Microstream®
Capnography Used
Resuscitation of a
Near Drowning and
Hypothermia
Patient
Submitted by
Laura Kelly Taylor,
RN, NREMT/P, MSN, CEN
Delta-Cardiff Volunteer Fire Company
Delta, PA USA

Profile
The Volunteer Fire Company received a report of a cardiac arrest at a local
quarry where scuba diving classes are conducted. A medic unit and a heavy
rescue responded and were on scene within five minutes of dispatch.
The crew found bystanders performing CPR on a 57-year-old male. The
patient had been diving at a depth of 30 feet and had been down in the cold
water quarry 22 minutes. He had been found floating face down in the water
and was pulled to a floating dock. The patient weighed about 180 pounds
and had a history of multiple sclerosis.

EtCO₂ monitor used
Microstream® Capnograph with FilterLine® Set on Medtronic Physio-
Control LIFEPAK® 12.

Clinical situation
The crew initiated ventilations with a Bag Valve Mask (BVM) and applied the
AED. Upon being placed in the ambulance, the patient had regained a sponta-
neous pulse. Endotracheal intubation was attempted due to a respiratory
rate of 4 breaths per minute (bpm). During the intubation attempt, the
patient’s respiratory rate increased to 8 to 10 bpm. Attempts to visualize the
vocal cords were unsuccessful, so the patient was nasally intubated with a
#6.0 Endotrrol™ tube using a BAAM™ device.

Clinical data
Bilateral breath sounds were present after intubation but the patient was
extremely difficult to ventilate with the BVM. End tidal CO₂ monitoring was
initiated to confirm tube placement. The initial EtCO₂ reading was

36 mmHg, confirming tracheal tube placement. Subsequent EtCO₂ readings
during the 47-minute transport time to the Level 1 trauma facility ranged
from 39 to 46 with a good waveform. The oxygen saturation ranged from
86% to 92%. The patient required suctioning multiple times and sedation
with diazepam enroute to the hospital. Ventilations were adjusted per the
EtCO₂ reading to keep the EtCO₂ level below 45.