



Their goals:

What they have achieved?

Tailored PMS to create single work orders for multiple HVAC units

Able to identify problems more quickly, avoids the needless proliferation of separate work orders and provides complete records.

To monitor the conditions within buildings are maintained.

The web-based compliance feature is designed to allow the operator to scan a bar code on the unit/asset which immediately tells what checks to conduct.

Uploading results from a hand held digital devices

The combination of effective PM and regular temperature checking constitute a synergistic tool for avoidance of Legionnaires' disease.

Fighting Off Legionnaires' Disease

By Dave Griffiths for www.achrnews.com, November 03, 2008

More than 30 years ago, a sinister disease of unknown origin created a panic in Philadelphia. Several people attending an American Legion's convention in Philadelphia in late July 1976 became severely ill with flu-like symptoms and soaring temperatures. In the end, 34 people died from this mysterious disease. Originally, no known cause could be found, and the thought of biological warfare entered the minds of some Americans who worried for their safety. After six months of painstaking research, epidemiologists and laboratory scientists discovered that the illness was not man-made. Instead, it was caused by a type of bacteria, named Legionella. Legionella bacterium are found naturally in the environment and thrive in warm water, like that found in cooling towers, hot water tanks, large plumbing systems, and air conditioning systems of large buildings. In this instance, the Legionella proliferated in the air conditioning system of the hotel where the convention was held. It quickly multiplied throughout the hotel's air conditioning system due, in part, to inadequate facility maintenance of the a/c system and associated heat exchange equipment.

Looking back, it is easy to see how this could have happened, said Dave Griffiths. Computerized maintenance management systems (CMMS) were not common yet. "At that time, most facility maintenance people did not use computers," said Griffiths, senior management consultant of CWorks Systems, an international CMMS developer based in Buffalo, N.Y., with partner offices in over eight different countries. **"Every task was recorded manually, with pencil and paper. We were just not advanced enough and did not have the technical expertise that we have today."** **Current maintenance management techniques have dramatically changed since 1976, thereby significantly reducing the risk of the potential for Legionella spread.** For instance, in the newly constructed 825-bed Mater Dei Hospital in Malta, a country off the coast of Italy, the facilities managers not only **have installed a CMMS to maintain their a/c units, but they also use compliance technology designed to ensure that the control scheme is being implemented and maintained.**

Meeting the challenge

Almost every room at the state-of-the-art Mater Dei health care facility has an a/c unit, posing a definite challenge to manage so that compliance could be carefully tracked. At Mater Dei, circulating hot and cold water provides the heating and cooling agent for these a/c units. However in the long, hot summers, condensate can accumulate on the air conditioning coils, from where a drip tray collects and drains this water.

“Legionella bacteria multiply rapidly in the temperature range 68° to 122°F,” noted biochemist Dr. Andrew Dobbins, chief technology officer of Zeta Compliance Technologies, Charleston, S.C. “If this water is not draining properly from the drip tray, it can accumulate and warm up to the critical temperature range for Legionella propagation.” **To ensure these drip trays are properly monitored, facility managers at Mater Dei incorporated a sophisticated CMMS that they said is easy-to-use, but could be customized as well. Both the facility managers from the hospital and the software engineers from CWorks collaborated and tailored the preventive maintenance system to create single work orders for multiple HVAC units. The preventive maintenance includes individual records for each individual unit. Such customization not only allows the facility manager to identify problems more quickly, but also avoids the needless proliferation of separate work orders and provides a complete record of compliance per unit for any required maintenance and repairs.** According to hospital engineers, the collaboration is designed to ensure that these units are working properly while preventing the creation of a hospitable environment for the spread of dangerous airborne diseases.

Maintaining the system

Mater Dei Hospital also depends on the compliance technology provided by Zeta Compliance Technologies, through its core product, a dedicated Web-based compliance software. According to the manufacturer, the system is used extensively to ensure that good water hygiene conditions are maintained within buildings, and it is applied to an ever-growing number of compliance issues, such as air hygiene. The manufacturer said it could also be used to monitor the safety of gas appliances in hospitals, to monitor the MRSA (Methicillin-resistant Staphylococcus aureus) bug, and any type of “dumb assets.”

“When you visit a retailer, hotel, university, bank, hospital or local authority, you take it for granted that you can rely on the quality of air and water on their premises, and that the building and its services pose no risk to your health,” said Rob Nicoll, CEO of Zeta Compliance Group plc. “Unfortunately, this expectation is not always met. Using a compliance system provides those responsible for managing Legionella and other potential health and safety risks a tool to effectively manage the assets within their estates/buildings.”

At Mater Dei Hospital, the **Web-based compliance feature is designed to allow the operator to scan a bar code on the unit or asset, which immediately tells the facility manager what checks to conduct. This personal digital assistant (PDA) software is also designed to enable the operator to easily and accurately input test results from the unit or asset being tested, by allowing users to scan bar codes, input results, make comments, and synchronize to the main database. Uploading results from a hand-held digital device straight to the database informs operators almost immediately if there is an area of non-compliance in the facility they are examining.** “Tests and schedules can be created for virtually any type of asset from a tap to major industrial plants requiring multiparameter tests,” said James Fields-Davis, marketing manager, Zeta Compliance Technologies Ltd. With some 35,000 equipment items, including the a/c units that need to be regularly maintained, the combination of effective preventive maintenance and regular temperature checking constitute a synergistic tool for avoidance of Legionnaires’ disease at Mater Dei Hospital.