EVOLUTION

St Mary's Hospital Paddington
& Western Eye Extension

Case Study

Background: St Mary's Hospital Paddington is part of Imperial College Healthcare NHS Trust. St Mary's is a general acute hospital that diagnoses and treats a range of adult and paediatric conditions. The Jefferiss Wing sexual health clinic is an internationally renowned centre of excellence for the diagnosis, treatment and care of people with sexual health problems, including sexually transmitted diseases such as HIV and AIDS. The paediatric service includes a dedicated children's A&E department and north-west London's paediatric haematology service. The hospital has pioneered the use of robotic surgery, including the UK's first da Vinci robot for keyhole surgery. Western Eye is dedicated to ophthalmology. It offers the only 24-hour emergency eye care service in west London.

The Project: Medical gases were using standard alarm panels for monitoring, which were visibly and audibly monitored by the 24 hour switchboard. Reaction to alarms after acknowledgement – was via the Medical Gas Authorised Person (AP) or other on-call engineer. These alarms were then assimilated against hospital protocol, and escalated by the AP to the support company for medical gases. If the AP was aware of the alarm immediately, through his pager or internal radio receiver, he may have to check the alarm first before calling an engineer to site. This time-consuming process could have meant an unacceptable delay in rectifying the fault.

The Solution: SHJ provided a remotely monitored alarm system – **EVOLUTION** – which meant a significant time-saving at the start of this process. This system also displayed the return-to-normal status, and so there was no time wasted by management in following up an incident. A permanent record was kept automatically, so intermittent alarms and regularly spaced alarms could also be identified.

EVOLUTION represents the latest technology to assist APs and Estates Managers to manage their medical gases rather than react to alarms. The system is monitored 24/7 and 365 days a year by SHJ. This company has been supplying and installing medical gas pipeline systems for over 40 years to the NHS. Its Research & Development laboratory has just launched **EVOLUTION** as a digital add-on to existing alarm systems, so there was no need to replace existing alarm panels. The system includes a touch screen for easy supervision within the hospital, and a secure on-line monitor through any web browser. Statistics generated by the system can be viewed at any time, so that Managers can trend faults for internal review.

Outcome: One regular alarm occurrence with an Entonox manifold, after several weeks of alarms, caused the Estates office personnel to look closely at the fault log. This showed that regular demands on the gas were causing bottle changes on a weekly basis, when the system should have had adequate capacity. The analysis of the data clearly showed that the two manifolds were working to capacity following weekend births.

SHJ HOSPITAL PIPELINES
Innovations in Medical Gas Technology

Western Eye Extension: A standard plant alarm panel at Western Eye had never been connected to the main 24/7 switchboard at St Mary's because of the high cost of the link required. **EVOLUTION** became the natural solution because it uses standard network protocols. With an already installed data link between the two sites, a remote link to the St Mary's Estates office **EVOLUTION** panel was installed at comparatively low cost.

The whole system can be managed from anywhere on the NHS local area network, which means that internal authorised users are able to pull down reports and monitor the system from any PC on this network. SHJ can also remotely reset existing alarm panels through **EVOLUTION**, thus saving unnecessary call-out charges.

Off-duty or out-of-hours personnel are now assured that, if a critical alarm is triggered on a panel, an SHJ engineer will acknowledge it and be on his way – sometimes before the AP is aware of the alarm.

The switchboard staff does not need to touch the screen but, if they wish, can press the fault button that has changed colour, and then check the Help screen to see what is actually required. This is of major benefit to them, as invariably, a temporary night shift switchboard operator, has little knowledge of the alarm panel and could easily call an engineer to site unnecessarily. With **EVOLUTION**, the system automatically makes the call if required. Other remedial actions are shown clearly on the screen. When the fault has been rectified, **EVOLUTION** automatically reverts back to normal, leaving a permanent record of the alarm, time-stamped when it was triggered and when it was resolved.

Conclusions: Because the system in the hospital is duplicated at SHJ, there is no need for a reactive response from the duty engineer. He can merely manage the situation and continue with other more important duties. Tests showed an engineer on call within two minutes of the alarm being raised. All gases are monitored securely both inside the hospital – there is no change to current operational policies – and outside the hospital – remotely at SHJ.