Quiet Please!

Sound masking helps keep the peace — and HIPAA-mandated privacy — in medical settings

by Karen Mitchell
**Picture yourself in an examination room at the doctor’s office, waiting to be seen. Despite an attempt to concentrate by reading the same magazine articles over and over, you can’t help but overhear a conversation drifting in from the next room where a nurse is reviewing another patient’s prognosis and treatment plan.**

The scene is even more troubling in a hospital setting, where privacy issues in a variety of spaces such as the admitting areas, patient accounts, surgical suites, and on inpatient floors, can impact patient recovery.

There is much buzz around sound masking as a solution, and whether AV can integrate the remedy for privacy and patient satisfaction, satisfying HIPAA requirements and fostering healing.

“For years, sound masking has been used to provide privacy and acoustical comfort in offices and healthcare environments,” said Jodi Jacobs, director of marketing for Lencore Acoustics.

What sound masking does is raise the ambient background sound level within an environment so that speech falls under the background sound level and is less distracting. “Proper masking sound is a gentle comfortable sound that is engineered to match speech frequencies and that creates a more pleasant environment,” Jacobs elaborated. “When properly introduced, sound masking gives a level of comfort and provides speech privacy. Raising the ambient background sound also reduces something the dynamic range, which is the difference between the ambient background sound level and the highest level of sounds that may be created in the same environment, essentially a signal-to-noise ratio. By reducing the dynamic range you simply increase comfort, something that hospitals are very much in need of doing.”

The search for a way to mitigate the problem in the healthcare sector dates back to the 1960s and 70s, when offices had a lot of metal desks, loud HVAC systems, and the clacking of heels on hard floors. “It was a cacophony of sound that helped to drown out voices in an odd way,” Jacobs added.

Today’s healthcare environment is still acoustically challenging, Jacobs noted, “with all of the hard surfaces and the absence of many absorptive and blocking surfaces.” Subsequently, “they have begun to look at ways to cover and minimize the impact of the noises that occur within spaces that impact the patient’s comfort. Masking in healthcare enables much of the extraneous conversations, noises in the hall, and some of the machine sounds to fall below the ambient background sound levels to help provide a better patient experience and improved acoustical comfort.”

The matter is a complicated one, said Stephen G. Lindsey, CTO of Cerami & Associates in New York, NY. “Hospitals are too noisy, but is it that the sound level is too high or is it that people hear what they don’t want to hear? Nurses’ stations and carts coming down the hall make noise, and that annoys patients. Masking is not going to help there to reduce noise.”

If a patient’s room is quiet, with a low sound level from a quiet HVAC system and closed windows, it’s more likely that the patient will be able to hear sounds from outside such as those from the room of the patient next door, what’s being said at the nurses’ stations, and in the corridors, Lindsey said. “When you have a quiet room with noise coming in, you can improve a patient’s comfort in that room by increasing the sound level, using masking to reduce the perception of the incoming sound. Masking works with a quiet space, but not in a noisy space where there is an impact from other events and external noises.”

A goal, Lindsey said, is to persuade hospital management, doctors, nurses, and so on to reduce noise in the first place. “Now, instead of traditional paging systems, some hospitals use devices that attach to the doctor and use visual alarms as opposed to audible alarms. At least, they talk about doing this. As consultants, we can only advise.”

Although sound masking is a well-discussed topic in the healthcare realm, translating it into sales is another matter, he said. “Everyone seems to realize that noise reduction in all facets is a big driver in patient comfort and in lessening dissatisfaction. So there is a willingness to listen to what can be done but less willingness to spend money on it; they’d rather buy another MRI machine, for example.”

**HIPAA’s ROLE**

Enhancing patient comfort while supporting privacy is a real goal for hospitals, Jacobs said. “Under HIPAA, hospitals must provide privacy in electronic, paper, and oral forms. Without stringent benchmarks or standards within healthcare, HIPAA looks to what prudent providers in other industries are doing to secure privacy. With regard to speech privacy, sound masking has been used and proven to achieve this in corporate and healthcare environments for decades. The sound masking industry also has a viable metric for measuring privacy and uses a nationally recognized ASTM standard and the Articulation Index to calculate when privacy is achieved.”
In some cases, where a hospital has been issued an oral privacy violation, they have put in sound masking as part of the remedy for addressing the violation and have cited the ASTM standard to show that a reasonable safeguard had been obtained to protect patient privacy. Today, many hospitals and healthcare facilities incorporate sound masking to help meet HIPAA objectives.

“But a unique thing happened along the way in meeting HIPAA objectives,” Jacobs stated. “Patients started commenting that they felt more comfortable resting and that they were sleeping better in environments that were treated with sound masking. This was an important discovery and one that hospital administrators and ‘quiet teams’ have embraced. Realizing that noise is a big issue and determinant in patient satisfaction, hospitals have turned to sound masking as a viable solution for providing privacy, comfort, and improved patient satisfaction.”

According to Scott Lauback, vice president of sales for Cambridge Sound Management (CSM), his company receives a lot of queries driven by concerns about HIPAA. “HIPAA requires reasonable efforts to be taken to ensure oral privacy to safeguard patient information,” he said. “Sound masking is frequently both the most effective and cost-effective way to improve oral privacy within a facility.”

Awareness of the need for masking is growing both in the corporate domain and in healthcare, with interest by the healthcare segment no more or less than in any commercial area, he added. The healthcare segment represents about 20 to 25 percent of CSM’s business, which is conducted through its network of resellers.

HIPAA plays a small role in generating sales opportunities for sound masking, but healthcare entities across the board seem to have done their best to minimize technology investment in order to comply, said Steve Younge, vice president of sales and marketing at Atlas Sound. “They’ve erected physical barriers at consultation counters, marked lines on floors, and posted multiple signs, but overall these are ineffective,” he said. “I think most of us have been at the doctor’s office or pharmacy where these barriers are in

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**One Cure for Your Audio Ailments?**

While compiling the editorial for this issue of Healthcare AV, we came across this new offering from Advanced Networking Devices (AND) that takes care of both sound masking and mass notification — the topics of this issue’s features. How could we not include it?

Technically, the new part of this offering is the addition of sound masking to AND’s current mass notification products, with the specific interest of helping healthcare institutions contend with HIPAA oral privacy regulations. By adding sound masking to the existing AND mass notification system, considerable cost savings can be achieved, according to the company.

AND has a variety of products that are PoE (Power Over Ethernet) and require no special hardware or servers. Its Gen2 devices get the time from an atomic time server automatically and can be sent audio from an IP phone or through the ClockWise application, which is a PC console that can be used to send audio and text messages. Multiple IP Speakers and IP Clocks can be combined for a complete synchronized clock and intercom system.

For more information on AND and its products and services, visit www.anetd.com.
A leading hospital in Milwaukee, WI, set high benchmarks for patient privacy and comfort during a recent renovation by Eppstein Uhen Architects. As part of the hospital’s comprehensive look at noise and its impact on its patients, the hospital “Quiet Team” researched available acoustical solutions and specified Lencore Sound Masking for their patient rooms and waiting areas. The system worked to minimize distractions, improve patient satisfaction, and create a better overall environment for patients, visitors, and staff.

From top to bottom: the common area, a hospital corridor, and a nurses station. Can you spot the sound masking?

place and still overhear a confidential conversation we would rather not have.”

Just the same, sound masking represents an important part of Atlas Sound’s business that has continued to show growth year after year even through the recent economic downturn. In most instances, sound masking can do a much better job in providing speech privacy than physical barriers, he said. “The concept of sound masking raises ambient noise uniformly throughout the room via a distributed speaker system installed above the ceiling or below an access floor. A good solution should sound like a quiet, soothing air-handling system. In a perfect world, with a well-tuned system, sound masking should hardly be noticed.”

An overlooked advantage that a well-designed masking system can provide is the enhanced functionality of providing paging and/or background music over the same speaker system that is delivering the sound masking, Young added. “We make some products that allow more than sound masking out of single system. They also can handle paging and background music through the same speakers. When you can combine multiple systems and still get speech privacy, that’s a good investment. Some may claim that you don’t get optimum performance, and that’s just not the case, as a well-designed masking system has better uniform coverage. And when proper head-end products are specified, you can achieve stellar paging intelligibility and background music reproduction without sacrificing sound masking quality.”

But what we lack, Cerami & Associates’ Lindsey stated, are definitive studies to show that if you improve the acoustic environment it helps patients get better more quickly. After a recent ASHE (American Society for Healthcare Engineering) gathering, he understood the slow pace of change, with the next revision of the Design Guidelines to be published in 2014, in a four-year cycle. “This is simply because so many interested parties have to review the recommendations before they can become Design Guidelines, and it’s very important that they do. Any missteps could be fatal in the hospital world.”

We see more masking in the corporate world, Lindsey added. “Yes it saves money and makes anecdotal sense to us that if you improve patient comfort, it reduces stress, but, as I heard in ASHE, germs trump noise and the germ police trump ev-
Enhanced Masking

When implementing sound masking, don’t forget the acoustics. Sound masking has to compensate for a lot of excess noise in facilities with hard, reverberant surfaces. Thus it’s a good idea to treat a space with acoustically absorptive panels.

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care. In his words, ‘Complete quiet doesn’t necessarily mean comfort. Comfort is defined with the right dynamic range for acoustics, and we are helping the healthcare industry to better understand true acoustical comfort.’

In considering AV integration, Jacobs said Lencore looks to the difference that access to system controls can have on patient experience and satisfaction. “In the same way that some hospitals provide patients with access to lighting and television controls, integrating sound masking controls into patient rooms can lead to a much more comfortable and healing environment. As industry leaders, this is certainly an option that companies such as Crestron and AMX should further explore.”

Jacobs believes sound masking is a great opportunity for the AV industry and hers to get together. “The sky is the limit when we look at embracing technology to help heal, and we’re really moving towards this. There’s a feel-good component that we can positively impact the healthcare industry. The hospitals seem to truly understand the importance of this and support it because their patients are demanding it. The market is asking for comfort and privacy, the technology has grown to meet it, and masking is a proven solution to achieve it. It’s a perfect formula for success for building a quality healing space. And now, with the integration of building systems that can seamlessly tie in with other systems such as lighting and HVAC, who better to make an impact on the sound quality and acoustical comfort of space than the AV industry?”