Data Acquisition System | Customer Success

CliniComp Data Acquisition Builds a More Resilient Health System: A Case Study

WALTER REED NATIONAL MILITARY MEDICAL CENTER, WASHINGTON DC

Annual inpatient admission.............................9,784

Staffed beds............................215

Clinical Users.........................2,640

CliniComp's Critical Care solution installed. Customer since 1997.

JAMES H. QUILLEN VA MEDICAL CENTER, JOHNSON CITY, TENNESSEE

Annual inpatient admission.........................6,884

Staffed beds.........................316

Veterans in Primary Service Area.........................36,164

CliniComp's Critical Care solution installed. Customer since 2017.

Walter Reed National Military Medical Center

Walter Reed National Military Medical Center and James H. Quillen VA Healthcare System gain multiple benefits advancing critical care delivery and care management.

Data acquisition integrated with patient monitoring devices and the enterprise electronic health record (EHR) system offers a much-needed layer of safety and insights at the point of care for critical care observation and actionable decision-making.

This case study highlights the realized benefits experienced by clinicians using the CliniComp Universal Data Acquisition System (UDAS) to facilitate highly efficient workflows and better team collaboration in the delivery and management of patient care.

Data acquisition capabilities provide important real-time data insights to inform clinical decisions, bolstering greater awareness of patient safety - a chief job satisfier and determinant of a more positive workplace for physicians, nurses, and other staff members.

CliniComp's Medical Device Integrator

CliniComp is an innovator in real-time clinical data acquisition and interoperable medical device connectivity over the network since 1986. CliniComp's UDAS has significantly evolved over three decades to securely capture,

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transmit, and display physiological data in real time for critical care observations, measurements, and patient care management.

A vendor-neutral solution, UDAS aggregates and normalizes data from hundreds of serial and network connected point-of-care medical devices such as monitors and ventilators, producing structured, actionable information that is immediately available to the patient's care team.

Patient surveillance data is collected in one place via waveforms, invasive pressure waves, monitor alarms, parameters, signals and sensors, events and other data types presented in digital visual formats.

Varied clinical data insights can include: uterine contraction waveforms and pediatric and adult ECG cardiac waveforms; non-invasive and invasive blood pressure measurement; sedation monitoring (EEG, Bispectral Index); monitoring breathing rates; vital signs; alarm-based fetal surveillance; dialysis and more. This data provides both quantifiable and qualitative benefits in assessing the status of a critically ill patient's condition.

Learn how two military provider organizations' critical care and other units achieve important care performance and operational efficiencies using the UDAS. The comprehensive, holistic data collected in real time for each patient helps formulate medical diagnoses that lead to better outcomes.

The Workflow and Real-Time Data Access Differential in Critical Care

Walter Reed National Military Medical Center is one of the nation's most prominent military medical centers in the Washington, D.C. metro area and one of CliniComp's earliest data acquisition adopters.

Located in the community of Bethesda, Maryland, Walter Reed National Military Medical Center has successfully integrated data acquisition capabilities into its daily patient critical care processes for nearly a quarter century.

The medical center currently uses UDAS to capture data from fetal monitors, incubators, ventilators, physiological and cardiac output monitors and other connectable bedside devices in labor and delivery (L&D), the neonatal intensive care unit (NICU), and the intensive care unit (ICU).

> CliniComp is an innovator in real-time clinical data acquisition and interoperable medical device connectivity.

James H. Quillen VA Medical Center

The UDAS provides data acquisition capability via serial medical devices, streaming the data directly to host servers and then to workstations hospital wide. This type of UDAS-device connectivity decreases the risk of human error from manual transcription, while creating flexibility to add more devices to data acquisition, enriching the EHR longitudinal record and clinical surveillance.

The resulting efficiencies enable clinicians to spend more quality time with patients, focusing on their emotional and physical needs to optimize outcomes.

Similarly, the **James H. Quillen VA Healthcare System** in Mountain Home, Tennessee, provides a full range of patient care services to 170,000+ veterans living in a 41-county area of Tennessee, Virginia, and Kentucky.

James H. Quillen VA Healthcare System currently uses the UDAS to integrate serial and network connected device data in critical care units to their EHR system. The data is aggregated from physiologic monitors, respiratory ventilators, intra-aortic balloon pumps and dialysis machines in ICUs and specialty care units.

The CliniComp UDAS :

- Provides data acquisition
- Streams data directly
- Decreases risk of human error
- Creates flexibility to add more devices
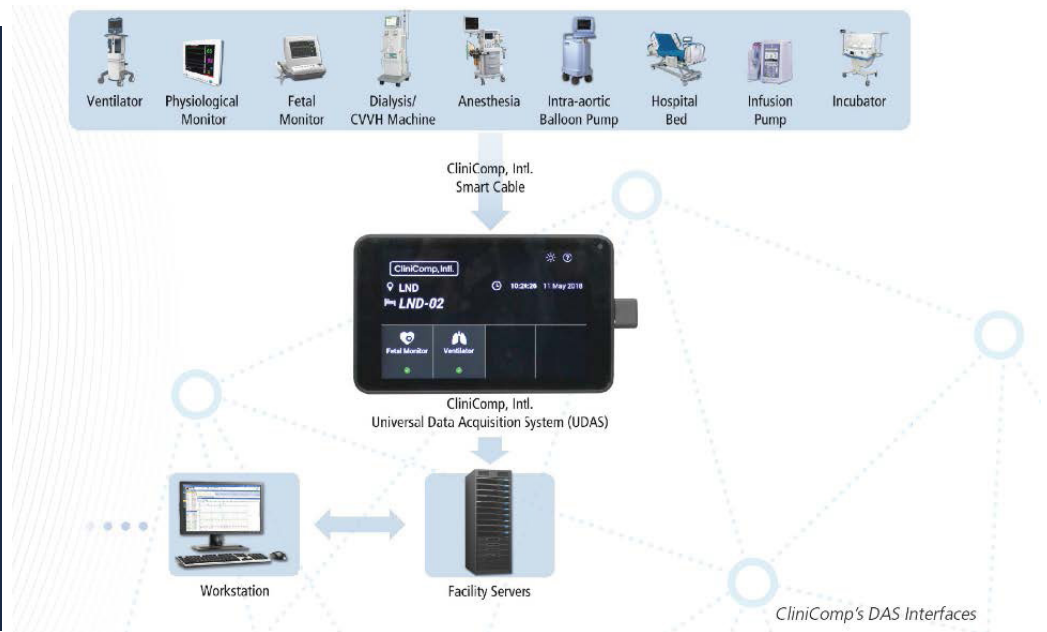
UDAS pulls data from patient monitoring devices to populate the enterprise EHR system and workstation screens.

Pre- and post-implementation of UDAS

Germain Allen, MS, BSN, R.N., Branch Chief, Clinical Systems, who was employed at Walter Reed National Military Medical Center prior to the implementation of CliniComp's Universal Data Acquisition System in April 1997, recalls the time lags and human error-prone issues endured at times from manual data entry processes.

With the deployment and rapid usage of UDAS over time, he has observed that the facility's automatic capture of device data generated more accurate, faster, and easier flow of patient health information into the CliniComp system. The organization, with the help of CliniComp's interfacing expertise, took a step further to add new devices over the years.

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Since the automatic aggregation of enriched device and monitor information is synchronized in near real time, Walter Reed National Military Medical Center is assured of data integrity and completeness of the patient longitudinal record, at any time and at any workstation.

At James H. Quillen VA Healthcare System, the UDAS was the facility's first data acquisition system implemented in November 2017.

Previously, the clinical staff was faced with the burden of printing paper strips every 15 minutes. The staff would then review, sign, and submit every individual waveform data strip to the patient's electronic chart for scanning. The scanned strips eventually became part of the patient's electronic record but only after a time lag. UDAS eliminated this manual data entry by automating the capture and transfer of real-time device data.

"CliniComp allows the doctors and other practitioners to see real-life, real-time data at any time."

AMBER GRUBB, MSN, RN, CNL
CLINICAL NURSE LEADER
JAMES H. QUILLEN VA MEDICAL CENTER

Clinical Summary on CliniComp|EHR for complete patient review

"Today, you can see onscreen what's occurring with the patient's condition and compare the data to nursing notes to check activities, for example, the blood pressure dropping while the staff happens to be turning the patient at the same time," explained Amber Grubb, MSN, RN, CNL, Clinical Nurse Leader SCU, BG, D1 at James H. Quillen VA Medical Center. "CliniComp allows the doctors and other practitioners to see real-life, real-time data at any time."

Multiple benefits advance critical care delivery and care management

PATIENT SAFETY

At Walter Reed National Military Medical Center, UDAS helped reduced the risk for human error by removing the need to assign a nurse or corpsman to manually record device-captured numbers at the bedside.

> "The device integration permits our clinical team to focus more on patient care attending to the individual's emotional and physical needs, while also streamlining workflow."
>
> **GERMAIN ALLEN, MS, BSN, R.N., FORMER BRANCH CHIEF | CLINICAL SYSTEMS WALTER REED NATIONAL MILITARY MEDICAL CENTER**

"The device integration permits our clinical team to focus more on patient care attending to the individual's emotional and physical needs, while also streamlining workflow," Allen said. "Nurses no longer have to worry about missing their window of opportunity at the bedside to document X, Y and Z. The UDAS automates the device data entry process accurately and at the right time."

Allen added that the enriched data from the add-on devices aid in the creation of diagnostic and treatment plans. "If clinical staff were titrating medications for blood pressure, urine output or other bodily functions, they could immediately see the effect of those number changes, which helped further the management of the patient's care," he said.

Tara Davis, MHA, MBA, BSN, RN-C, Quality Management Analyst, SAIL Champion at James H. Quillen VA Medical Center, found the UDAS reporting equally helpful. She remarked on the resourcefulness of the CliniComp | EHR built-in reports created by UDAS data for critical care quality management.

COLLABORATIVE DECISION-MAKING

The two decades of use of UDAS at Walter Reed National Military Medical Center – and particularly the patient data displayed in real time – vastly helped to create a collaborative team environment among clinical staff members.

"Communication between staff greatly improved," Allen recalled. "We had device data entered through one workstation and immediately shared throughout the critical care unit and hospital.

The Cincinnati, Ohio - based telehealth ICU care team that supports James H. Quillen VA Healthcare System uses data acquired from the UDAS on their dashboard to display the integrated patient surveillance data. The information informs care decisions as well as identifies health trends.

INTEROPERABILITY

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As an interoperability benefit, Walter Reed National Military Medical Center's longitudinal health record augmented with the UDAS data is the de facto central data repository accessible 24/7 at any workstation. This means that clinicians can check their critical care patient's status including blood pressure, for example, on any floor, in any department.

Beyond the military treatment facility, the UDAS data is shared with participating health information exchanges (HIEs), facilitating remote collaboration of a patient's well-being with care team members beyond the hospital while helping drive population health initiatives.

Furthermore, interdisciplinary care teams who interact with critical care units at James H. Quillen VA Healthcare System can consult the UDAS data for different purposes at any workstation enterprise wide.

SECURITY

"The CliniComp UDAS solution is secure, and no breaches have ever occurred at Walter Reed National Military Medical Center," remarked Allen.

Contact us for more information

"Our clinicians and medical professionals outside our organization hold a high level of confidence for both the confidentiality and the integrity of the clinical data."

REMOTE PATIENT MONITORING LEADS TO HIGHER PATIENT SATISFACTION

Walter Reed National Military Medical Center L&D unit has remote dashboard displays integrated with UDAS data situated throughout the floor. This remote surveillance creates an opportunity for nurses to monitor their patients as well as other patients unassigned to them but who may be in need of attention.

"For example, nurses can be in the breakroom monitoring different moms down the hall," Allen said. "The dashboard's up-to-the-minute data remote display gives them the ability to check and respond to more than one patient in different areas of the L&D."

The Fetal Monitor Remote Display with Smart Alerts (FMRDSA) has led to reports of greater patient satisfaction and the perception of the quality and attentiveness of patients' perinatal care experience.

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"Patients feel they are receiving a higher level of care," Allen noted, explaining that L&D staff have more time to respond to direct patient care. "Even small needs are noticed like delivering a blanket or refilling a cup of water all translate to a happier patient," he said.

CONTINUITY OF CARE

In the emergency department, Walter Reed National Military Medical Center clinicians use ED specific dashboards supplemented with UDAS data to seamlessly track every patient who walks in the door.

Physicians use the data to access and time-stamp factors impacting throughput of the patient's entering and exiting the ED. They also use the dashboard's UDAS data to order tests and medications while, at the same time, checking every patient's record to ensure their treatment is consistent with the physician's orders, ensuring continuity of care.

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Seamless vendor-neutral integration with multiple device categories and manufacturers

The CliniComp UDAS supports networked devices in the following categories including, but not limited to:

- Ventilators
- Physiological Monitors
- Fetal Monitors
- Continuous Renal Replacement Therapy Devices
- Anesthesia Machines
- Intra-aortic Balloon
- Pumps
- IV Pumps
  Sedation Monitors

Summary

Critical care units by design are data-intensive environments. The dedicated healthcare professionals who work in these specialty care areas - the ICU, L&D, NICU, emergency department and perioperative surgical areas - have long recognized the importance of the data acquisition system. They rely heavily on the integrated data collection technology solution to help affect health outcomes in a critically ill or injured patient.

For that reason, precise time-stamped physiologic information is a tremendously valuable data asset in critical care environments spanning neonatal to adult populations. Decisions made within minutes or seconds in a setting of a high degree of uncertainty are dependent on accessing this enrichment of information acquired in real time from round-the-clock monitoring.

For more information on CliniComp's suite of solutions and technology to simplify clinical workflow, alleviate IT complexities, and promote fiscal vitality, please contact us at:

1.800.350.8202

or visit us at:

www.clinicomp.com

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