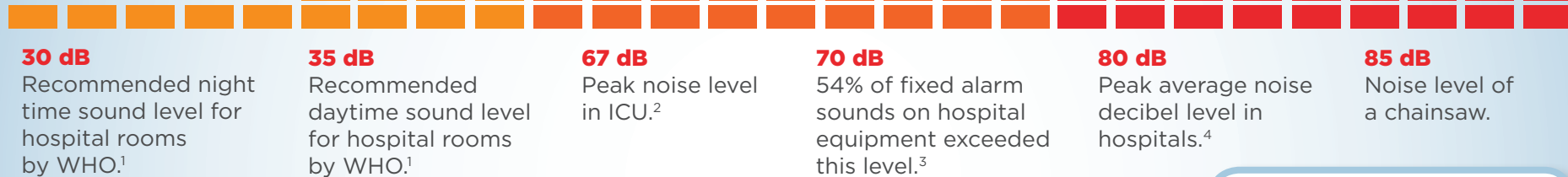


CREATING A QUIETER HOSPITAL

(THE IMPACT OF NOISE ON HEALTH & HEALING)

HOSPITALS ARE LOUD.



30 dB

Recommended night time sound level for hospital rooms by WHO.¹

35 dB

Recommended daytime sound level for hospital rooms by WHO.¹

67 dB

Peak noise level in ICU.²

70 dB

54% of fixed alarm sounds on hospital equipment exceeded this level.³

80 dB

Peak average noise decibel level in hospitals.⁴

85 dB

Noise level of a chainsaw.

Impact of Noise on Patients:

Patients identified noise as the biggest irritant during hospitalization.⁵

Patients in a noisy environment **required more pain medication** than those in a quiet setting.⁵

Patients exposed to nighttime noises **lost an average of 76 minutes of sleep per night.**²



Impact of Noise on Staff:

85% to 90% of equipment alarms are not medically significant.⁶

Hospital staff are exposed to **one alarm sound every 90 seconds.**⁷

Noise contributes to **staff stress symptoms** such as fatigue, concentration problems, and headaches.⁸



THE PRIMARY SOURCES OF HOSPITAL NOISE:⁹

Paging Systems
Alarms
Bedrails
Telephones
Ice Machines
Pneumatic Tubes
Carts
Bedside Medical Alarms



WHAT'S BEING DONE ABOUT IT?

Karmanos Cancer Institute in Detroit, Michigan installed acoustic paneling and decentralized its nursing stations to prevent large groups of people talking near patient rooms. It reported a **30% drop** in medical errors.¹⁰

A Kaiser Permanente Hospital in Oakland, California implemented a noise reduction program and saw their HCAHPS score **improve by 12%**¹⁰

Montefiore Hospital in the Bronx, New York implemented a noise reduction program saw decibel levels **decrease by 40%**¹¹

BIAMP SYSTEMS CAN HELP.

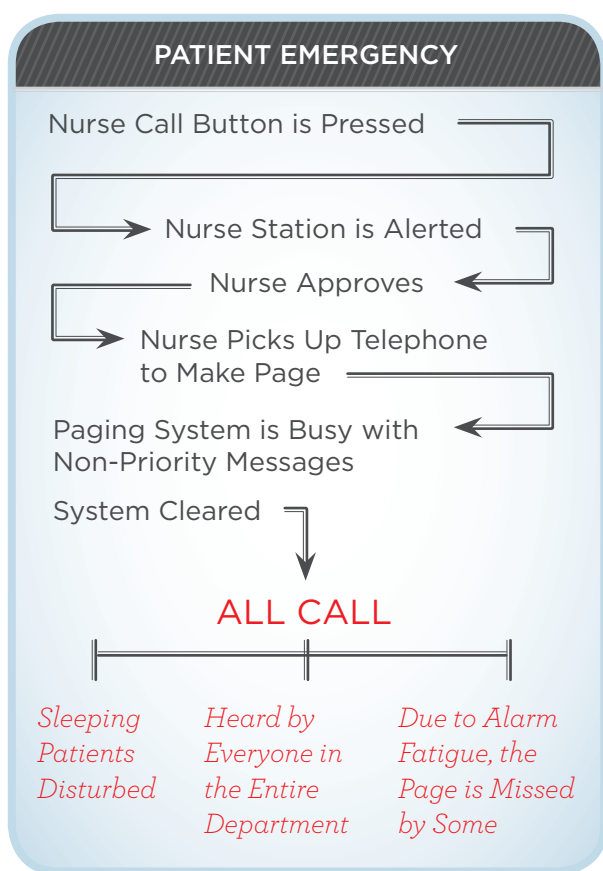
Control, Prioritize, and Automate Code Calls.

Nurse Call Integration (NCI) with Biamp Systems' Vocia® product line automates and prioritizes critical overhead paging messages in hospitals. With NCI, pages are automatically sent from the Nurse Call system to the Vocia server, which eliminates delays and improves response times.

Thanks to Vocia's zone-based configuration, announcements can be sent to precise locations. Zoning prevents messages from playing inside or near patient rooms. With Vocia, overhead paging is not only more efficient, but it's more intelligent – contributing to a quieter, patient-centered healing environment.

The path an overhead page takes has a huge impact on the hospital environment.

Without NCI from Biamp Systems:



With NCI from Biamp Systems:



HOW IT WORKS:

Messages pass through an intelligent matrix that reads, parses, and prioritizes them.

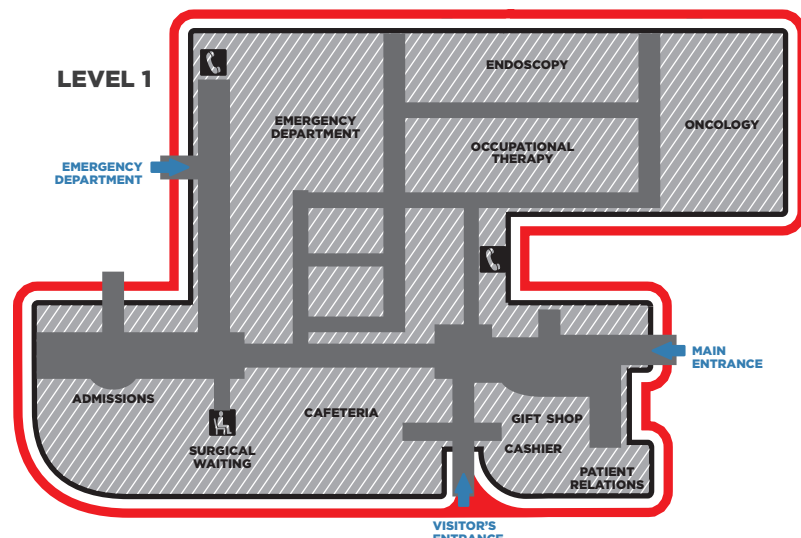
Example of TAP Message:

3300D 4544 20 3130 3A 31 20 6F6374 OD033



ZONES CAN MAKE ALL THE DIFFERENCE.

Vocia's zoned approach for overhead paging allows for targeted pages, resulting in less noise, more efficient staff, and improved patient care.

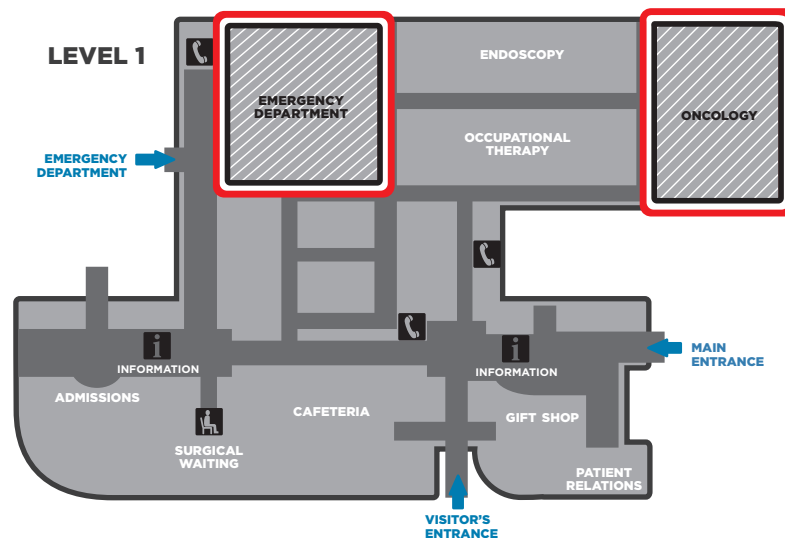


Un-Zoned Paging

With a single paging zone (outlined in red), the entire floor receives every page for all departments.

Results

Staff are distracted by unnecessary pages which can increase alarm fatigue and result in decreased quality of patient care. Patients are disturbed by pages and negatively impacts healing, and are reflected in unfavorable HCAHPS evaluations.



Zoned Paging

Multiple paging zones (outlined in red) allow only the necessary departments and staff to receive the relevant pages.

Results

Staff can focus on the pages that pertain to them and respond promptly to patient needs. Patients are protected from having to hear any pages at all, which improves the healing environment and can be reflected in favorable HCAHPS evaluations.

1. http://well.blogs.nytimes.com/2012/08/02/the-clatter-of-the-hospital-room/?_r=0
 2. <http://www.advisory.com/Daily-Briefing/2012/01/11/Hospital-noise>
 3. http://www.aami.org/publications/bit/2012/JA_alarm_noise
 4. January 2012 Archives of Internal Medicine, Jordan Yoder, BSE, from the Pritzker School of Medicine, University of Chicago.
 5. http://www.medscape.org/viewarticle/574813_4
 6. http://www.medscape.com/viewarticle/574813_4v
 7. http://www.chgbeds.com/Education_AlarmFatigue.php
 8. <http://www.advisory.com/Daily-Briefing/2012/01/11/Hospital-noise.pdf>
 9. http://healinghealth.com/downloads/HospitalNoise_BIT_SeptOct2012.pdf
 10. http://watsonearingscience.org/files/Cohort%208/Abstracts/LaVerne%20Williams%20-%20CCEP8_Abstract.pdf
 11. http://usatoday30.usatoday.com/news/health/2006-04-16-silence-heals_x.htm

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Learn more about making hospitals quieter at www.biamp.com/products/vocia/nurse_call.aspx