

TOMMI VÄLIMÄKI

SAFETY PLANNER

HOSPITAL DISTRICT OF SOUTHWEST FINLAND

HOPITAL FIRE

NOKIAS 2016 TURKU FINLAND 15-17 SEPT 2016

SUMMARY

FIRE LED TO EVACUATION FROM TURKU HOSPITAL ON 2 SEPTEMBER 2011

A fire broke out at 05.41 hrs on Friday 2nd September 2011 in Turku University Hospital. The fire started in the eastern corridor of the emergency room above a suspended ceiling. The space above the ceiling is occupied by hospital technical equipment and pipes for pressurised air and oxygen. One of the nurse call-out system connection units in the space overheated. Overheating resulted from a short-circuit in the call-out system connectors in a patient room.

The oxygen pipes were damaged by the fire to the extent that it was impossible to determine their condition before the fire. Inaccurate consumption information made it impossible to detect any leaks. However, by excluding various possible causes of the fire, the investigation concluded that the oxygen pipes leaked before the fire broke out. Because of this, the oxygen concentration above the suspended ceiling was higher than normal, which lowered the ignition temperature of the materials, increased the combustion temperature, and increased the speed of the fire's development.

The fire heated the oxygen and pressurised air-pipe connections in the space above the suspended ceiling. This led to the connections' melting and opening, releasing more oxygen into the space.

Smoke spread remarkably quickly through the inlets for electric wires and other HVAC technology located above the doors. It also spread throughout the building, via lift shafts, staircases, air conditioning and inlets. The fire itself spread through the third-floor duct for electric cables. Due to the spread of the smoke, the entire building, apart from the intensive care unit, was evacuated.

No one died in the fire, but three nurses suffering from smoke exposure were taken to the health centre for examination. No injuries to patients were reported. The hospital building suffered considerable damage. The eastern end of the emergency room on the second floor and the ER laboratory corridor on the third floor were completely destroyed. In addition, the hospital premises suffered various degrees of smoke and soot damage. Hospital equipment was rendered unusable. Total damage, including consequential loss, is estimated at EUR 17.5 million.

In order to improve safety, hospitals should have a proactive repair programme covering all the fields of safety. The programme should be implemented and monitored regularly. Nursing homes and other institutions should also have a working system for alerting the management and personnel and for internal communication. In addition it is recommended that all nursing homes and other institutions should be protected with automatic fire extinguishing system (sprinkler)