

Case Study

Incubating success in a microbiology laboratory

Victoria Hospital in Kirkcaldy is the largest hospital in Fife, offering frontline emergency medicine and minor injuries care, as well as acute and specialist services to support both primary and secondary care facilities in the region. The hospital's microbiology department plays a crucial role in infection control and diagnostics, processing around 500,000 samples annually. This includes a diverse range of sample types – including blood, urine, bodily fluids, wound swabs and nail clippings – which are routinely cultured to enable identification and antimicrobial susceptibility testing of the microorganisms present.



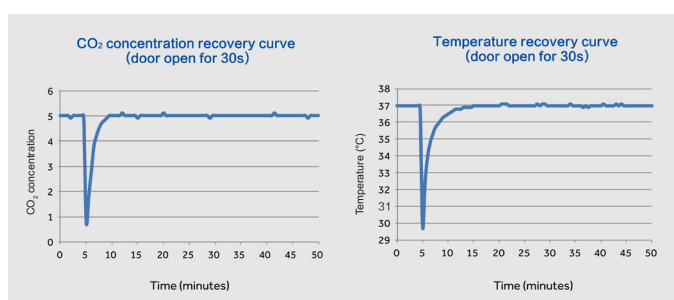
VICTORIA HOSPITAL NEEDS

- Reliable and cost-effective replacement of old incubator
- Real-time CO₂ and temperature display
- Stable and consistent internal environment
- User-friendly design
- Meeting rigorous verification standards

“When choosing the new incubator, we obviously wanted a reliable and cost-effective device, and were also keen to purchase a system with an easy-to-read front display that indicated the CO₂ and temperature in real time. We also wanted a unit that would ensure a stable and consistent internal environment.”

Haier Biomedical: Incubating success in a microbiology laboratory

Incubation of cultured samples under consistent temperature, humidity and gas composition conditions is essential to promote microbial growth, making CO₂ incubators a mainstay of any microbiology lab. A CO₂ incubator closely mimics *in vivo* conditions by maintaining a stable temperature around 37 °C, regulating CO₂ levels at approximately 5 % to preserve pH balance, and providing consistent humidity to prevent sample desiccation, all of which create an optimal environment for the rapid growth and identification of microorganisms. The microbiology department at Victoria Hospital has two CO₂ incubators to handle its primary and secondary care workload, and chose a CO₂ incubator from Haier Biomedical in 2021/2022, when one of its existing units was in need of replacement. James Omojola, Quality Lead at the microbiology lab, explained: "When choosing the new incubator, we obviously wanted a reliable and cost-effective device, and were also keen to purchase a system with an easy-to-read front display that indicated the CO₂ and temperature in real time. We also wanted a unit that would ensure a stable and consistent internal environment."



Any new piece of equipment entering a clinical setting has to undergo a rigorous verification process before being put into routine use, to ensure it is performing as expected and will not compromise results, which could potentially have knock-on effects on patient management and safety. "Part of my job is ensuring that the equipment used in the lab meets our requirements and the manufacturer specifications," James continued.

"To test the new incubator, we obtained a set of known EQA control organisms – over 40 separate species – and incubated them in CO₂ media for 2-3 weeks. Throughout this period, we meticulously monitored and measured the samples to ensure consistent growth, as well as using a standalone CO₂ and temperature sensor to independently measure the internal environment. The results were excellent, confirming that the incubator was performing as promised. Following on from the initial validation process, we perform continuous remote monitoring of the CO₂ level and temperature inside the incubator to verify that optimal conditions are maintained. There have been no issues during the two years that we have been using the incubator, and it has proven to be very reliable."

The Haier Biomedical CO₂ incubator has become an integral part of the lab's daily operations, providing the controlled environment that is essential for the growth of various cultures and ensuring high quality and consistent results to guide patient care. Lab staff have found the Haier Biomedical CO₂ incubator to be very user-friendly.

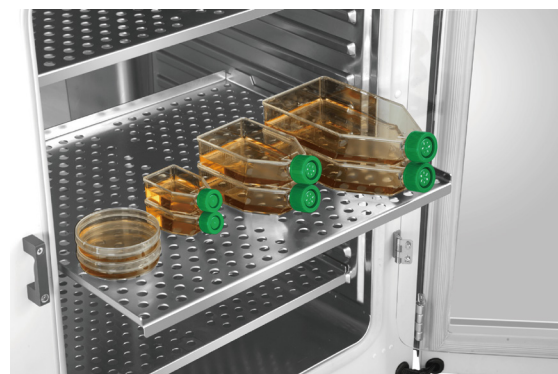
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James added:

“Our team appreciates how easy the incubators are to use, especially the visual dashboard that provides at-a-glance monitoring of key parameters. This intuitive interface allows staff to quickly assess the status of the incubator, enhancing the overall efficiency of the lab. Our other CO₂ incubator is coming to the end of its working life, and we will certainly be considering a second Haier system to replace it, as this will simplify operation and support us in delivering timely and accurate information to our colleagues.”

PROJECT OUTCOMES

- Consistent microbial growth
- Continuous remote monitoring of optimal conditions
- Reliable operation since installation
- Improved lab efficiency with intuitive interface



View our portfolio of incubators here:



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