	REGULATION 28 REPORT TO PREVENT FUTURE DEATHS **THIS REPORT IS BEING SENT TO:** National Institute for Health & Care Excellence [N.I.C.E.] Level 1A City Tower Piccadilly Plaza Manchester M1 4BT
1	**CORONER** I am Alan Anthony Wilson Senior Coroner for **Blackpool & Fylde**
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. http://www.legislation.gov.uk/ukpga/2009/25/schedule/5/paragraph/7 http://www.legislation.gov.uk/uksi/2013/1629/part/7/made
3	**INVESTIGATION and INQUEST** The death of Imogen Heap, aged 17 years, at Blackpool Victoria Hospital was reported to me and I opened an investigation. An inquest was conducted which concluded on 16th July 2024. The medical cause of her death was: **1a Cardiac arrest** **1b Bradycardia following extubation** **1c Propranolol toxicity** In box 3 of the Record of Inquest I recorded as follows: Imogen Heap had previously been prescribed propranolol medication after being diagnosed with anxiety and depression. On 31st October 2023, and at a time when she was low in mood, she voluntarily ingested a very high quantity of propranolol, and a smaller amount of prescribed fluoxetine and some paracetamol from around 4 pm that afternoon. She did so with a view to ending her life, but at some point she reflected upon this and decided to call for help at 16.10 pm that evening. Due to pressures on the ambulance service at that time, it was 19.57 when an ambulance arrived at her home, and after initial assessment was transferred to Blackpool Victoria Hospital by 20.38. A number of ambulances were queueing outside of the hospital due to the number of patients in the emergency department at that time. Imogen remained in the ambulance. At 21.33 hours Imogen became hypotensive and vomited. It was at around 22.13 when she began to have some seizures, brought on by the toxic impact of the medication she had ingested, and was taken into the hospital emergency department. Imogen received advanced life support, her heart beat stabilised, and was transferred to the Intensive Treatment Unit. Over subsequent hours, Imogen's prognosis remained very concerning. She

	was being actively treated. By the morning of 2nd November 2023, at around 10.00 am, it was felt the propranolol medication had metabolised sufficiently for her to be extubated, following which she quickly became agitated. A member of the nursing staff appropriately raised concerns about her deterioration but before she could be re-intubated she became bradycardic and went into cardiac arrest. Despite intubation and advance life support, Imogen deteriorated and died at 13.33 that afternoon. Extubated on 2nd November 2023, and at a time when she was still likely to die, an unexpected and unusual reaction to extubation inadvertently accelerated her deterioration. The conclusion of the Coroner was a narrative conclusion which read: **At a time when she was low in mood, Imogen Heap ingested a very large quantity of tablets, mostly prescribed propranolol medication, with a view to ending her life. Within a period of around 2.5 hours of beginning to ingest the medication, she decided to telephone for help, but by that time the extent of the overdose was going to prove fatal.**
4	**<u>CIRCUMSTANCES OF THE DEATH</u>** In addition to the contents of section 3 above, the following is of note: Propranolol is a drug used to treat medical conditions, including the physical effects of anxiety. It is in a class of medications known as beta blockers. It is believed that this drug can rapidly cause significant chemical damage to the heart when taken in overdose; typical effects include profound bradycardia (slow heart rate), hypotension (low blood pressure) and reduced electrical activity in the heart. It may lead to fatigue, reduced consciousness levels, confusion, hallucinations, seizures, and coma. Overdose symptoms are usually apparent within one to two hours of medication being ingested and may result in the rapid deterioration of a patient's condition. During this inquest, I received evidence from: • [redacted], a Consultant in emergency medicine and major trauma. He had been asked by me to conduct an independent review of the care Imogen had received. • [redacted], an experienced Consultant in critical care. She gave evidence regarding the hospital Trust's Serious Incident Investigation Report. Both of these doctors were in agreement that Propranolol is a drug which is widely prescribed and often to relatively young people reporting symptoms of anxiety, but that there can be an under-appreciation of how toxic an elevated level of propranolol medication can be. At the conclusion of the inquest, I explained in court that I planned to write a report to prevent future deaths. However, further to giving that indication, I became aware that in 2020, the Healthcare Safety Investigations Branch [HSIB] (which later became Health Services Safety Investigations Body [HSSIB] had in February 2020 published a report which concluded with the following recommendation: ***It is recommended that the National Institute for Health and Care Excellence reviews and updates guidance on the use of propranolol in the treatment of anxiety and migraine, with particular reference to the toxicity of propranolol in overdose.***

	That report noted that it had been felt that for some time there had been a steady rise in the number of propranolol prescriptions issued to NHS patients, and about the number of deaths reported was being linked to propranolol overdose. I repeat the link to that report here: Potential under-recognised risk of harm from the use of propranolol In response to their report, HSSIB received helpful responses from organisations including: • National Institute for Health & Care Excellence [N.I.C.E.] • Royal College of General Physicians • NHS England & NHS Improvement • Association of Ambulance Chief Executives
5	**CORONER'S CONCERNS** During the course of the inquest the evidence revealed matters giving rise to concern. In my opinion there is a risk that future deaths could occur unless action is taken. In the circumstances it is my statutory duty to report to you. The **MATTERS OF CONCERN** are as follows. – My concern is that Propranolol continues to be a drug which is widely prescribed, and often to young people reporting symptoms of anxiety, but that there continues to be an under-appreciation of the level of risk posed by an elevated level of propranolol medication can be. Having reflected upon the H.S.S.I.B. report from 2020 mentioned above, which I had not considered at the time I conducted this inquest, I have reviewed whether my concern remains and that this report is necessary. I am confident that it does. The need to raise this concerns remains valid bearing in mind the evidence received during Imogen's inquest, over four years on from the report. It may be that over subsequent years, the organisations who responded to the H.S.S.I.B. report have conducted a lot of work to improve guidance and awareness, but I feel it would be remiss of me not to go ahead and write this report. I feel it should be sent to the National Institute for Health & Care Excellence [N.I.C.E.]
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.
7	**YOUR RESPONSE** You are under a duty to respond to this report within 56 days of the date of this report. I, the coroner, may extend the period further. 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 of Imogen Heap • Chief Executive, Blackpool Teaching Hospitals NHS Foundation Trust 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. I also send a copy to the following organisations as I believe they may find it to be of interest: • Royal College of General Physicians • NHS England • Association of Ambulance Chief Executives [A.A.C.E.]
9	8th November 2024. Signature  Alan Anthony Wilson Senior Coroner **Blackpool & Fylde**