

**UZ Brussel develops electronic modified early warning score**

## 10 % less deaths as a result of faster monitoring of vital functions?

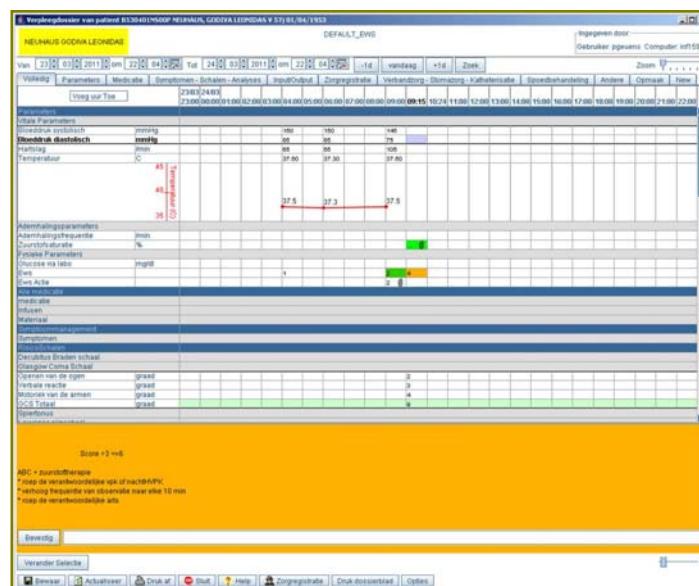
University Hospital Brussels (UZ Brussel) has developed an electronic device which makes it possible to respond more rapidly to changes in patients' vital functions. This software enables to anticipate serious complications and to undertake timely preventive treatment. Using this software can diminish the number of unexpected deaths and complications by at least 10%.



Changes in vital functions (blood pressure, temperature, respiration...) often go undetected or are spotted too late, their severity remains underestimated and lack of knowledge or experience may prevent an adequate response. It is unmistakably important to respond rapidly to changes in vital functions among hospital patients. Identifying and prompt treating such alterations in vital functions can indeed help to prevent life threatening complications. A team at UZ Brussel led by Prof. Dr Ives Hubloue and Door Lauwaert has developed a device which solves this

problem by improving decision-making processes and thereby diminishing the number of complications: the Electronic Modified Early Warning Score (e.m.EWS). This involves an early alarm so as to ensure rapid intervention in cases where patients' condition may be rapidly and unexpectedly deteriorating.

Up till now, despite the existence of guidelines, every caregiver interpreted the consequences, for example, of faster breathing in a subjective manner. E.m.EWS helps to standardise and objectivise such interpretations. When a doctor or nurse inputs vital functions data into a patient's electronic file, the programme will automatically calculate a score between 1 and 6. The higher the score, the faster caregivers should respond. They can therefore often respond even before deterioration of the patient's condition. For example, the first signs of cardiac arrest may already be apparent from up to 6 hours in advance.



The early warning score has been extensively tested within 2 nursing units. The results were

overwhelming: during the first test period there were at least 10% less unexpected deaths and more than 85% less call ups for the hospital Medical emergency Team (MET) compared to the same period in the previous year. All nursing units at UZ Brussel will be equipped with this system by September 2011. The intention in a later phase is to explore the possibility to adapt the software so as to also roll it out within UZ Brussel's Children's Hospital. As early as 2008 the Health Ministry had earmarked this project as an example for all Belgian hospitals.

Electronic Modified Early Warning Score (e.mEWS)							
SCORE	3	2	1	0	1	2	3
Respiratoire Ritme	<input type="checkbox"/>						
Pols	<input type="checkbox"/>						
Syst. Bloeddruk	<input type="checkbox"/>						
GCS	<input type="checkbox"/>						
of	<input type="checkbox"/>						
WAPA	<input type="checkbox"/>						
Urine	<input type="checkbox"/>						
Temp (°C)	<input type="checkbox"/>						
SpO <sub>2</sub>	<input type="checkbox"/>						
TOT. SCORE	<input type="checkbox"/>						

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University Hospital Brussels (UZ Brussel) is an academic hospital which counts about 3.200 staff. It is linked to the Faculty of Medicine and Pharmacy of the Free University of Brussels on the Jette Campus. With its 721 hospital beds, UZ Brussel each year treats more than 28,000 inpatients and 400,000 outpatients, both national and international. University Hospital Brussels' values are based on three principles: Dutch language, pluralistic and community-focused. As a university hospital, UZ Brussel also fulfils a teaching mission and conducts scientific research. Further information is available on [www.uzbrussel.be](http://www.uzbrussel.be).

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