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USCOM cost effective replacement for ICU Ultrasound

New evidence for USCOM 1A guidance of fluid and cardiovascular therapy in critical care

SYDNEY, Australia, Monday 9th October 2017: Uscom Limited (ASX code: UCM) (the **Company** or **Uscom**) announced the publication of a study demonstrating excellent correlation and agreement (96% and 95%) of the USCOM 1A with echocardiography, the current gold standard, for measurement of heart function. The USCOM 1A also identified the need for fluid with excellent sensitivity and specificity (95%) in the prospective, observational, multi-centre trial of 121 ICU patients.

Fluid is the most common critical care and peri-operative intervention in critically ill neonates, children and adults, with more than 50% of all fluids currently used being unnecessary or harmful. Fluid management remains one of the great clinical challenges in medicine, with particular relevance in paediatrics, anaesthesia, critical care and sepsis. An accurate and widely adopted solution to this problem has potentially enormous cost effectiveness benefits for medicine worldwide. This study demonstrates the USCOM 1A to be a cost effective solution to this problem.

A recent study of fluid administration in 655,426 patients having routine surgery across 524 US Hospitals found that more than 50% of all patients received too much or too little fluid, and this was associated with increased length of hospital stay, increased complications and increased cost of care. The current study found USCOM 1A use resulted in 95% of patients receiving appropriate fluid, suggesting improved care, significant cost savings and reduced in hospital stay.

Previously invasive BP monitoring devices, such as PiCCO, LiDCO, FloTrac, were demonstrated to fail in free breathing patients, those with cardiac dysrhythmias, and in those with serious diseases such as sepsis. The noninvasive USCOM 1A device, which directly measures blood flow, was shown to demonstrate high levels of effectiveness even in the most difficult ICU patients.

While Echocardiography is considered accurate the American Society of Echocardiography don't recommend its use as a monitor as it is complex to implement, is time consuming (45 minutes per exam), requires years of training and accreditation, and its use is not yet supported by evidence. However, USCOM has been demonstrated to have a short learning curve (two days training), is simple to implement (less than 5 minutes per exam), is relatively inexpensive, and has widespread proof of effectiveness. The current market for echocardiography is in the order of \$1.5B and growing.

Executive Chairman of Uscom, Associate Professor Rob Phillips said, *"This is the kind of evidence we need to support widespread adoption in cost stressed global health systems. Not only is USCOM 1A equivalent to the current gold standard but it increases the accuracy of identifying fluid responsiveness from 50% to 95%, and is applicable in the most complex of ICU patients. This evidence demonstrates that patients examined using USCOM 1A receive improved and cost-effective cardiovascular care. A number of public health groups in the USA are purchasing USCOM 1A across their organisation so they can implement non-invasive advanced haemodynamics and this new Australian data should accelerate this adoption."*

Reference: Elgendy A, Seppelt IM, Lane AS. Comparison of continuous-wave Doppler ultrasound monitor and echocardiography to assess cardiac output in intensive care patients. Crit Care Resusc 2017; 19: 222-229 Thacker JKM, Mountford WK, Ernst FR, Krukas MR, Mythen MG. Perioperative Fluid Utilization Variability and Association With Outcomes Considerations for Enhanced Recovery Efforts in Sample US Surgical Populations. Annals of Surgery 2016, 263(3):502-510. doi: 10.1097/SLA.0000000000001402. Porter TR, Shillcutt SK, Adams MS, et al. Guidelines for the Use of Echocardiography as a Monitor for Therapeutic Intervention in Adults: A Report from the American Society of Echocardiography. J Am Soc Echocardiogr 2015;28:40-56. <https://www.technavio.com/report/global-echocardiography-market-2017-2021>



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About Uscom

Uscom Limited (UCM): An ASX listed innovative medical technology company specializing in development and marketing of premium non-invasive cardiovascular and pulmonary medical devices. Uscom has a mission to demonstrate leadership in science and create noninvasive devices that assist clinicians improve clinical outcomes. Uscom has three practice leading suites of devices in the field of cardiac, vascular and pulmonary monitoring; the USCOM 1A advanced hemodynamic monitor, Uscom BP+ central blood pressure monitor, and the Uscom SpiroSonic digital ultrasonic spirometers. Uscom devices are premium resolution, noninvasive devices which deploy innovative and practice leading technologies approved or submitted for FDA, CE, CFDA and TGA regulatory approval and marketing into global distribution networks.

The USCOM 1A: A simple to use, cost-effective and non-invasive advanced hemodynamic monitor that measures cardiovascular function, detects irregularities and is used to guide treatment. The USCOM 1A device has major applications in Pediatrics, Emergency, Intensive Care Medicine and Anesthesia, and is the device of choice for management of adult and pediatric sepsis, hypertension, heart failure and for the guidance of fluid, inotropes and vasoactive cardiovascular therapy.

The Uscom BP+: A supra-systolic oscillometric central blood pressure monitor which measures blood pressure and blood pressure waveforms at the heart, as well as in the arm, information only previously available using invasive cardiac catheterization. The Uscom BP+ replaces conventional and more widespread sub-systolic blood pressure monitors, and is the emerging standard of care measurement in hypertension, heart failure and vascular health. The Uscom BP+ provides a highly accurate and repeatable measurement of central and brachial blood pressure and pulse pressure waveforms using a familiar upper arm cuff. The BP+ is simple to use and requires no complex training with applications in hypertension and pre-eclampsia, heart failure, intensive care, general practice and home care. The Uscom BP+ is supported by the proprietary **BP+ Reporter**, an innovative stand-alone software solution that provides a digital platform to archive patient examinations and images, trend measure progress over time, analyze pulse pressure waves and generate a summary report.

Uscom SpiroSonic digital multi-path ultrasonic spirometers: High fidelity, digital, pulmonary function testing devices based on multi path ultrasound technology. They are simple and accurate to use and provide research quality pulmonary function testing in small hand held devices that can be used in research, clinical and home care environments. The devices can be coupled with mobile phone applications and proprietary SpiroSonic software platforms with wireless interfacing to provide remote tele-monitoring of pulmonary disease. The devices are specialized for assessment of COPD, sleep disordered breathing, asthma, industrial lung disease and monitoring of pulmonary therapeutic compliance. The SpiroSonic devices are supported by the proprietary **SpiroReporter**, an innovative stand-alone software solution that provides a digital platform to archive patient examinations and images, trend measure progress over time, analyze spirometry outputs and generate a summary report.

For more information, please visit: www.uscom.com.au

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