

CASE STUDY

Theatres Shutdown List

Christine Range

Morrison Hospital, Swansea Bay University Health Board

Case Setting

We have 22 operating theatres. Normal hours are 7am to 6pm with exceptions. Emergency theatres are running 24/7 (one to four theatres). Theatres have powerful lighting, air handling units (AHU), high volume ventilation, anaesthetic gas scavenging pumps and electrical equipment such as computers, anaesthetic machines, etc. A survey showed that a significant number of these were not switched off at the end of a day, using energy unnecessarily as the majority of theatres is not in use out of hours.

Intervention

We identified devices that are easily switched on and off with additional benefits, e.g. re-booting computers (PCs), self-testing anaesthetic machines, noise reduction when AHUs are off. The resulting “shutdown list” consisted of lights, anaesthetic machines, PCs and AHUs/high volume ventilation and scavenging pumps. Medical electronics, IT and Estates departments were contacted for practicalities and calculation of potential savings. We talked to staff and put up posters to spread information.

Measurement

We tried to find out the energy consumption of devices from relevant departments. This would enable us to convert the potential energy savings into more tangible information, e.g. equivalent distance that could have been travelled in an average car. Our measurements consist of counting the devices in operating theatres that had not been switched off at the end of a day. We expect staff to take up the habit of switching off unnecessary equipment over time. We therefore intend to make this measurement repeatedly at varying intervals and to engage with staff in the meantime. As such we'll enquire about barriers to behaviour change and work towards eliminating these barriers. A first measurement after introduction of the

“shutdown list” showed that 60% of devices had been left switched on, suggesting that the road to a reliable shutdown procedure at the end of a day is long.

Challenges and Enablers

Additions to the original hospital building over time have resulted in complicated installations. Even Estates lack detailed information about AHUs. We also found problems with the anaesthetic gas scavenging pumps, meaning estates had to address the issue. It was difficult to find out about the energy consumption of PCs, too. The most helpful partner in this was the medical electronics department. Personal contact to staff from the respective departments proved to be the main facilitator.

This is a work in progress, and with time we hope to be able to make complete shutdown of the majority of theatres a routine in our hospital while ensuring that there is capacity at short notice for medical emergencies.