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New Welch Allyn Blood Pressure Averaging Technology Improves Diagnosis

Welch Allyn, a leading global provider of frontline medical products and solutions, recently introduced Office Profile, a new enhancement for the Welch Allyn Connex® Vital Signs Monitor (VSM) which provides a unique, adaptable blood pressure averaging program that helps healthcare providers conduct blood pressure measurement in patients with a precision and ease lacking in traditional devices. Now available across Canada, the new Office Profile improves existing technology by offering clinicians the option to take numerous automated blood pressure readings in succession and then average them for complete and accurate measurements.

“Misdiagnosis of hypertension can occur for multiple reasons,” said Shawn St. Pierre, senior manager of Vital Signs Marketing at Welch Allyn. “In-office measurements can vary based on technique of the examiner, equipment being utilized for blood pressure measurements and attributes of the patient’s health, as well as activities the patient has participated in during the day of the exam. Even the most seemingly inconsequential factors can cause variability in systolic and diastolic blood pressure such as talking during the exam or placing the cuff over the patient’s clothing. Providing multiple automated readings as well as an average result is designed to help mitigate these anomalies.”

A broad range of studies reviewed by the National High Blood Pressure Education Program show average blood pressure measurement errors between 5-15mmHg.*1 Given that the classification of patients as pre-hypertensive or hypertensive has as little as 20mm Hg difference between them, it is becoming increasingly important to get the most accurate blood pressure readings in order to reduce the risk of misdiagnosis.

The White Coat effect is described as the transient alerting reaction which causes elevated readings that is invoked by in-office blood pressure measurement. In a study done by Mancia Paroti and Pomidossi titled the Alerting Reaction and Rise in BP during Measurement by Physician and Nurse, a physician’s presence was observed to effect blood pressure readings by as much as 22/14mm Hg. Norman Kaplan’s text on Clinical Hypertension recommends that “in order to reduce the alerting reaction, patients should relax in a quiet room and halve multiple readings taken with an automatic device.” (Myers et al., 2009)

In response to the prevalence of multiple factors that can lead to misdiagnosis or inaccurate readings, The American Heart Association recommends two blood pressure readings be taken with a one minute interval between them and the average recorded.

The new Welch Allyn Office Profile was created to allow the physician to configure his/her preferred averaging protocol for their practice. It also connects directly to an electronic health record (EHR) and reduces the time spent on manual transcription and the possibility for transcription errors.

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Since a significant portion of hypertension diagnosis is based on measurements relative to established blood pressure ranges, measurement accuracy is critical to a proper diagnosis," added St. Pierre. "In particular, the most sensitive range for diagnosis is between 120 mmHg and 140 mmHg systolic where a patient can be classified as normotensive, pre-hypertensive, or hypertensive. Blood pressure averaging helps minimize the alert effect (tendency for the first reading to be high) associated with the white coat hypertension observer effect, and yields an accurate representation of the patient's blood pressure."

Effective May 7, 2013 all Connex VSM 6300 series have Office Profile pre-loaded on the device. Current customers with Connex VSM 6400 or 6500, can receive the new Office Profile feature by contacting Welch Allyn Customer Care at 1-800-561-8797. Subscribers to the Welch Allyn Partners in Care Comprehensive Service Plan will also receive a free 9-cell battery, providing longer-lasting time between charges, with the Office Profile upgrade.

A study released today by George Washington University School of Public Health and Health Services (SPHHS) researchers offers an in-depth look at hospitals nationwide and admissions to intensive care units (ICU). The study, published in the journal Academic Emergency Medicine, finds a sharp increase—nearly 50 percent—in ICU admissions coming from U.S. emergency departments.

"These findings suggest that emergency physicians are sending more patients on to the ICU," said SPHHS researcher and lead author Peter Mullins. "The increase might be the result of an older, sicker population that needs more care." The larger question, one that this study couldn't answer, is whether there will be enough ICU capacity in the future to accommodate the growing number of patients, particularly the oldest of the old, the authors said.

Mullins and his colleagues conducted the study by using data from the National Hospital Ambulatory Care Survey, a sample of U.S. hospital-based emergency departments during a seven-year period. They found that ICU admissions jumped from 2.79 million in 2002-2003 to 4.14 million in 2008-2009. The study also shows that during the same time frame overall emergency department admissions grew by only 5.8 percent.

Other key findings of the study:
• ICU admissions grew the most among patients aged 85 and older—increasing 25 percent every two years.
• Utilization of tests and services provided to emergency department patients on their way to the ICU also jumped during the study period, with the largest rise occurring in computerized tomography (CT) or magnetic resonance imaging (MRI) tests. In fact, CT and MRI tests provided while still in the emergency department increased from 16.8 percent to 37.4 percent.
• The most common reasons for ICU admissions were symptoms such as chest pain or shortness of breath that can signal life-threatening conditions like heart attacks.
• On average, patients had to wait five hours in the emergency department before getting into the ICU.

Additional research must be done to find ways to keep critically ill patients from facing long waits in crowded emergency departments, said co-author Jesse Pines, MD, MBA, MSCE, a practicing emergency physician and an associate professor of emergency medicine and health policy at SPHHS.

"Studies have shown that the longer ICU patients stay in the emergency department, the more likely they are to die in the hospital," Pines said. "Better coordination between the emergency department and ICU staff might help speed transfers and prevent complications caused by long emergency department waits," he said.

Mullins, Pines and Munish Goyal, MD, at the Washington Hospital Center, published the study, "National Growth in Intensive Care Unit Admissions from Emergency Departments in the United States from 2002 to 2009," in the journal Academic Emergency Medicine.

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