First recorded vital signs at the Emergency Department of Landspitali University Hospital

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Introduction
Recording of vital signs is an important step in the diagnosis of serious illnesses and health care professionals need to record them on a regular basis when assessing patients. Vital signs are the recordings of biophysiological values and refer to breathing, heart rate, body temperature and blood pressure.

In 1992, the definition of Systemic Inflammatory Response Syndrome (SIRS) was established. Signs of SIRS are the basis for defining sepsis and stands for changes in respiratory rate, heart rate, body temperature and white blood cell (WBC) count. At least two of these factors have to meet certain criteria for SIRS to be diagnosed. See table 1. The definition has been criticized for being overly sensitive and nonspecific.

An instrument that takes on the changes in biophysiological values has been proven to be useful in diagnosing acutely ill patients. Modified Early Warning Score (MEWS) is one of these instruments that help medical professionals diagnose an acutely ill patient. See figure 3.

Method
The purpose of this study was to evaluate the patients’ first recorded vital signs that came to the Emergency Department of Landspitali University Hospital in view of SIRS and MEWS. The research questions were:
1. What are the first recorded vital signs when patients come to the Emergency Department?
2. How are the vital signs evaluated given the criteria for SIRS?
3. How are the vital signs evaluated given the criteria for MEWS?

This was a retrospective study and the data was gathered from patient’s records. The research period was from October 1st, 2011 to November 30th, 2011. Information was gathered on 1) respiratory rate, 2) heart rate, 3) body temperature, 4) blood pressure and 5) WBC count. (WBC count was only recorded from February 2012).

Results
The total population of the study was 3971 (n) patients who sought the Emergency Department of Landspitali during the research period. About 1% (n=40) of the total population had no recordings of vital signs.

Respiratory rate was recorded in approximately 66% of cases (n=2637). The mean was 18 breaths per minute. The median and mode were 16 breaths per minute. Almost 11% (n=418) of patients breathed faster than 20 times per minute.

Heart rate was recorded in more than 97% of cases (n=3869). The mean was about 84 beats per minute and the median was 81 beats per minute. Almost 32% (n=1255) had a heart rate of over 90 beats per minute.

Body temperature was recorded in 91% of cases (n=3627). Mean and median was 36.9°C. More than 15% (n=418) had a body temperature lower than 36.0°C or higher than 38.0°C.

Blood pressure was recorded in more than 97% of cases (n=380). The mean systolic pressure was 135 mmHg and the median was 133 mmHg.

About 16% (n=623) of patients had two or more criterias of SIRS. See figure 1. Around 14% (n=580) had a score of three or more on the MEWS. See figure 2.

Conclusion
It may be assumed that not every patient that comes to the Emergency Department has problems that need their vital signs measured and recorded. It is safe to say that recording of vital signs at the Emergency Department of Landspitali is good.

The criteria of SIRS is helpful when diagnosing acute illnesses, but it is essential to look at more information regarding each patient.

To promote vigilance, it is important to diagnose symptoms of SIRS using instruments like MEWS. Emergency nurses have important roles in treating acutely ill patients. They assess the patients from the beginning, prioritize their needs and follow them through their illness.