Reducing noise at night on a hospital ward: A case study of NOISELESS: (Less Noise More Sleep).

What was the problem?
Huddersfield Royal Infirmary is a 400 bed district general hospital within the Calderdale and Huddersfield NHS Foundation Trust (CHFT). In 2016, 123,300 in-patient adults and children from both urban and rural locations were provided with healthcare by CHFT. Feedback from the NHS Friends and Family Test survey highlighted that a lack of sleep due to noise on wards was a problem for many patients at CHFT. This is known to be a common problem in hospitals world-wide.

What was the solution?
In Phase One we secured research funding to conduct a study which provided an in-depth understanding of real-time night time noise levels and patients’ self-reported experiences of sleep. These data provided important background information which were further explored in Phase Two in which 2 co-design workshops were run to co-create potential solutions to improve the sleep experience for in-patients.

- Increased leadership capacity for research and quality improvement through a joint clinical academic appointment between Calderdale and Huddersfield NHS Trusts and University of Huddersfield.
- Pilot research study conducted on MAU funded by the General Nursing Council: Noise levels (in decibels) were objectively recorded 24/7 for a 6 week period; patient self-reported ratings for sleep quality and quantity were assessed using a questionnaire; published approaches to reduce noise at night on hospital wards were collected from the literature and appraised for quality.
- Identified reasons for noise on MAU: Two night observations were conducted by a research nurse and staff feedback/opinion recorded.
- Partnership formed with the Yorkshire and Humber Collaboration for Leadership in Applied Health Research and Care (CLAHRC-YH): Two half day co-design workshops were conducted with MAU staff (ward manager, nurses, healthcare assistants, porter) and service users.
- Awareness raising participatory noise reduction workshops conducted with staff during a CHFT Compassionate Care in Practice Nursing and Midwifery Conference.
- Advisory group convened with CHFT Directors of Nursing and Quality and colleagues from NHSI who provided advice and developed strategy for impact and wider dissemination.

What were the results?
- Research study: noise levels were higher than recommended, but similar to those reported in ward environments at other comparable hospitals. Patients’ feedback about sleep quality and quantity indicated that there was room for improvement. Published literature highlighted that approaches to reduce noise are more likely to be successful when multiple interventions are used.
- A period of observation at night identified noisy equipment which could be adjusted to reduce noise levels: door slow closures were fitted by estates, sticker printers were no longer used, foam pads were added to bin lids to
reduce banging on closure, staff were taught how to reduce the patients call bell volume at night.

- A literature review identified nine quantitative studies that provided evidence to support noise reduction interventions used in ward settings. No single approach appeared to be superior but the strength of evidence was somewhat limited indicating the need for additional research.
- Two co-design workshops were run in which priority areas for improvement were identified and then tested on a “prototype” night. Sleep promotion posters were displayed and ‘quiet time’ proposed between 10.30pm – 7am. During this time blinds were closed, lights in corridors and patient bays dimmed, volume on telephones and equipment alarms reduced if appropriate, and staff encouraged to place “I am noisy” stickers on equipment that required attention. Patients were provided with a “sleep well” pack which contained an eye-mask, different types of ear plugs, advice on sleep hygiene, “do not disturb” bed magnets and “I am noisy” stickers. Herbal and decaffeinated teas were made available in addition to standard night-time drinks. Additional testing of these improvements is planned for other ward settings.
- As part of a Nursing and Midwifery Conference event, presentations were delivered to increase awareness of the impact of “noise at night” with pledges from staff about what they would do in their own ward environment.

What were the learning points?

- It is important that staff from all levels and departments of the organisation commit and work together to facilitate quality improvement projects. It was especially important to involve patients and all team members including representation from estates, domestic services and portering.
- Allowing service users and staff members to work together in quality improvement projects enhances understanding of the problem and facilitates generation of potential solution that are context specific as a ‘one-size fits all’ approach is less likely to be effective.
- Significant reductions in night-time noise levels are a challenge as hospitals are noisy places. However, raising awareness of the problem amongst staff is an important first step. Using eye-masks and ear plugs offers patients a way of shielding themselves from noise levels. Other factors that contribute to poor sleep in hospital are pain and anxiety which can be addressed.