**Title:** Education Intervention Among Artisanal Fishermen of the Yucatan Peninsula, Separating Engine Exhaust Gases from Compressor Intake.

**Introduction Background:** Artisanal fishermen used surface supplied air to dive for sustenance. 100-120 PSIG of air pressure is compressed into a 1-2 cubic feet volume tank via a single stage compressor powered by a 5-6 HP gasoline engine (GE). Entrainment and wind patterns as they relate to gas engine exhaust (GEE) causes carbon monoxide to be compressed into volume tanks\(^1\). Simple separation of GE from compressor intake has been shown to drastically reduced CO in the volume tanks these fishermen use to dive\(^2\). Focus groups and educational interventions in this population of artisanal fishermen divers helped establish a clear intervention model. We wanted to see how efficacious our previous educational interventions were after one-year period among a single fishing village.

**Materials Methods:**
In January 2014 focus group were undertake among the cooperatives in Rio Lagartos, using guide questions about diving history, perceived risks in the diving activity, ways to mitigate risks specifically those related to the diving systems. The data collected provide a better understanding of the fisherman’s concerns of what our intervention would cause, what down sides and possible upsides. We set up an educational workshop. Fishermen from six cooperatives were invited to participate. The workshop focused on a simple explanation of the importance of separation of engine exhaust fumes and compressor intake. Demonstration of this was accomplished via schematics, power point presentations and hands on model. Educational six by six feet color posters explaining in detail the procedures of separating compressor intake and GE exhaust were hung in 6 Fishing cooperatives. After a one-year follow up we visited one of the communities (Rio Lagartos) and counted the amount of boats that had the intervention taught.

**Results:** Based on the posters and the seven boats modified by researchers, 34 boats from the 198 artisanal fleet, which use a hookah system to dive, had the intervention of GEE separation that was taught. The supplies used to the improvements vary between the boats, specifically with the material of the hose; lack of major particles filter at the top was common. The hose was directly connected to the air intake avoiding the aluminum plate recommended.

**Conclusion**
The easily improvements to the dive systems, the efficacy demonstrated and the collaboration of fishermen in the design helps to the adoption by other fishermen. Workshops in other communities needs to be stated as well as follow up in terms to know the impact obtained among population and the efficacy of the improves made by itself. Provide the supplies for the improvements could avoid the use of inadequate materials and ensure the efficacy of the device.

\(^1\)CO and CO2 Analysis in the Diving Gas of the Fishermen of the Yucatan Peninsula. Undersea and Hyperbaric Medicine Journal 2014; 41(5): 480