Sistem Pemantauan Detak Jantung, Saturasi Oksigen, Suhu Tubuh, dan Tekanan Darah Bedasarkan Early Warning Score (EWS) = Heart Rate Monitoring System, Oxygen Saturation, Body Temperature and Blood Pressure Based on Early Warning Score (EWS)

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Abstrak

Kesehatan merupakan hal yang penting dalam kehidupan, dengan teknologi yang semakin canggih, salah satunya adalah teknologi Internet of Things (IoT). Internet of Things menyediakan layanan kesehatan karena berbagai fungsinya, seperti aksesibilitas dan keterjangkauan layanan kesehatan. Makalah ini menyajikan solusi untuk memudahkan pengguna dalam memantau kesehatan dengan menggunakan parameter tanda vital seperti tekanan darah, nadi, suhu tubuh, dan saturasi oksigen. Dengan berbasis Early Warning Score sehingga perawatan dan pemantauan kesehatan dapat dilakukan di rumah berdasarkan pemantauan real-time dan dicatat serta disimpan secara lokal. Sistem juga ditampilkan melalui situs web dan dapat dikirim melalui email untuk analisis lebih lanjut. Subyek dimonitor pada jam-jam tertentu, 1 jam, 2 jam dan 3 jam. Hasil tanda vital dari 15 subjek dengan rentang usia 18±63 menunjukkan rata-rata tekanan darah sistolic 125, tekanan darah diastolic 81, nadi 88,55, suhu tubuh 36,88, dan saturasi OK 97,53. Pengukuran tanda-tanda vital rata-rata pada pria menunjukkan tekanan darah sistolic 131, tekanan darah diastolic 84, detak jantung 93,3, suhu tubuh 36,9, dan saturasi oksigen 97,63. Sedangkan rata-rata pengukuran tanda vital pada wanita menunjukkan tekanan darah sistolic 119, tekanan darah diastolic 79, detak jantung 84,4, suhu tubuh 36,9, dan saturasi oksigen 97,44. Penelitian dari 15 subjek menunjukkan perhitungan skor total ews secara otomatis <4, hal ini menunjukkan bahwa risiko klinis rendah dari 15 subjek.
.....Health is an important thing in life, with increasingly sophisticated technology, one of which is Internet of Things (IoT) technology. The Internet of Things provides health services because of its various functions, such as the accessibility and affordability of health services. This paper presents a solution to make it easier for users to monitor health by using parameters of vital signs such as blood pressure, pulse, body temperature, and oxygen saturation. With an Early Warning Score based so that health care and monitoring can be carried out at home based on real-time monitoring and recorded and stored locally. The system is also displayed via the website and can be emailed for further analysis. Subjects were monitored in certain hours, 1 hour, 2 hours and 3 hours. The results of the vital signs of 15 subjects with an age range of 18±63 showed an average of 125 systolic blood pressure, 81 diastolic blood pressure, 88.55 pulse, 36.88 body temperature, and 97.53 OK saturation. The average vital signs measurements in men showed a systolic blood pressure of 131, a diastolic blood pressure of 84, a pulse of 93.3, a body temperature of 36.9, and an oxygen saturation of 97.63. Meanwhile, the average measurement of vital signs in women showed systolic blood pressure of 119, diastolic blood pressure of 79, pulse of 84.4, body temperature of 36.9, and oxygen saturation of 97.44. Research from 15 subjects showed the calculation of the total ews score automatically <4, this indicates that the clinical risk is low from 15 subjects.