minor exercises, such as raising an arm or bending a knee. It is a known fact, for example, that red affects the body more than any other color by causing the adrenal glands to release, the heart rate to rise, and the mouth to salivate. This physical response tends to elevate one's emotional well being, much the same as exercise has been proven to create a sense of euphoria. Generally, blues and greens are calming colors, which often prompts the opposite of the physical reactions to red. It seems that pure yellow is one of the most difficult colors for the brain to process, particularly in someone who is already suffering from any number of brain dysfunctions.

Therefore, the question becomes, if such reactions are a fact of human existence, how and why are particular color pallets chosen for healthcare facilities? Many would find it obvious to believe that very bright colors are best, as they appear to be more "cheery" to a person who is obviously in a place they would rather not be. Perhaps a cooler color scheme, on the blue/green scale, should be employed in order to calm typical patient anxieties. Or, should a marketing perspective be adopted by utilizing the trendiest color schemes of the day, usually derived from current fashion, in order to elevate the building to a status of maximum profit for the bottom line?

Lately, I have had the unfortunate occasion of following my 86-year-old uncle from one acute care hospital to another, as he suffers through some of the pitfalls of aging. As a senior housing interior designer of 18 years, I can't help but wonder how the various drab and generally lifeless color schemes I have encountered were chosen. I realize budgets in most of these facilities are stretched to the breaking point, but I can't help but notice in my journeys through the acute corridor continuum that most are still using greys, beiges, blues, and pale greens with very little use of accent colors. This seems to apply to not only the local, regional facilities, but also to some of the most well-funded facilities within the highest per capita neighborhoods in the country. Who is selecting these colors and why is a muted color mandate so prevalent?

Much of the color washout is typically caused by the usual cool-white, fluorescent light sources that have been the stalwart of hospitals since the discovery of fluorescent light. This will dull down the enthusiasm of any color scheme within a typical 8' × 8' × 220' painted, healthcare corridor. But short of that, there should be no reason why more passionate color pallets cannot be integrated to deinstitutionalize the central institution of our healthcare system, the hospital.

Paint is an inexpensive material that can be utilized to

change an environment. Well-chosen, well-placed colors can be an effective tool used to evoke a positive, unconscious confidence for a person in a space that is embellished with uncertainty. Of course, the light/dark value scale must also be considered. Think of a typical color paint chip from the paint store, which starts with the lightest value of blue, for example, at the top and works its way down to the darkest shade of that same blue at the bottom. On a scale of 1-10, "1" being white (all light) and "10" being black (no light), it is generally accepted that anything less than a "5" in light/dark value is best in a healthcare environment as the most predominant color, where there is very often no natural light source. Here is where the LRV (Light Reflected Value) shown on most commercial paint chips becomes important. It can help assess how much light any particular shade will reflect back into the space based on the lightness or darkness of that color (figures 1 and 2). For example, a muted gold, an eight on the light/dark value scale, would be too dark on all the walls in a long corridor with no natural light. Instead, a three value in the same color with contrast accents, such as pictures with dark-colored mats, a focal wall at the end of a corridor, or a dark-colored handrail in an eight value would significantly spice up the space without darkening it, with very little effort and minor expense. Strategic color contrasts such as these can also project a custom image that is more akin to a fancy Las Vegas hotel than a hospital.

Without realizing it, a positive and appropriate color scheme can excite the father of an anticipated newborn beyond his insecurities. It can unconsciously soothe a patient on her way to surgery with the confidence of knowing that she is in a good place, where she will be taken care of while her life is out of her control. Or, it can irrationally instigate anxiety, irritability, and even fear. Perhaps it's time healthcare professionals were more attentive to the colors they use in their facilities where life and death is so tentative. Even if bottom-line business practices are the target, remember that the bills cannot be paid if the beds aren't full. The first impression of one facility in comparison to its competitor down the street can be paramount, just as its colors should be. **HD**

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