

An aerial photograph of a city skyline, likely Kansas City, Missouri, with a semi-transparent grey text box overlaid in the center. The skyline features several prominent skyscrapers and a dense urban area. The foreground shows a large, multi-story brick building complex, likely the VA Medical Center, surrounded by greenery and parking lots.

Raising Our Voices to Create a Quiet Environment

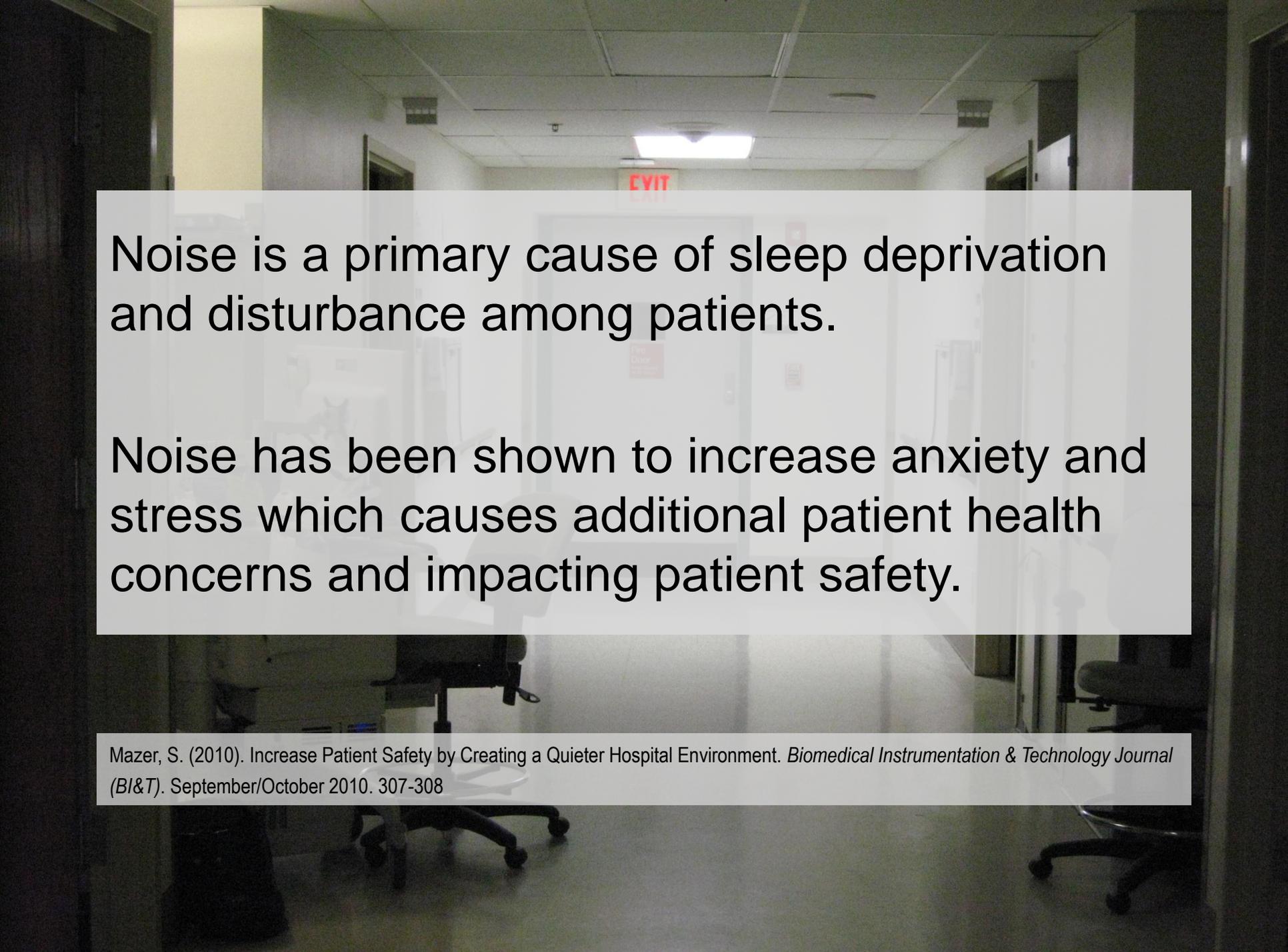
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Disclosure

- This presenter has not received any commercial support or sponsorship.
- No conflicts of interest were identified.
- There will be no discussion of uses of products other than what is approved by the FDA.

Objectives

- Recognize hospital noise as a detriment to the hospital environment including affecting patient care and outcomes.
- Recognize successful strategies to reduce unnecessary noise in the hospital environment thus improving patient care and outcomes.
- Recognize the shared governance process as an effective structured environment allowing direct care providers to have opportunities to make meaningful changes at the point of care and unit level.

A photograph of a hospital hallway with a white text overlay. The hallway is dimly lit, with a bright light fixture on the ceiling and a red 'EXIT' sign above a doorway in the distance. The text is centered on a white rectangular background.

Noise is a primary cause of sleep deprivation and disturbance among patients.

Noise has been shown to increase anxiety and stress which causes additional patient health concerns and impacting patient safety.

Mazer, S. (2010). Increase Patient Safety by Creating a Quieter Hospital Environment. *Biomedical Instrumentation & Technology Journal (BI&T)*. September/October 2010. 307-308

“Unnecessary (although slight) noise injures a sick person much more than necessary noise (of a much greater amount).”

“Unnecessary noise, then, is the most cruel absence of care which can be inflicted either on sick or well.”

“Such unnecessary noise has undoubtedly induced or aggravated delirium in many cases. I have known such-in one case death ensued.”



Florence Nightingale

Impact of Noise

- **Impact on PATIENTS**

Noise is reported as the primary cause of sleep deprivation among hospitalized patients.

- Increases anxiety & stress which impacts patient safety
- Contributes to falls, patient confusion, altered memory, increased agitation, aggression and delirium, less tolerance to pain

Impact of Noise

- Impact on STAFF
 - Noise has been shown to contribute to medical and nursing errors
 - Noisy environments cause stress induced experiences of staff
 - Patient confidentiality violations

QUIET TIME

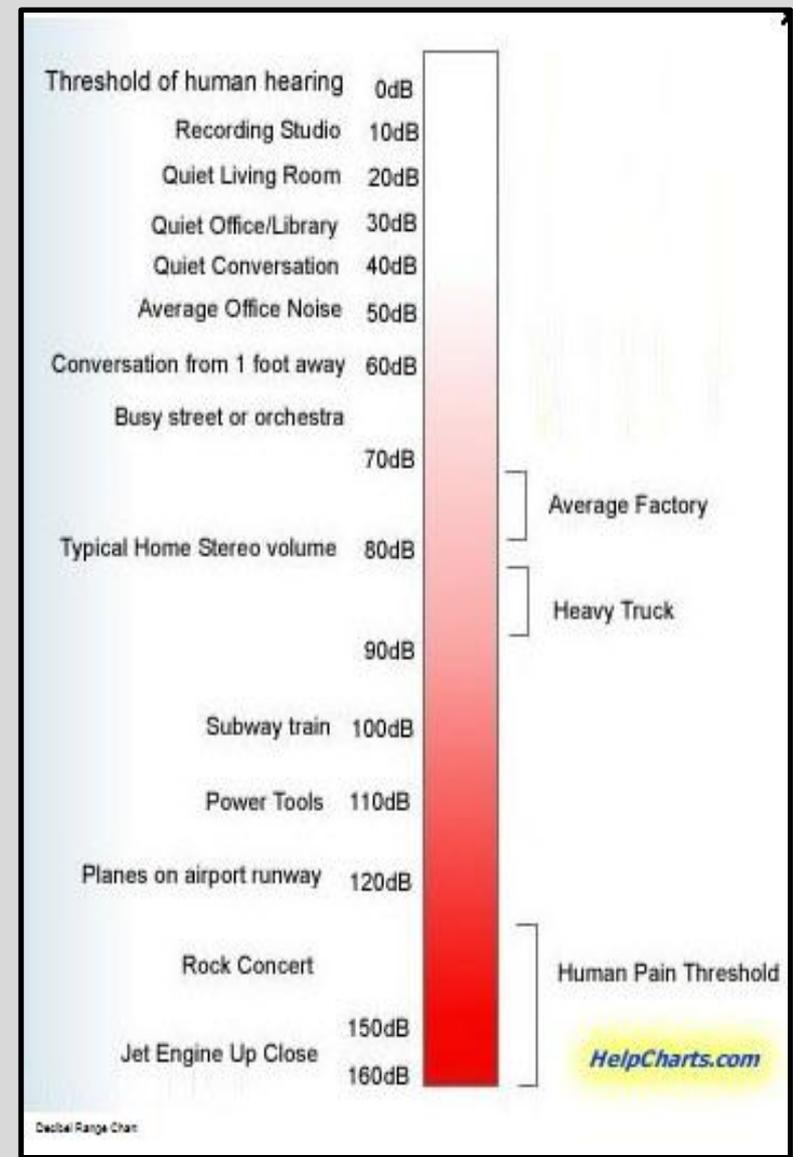
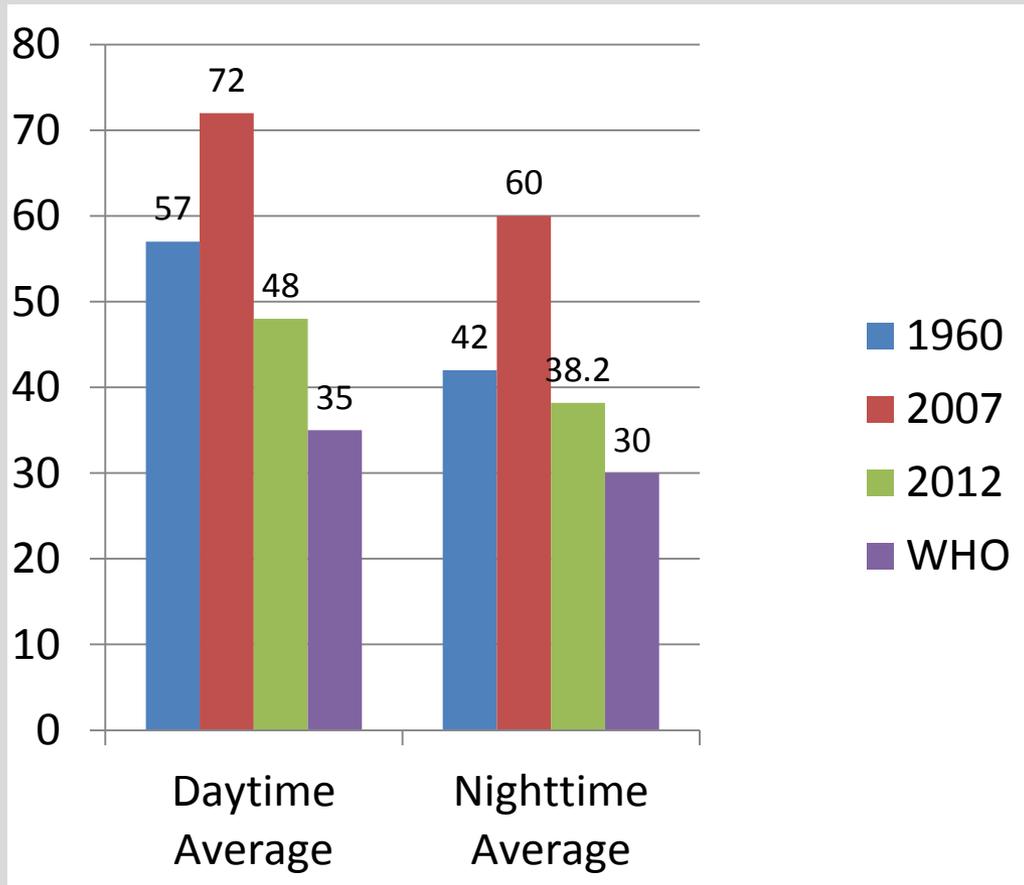
Healing in
Progress

Common Sources of Noise

- Staff conversation
- Roommates (TVs, Visitors)
- Alarms (IV pumps, Heart/O2 monitors, etc.)
- Intercoms/Paging Systems
- Telephones
- Slamming Doors
- Noisy Equipment (Cleaning equipment, Squeaking wheels, etc.)

Hospital Noise Measurements

Comparing 1960, 2007, 2012, & the World Health Organization (WHO) Recommendations Average Decibels (dB)

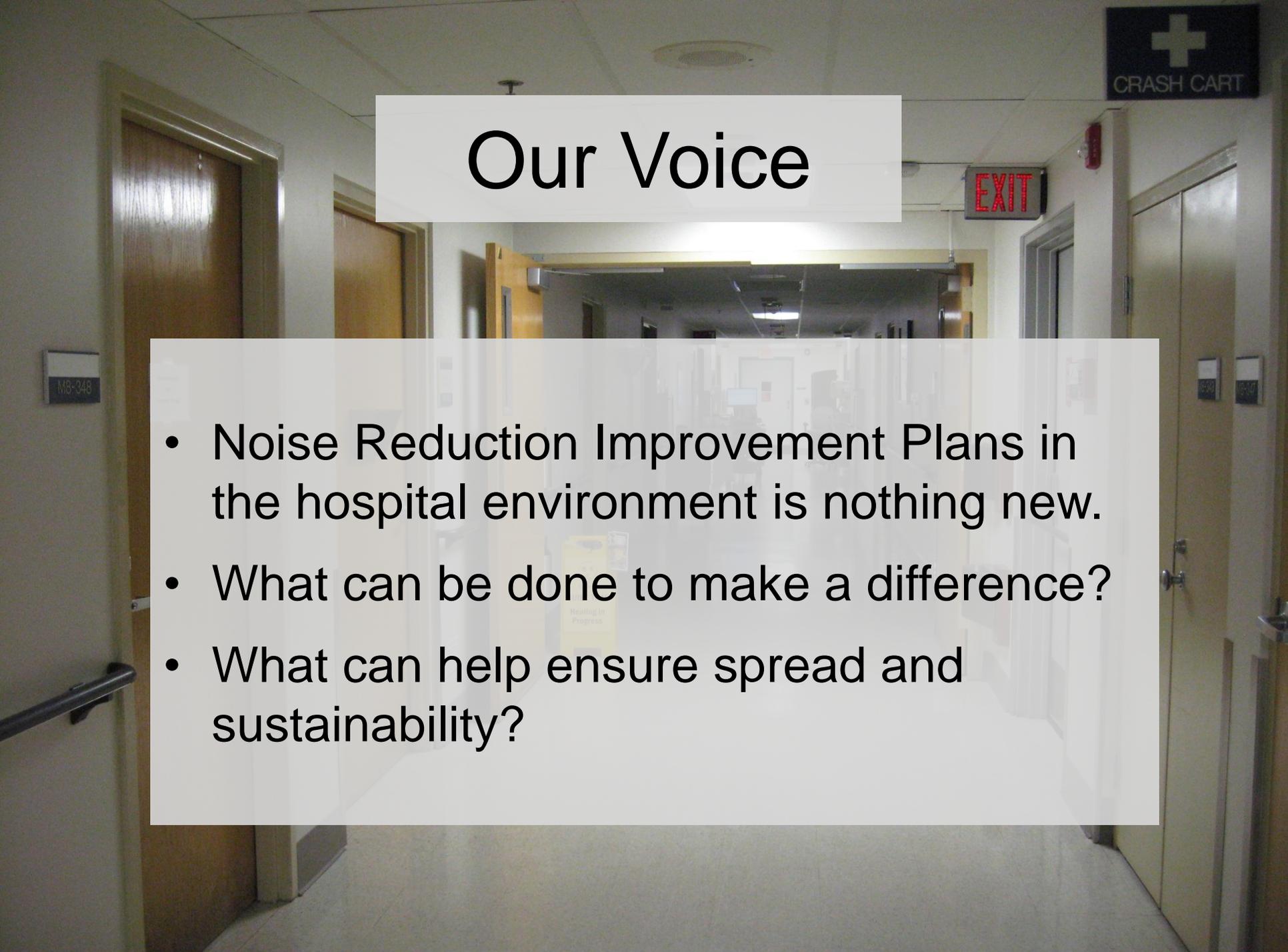


Ulrich, R.P., & Joseph, A.P. (2007). Sound Control for Improved Outcomes in Healthcare Settings. The Center for Health Design, Vol. January 2007, Pages 2-17

Garcia, J. (2012). Hospital Noise Results in Significant Patient Sleep Loss. *Arch Intern Med*/Vol 172 (No.1), Jan 9, 2012, Downloaded from <http://archinte.jamanetwork.com/> on 09/12/14

Improving the Hospital Noise Environment

- Behavioral modifications
- Quiet zones
- Changing alarm settings
- Design strategies
- Reducing Noise from Communications Systems

A photograph of a hospital hallway with several doors on both sides. In the upper right corner, there is a black sign with a white cross and the text "CRASH CART". Below it, a red "EXIT" sign is visible. The hallway is brightly lit with overhead lights.

Our Voice

- Noise Reduction Improvement Plans in the hospital environment is nothing new.
- What can be done to make a difference?
- What can help ensure spread and sustainability?

Structural Empowerment Shared Governance

8 East Unit Based Council (UBC)

- Medical/Surgical Telemetry In-Patient Unit
- Unit members with direct care responsibilities (RNs, LPNs, and Health Technicians)
- Allowed input and to make changes at the point of care
- Mentor assigned to assist UBC
- Shared Governance Budget available for improvement projects
- The UBC makes recommendations to leadership & councils.

Staff Engagement

- 8 East UBC chose “Noise Reduction” as a project to improve patient outcomes and the care environment
- The Unit Manager selected a member of 8 East UBC to attend Lean Healthcare Improvement Training

QUIET TIME

Healing in
Progress

VA TAMMCS

Improvement Framework Approach
Included in Yellow Belt Training

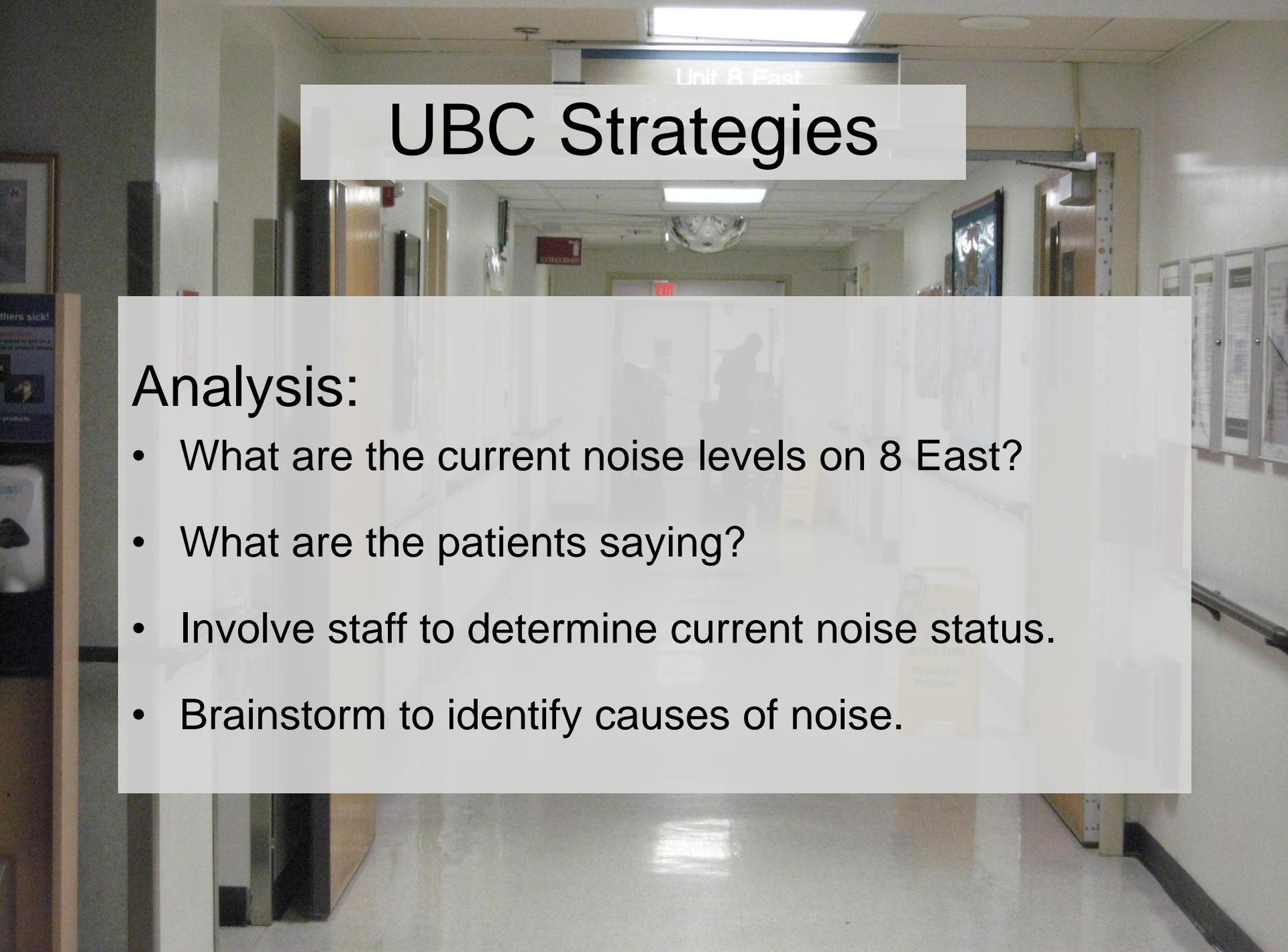
- Vision
- Analysis
- Team
- Aim
- Map
- Measure
- Change
- Sustain/Spread

Unit 8 East

UBC Strategies

Vision:

- Reduce noise disturbances on 8 East to improve patient outcomes and the care environment.
- Improvement strategies focus on veteran-centeredness, quality, and efficiency of healthcare delivery and services.
- We will provide a nurturing environment, one that is caring, supportive, and healing for both the patient and the nursing staff.

A photograph of a hospital hallway. The hallway is brightly lit with overhead fluorescent lights. In the distance, a sign above a doorway reads "Unit 8 East". The walls are light-colored, and there are various signs and notices posted on them. The floor is a light-colored, polished material. The overall atmosphere is clean and professional.

UBC Strategies

Analysis:

- What are the current noise levels on 8 East?
- What are the patients saying?
- Involve staff to determine current noise status.
- Brainstorm to identify causes of noise.

- What are the current noise levels?

- Noise recorder was purchased and installed on 8 East
- The daily average noise level were determined to be 54 dB (Sept.10 to Oct.14)



QUIET TIME
Healing in
Progress

Problem Statement & AIM Developed

- **Problem:**

- Patient care & patient outcomes will continue to be adversely affected if noise levels are not decreased in the in-patient areas.

- **AIM:**

- Reduce Noise levels on 8 East by 10% from a daily average of 54 decibels to a daily average of 48.6 decibels by December 1, 2014.

What Our Patients Said About Noise

Although our Patient Satisfaction Survey data (*SHEP*) were strong regarding noise, we identified an issue based on what patients were saying when they were interviewed while inpatients.



What Our Patients Said About Noise

“Noise on weekends and nights - believes more other departments rather than nursing (seem to be the men in the housekeeping)”

“Overall very satisfied but felt that a.m. change of shift was very loud - they sounded happy but it was hard to rest.”

“Noise level constantly loud. Employees don't respect my need for rest and quiet...”

“Too much noise during change of shift”

“The last time I was here there was a lot of noise in the hallways. It is a little better this time.”

“ ...You and your roommate need to be on the same (TV) channel because the competing sound will drive you crazy.”

Involve Staff to Determine Current Noise Status

Voice of the Customer (VOC) Analysis:

- Provides valuable information about the current state
- Identifies new opportunities for improvement
- Increases employee engagement
- Helps with sustainability and spread

QUIET TIME
Healing in
Progress

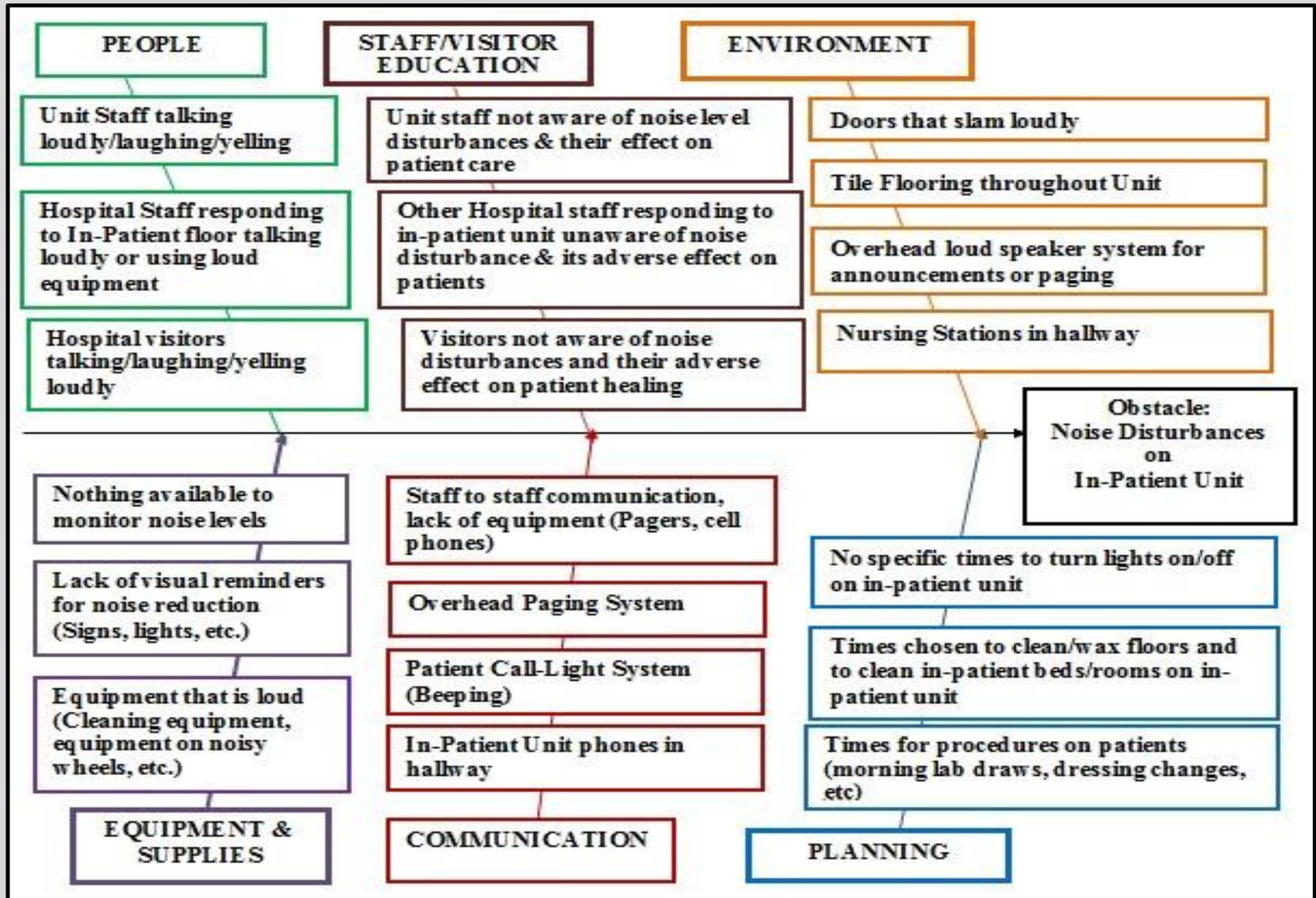
What Our Staff Said About Noise

- Signs to remind employees/visitors to keep noise down.
- Educate employees what impact noise has on patients.
- Need centralized nursing station instead of stations outside patients room.
- Change of shift reports should be given in office.
- Phones ringing in hallways are a problem.
- Cell phones/Pagers for nurses.
- Ear buds/Earphones for patients TV control.
- Patients doors closed with patients permission.

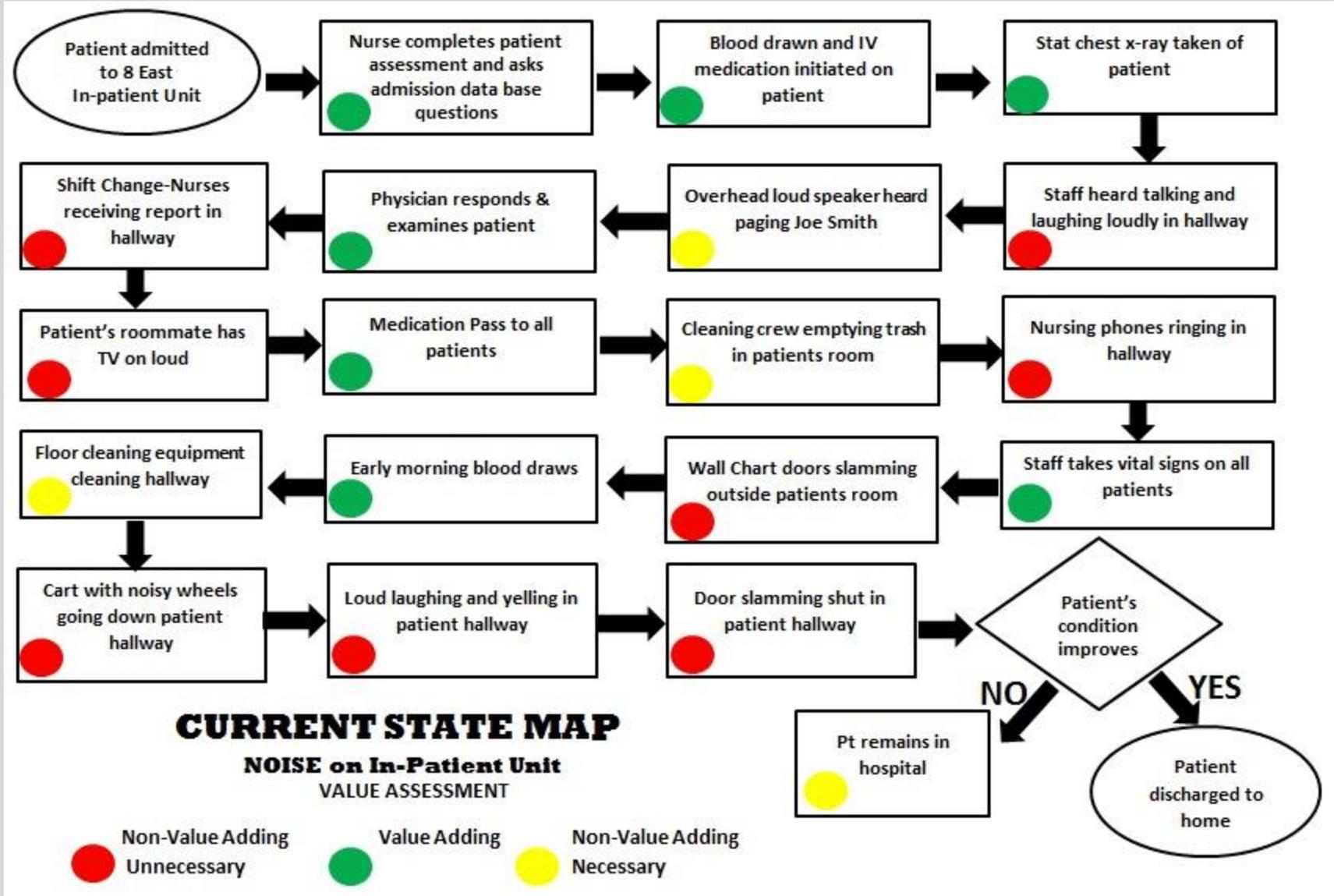
Team Brainstorming

FISHBONE DIAGRAM - Cause & Effect of Noise

Method of systematically organizing the potential causes that may be contributing to noise disturbances.



Current State Map with Value Assessment from Patients' Perspective



Unit 8 East

UBC Noise Reduction Strategies

- Continual Noise Monitoring
- Noise producing equipment identified & fixed
- Quiet Signs posted in unit
- Quiet Times established



UBC Noise Reduction Strategies

- Sound Conditioner purchased



- Ear buds purchased for patient use with TV control in room.



- Lapel “Quiet” buttons given to nursing & support staff, visitors, and patients to wear.



UBC Noise Reduction Strategies

- Educational brochures developed

NOISE REDUCTION ON 8 EAST IN-PATIENT UNIT

Shhhhh!

HEALING IN PROGRESS

NOISE is reported as a primary cause of sleep deprivation among hospitalized patients. Prolonged exposure to noise increases anxiety & stress which impacts patient safety contributing to falls, patient confusion, altered memory, increased agitation and less tolerance to pain. Noise has also been shown to contribute to medical and nursing errors.

Patient surveys and noise recordings reveal noise is above the recommended level for In-Patient Units.

Providing a nurturing environment that is caring, supportive, and healing to assist the patient to their optimal level of health is the mission of the KCWA. Decreasing unnecessary noise in patient care areas improves the healing environment for the patient. This quiet environment also increases the efficiency of the healthcare team.

GOAL:

- Maintain an optimum continuous volume level an average of 50dB during the day and an average of 40dB at night.
- Decrease patient complaints regarding noise levels.

PLAN OF ACTION:

DESIGNATED "QUIET TIME"
1300 hrs. to 1400 hrs.

- Signs will be placed in each hallway designating "Quiet Time."
- Lights will be dimmed in each hallway.
- Conversations will be held in areas other than outside the patients room.
- Staff will attend to alarms quickly.
- Visitors will be requested to assist in maintaining a quiet environment 2130 hrs. to 0600 hrs.
- All the above but in addition, the doors to the Unit will be closed.

NOISE REDUCTION

- Coordinate care to minimize interruptions to patients.
- Close patients doors if no objection from patient.
- Move away from patients rooms when giving report at end-of-shift (EOS).
- Report noisy equipment for repair.
- Lower volume on patient's TV or turn off at night.
- Remind visitors to maintain a quiet healing environment.
- Minimize conversations outside patients rooms.
- Wear "Shhhhh! Healing in Progress" buttons.
- Conduct frequent noise level monitoring.
- Conduct frequent patient surveys.

"We will provide a Nurturing environment, one that is caring, supportive, and healing for both the patient and the nursing staff. We will support Wellness; the optimal level of health."

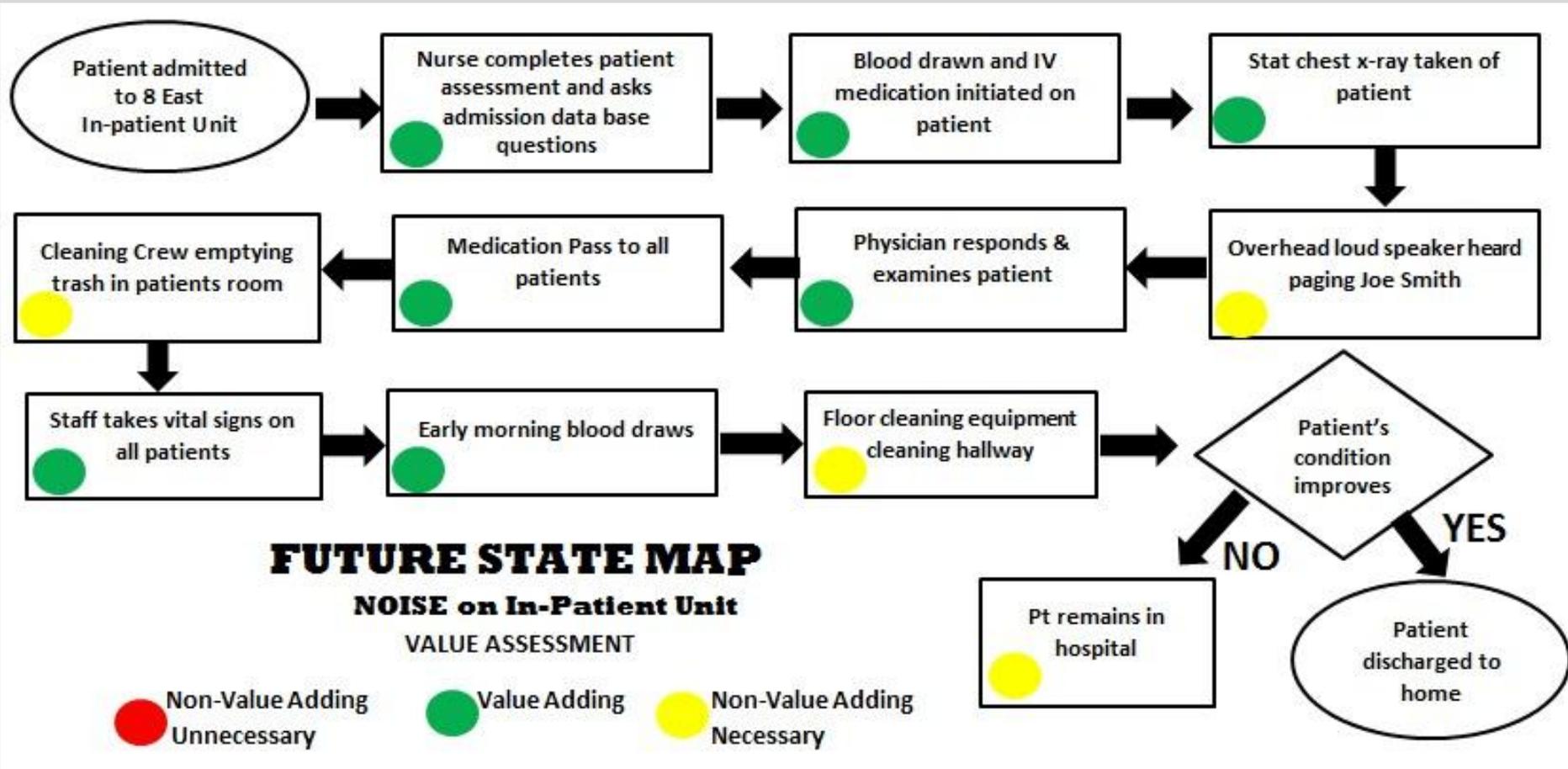
The World Health Organization (WHO) recommends for average hospital room noise levels of 30 dB (mean average sound level 48.0 dB) and the recommended maximum of 40 dB.

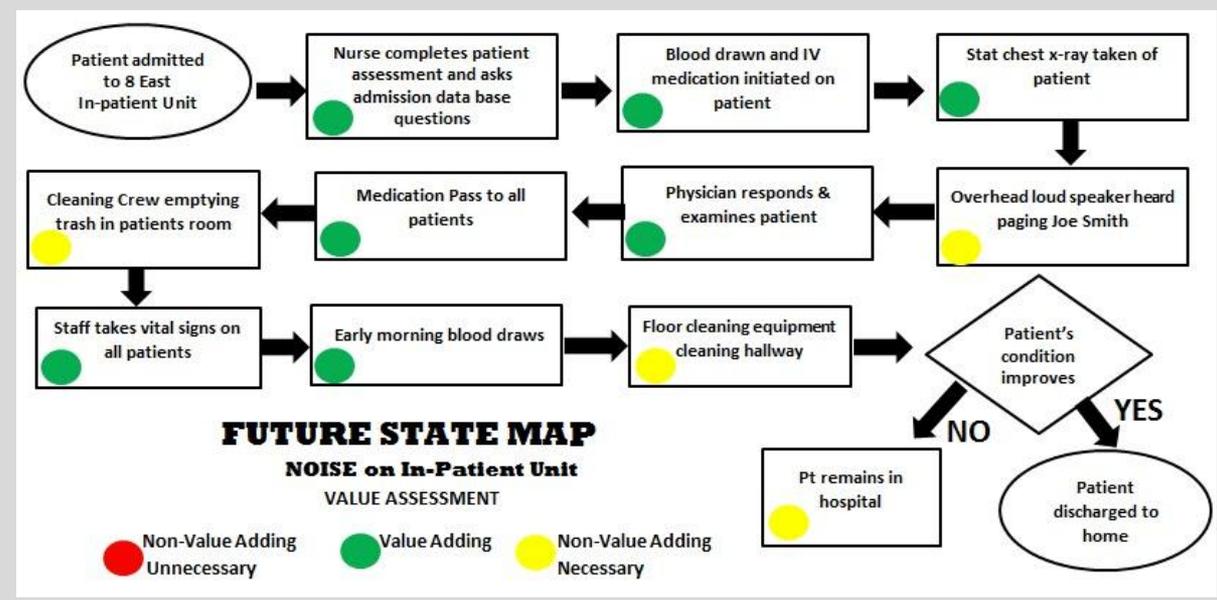
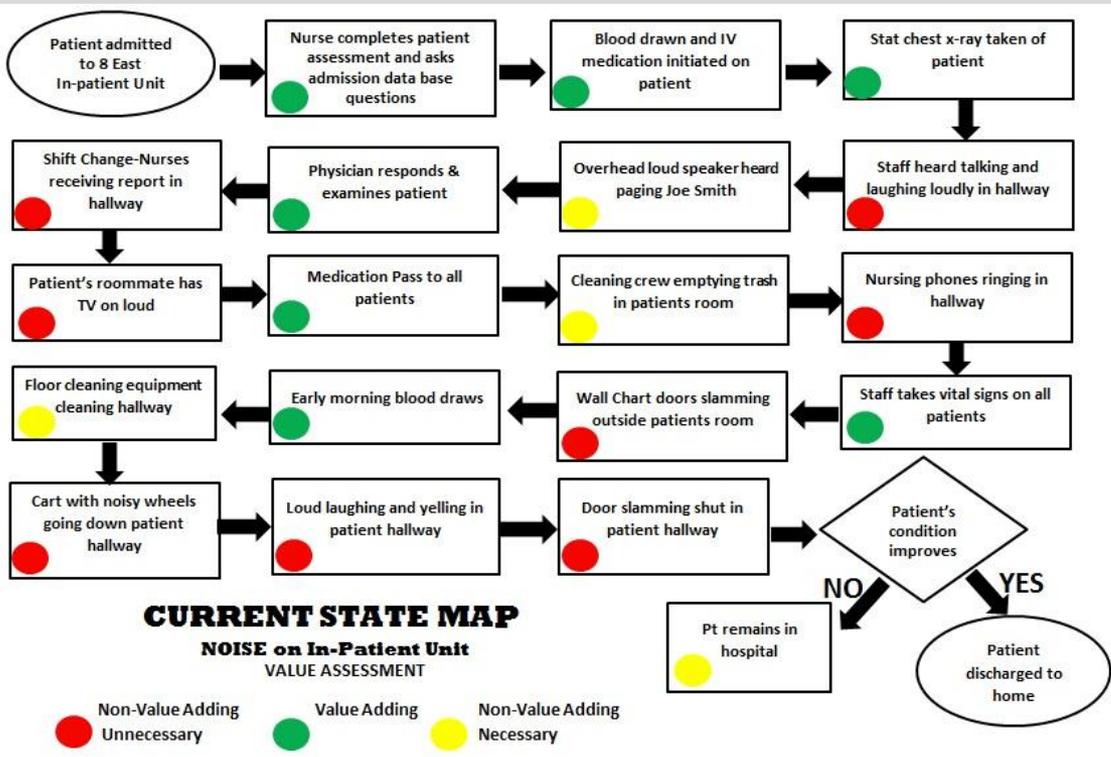
Threshold of Human Hearing

Recording Studio	10dB
Quiet Living Room	20dB
Quiet Office/Library	30dB
Average Office Noise	50dB
Conversation at 1 foot	60dB
Busy Street or orchestra	70dB
Home Stereo volume	80dB
	90dB
Subway train	100dB
Power Tools	110dB
Planes on runway	120dB
Rock Concert	150dB
Jet Engine Up Close	160dB

Human Pain Threshold

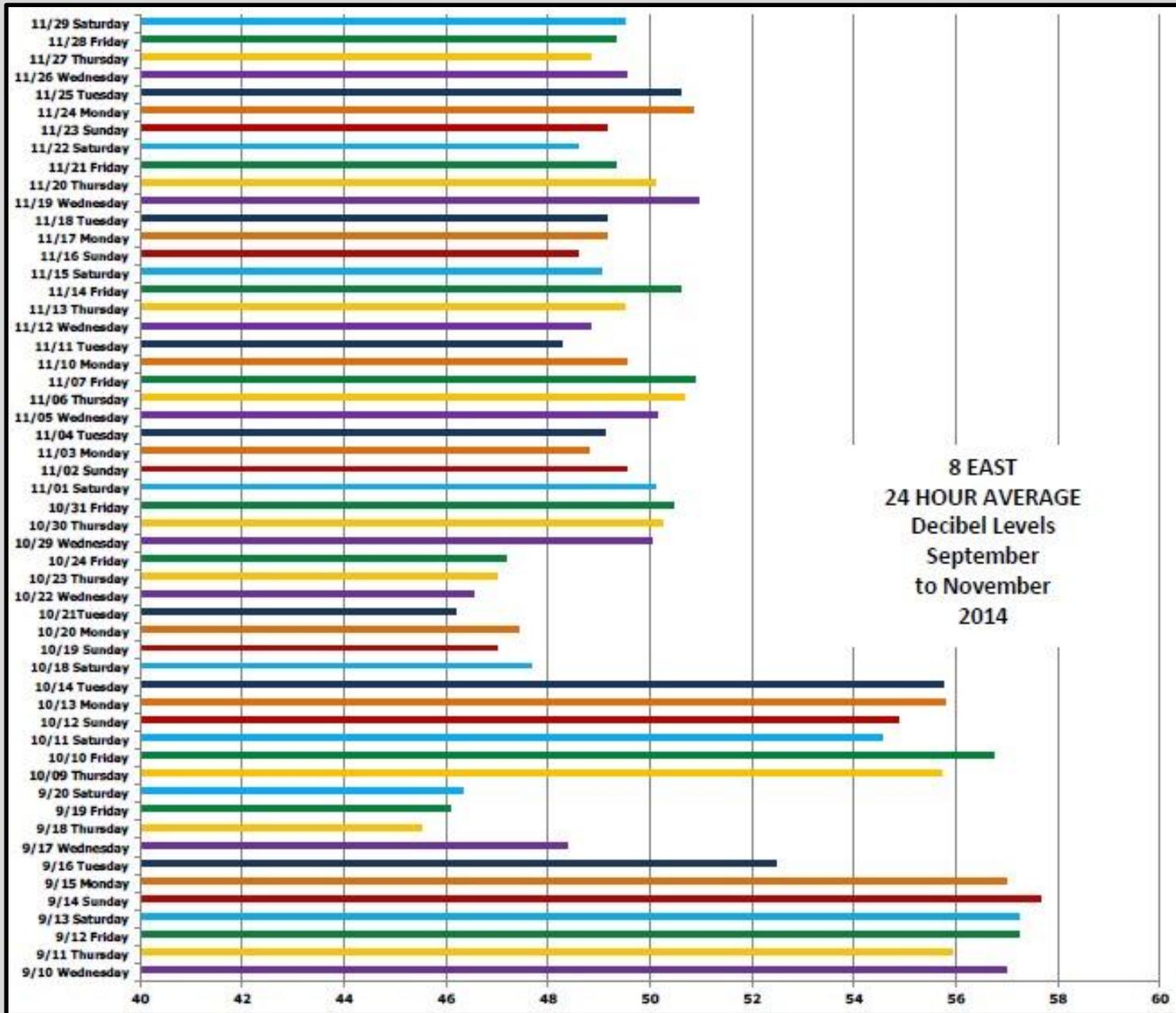
Future State Map with Value Assessment from Patients' Perspective



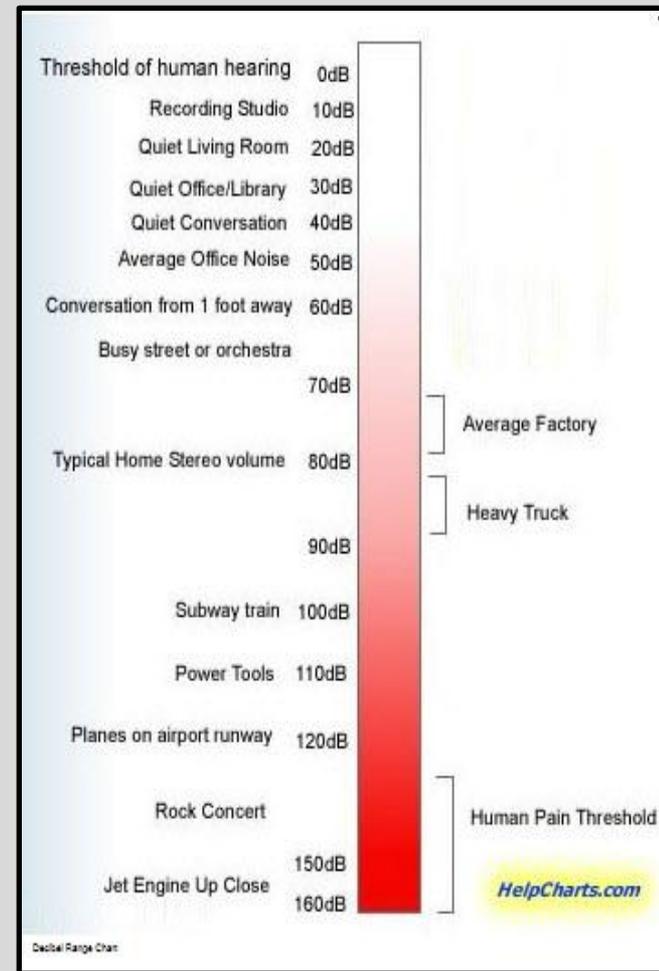
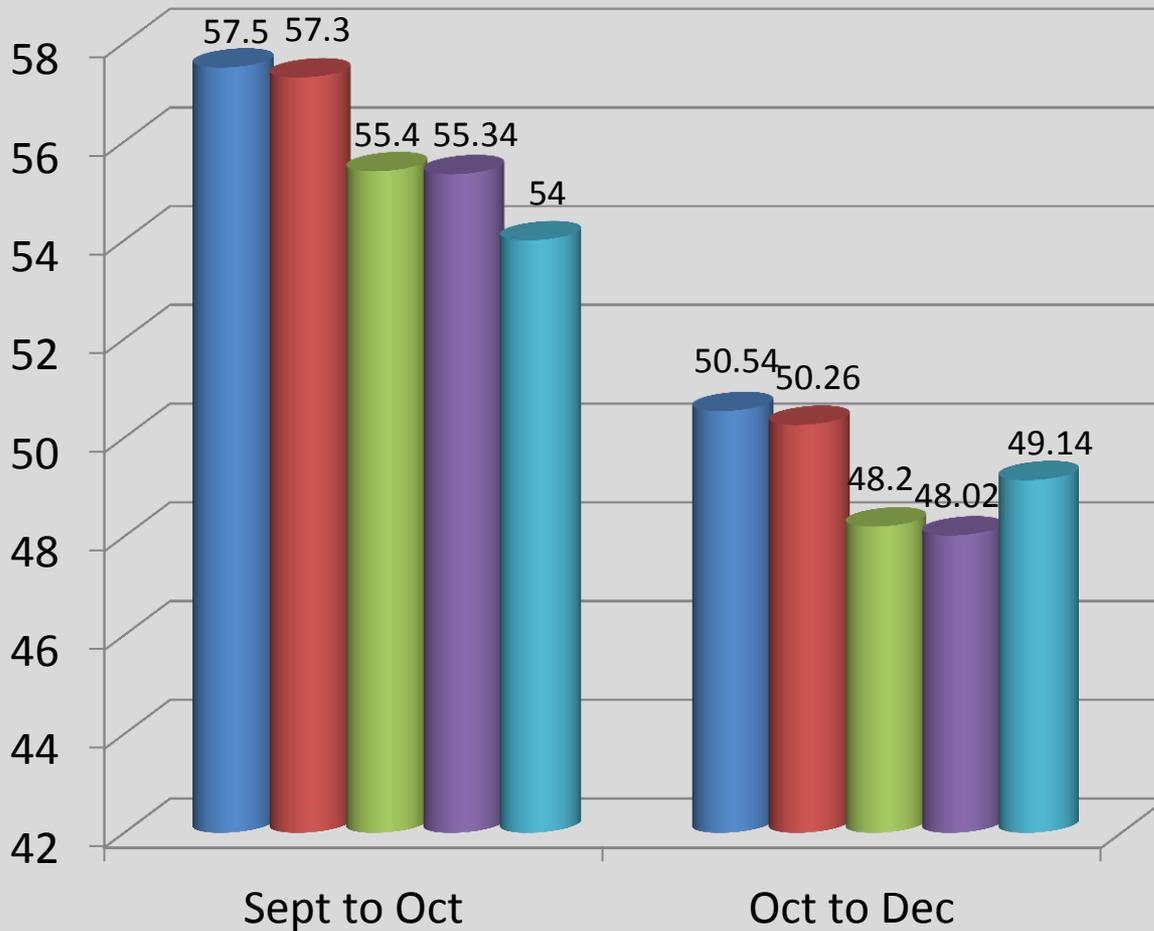


Aim: Reduce Noise levels on 8 East by 10% from a daily average of 54 dB to a daily average of 48.6 dB by December 1, 2014.

Change: Noise levels on 8 East had statistically significant reduction from 54 dB to 49.15 dB by December 1, 2014.



Noise Reduction



- Day Avg
- Day Quiet
- Night Avg
- Night Quiet
- 24 Hr Avg

Sustain/Spread

- Employees attitudes toward the proposed noise reduction predicts success.
- Senior management/leaders must continue their support for change.
- Bottom-up vs. Top-Down: Change has better chance of sustainment driving from the lowest level possible (Front-line)
- Regular Data Feedback to Front-Line Staff.
- Provide recognition to staff/unit for successes.
- Celebrate and communicate accomplishments.
- Once the noise reduction intervention has proven effective, consider how to spread it for broader implementation to other units.

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- Celebration of UBC Accomplishments
 - Eat & Greet Celebration
 - All staff invited including support staff
 - Director attended
 - Nursing Management/Nursing Supervisors attended

Staff Engagement

- Unit Based Council-Team Approach
- Buy in from staff because they had input in the process changes
- Voice of the Customer
- Education
- Multiple Domains

Kansas City VA Medical Center

Our Mission
is to provide high quality,
comprehensive primary and
secondary healthcare to

State
Operational
Patient & Employee
Enhance Tertiary &

LPN

LPN

Structural Empowerment Shared Governance & Leadership Support

- UBC training
- Mentor
- Shared Governance Budget
- Manager Support
- Communication of Results and Strategic Plan



Impact on the Organization

- Sustainability – Improved patient outcomes and patient satisfaction
- Spread - Throughout hospital/clinics
- Celebrating and Acknowledging Successes
- Nursing Professionalism



Florence Nightingale

“A good nurse will always make sure that no door or window in her patient's room shall rattle or creak ; that no blind or curtain shall, by any change of wind through the open window be made to flap-especially will she be careful of all this before she leaves her patients for the night.”

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