MetaVisionSuite®

iMDsoft®

The University Hospital of Lausanne (CHUV) increases quality of nutritional support in ICUs and improves newborn care with MetaVision

MetaVision helps CHUV to reduce malnutrition, minimize ICU patient weight loss, and identify potentially dangerous conditions in newborns

Hospital profile

The University Hospital of Lausanne (CHUV) is a leading hospital in Switzerland which admits 43,500 patients annually. Through its collaboration with the Faculty of Biology and Medicine at the University of Lausanne, CHUV plays a leading role in the areas of medical care, medical research, and training. MetaVision is installed in the hospital's cardiovascular, burn, surgical, neonatal and pediatric intensive care units.

The need

CHUV sought a clinical information system to increase the accuracy of their patient data and reduce their nurses' clerical workload. Hospital management needed a system to facilitate quality control initiatives, and provide notifications of potentially dangerous events. As a university teaching hospital, CHUV required the ability to easily extract information from the patient database for research purposes and for reporting.

The solution

In 1999, MetaVision was first implemented in the hospital's surgical ICU, extending to the entire ICU (32 beds) over three years, and later to the cardiac surgery intermediate care. In 2006, the Clinic of Neonatology implemented MetaVision, and became the hospital's largest user of the system, with 37 units installed. The Clinic of Neonatology serves as the tertiary perinatal center for a perinatal network with about 14,000 live births annually, serving most of the French speaking area of Switzerland.

According to Dr. Matthias Roth-Kleiner, PD & MER, Staff Neonatologist, one of the greatest advantages of using MetaVision in the Clinic of Neonatology is that patients benefit from uninterrupted data recording for the entire duration of their hospitalization. Beginning directly after the resuscitation procedure in the delivery room the patient's data, including vital parameters, incubator and ventilator settings, and laboratory results, is registered and displayed by MetaVision. As a result of this comprehensive recording process, clinicians can monitor patients closely and survey the complete dataset of each patient's hospitalization from birth until discharge home or to Level II or Level I clinics.

CHUV's staff has reported ease of use and customization as key advantages of MetaVision. The hospital was able to implement functionalities tailored to the specific workflows of their different units, while maintaining a single standardized patient database across clinical departments. CHUV has saved on integration costs due to MetaVision's interoperability with other systems.

At a Glance

Hospital Profile

> Leading hospital in Switzerland
> Admits 43,500 patients annually
> Active in medical care, medical research, and training

The Need

> Reduce clinician clerical workload
> Facilitate quality control
> Easily extract data for reporting and research

***i*MD*soft* Solution**

MV-ICU™, ***i*MD*soft***'s Clinical Information System for ICUs

Results

> Shortened reporting time by 30 minutes per shift
> Mean increase of energy delivery by 415 calories per day per ICU patient
> 5 kg less weight loss per burn patient
> Safer, more accurate testing for newborns

Results

Clinicians at CHUV report that MetaVision improves patient safety and treatment accuracy, and has a significant impact on their daily workload. MetaVision gathers data from many disparate sources and presents a unified patient record, reducing the chances of clinicians missing essential data. MetaVision sends out warnings about potentially life-threatening situations and assists with prescriptions by suggesting alternatives according to a given algorithm.

At CHUV, MetaVision shortened the time required for computations and clerical reporting by 30 minutes per shift, enabling clinicians to spend more time on patient care. Additionally, MetaVision helps quality control efforts by mandating adherence to established guidelines.

Better nutrition for ICU patients

CHUV studied the impact of MetaVision on malnutrition, revealing a significant improvement in care. Malnutrition in ICU patients is a serious concern, associated with increased infectious morbidity, prolonged hospital stay, and increased mortality. They showed that the use of MetaVision led to improved nutritional support through easy visualization of the nutritional intervention and prescription standardization. These improvements led to better follow-up, a nutrient delivery closer to the energy target (mean increase of energy delivery by 415 calories per day in all patients), and less weight loss for burned patients (5 kg less weight loss per patient). In fact, their study showed that use of MetaVision almost doubles the percentage of patients who receive adequate nutrition within 4 days in the ICU. [1]

Graph showing the progression of the daily energy balance, with rate and type of feeding shown in the Gantt

Safer, more accurate testing for newborns

CHUV's clinicians have praised MetaVision's rich source of reliable data and unique querying capabilities as extremely effective for research purposes. Based on data gathered by MetaVision, CHUV has now published more than twelve papers in international journals, resulting in improved care quality.

CHUV performed research on newborns that was only possible by querying cases using MetaVision, and which resulted in better patient care. Low blood sugar (hypoglycaemia) is a dangerous condition for babies, which can have devastating effects on their long-term development. However, this condition is difficult to detect, as often there are no symptoms. Clinicians are faced with the challenge of how to test for hypoglycaemia without extracting excessive amounts of blood from newborns. Using their database of 30,000 glycaemia entries in MetaVision, CHUV was able to determine the accuracy of new point-of-care blood testing devices without performing potentially detrimental blood testing of neonates[2]. As a result of this study, an ineffective point-of-care blood testing device was determined to be inaccurate, and was taken off the market for neonatal hypoglycaemia screening purposes.

1.Berger MM, Bouvry S, *et al*. Impact of a computerized information system on quality of nutritional support in the ICU. Nutrition 22 (2006): 221–229.

2.Roth-Kleiner M, Stadelmann DC, *et al*. Evaluation of different POCT devices for glucose measurement in a clinical neonatal setting. European Journal of Pediatrics 169: 11 (2010): 1387-95.

> ***"MetaVision has made nutrition information visible to nurses and clinicians, enabling anticipation of nutrient delivery and preventing the build-up of energy deficit. This holistic view of the patient improves treatment integration as well as patient safety and treatment accuracy."***
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