

Create a hospitable indoor climate

Productivity down? Check heat, humidity, and noise levels in your dispensary

In our first two instalments (January and June 2000), we looked at lighting and colour and how these visual design elements affect productivity, efficiency and error rates. We now turn our attention to the "indoor climate," which includes temperature, humidity and air circulation (ventilation). We'll also examine the impact of noise on the dispensary.

I wrote this article in Las Vegas in July. The temperature outside: an oppressive 44°C (115°F). Inside the hotels, conference centre and casinos, however, people were wearing

sweaters and suit-jackets and complaining of being cold.

For casino owners, keeping the casino too cool is a good idea—it makes their customers restless, less alert and less able to concentrate. In your dispensary, however, this reduced ability to concentrate (especially on mental tasks like checking prescriptions) can have disastrous results. Keeping the temperature too warm also has negative consequences on productivity and error rates, as overheated employees will become drowsy. And, if a drop in humidity (to below 30%) accompanies the heat,

they will also end up with sore eyes, noses and throats.

To keep everyone comfortable, indoor temperature should be kept between 20°C and 24°C, with a relative humidity level between 40% and 50%. One way to keep humidity levels comfortable is to add potted plants around the pharmacy, to the top shelf above the dispensary work counter, and in the patient waiting area(s) especially. In addition to helping control humidity, the plants will make for a more pleasant work environment.

Another way to improve the indoor climate is to avoid placing heating and air conditioning vents above or behind the dispensary work counter. Draughts are better tolerated if they come from the front, and because our necks and feet are particularly sensitive to draughts it's actually best if vents are not located too close to a work area at all. However, if they must be located in the

ceiling, the higher the better, as higher ceilings allow for better airflow.

A more important influence on productivity and error rates than temperature, humidity and airflow is noise. It has been reported that of all



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environmental factors, noise in the workplace is the leading cause of job dissatisfaction and increased stress. Exposure to noise can cause blood pressure to rise and muscles to ache, and it decreases our ability to think clearly and communicate effectively.

Noise causes distractions that will substantially increase the number of dispensing errors and, as the noise levels increase, so too will error rates.

In one study of an ambulatory pharmacy with a baseline error rate of 3.23%, researchers found an error rate of 6.55% when the pharmacist was distracted by noise and 6.65% when the noise interrupted the pharmacist from the task at hand. The study found that the pharmacists were distracted four times and interrupted three times (on average) per half-hour, with a maximum rate of 16 distractions and 17 interruptions during one half-hour period.

Studies of the opposite (a reduction in noise levels) showed substantial benefits in machine shops when noise levels were reduced by 20 to 25 decibels (dB). The results: 50% fewer rejected parts and a 30% increase in productivity. A corollary to a dispensary data-entry station can be seen in another study (of an old-fashioned typing pool), where a 25 dB reduction in noise levels resulted in 30% fewer typing errors.

Here are some suggestions on how you can reduce the noise levels in your dispensary.

- Use sound-absorbing materials on floors and ceilings (carpet on the floor, tiles instead of gyprock on the ceiling).
- Replace dot matrix printers with laser or bubble-jet printers.
- Reduce the amount of phone traffic entering your dispensary through the use of an automated telephone refill management system.
- Locate data entry and filling stations away from checking (i.e., don't put everything side-by-side on one dispensing counter).
- Use sound masking systems (i.e., white noise generators).

One last suggestion on how to reduce noise is to play music. It will not only mask noise and unwanted sounds, but it can also improve morale, boost productivity and reduce error rates. It can even increase sales in the frontshop!

So remember: keep the temperature between 20°C and 24°C, humidity between 40% and 50%, reflect the draughts away from the backs of your necks, and never double-down when the dealer's showing an ace.

Excerpted from The Efficient Pharmacy: by Design (a work in progress).

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