SONICU™
Monitoring Measured

Targeting Sound:

Hospital noise reduction with Sonicu STAR Reports and Sound Monitoring Program

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a Sonicu ebook

The noisy healthcare environment

For years, reducing hospital noise has been a top priority for healthcare leaders to improve patient experience, but research reveals anemic hospital noise reduction efforts have noise levels spiraling ever upward.

Until now, healthcare has lacked a definitive, data-driven tool for effective assessment of the noise environment. Healthcare leaders have not had the means to plot a realistic hospital noise reduction strategy.

Sonicu's Sound Monitoring Program with its proprietary *Sound Target Achievement Reports* (STAR) has been specifically designed for healthcare with input from some of the sector's most reputable thought leaders.

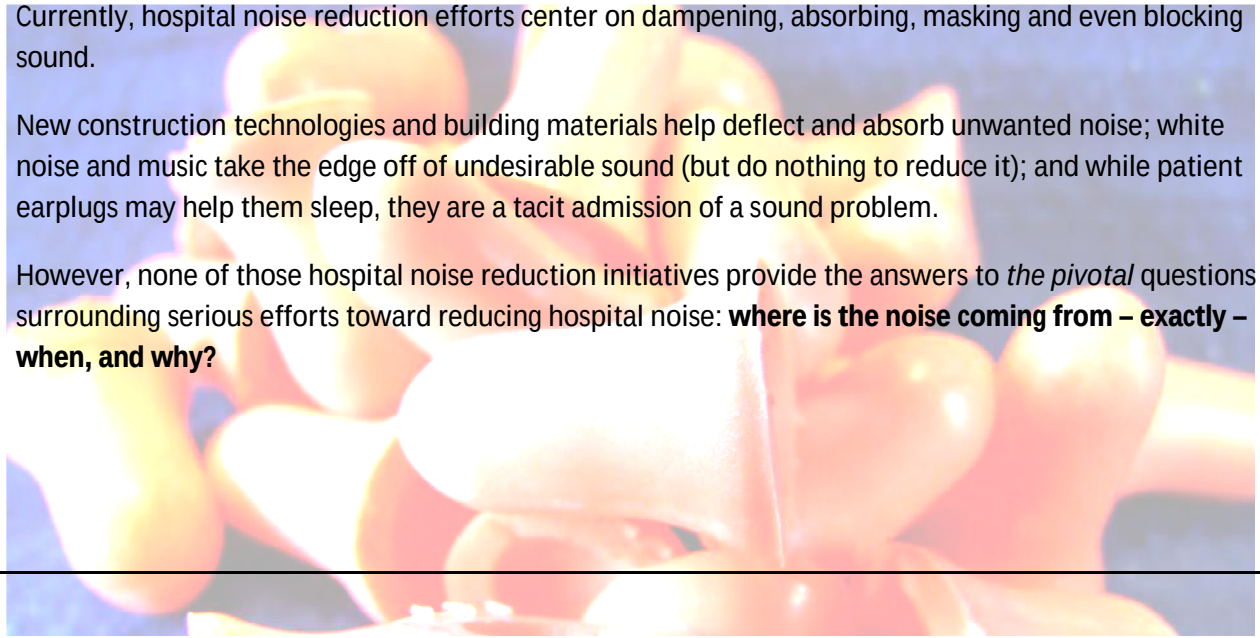
Sonicu STAR reports pinpoint the precise time and location of sound events, giving managers the insight necessary to understand why their departments and systems are too noisy.

State of the industry

Currently, hospital noise reduction efforts center on dampening, absorbing, masking and even blocking sound.

New construction technologies and building materials help deflect and absorb unwanted noise; white noise and music take the edge off of undesirable sound (but do nothing to reduce it); and while patient earplugs may help them sleep, they are a tacit admission of a sound problem.

However, none of those hospital noise reduction initiatives provide the answers to *the pivotal* questions surrounding serious efforts toward reducing hospital noise: **where is the noise coming from – exactly – when, and why?**



Prevailing methods for gaining answers to those questions involve *asking* staff members where they think noise problems persist or performing a *sound audit,* neither of which is particularly precise.

Staff surveys, while perhaps easiest to conduct, arguably provide the least reliable data. Survey information is a collection of opinions. Opinions that may or may not be supported by hard data.

Sound audits record sound levels with a variety of equipment and devices. Some sound auditing applications record accurate sound pressure readings while others utilize free apps and do not.

Sound audits record sound levels at specific times and locations suggested by staff surveys to document a perception of where sound problems exist. Data gathered is unique to the specific time the audit was conducted, and sound events that occur outside audit parameters are not captured. As a result, the information is difficult and in some cases nearly impossible to integrate into a seamless hospital noise reduction strategy.

The problem with the state of the industry

The former categories of dampening and absorbing noise are efficient for new construction, but retrofitting an existing department, wing or enterprise with sound-absorbing technology can be a costly and daunting effort.

The latter sound-masking techniques, though perhaps reducing the *effect* of extraordinarily high sound levels on individual patients and staff, do nothing to *affect* a lasting change to the noise environment.

To successfully quell healthcare's noise problem, leaders must *understand* the specifics of the issue, precisely and objectively, with hard data to support their conclusions and a means to monitor and manage future hospital noise reduction initiatives.

Sound reduction decisions, initiatives and policies are currently based on consensus and opinion not reliable data-driven intelligence. Without sound information on the sound environment, healthcare's noise problem will only continue and worsen.

State of the *art*

Instead of attacking the problem of hospital noise with incomplete data, Sonicu STAR reports target sound events and provide precise information as to when, where and why those events occur.

Rather than gathering subjective input on sound sources and levels or relying on a spot-check sound audit, Sonicu constantly monitors the environment 24/7 with wireless digital sound meters to determine decibel levels at precise locations.

That data is then sent via Wi-Fi or a cellular modem to Sonicu's cloud-based software platform where sound events can be seen in real-time, analyzed daily and pushed out in the form of a STAR report.

Sonicu's STAR report shows managers peak sound events as well as rolling average sound levels over five-minute durations so they can understand where and why sound events are occurring at any time of the day or night, allowing them to *assess* their sound environments based on hard data.

Sound Target Achievement Report (S.T.A.R.)

Top 10 Sound Events for Friday, September 30, 2016					
L_{eq} Events			L_{max} Events		
Device Name	L_{eq} (dBA)	Time	Device Name	L_{max} (dBA)	Time
9N 23B	77.7	23:45 - 23:50	9N 21A	91.4	18:30 - 18:35
9N 23B	77.7	05:50 - 05:55	17W Hall	91.0	11:10 - 11:15
9N 23B	77.7	05:55 - 06:00	17W Hall	86.8	11:15 - 11:20
9N 23B	77.7	06:15 - 06:20	17E Hall	86.1	11:10 - 11:15
9N 23B	77.7	20:10 - 20:15	17N Hall	83.7	11:10 - 11:15
9N 23B	77.7	20:15 - 20:20	17E Hall	83.7	11:15 - 11:20
9N 23B	77.7	06:00 - 06:05	9N 23A	83.6	20:35 - 20:40
9N 23B	77.7	05:45 - 05:50	9N 26	83.4	17:10 - 17:15
9N 23B	77.7	06:10 - 06:15	9N 25	83.3	19:10 - 19:15
9N 23B	77.7	20:20 - 20:25	9N 25	83.3	16:10 - 16:15

Once the sound environment is understood, managers can employ STAR reports to set sound target achievement levels and gradually begin to quiet the sound environment. Sonicu STAR reports provide immediate feedback on hospital noise reduction strategies, showing where peak sound events have been eliminated or reduced.

As maximum sound events decrease and begin to drop the hospital's overall average sound level, emphasis can shift to *monitoring* and *managing*, continually refining the process until noise levels are optimized for a given area, unit or enterprise.

STAR report features

Sonicu STAR reports were designed with input from healthcare's most prominent thought leaders and are used by some of the nation's leading hospitals, including NICUs at Bellevue Hospital, Loma Linda University Medical Center and Baylor Medical Center and in University of Tennessee Health Science Center patient areas

NYC HEALTH+ HOSPITALS | Bellevue

THE UNIVERSITY of TENNESSEE HEALTH SCIENCE CENTER

BAYLOR All Saints Medical Center

Paired with Sonicu's Sound Monitoring Program, those and other healthcare enterprises across the country enjoy:

- Fully automated sound monitoring and reporting.
- STAR reports that can be automatically pushed out to any number of users at customized intervals.
- Actionable data that pinpoints peak sound events to within 5 feet and rolling average sound levels within a defined area reported over five-minute intervals.
- A cloud-based software platform that is user-friendly and accessible from any PC or internet-based device.
- Easy implementation and expansion.

The STAR report advantage

Sonicu's Sound Monitoring and STAR reports revolutionize the way healthcare sees its sound problem. Instead of guessing and/or assuming where sound is excessive, leaders and managers can assess, improve and manage their sound environments with a proven program that provides:

> *Instead of attacking the problem of hospital noise with incomplete data, Sonicu STAR reports target sound events and provide precise information as to when, where and why those events occur.*

- Constant, consistent and digitally accurate sound monitoring of all sound events 24/7/365, on-site or off.
- Fully automated reporting showing precise sound data for informed policy making.
- Complete scalability as needs and facilities expand. Sonicu Sound Monitoring can also be easily deployed alongside other Sonicu monitoring applications such as temperature, humidity, and air pressure, or incorporated into a single-source System-wide solution.
- Easy accessibility through a cloud-based platform that can operate independently of existing enterprise IT systems.

What Sonicu STAR reports can do for your healthcare system

Sonicu's gold standard Sound Monitoring Program, STAR reporting and analytics, and cloud-based software platform provide healthcare leaders the actionable data needed to change and control their sound environments by:

- Furnishing precise data as to where and when noise is occurring to understand why it's happening.
- Giving leaders and managers the information necessary to assess, improve, manage and monitor the sound environment for real, long-term gains.
- Providing a framework and strategy to effect lasting cultural change within an enterprise that actually reduces noise, not masks or covers it.

- Improving patient experience and outcomes with a quiet, healing environment that leads to higher HCAHPS scores and increased reimbursements and revenues.

Contact Sonicu today to find out how easy it is to target and tame your sound environment with a Sonicu sound monitoring starter kit that is virtually plug-and-play and includes all Sonicu Sound Monitoring Program features, including STAR reports.

About Sonicu

Based in Greenfield, Indiana, Sonicu is an IoT innovation company focusing on health care and offering the first gold-standard sound management program available for the industry. For more information or to schedule a demonstration, email us at info@sonicu.com or call toll free (844) 4-SONICU (476-6428).

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Table A – Sonicu Sound Target Achievement Report (STAR)

Sound Target Achievement Report (S.T.A.R)

Top 10 Sound Events for Thursday, June 2, 2016					
L_{max} Events			L_{eq} Events		
Meter Name	L_{max}(dBA)	Time	Meter Name	L_{eq}(dBA)	Time
Sound 1	66.4	21:00 - 21:05	Sound 1	59.2	15:00 - 15:05
Sound 1	66.4	15:00 - 15:05	Sound 1	59.2	21:00 - 21:05
Sound 1	66.4	09:00 - 09:05	Sound 1	59.1	03:00 - 03:05
Sound 1	66.4	03:00 - 03:05	Meter 49	59.1	14:10 - 14:15
Sound 2	66.4	04:40 - 04:45	Sound 2	59	22:40 - 22:45
Sound 2	66.4	16:40 - 16:45	Sound 1	59	09:00 - 09:05
Sound 2	66.4	10:40 - 10:45	Meter 49	59	20:10 - 20:15
Sound 2	66.4	22:40 - 22:45	Sound 2	58.9	16:40 - 16:45
Meter 49	66.4	14:10 - 14:15	Sound 2	58.6	04:35 - 04:40
Meter 49	66.4	02:10 - 02:15	Meter 49	58.4	08:10 - 08:15