REGULATION 28: REPORT TO PREVENT FUTURE DEATHS

	REGULATION 28 REPORT TO PREVENT FUTURE DEATHS **THIS REPORT IS BEING SENT TO:** **1. MHRA - Chief Executive** **2. HSE - Chief Executive** **3. West Midlands Ambulance Service- Chief Executive** **4. Care Quality Commission- Chief Executive**
1	**CORONER** I am Zafar Siddique, Senior Coroner, for the coroner area of the Black Country.
2	**CORONER'S LEGAL POWERS** I make this report under paragraph 7, Schedule 5, of the Coroners and Justice Act 2009 and regulations 28 and 29 of the Coroners (Investigations) Regulations 2013.
3	**INVESTIGATION and INQUEST** On the 23 April 2020, I commenced an investigation into the death of Mrs Lynn Hadley. The investigation concluded at the end of the jury inquest on the 12 November 2020. The conclusion of the inquest was a short form conclusion of accidental death. The cause of death was: 1a Fatal Burn Injuries Incompatible with Life
4	**CIRCUMSTANCES OF THE DEATH** i) On the 13 April 2020, paramedics attended Mrs Hadley's home address. She had been complaining of COVID-19 type symptoms. On examination it was determined that she needed oxygen therapy. The oxygen cylinder was taken out of the Basic Life Support (BLS) bag, and the protective cellophane removed. The tubing was attached to the cylinder and turned on to deliver 4 litres. ii) The cylinder then sparked and then set alight from the collar region and set the house on fire. iii) Mrs Hadley was located on the ground floor to the rear of the property and the house caught fire very quickly. Despite efforts from family members and paramedics, they were unable to remove her from the property. iv) Sadly, Mrs Hadley died from her burn injuries.
5	**<u>CORONER'S CONCERNS</u>** During the course of the inquest the evidence revealed matters giving rise to concern. In my opinion there is a risk that future deaths will occur unless action is taken. In the

	circumstances it is my statutory duty to report to you. The **MATTERS OF CONCERN** are as follows. – 1. Evidence emerged during the inquest from two destructive examinations of the damaged regulator indicated that ignition happened following either adiabatic compression or particle impact. Either of these two events occurred within the on/off shuttle cartridge assembly of the brass regulator which was attached to an oxygen cylinder used to treat Mrs. Hadley. 2. Although both of these phenomena are extremely rare, the sudden uncontrolled release of oxygen by rapidly opening the on/off valve of the regulator can expedite the occurrence of ignition. 3. Evidence from the paramedic confirmed that she opened the patient valve first before opening the on/off valve, thus increasing the chance of the reported phenomena occurring. 4. Evidence from the Fire Investigation Officer, confirmed that there was little if any knowledge of either adiabatic compression or particle impact and the ramifications of such an event when opening a cylinder incorrectly by those responsible for using the equipment. 5. Evidence from the MHRA confirmed that they are aware of four cases of ignition within valve components of oxygen cylinders leading to fire since 2011 including this incident. The valve manufacturer VTI, Germany has subsequently reported nine cases of ignition. VTI are also examining a further 20 regulators. At present no defects have been found.
6	**ACTION SHOULD BE TAKEN** In my opinion action should be taken to prevent future deaths and I believe you have the power to take such action. 1. All agencies involved may wish to consider reviewing and issuing guidance for the operation and use of oxygen cylinders. 2. I am particularly concerned about the use of oxygen cylinders in the community in general and would invite the HSE and CQC to consider issuing further guidance urgently.
7	**YOUR RESPONSE** You are under a duty to respond to this report within 56 days of the date of this report, namely by 1 March 2021. I, the coroner, may extend the period. Your response must contain details of action taken or proposed to be taken, setting out the timetable for action. Otherwise you must explain why no action is proposed.
8	**COPIES and PUBLICATION** I have sent a copy of my report to the Chief Coroner and to the following Interested Persons; Family. I am also under a duty to send the Chief Coroner a copy of your response.

	The Chief Coroner may publish either or both in a complete or redacted or summary form. He may send a copy of this report to any person who he believes may find it useful or of interest. You may make representations to me, the coroner, at the time of your response, about the release or the publication of your response by the Chief Coroner.
9	**18 January 2021** **Mr Zafar Siddique** **Senior Coroner** **Black Country Area**