



JEMS Opinion Paper Paves the Way for Public/First Aid Oxygen

Frisco, Texas, September 28, 2015 – OxySure Systems, Inc. (OTCQB: OXYS) (OxySure, or the Company), the medical device innovator of life-saving easy-to-use emergency oxygen solutions with its “oxygen from powder” technology and other emergency medical solutions, provided commentary today regarding a recent opinion paper published in the Journal of Emergency Medical Services (JEMS). The opinion appears to pave the way for “public/first aid oxygen” usage, prior to the arrival of professional first responders.

JEMS published the opinion piece because many EMS agencies are now implementing training programs for school teachers, school security police and the public for use of tourniquets, Epi pens and other treatment modalities in addition to AEDs, and felt that EMS agencies should be aware of their position on the use and impact of oxygen in a medical emergency. The article also provides guest commentary from Pete Goldman MD, an emergency department physician who’s been an innovator in public involvement in emergency care delivery for decades. In his commentary Dr. Goldman presents an interesting dialogue on the public’s use of oxygen for people with respiratory compromise and in need of emergency care, sometimes in tandem with AEDs.

In large part, the article addresses any remaining unanswered questions regarding EMS use of oxygen by titration to pulse oximetry readings, given that in some EMS areas there is increasing emphasis on the need for EMS to carefully titrate oxygen administration using pulse oximetry. This naturally raises a lingering question about first aid oxygen units that are used by lay responders who don’t have access to pulse oximetry.

Estimated PaO₂ Calculation of First Aid Oxygen Units

FDA-approved first aid oxygen units marketed for the general lay public in the United States are required to have a minimum flow rate of 6 liters per minute (LPM) and a minimum endurance capacity of 15 minutes. In his commentary, Goldman argues that all stock oxygen units (this includes OxySure devices) sold to the lay public use a pocket mask or close variant, or a simple rebreather mask as the delivery device, and most have continuous flow rates from 6–7 LPM. A pocket mask, when used for a breathing patient, is effectively equivalent to a medium concentration simple rebreather mask that, for quiet breathing patients with flow rates of 5–10 LPM, presents oxygen concentrations in the range of approximately 35–70%.

Goldman adds that this was demonstrated in a study on healthy volunteers by Peter Safar, MD, in 1974. Dr. Safar is widely credited with pioneering cardiopulmonary resuscitation (CPR). Interpolating Safar’s oxygen concentration from flow rate data, and using the “rule of 5” that respiratory therapists employ to estimate PaO₂ (partial pressure of oxygen in arterial blood) for quiet breathing from the oxygen concentration provided, namely multiplying the concentration by 5, yields approximately 265 mmHg (millimeters mercury) for a concentration of 53% from a 6 LPM flow rate into a pocket mask. This would present a concentration of 57% from a 7 LPM flow rate and the PaO₂ would be estimated at approximately 285 mmHg. In terms of partial pressures, plasma normoxia is defined as ranging from 60 to 300 mmHg PaO₂. Hyperoxia (occurring when tissues and organs are exposed to an excess supply of oxygen) occurs at plasma PaO₂s in excess of 300 mmHg, and hypoxia (a deficiency in the amount of oxygen reaching organs and tissues) occurs at oxygen partial pressures below 60 mmHg.

PaO₂ Likely Lower Than Calculation Estimate

Goldman further states that there are also several other points that EMS and first responder agencies should consider about the oxygen being delivered by oxygen units deployed by the general public:

- Hyperventilation (tachypnea and/or hyperpnea) also lowers the oxygen concentration in the mask because the oxygen source is a continuous flow. In terms of oxygen concentration, this creates an underestimate of actual oxygen delivered over time.
- Rescue breathing provides a lowering of oxygen concentration in the mask due to the approximately 5% lower oxygen concentration of the provider's breath (16% compared to ambient 21% oxygen) that mixes with the source oxygen inside the mask. And, the underlying condition requiring rescue breathing likely further reduces any resultant PaO₂. The above estimated numbers are based on a healthy individual with no leakage around the mask rim, which would also reduce concentration.
- Unhealthy individuals, particularly those with pulmonary deficit, and those with decreased perfusion, would necessarily have lower PaO₂s with the same concentrations. In addition, the mask seal in lay first aid response is often imperfect.

Therefore, Goldman argues, with a good seal, quiet breathing of oxygen in a healthy individual would provide the highest concentration per given flow rate to calculate PaO₂.

The conclusion of the opinion paper is that FDA-approved stock first aid oxygen units, with flow rates of 6–7 LPM, are probably safe to use without pulse oximetry. Supporting this, Goldman's own PaO₂ at the end of 5 minutes of quiet breathing from a stock first aid oxygen unit delivering a confirmed 6.8 LPM flow into a pocket mask with a tight seal was 222 mmHg, well below the threshold for hyperoxia.

“The JEMS opinion confirms our belief that FDA-approved first aid oxygen units that are used by lay responders who don't have access to pulse oximetry are safe to use, because at flow rates of 6-7 LPM the highest oxygen partial pressure reachable using these stock oxygen units is 285 mmHg, which falls within the plasma normoxia range of 60 to 300 mmHg PaO₂,” said Julian Ross, CEO of OxySure Systems, Inc. “We have always believed that to improve medical outcomes the significant risks associated with hypoxia in a medical emergency have to be addressed as soon as possible after its onset. The JEMS opinion lays to rest any concerns about “over-oxygenation” in certain situations, and provides EMS and lay rescuers peace of mind regarding the use of FDA-approved first aid oxygen units on an emergency basis prior to the availability of pulse oximetry (usually upon the arrival on the scene of trained first responders).”

A copy of the JEMS opinion can be found here: <http://www.jems.com/articles/2015/08/is-first-aid-public-use-of-oxygen-safe-without-oximetry.html>

About OxySure Systems, Inc.

OxySure Systems, Inc. (OXYS) is a medical technology company that focuses on the design, manufacture and distribution of specialty respiratory and medical solutions. The company pioneered a safe and easy to use solution to produce medically pure (USP) oxygen from two dry, inert powders. The company owns numerous issued patents and patents pending on this technology which makes the provision of emergency oxygen safer, more accessible and easier to use than traditional oxygen provision systems. OxySure's products improve access to emergency oxygen that affects the survival, recovery and safety of individuals in several areas of need: (1) Public and private places and settings where medical emergencies can occur; (2) Individuals at risk for cardiac, respiratory or general medical distress needing immediate help prior to emergency medical care arrival; and (3) Those requiring immediate protection and escape from exposure situations or oxygen-deficient situations in industrial, mining, military, or other "Immediately Dangerous to Life or Health" (IDLH) environments. *In addition to oxygen products for public/lay responder usage, OxySure also markets emergency medical solutions including AEDs, Bleeding Control solutions, resuscitation products and pulse oximetry products.* www.OxySure.com

Forward-Looking Statements

This release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Statements contained in this release that are not historical facts, including, without limitation, statements that relate to the Company's expectations with regard to the future impact on the Company's results from new products in development, may be deemed to be forward-looking statements. Words such as "expects", "intends", "plans", "may", "could", "should", "anticipates", "likely", "believes" and words of similar import also identify forward-looking statements. These statements are subject to risks and uncertainties. Forward-looking statements are based on current facts and analyses and other information that are based on forecasts of future results, estimates of amounts not yet determined and assumptions of management. Readers are urged not to place undue reliance on the forward-looking statements, which speak only as of the date of this release. Except as may be required under applicable law, we assume no obligation to update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this release. Additional information on risks and other factors that may affect the business and financial results of OxySure Systems, Inc. can be found in the filings of OxySure Systems, Inc. with the U.S. Securities and Exchange Commission.

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