CROWCON KEEPING HEALTH WORKERS AND PATIENTS SAFE AT THE FRONTLINE OF COVID-19

CASE STUDY

The Covid-19 pandemic pushed both the healthcare system and its workers to the very limit, with oxygen management in hospitals becoming a particular challenge for health systems worldwide. This case study features hospital wards across a number of NHS Trust hospitals, in which there was a high dependency for oxygen on intensive care wards and Crowcon provided a Gasman detector to support O2 detection.

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Challenges of oxygen enrichment

Crowcon provided over 10 miles of piping to Nightingale Hospital, which serves 4000 beds. Without accurate O2 detection, leaks would cause O2 enrichment which would endanger both healthcare professionals and patients. Even with leaks, the risk is heightened in this environment due to the sheer volume of ventilators in an enclosed space which could also cause an enriched atmosphere.

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Oxygen enrichment is the term often used to describe situations where the oxygen level is greater than in the air. Oxygen is colourless, odourless and tasteless, meaning it is not easily detected by human senses when in the presence of an oxygen-enriched atmosphere. Oxygen enrichment can develop from several sources, including leaking valves, poor connections, opening valves deliberately or accidentally, not closing valves properly after use, using an excess of oxygen in welding, flame cutting or similar processes where there is poor ventilation and oxygen is being used.

Oxygen enrichment is a fire hazard when O2 levels increase by just 24%. Not only is there a heightened ignition risk, but the overall result is that of a fiercer flame and a higher burn rate, in which extinguishing the flame could become almost impossible. In a hospital environment this poses a serious threat to those working in the environment, but also to those who they are trying to help put the fire out. The main danger to people from an oxygen-enriched atmosphere is that clothing or hair can easily catch fire, causing serious or even fatal burns.

Our contribution

According to guidance sent to hospital estates teams by NHS England and NHS Improvement, the density of ventilators could 'enrich' the air with oxygen, and increase the 'combustion risk'. Due to the increased use of oxygen and ventilator equipment within the pandemic, hospitals were sometimes required to adapt areas for emergency use, meaning time and low ventilation were a concern. As a result, trusts were ordered to carry out regular monitoring of 'potentially exposed rooms' to 'ensure oxygen enrichment is controlled'.

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The Crowcon team rose to the challenge after being contacted by one of the hospitals in the UK preparing to increase intensive care facilities. Jumping into action, the manufacture of 30 portable O2 detectors was prioritised by Crowcon to support our valuable healthcare workers, and ensure the fastest possible delivery. We went the extra mile by producing a special part number for the NHS, so that units could be supplied with the 'confidence bleep' disabled. This ensured that the units did not make this sound. As a result of this Crowcon was also accepted as a supplier on the Government's Covid supply chain website.

The O2 Gasman provided protection to care givers, as well as patients due to its small, lightweight and easy to use size. The Gasman was able to be placed next to ventilators throughout wards for area monitoring following the NHS guidance. As the device has up to two years of hassle-free operation with no need to plug in for constant power or even to charge, the detector makes sure the focus is fully on care of the patients. The alarm levels are set in-line with the latest guidelines of 23.5% oxygen.

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In a nutshell

Enriched oxygen environments pose severe risks to those within them, and so oxygen management in hospitals was key to preventing this real danger. Our O2 Gasman provided protection to everyone within the healthcare environment and Crowcon are proud to have gone the extra mile to support frontline workers. The production of the special NHS part number to disable the 'confidence bleep' allowed for swift delivery of a much-needed detection product to ultimately safeguard those that matter most during Covid-19.

"Crowcon are proud to have gone the extra mile to support frontline workers"

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