

1-2020

Scavenger of Waste Anesthetic

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Recommended Citation

Hess, Cary; Karp, Jonathan; Kiani, Delara; Jameson, Corey; Mahla, Michael E.; Herman, Mary; Gravenstein, Dietrich; and Pugliese, Robert S., "Scavenger of Waste Anesthetic" (2020). *Phase 1*. Paper 20.

https://jdc.jefferson.edu/si_des_2022_phase1/20

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Waste anesthetic gases (WAGs) are associated with spontaneous miscarriages in pregnant persons, an increased risk of congenital abnormalities, hepatotoxicity, neurotoxicity, and cognitive impairment. Through monitoring anesthesiologists we found levels of WAGs to be 5-10x the current standard inside the OR. Currently, no solutions exist for the mitigation of WAG release. Remora is a solution to removing WAGs that fits on top of existing anesthesia masks. A flexible skirt is joined to a rigid ring, which deforms under hand pressure to facilitate effective hand-to-mask placement. The suction system is plugged into an unused suction port to create an area under the anesthesia mask that is depressurized, creating circumferential suction around the mask. The negative pressure gradient between the Remora-mask unit and room air pulls WAGs into the gap between the anesthesia mask and Remora, and then into the anesthesia machine's suction system. From there, WAGs are exhausted into the air handling system which receives other waste gases. Using visible gas we were able to show how much WAGs may be escaping during induction and the amount Remora was able to scavenge. While we were unable to quantify our results, we were able to qualitatively show that the amount of gas was significantly less once Remora was turned on. Our hope is to perform further studies to prove that with the use of Remora the concentration of WAGs will decrease in the OR and decrease the negative side effects associated with WAGs.