

## CO-Gas Safety Unintentional Carbon Monoxide Poisoning Case Study

### AMBER YATES, Survived in 2021



*Amber, James and baby Elliot*

**Age:** 24

**Fuel:** LPG cylinder (propane)

**Appliance & Location:** Fridge in privately-owned touring caravan

**Notes by CO-Gas Safety:** Amber and her husband, James, had this very close shave with CO in their own caravan when they went on holiday just a few hours from their home, with their newborn son. They had only replaced the battery in their caravan's CO alarm the day before. CO-Gas Safety are very relieved that they knew what to do when the alarm then activated in the middle of the night.

#### **The night of our incident**

Myself, my husband James, our 6-week-old baby Elliot and our cocker spaniel Oakley were on holiday in our touring caravan on August Bank Holiday 2021. On Saturday night, we sat outside the caravan with some friends. At about 11pm I took Elliot and Oakley inside, and at about 11.30pm we drifted off to sleep. We were camping 'off grid', relying on our gas appliances and solar panels.

My husband stayed outside with our friends until around 1am, when he came into the caravan, climbed over me onto his side of the bed and went to sleep. Unusually, neither our baby, myself nor the dog heard him come to bed. At 3am we were woken up by an alarm sounding; it took us a second to wake up and realise what the noise was. My husband picked up the CO alarm to see that it was flashing and that it had a reading of 94. At this point he said to me that he thought the alarm was broken as he had only put new batteries in it 12 hours previously, making this a big coincidence. He asked me if I felt alright, and although we both agreed we felt fine I wasn't willing to mess around with the risk of CO and our baby, so we decided to move outside. I grabbed the bassinet with the baby inside and put him out in the awning. He was still sound asleep, as was the dog (who normally barks at the slightest noise, such as the doorbell or the oven timer).

#### **Increasing symptoms**

In the couple of minutes that it took us to get out of the caravan, the alarm reading rose to 240. Conscious that it was freezing cold outside, I grabbed the car keys and put Elliot and Oakley in the car with the heating on. Elliot still did not wake, despite being moved around and taken into the cold, and Oakley was extremely lethargic. Whilst my husband turned off the caravan's gas appliances, I knocked on a friend's caravan and asked them if we could sleep in their van for the rest of the night. My husband ran back into our caravan to grab the baby milk and nappy bag; he was gone for a little while and our friend went over to check he was alright. James was very dizzy and confused; he was looking for something that we had already brought out with us and his vision went blurry. We then took a moment to digest what had happened and made the decision to get ourselves to the hospital. This decision was made on the basis that we had such a small baby; if it had just been us we would probably not have taken the situation seriously and 'slept it off'.

By this point my chest was feeling extremely tight and I was beginning to find it difficult to breathe. We were camping in the corner of a huge farm field with minimal signal, so I felt that an ambulance wouldn't find us. Google said we were 17-minutes from the nearest hospital, so we all got in the car and set off. On the journey we both began to feel worse and therefore we called ahead to the hospital to let them know we were on our way.

### **Finding medical help**

We arrived at the hospital, parking as close as we could to the door, where we got the pram out of the boot as neither of us felt safe to carry the baby. We walked into A&E; the staff were chatting on the desk and didn't pay us any attention. By this point my husband was struggling to stand and we were both having agonising chest pain. I called over to the staff asking for help, to be told we were in the wrong part of the hospital. A&E appeared to be very quiet and I asked a staff member to walk us to where we needed to be, explaining that we had all been exposed to CO. The lady reluctantly showed us; it was a long walk where we had to go up and down multiple corridors and even out through a car park.

We were then taken into the children's A&E department, where we were told to take a seat. They opened the door and told us to sit by it so we could breathe in some fresh air; again, we were the only ones in the waiting room. 10 minutes later, I was growing more and more concerned for all of our welfare. I went up to the desk and begged them for help. I reminded them that I had a 6-week-old baby and that my husband's state was deteriorating. Finally they took us into a family room where they began to take us more seriously. James had to immediately lie down on the bed. It had now been over an hour and a half since the CO alarm went off. The staff in the children's department explained that we would have to wait for someone from the adult department to be ready to come down to treat us. They checked Elliot's blood oxygen levels and told us that he appeared fine. The staff also told us that they were trying to track down a particular CO test machine of some sort that the hospital only had one of, which to my knowledge was never found.

### **A doctor's opinion**

In the meantime, a doctor came in to take an arterial blood gas (ABG) on myself and my husband. They then told us that as James appeared the most affected, they only needed to test him. The doctor tried twice on James to carry out the test and didn't get any blood. He was in agony with shooting pains up and down his arm, which was also trembling. They then tried to do the ABG on me and failed again. James was feeling extremely nauseous, lethargic and very unwell. Another doctor came down to try and get the ABG from James; he was successful the first time and commented that his visual assessment on James concluded that he required further assistance. James was then wheelchaired up to the adults A&E where he was put on oxygen. The doctor explained to me that if James' ABG results were high, he would carry out a blood test on Elliot, but that if they were normal, as we had all been in the same confined space, he was happy that Elliot and I would be fine.

He soon came back and said he wanted to conduct a heel prick on Elliot. I consented to this and said that I would like to know for certain what Elliot's condition was rather than guessing from James' results. I held him closely whilst the doctor carried out the heel prick. My poor baby cried like I had never heard him cry before but I was just so thankful to feel his every breath. I then asked if they would be doing any tests on me, as I am asthmatic and still had chest pain. I was told that it wasn't necessary. A while later, the doctor told me that everyone's results had come back and that it 'was apparent James had been exposed to CO' and that Elliot's results were 'close to normal'. I am sceptical on the reliability of this reassurance due to the amount of time in between the exposure to CO and the tests being carried out. At about 8am we were told we could leave the hospital.

### **The next day**

The next day, James and I still felt extremely lethargic and groggy. We both had a headache and we were very exhausted and overwhelmed. We had a few hours of sleep in our friends' caravan to prepare for our 200-mile drive home - we didn't want to spend another night in our caravan.

When we got home I took the CO detector/alarm with us into the house, as I realised that we only owned the one. I placed it on our landing next to the boiler cupboard and I now look at it every time I go up or down the stairs. We now also have back-up alarms in both the house and the caravan.

### **Looking backwards**

I believe the fridge was the source of the CO because, on the outside of the caravan, there were black soot marks out of the fridge vent. The layout of our caravan means that the fridge vents blow out into the awning. I assume that the CO came out of the fridge vents primarily and then slowly came back into the caravan through aged seals around the windows and door. Awnings are often used as an extra bedroom on a caravan, and it concerns me now that somebody could have been out there, exposed to much higher levels of CO before the alarm inside the caravan detected it.



### **Moving forwards**

It's now a month on from our incident and James is still experiencing severe pain in his wrist where the doctor attempted the ABG. Elliot and Oakley appear to have recovered really well and seem unphased by the incident. I have experienced a lot of anxiety around the entire situation. I now question regularly if I am in the vicinity of a CO detector, whether this is at a friend's house, in a restaurant or at the cinema. I wonder what protection is in place to ensure everyone's safety.

I lived in student housing for 3 years, without giving a second thought as to whether there was a CO detector installed. I have been on holidays and stayed in a variety of different accommodations without questioning if a CO detector would be a minimum necessity for these places to meet the health and safety requirements. I have since learned that this is not the case. I will now be taking a CO alarm with me wherever I go, especially for overnight stays. In our experience, the alarm was crucial to saving our lives and I would encourage everyone to have and maintain an alarm that is of standard EN50291, and a back-up one too. However, when I press the button on the alarm to test it, I am aware that I am only testing that the electrical element of the alarm is successfully receiving power from the batteries, it cannot test that the sensor is still capable of detecting CO within the air.

Caravan services are recommended every 12 months but this is not a requirement to make the vehicle habitable; our caravan had been serviced upon purchase just 15 months before our incident. Unfortunately, I have also recently learned that the fridge emissions are not included in the standard service and therefore it is unlikely that this was checked when we bought the van.

### **The aftermath**

48 hours after our exposure to CO, I thought back about how lucky we were to have installed the batteries in the detector just 12 hours prior to it saving our lives. James only happened to put them in because he had some left over in a pack after putting new ones into one of Elliot's favourite toys. We had mistakenly been travelling for some time without any batteries in the alarm. This made me wonder how many other people were sitting in their houses, caravans, motorhomes etc with a CO detector that doesn't have batteries inside it, with a detector still in the box, or one that has expired.

I decided to put a public post on Facebook sharing our story, in the hope that it would raise awareness and give others a nudge to check their alarms and appliances. The Facebook post went viral and at the time of writing has close to 7k shares and 4k reactions. The story was also picked up by BBC North West Tonight, Liverpool Echo, The Sun and Blackpool Gazette. I had hundreds of people contact me, thanking me for raising awareness and encouraging them to both check their own alarms and to prompt their loved ones to check theirs.