

Questions of the Heart [and Luck]

Hello everyone,

We have just come back from a holiday on the Red Sea (13-20 May) with our group, Scubadolphin, and we would like to share something with you that happened on that trip.

We left very early in the morning of May 13th. At 05:00, we were already all at the Airtaly desk of Rome Fiumicino airport, ready to check-in our luggage. Our destination was Sharm el-Sheikh. Although it was dawn, we were all very much awake, full of enthusiasm and joy as some of our group had never beheld the beauties of the Red Sea before.

There were 22 people in our party – from a student to an office employee, a pharmacist to a doctor – all with one thing in common: a passion for diving. There were also some newly qualified divers: Giuseppe Vairo with his son Davide, respectively Open and Junior Divers, along with Giuseppe's wife and their other, younger son. All in all, a nicely assorted group, captained by our mascot, Nicoletta, only 13 months old!

Having gotten through airport procedures, we began to embark, each one of us boarding from the front or back stairs of the aircraft. Giuseppe Casalanguida and Elisabetta Piscioti get on the plane from the front entrance and go to their assigned seats, 12A and 12B. Having placed their luggage in the overhead compartments, they look around to see where the rest of the party is sitting, when suddenly, a young man of about 35 or 40 falls to the ground unconscious, right in the aisle next to Elisabetta, striking her.

Someone yells, "Oh God, he's fainted!"

In the fall, the man ends up with his head under Elisabetta's seat who turns to look at him; his eyes are blank, his hands and fingers stiffened and cramped, and he has begun wheezing. As there is little room, and the injured man is in an awkward position, Giuseppe C. and Elisabetta, with the precious help of another passenger, move him to the middle of the aisle in a supine position and began to administer BLS.

In our group there is a doctor present (Giuseppe V.), and Giuseppe C. calls him over immediately. Our new open diver, a.k.a. doctor, asks the victim's wife if her husband suffers from epilepsy or any other conditions; to which the woman replies "No, he's healthy!"

After an initial assessment, Giuseppe V. alerts Elisabetta and Giuseppe C. that the victim has no heartbeat, and, placing the patient between two seats, he immediately begins a cardiac massage while Giuseppe C. yells to the captain to call for an ambulance, straight away. About 30 to 40 seconds have elapsed from the moment the man lost consciousness to the beginning of BLS and the request for an ambulance.

Giuseppe V. is now kneeling between the seats to the right of the injured man, and continues the cardiac massage, taking turns with Elisabetta who is at the man's left.

Due to the lack of space, Giuseppe C. is unable to reach the man's head to give him mouth-to-mouth; in the meantime, he bids the cabin staff to clear the area of the people sitting nearby and also of the man's wife, who is holding their child of about 3 or 4, who keeps yelling: "Daddy, daddy..."

Despite his height of more than 2 metres, Giuseppe C. is forced to climb over the seats to ask the flight assistants for a BVM (Bag Valve Mask, a.k.a an Ambu bag) to attempt insufflation. They don't even know what it is.

So, Giuseppe C. asks for an oxygen tank with the appropriate masks. A hostess answers that they have an

oxygen tank. A woman arrives and qualifies herself as a nurse, positioning herself at the man's head. In the meantime, Giuseppe C. goes through the plane's first aid box looking for the masks, but doesn't find any. The captain brings the oxygen tank...

Upon seeing the tank with the depressurization masks, Elisabetta exclaims "What's this?!" Giuseppe C. asks the captain to open the oxygen valve as much as possible, but the captain says it already is at its maximum: "4 litres per minute." At a certain point, Giuseppe V. exclaims, "I'm tired!" and Elisabetta responds, "I'll take over!"

Elisabetta has been practising on our association's dummies for many years; now it's time to put everything DAN has taught her into practice. She positions her hands, as "by the book," and starts the compressions: a little slow at first, but then immediately gets the right rhythm, counting "and one, and two, and three...", when a cracking sound is heard. Oops! "Sorry, Salvatore (the man's name), I'm afraid I've broken one of your ribs!"

Unfortunately, Salvatore is emitting only wheezes, and as we know from the manual, a wheeze is not a sign of breathing, so the massage must be continued. After a while, Elisabetta also grows tired and Giuseppe C. takes over, alternating with Giuseppe V. in giving the massage...

Twenty-five minutes go by and Salvatore doesn't want to come back to us; he remains unconscious. This is when the ambulance arrives.

A paramedic prepares the defibrillator. While continuing to perform the compressions, Giuseppe C. asks them if they have a suitable mask for oxygen delivery. Finally a BVM is produced, which the paramedic, reaching out, gets over to Giuseppe C., who is still stuck between the two seats to Salvatore's right. Giuseppe C. points out that the mask is missing...

Soon after receiving the mask, Giuseppe C., continuing the compressions, points out that the mask is split, but the ambulance technician says it's the only one they have. At this point Giuseppe C. stops the compressions, as one of the first aid technicians (who in the meantime has situated himself above the seat by Giuseppe V.) takes over. Giuseppe C. moves over to the seat and positions the mask on Salvatore's face, pointing out to the nurse that it is split, and that she must hold it firmly with both hands to make sure it adheres properly around the injured man's mouth and nose, so that as much oxygen as possible enters his lungs. Giuseppe V. and the ambulance man take turns in giving the heart massage; Elisabetta moves over so that the defibrillator can fit into the cramped space: there only room is under a seat. With the help of the nurse in the aisle, Giuseppe C. employs the Ambu from where he's seated.

Then finally, the moment we are all waiting for... the defibrillator is ready and the analysis begins; the recorded voice says, "Stand back from the patient, analysis underway, do not touch the patient, analysis is underway!"

We make sure that no one is touching the man whilst the defibrillator continues: "analysis underway, do not touch the patient." Then there's us saying, "Get back; move everything out of the way." A few more seconds and the defibrillator says "Administer shock!" The ambulance nurse is far from the defibrillator and can't reach it to press the red button; at this point Giuseppe C. yells, "I'll give the shock, I can reach it, it's near me!" and the nurse says, "Yes, go ahead." and repeats, "Everyone clear? All clear!" The first shock is administered!

The defibrillator immediately says: "Continue CPR." At this point, the other ambulance nurse, who has taken the place of Giuseppe V., starts the massage, whilst Giuseppe C. and the nurse administer

ventilation through the Ambu, alternating turns at CPR with the emergency staff.

“Come on Salvatore, come back to us!” someone yells.

The defibrillator resumes its instructions, and we hear the voice tell us again, “Move away from the patient, analysis underway.” and again “Analysis underway.” A few more seconds of silence go by, then, “Administer shock.”

Elisabetta presses the button for the second round of administration. The second shock is given and the defibrillator

says, “Continue CPR.” Another few minutes of CPR, then Giuseppe C. sees the monitor from the corner of his eye showing that the man’s heartbeat has taken on a steady rhythm, and he yells, “There it is! Don’t administer another shock, do not administer another shock,” meaning that the heart has started beating again.

There he is! The man looks around and someone shouts, “Bravo Salvatore! Bravo!” He’s back! Way to go Salvatore! The nurse, as advised by Dr. Giuseppe V., gives him an adrenaline injection. The patient’s reaction is almost immediate, he even wants to sit up, exclaiming “I’m fine, I’m fine!” Now we’re certain... he’s alive. Thank God!

It seems like only a few minutes have gone by, but in fact we’d been there, resuscitating him, for more than 35 minutes before the defibrillator arrived.

Salvatore has been, how can you say... lucky. He’s alive because for all that time, in unspeakable and undescrivable conditions, we continued to administer BLS, and because the defibrillator arrived! And if the incident had occurred when the plane was already mid-air... ?! All we could have done on-board is give a heart massage! The whole Scubadolphin group is trained in BLS, in giving oxygen, and on how to use a defibrillator; of course, we would have kept taking turns... but would Salvatore have recovered with BLS alone?

The personnel and passengers on-board were convinced that we were doctors; you should have seen their incredulous faces when they heard that we were only people with training and DAN Europe first aid instructors.

We don’t mean to be rhetorical; we just wanted to point out that knowledge and training can mean the difference between the life and death of a human being. Having the right equipment can certainly help the situation, but the person giving assistance must also know how to use it.

On the planet we weren’t able to use any equipment because there wasn’t any equipment. That’s something to think about... Salvatore, even with all the misfortune that took place, the 13th of May was definitely your lucky day.

Best wishes!

Giuseppe V, Giuseppe C, Elisabetta and the Scubadolphin team

A Comment from DAN Training

My compliments to the rescuers, who did an excellent job in rather difficult conditions!

It is always a pleasure to see a life that has been saved thanks to immediate action taken by people who have attended various DAN courses.

This shows how **it is not always possible to give life support in ideal conditions. Notwithstanding, thanks to their training and appropriate response, the lifesavers managed to successfully resuscitate a victim of a sudden heart attack.**

Let's not forget that a **sudden cardiac arrest can happen anywhere and at any moment**; most often it's a case of arrhythmia (Ventricular Fibrillation - VF). CPR (Cardiopulmonary Resuscitation) keeps tissues oxygenated, but hardly ever starts the heart beating again; on the contrary, using an AED (semiautomatic defibrillator) significantly increases the possibility of restarting the heartbeat; bringing the VF back to a normal rhythm, as seen in this case. Regarding the broken rib during CPR, it's not unusual; it's something that can happen even when CPR is given by professionals.

What happened here highlights the **importance of adequate and ongoing training**. It's not enough to have attended one BLS or BLS-D course in the past: the qualification must be kept active (up-to-date).

This is the only way for a rescuer to feel prepared to act, even in difficult situations.

Unfortunately we can ascertain that due to the lack of adequate equipment on-board (in this case an AED), this story could have ended very differently! Also, if the plane had been in flight, the probability that the heart attack victim would have survived is very low.

The oxygen systems that are usually kept on-board planes are not designed for giving oxygen to a nonbreathing person. A resuscitation mask (with or without oxygen supply) is a well-known instrument for divers, but not for the general public, and it is rarely included in common first aid kits.

The [DAN BLS](#) (and [DAN Oxygen Provider](#)) course teaches you how to use resuscitation masks (the Pocket Mask type), but there are few other courses that teach the use of these masks as part of the BLS course.

When you plug a resuscitation mask into the oxygen, you can reach concentrations of 50%. Instead, the use of a Bag Valve Mask allows you to increase the oxygen concentration to up to 97-100%; even if it's not connected to the oxygen, the concentration will still be higher (21%) than that provided by mouth-to-mouth or mouth-to-mask resuscitation (16-17%). **To learn to use a Bag Valve Mask, it is necessary to obtain specialized training, as given in the DAN Advanced Oxygen Provider course.** Ambulances and ambulance crews are equipped with Ambu bags (even though in this situation the mask was in poor condition), and this increases the chance of survival and reduces brain damage.

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