	Senior Coroner, London Inner South, UK **Re: Rachel Ann Burke, case ref 1141-11,** **REGULATION 28 REPORT TO PREVENT FUTURE DEATHS** **THIS REPORT IS BEING SENT TO:** 1. [redacted] **The Adventure Company** **1 Cross and Pillory Lane, Cross and Pillory House,** **Alton, Hampshire, GU34 1HL** 2. [redacted] **Managing Director, Himalayan Encounters, PO Box 21218** **(Courtyard Kathmandu Guest House)** **Thamel, Kathmandu, Nepal** 3. **Mr Mark Tanzer** **Chief Executive, The Federation of Tour Operators** **ABTA – The Travel Association** **30 Park Street, London SE1 9EQ** 4. [redacted] **Head of Legal, The Association of Independent Tour Operators** **133a St Margarets Road, Twickenham TW1 1RG** 5. **Mr. Ram Kuma Shrestha** **Honourable Minister for Tourism,** **The Government of Nepal Ministry of Culture, Tourism and Civil Aviation,** **Singha Durbar, Katmandu, Nepal**
1	**CORONER** I am Andrew Harris, senior coroner for the jurisdiction of London Inner South
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 8th November 2011 I opened an inquest into the death of Rachel Ann Burke, aged 28 years, date of death 23rd April 2011. The inquest was concluded on 15th January 2014. The cause of death was found to be High altitude cerebral oedema and high altitude pulmonary oedema. A UK Professor of Pathology gave evidence (citing internationally recognized *Davies* criteria) that Coronary arteriosclerosis was very unlikely to be present in an athletic 28 year old and that it did not cause her death, despite that being found by the autopsy in Kathmandu on 25th April 2011 (ref 68-0047). However the state of the coronary arteries were not recorded, nor was histology studied by the Kathmandu Autopsy Center, which would be expected if such a rare finding were suspected.

4	**CIRCUMSTANCES OF THE DEATH** Ms Burke went on a high altitude trek in the Himalayas in trek organised by Himalayan Encounters (HE) with guides and experienced leader. She made an ascent of 600m from Nanche Bazaar to Dole (day 6) on 20th April. The next day she was slower than others and developed breathlessness and fatigue. Later she developed central cyanosis. She slept poorly, having to be upright and in the morning of 22nd April she was ataxic, cyanosed, unable to eat properly or do her shoes. She was slow in admitting her health problems and was reluctant to descend. She had High altitude cerebral oedema (HACE) and high altitude pulmonary oedema (HAPE) that were not recognised. She did not attend the health post some 12 minutes away but descended with support to Dole, but making very poor progress. She was found on the way to be confused and despite treatment on the slope by passing doctor and barometric oxygen in Dole, died later at 00:45 in Dole from HACE and HAPE. Factors contributing to her death were non recognition of HAPE and HACE at Machermo, walking under her own steam down to Dole, sending her down the mountain with a guide unfamiliar with acute mountain sickness and her not attending the health post in Machermo, about which the leader but not herself knew. Not taking her to the health post amounted to neglect.
5	**CORONER'S CONCERNS** During the course of the inquest the evidence revealed matters giving rise to concern. The **MATTERS OF CONCERN** are as follows. – (1) The Adventure Company (TAC) Everest Gokyo Lakes Trek had advertised the ascent from Namche Bazaar at 3440m to Dole at 3780m, when in fact it was 4050m. This was an ascent of 610m in one day, whilst its preferred code of practice identified that ascents should be a maximum of 300m per day. An expert in mountain sickness, [redacted] said that the speed of ascent was the one factor that limits the incidence of altitude sickness. He said that the sleeping altitude (above 3000 metres) should never be more than about 300 or 400 metres above the previous night and that every 3 days or 1000 metres of additional ascent, an additional rest day would be needed. He described the ascent to Dole on this trek as excessive, being double the safe recommended ascent rate. It was noted that TAC hold a high altitude trek in Peru where the limits are strictly complied with, due to local legislation. (2) The HE trek leader was concerned about the costs of accessing services from the Health Centre and of making satellite phone calls, possibly mindful of the TAC manual for overseas group leaders, which states under "emergency" on page 20, that priority must be given to finding a cost effective solution. Despite having a satellite phone at Machermo and being 12 minutes from a health post, neither was used, when the trekker needed urgent medical care. (3) The severity of her illness was not appreciated by the trek leader. The expert said that it was very well known in the trekking community that people were loathe to admit they were as ill as they were and that a good mountain guide was as capable of picking up the subtle signs of mountain sickness as most doctors. Nevertheless, this severely sick trekker with ataxia and cyanosis, signs of HACE and HAPE, was asked by the trek leader to descend under her own steam with a Himalayan Encounters guide who had inadequate or no training in acute mountain sickness. This should not happen, the expert said, since exercise worsens HAPE. Ideally she should descend passively or be treated at the health centre. The information about the training of each leader and guide was not passed to TAC, who assured themselves of the adequacy of training by statements of general compliance from HE. Whilst the companies report that action has been taken to address this, there may remain a similar risk for other trek organizers. (4) The cause of death was found to be High altitude cerebral oedema and high altitude pulmonary oedema. Coronary arteriosclerosis did not cause death in this 28 year old, despite that being found by the autopsy in Nepal.

6	**ACTION SHOULD BE TAKEN** (1) **The Adventure Company, Himalayan Encounters and British Tour organizers should consider for high altitude treks:** a) ensuring that planned treks comply with the limits of ascent in one day, and days rest and other safety requirements in the consensus guidelines approved by the Wilderness Medicine Society, (as recommended by [redacted] and b) where, because the terrain does not permit, informing trekkers who book when treks do not comply with these guidelines and the steps taken to mitigate the risk so that they may take informed decisions about their participation. (2) **TAC and Himalayan Encounters and tour organizers for high altitude treks** should consider reviewing the knowledge of and guidance to trek leaders about the health insurance of trekkers and the cost of accessing health and emergency care, so that cost considerations do not prevent appropriate access to medical advice and care. (3) **The Government of Nepal** may wish to consider whether it would wish to take any action to assure visitors and UK travel companies on three matters: (a) either legislative prescription of trek safety requirements (as in Peru) or guidance to Nepali trekking companies, of the safety of treks, especially with regard to ensuring that planned treks comply with the limits of ascent in one day and days rest, as approved by the Wilderness Medicine Society, and (b) that trekking organizations ensure their leaders are not disinhibited from enabling access of insured westerners to medical and rescue facilities, and (c) either by enquiry or guidance about the adequacy or independence of pathology services for trekkers, in light of the apparent error or invalidity of the autopsy report in the Kathmandu Autopsy Centre.
7	**YOUR RESPONSE** Other than the Government of Nepal, which is merely invited to respond, you are under a duty to respond to this report within 56 days of the date of this report, namely by Monday, April 21st 2014. 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: [redacted] next of kin [redacted] for family [redacted] from Plexus Law for The Adventure Company [redacted] Director of The Adventure Company I am also copying it to The Young Explorers Trust, The Duke of Edinburgh Award Scheme, The Expedition Providers Association, the British Mountaineering Council, British Mountain Guides and the Wilderness Medicine Society who may find it useful or of interest. 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. If you would like further information about the case, please contact my officer: [redacted]
9	**[DATE]** **[SIGNED BY CORONER]** (as amended)