ABSTRAK

Latar Belakang: Fenomena *overcrowding* dan tingginya *Length of Stay* (LOS) > 6 jam di IGD merupakan ancaman serius terhadap *patient safety*. Kerangka *System Engineering Initiative for Patient Safety* (SEIPS) 3.0 menawarkan pendekatan sistemik untuk menganalisis hubungan elemen struktur kerja (SDM, fasilitas, dan teknologi) terhadap durasi pelayanan.

Tujuan: Menganalisis pengaruh rasio perawat-pasien (X1), ketersediaan tempat tidur (X2), dan ketersediaan alat medis (X3) secara parsial dan simultan terhadap LOS (Y) di IGD RSUD Sumberglagah Tahun 2026.

Metode: Penelitian kuantitatif observasional analitik dengan desain *cross-sectional*. Sampel sebanyak 387 pasien IGD dipilih menggunakan teknik *simple random sampling* berdasarkan rumus Slovin. Data dianalisis menggunakan uji statistik regresi linear berganda ($\alpha = 0,05$).

Hasil: Secara simultan, rasio perawat-pasien, ketersediaan tempat tidur, dan ketersediaan alat medis berpengaruh signifikan terhadap LOS IGD $p < \alpha = 0,05$. ($0,000 < 0,05$); Secara parsial, ketersediaan tempat tidur terbukti sebagai variabel paling dominan dalam memengaruhi durasi LOS, diikuti oleh rasio perawat-pasien dan ketersediaan alat medis.

Analisis & Pembahasan: Melalui lensa SEIPS 3.0, hambatan alur pasien (*bottleneck*) terutama disebabkan oleh *access/exit block* pada tempat tidur rawat inap serta tingginya beban kerja perawat. Keterbatasan pada komponen struktur ini menghambat proses *throughput* klinis, sehingga berdampak langsung pada pemanjangan waktu tinggal pasien di IGD.

Kesimpulan: Penerapan model SEIPS 3.0 membuktikan bahwa perbaikan elemen struktur sistem kerja efektif menekan LOS IGD. RSUD Sumberglagah disarankan mengintegrasikan manajemen kapasitas tempat tidur dan alokasi SDM berbasis beban kerja.

Kata Kunci: *Length of Stay*, SEIPS 3.0, IGD, Rasio Perawat, Tempat Tidur, Alat Medis.

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ABSTRAC

Background: *The phenomenon of overcrowding and high Length of Stay (LOS) > 6 hours in the Emergency Department (ED) poses a serious threat to patient safety. The System Engineering Initiative for Patient Safety (SEIPS) 3.0 framework offers a systemic approach to analyze the relationship between work system structural elements (human resources, facilities, and technology) and service duration.*

Objective: *To analyze the partial and simultaneous effects of nurse-to-patient ratio (X1), bed availability (X2), and medical equipment availability (X3) on LOS (Y) in the ED of Sumberglagah Regional Public Hospital in 2026.*

Methods: *This was an observational analytical quantitative study using a cross-sectional design. A sample of 387 ED patients was selected using a simple random sampling technique based on Slovin's formula. Data were analyzed using multiple linear regression statistical tests ($\alpha = 0.05$).*

Results: *Simultaneously, nurse-to-patient ratio, bed availability, and medical equipment availability significantly influenced ED LOS $p < \alpha = 0,05$. (0,000 < 0,05); Partially, bed availability was proven to be the most dominant variable affecting LOS duration, followed by nurse-to-patient ratio and medical equipment availability.*

Analysis & Discussion: *Through the lens of SEIPS 3.0, patient flow bottlenecks were primarily caused by access/exit blocks regarding inpatient beds as well as high nurse workloads. Limitations in these structural components hindered clinical throughput processes, directly resulting in prolonged patient stay in the ED.*

Conclusion: *The application of the SEIPS 3.0 model demonstrates that improving work system structural elements effectively reduces ED LOS. Sumberglagah Regional Public Hospital is advised to integrate bed capacity management and workload-based human resource allocation.*

Keywords: *Length of Stay, SEIPS 3.0, Emergency Department, Nurse Ratio, Bed Availability, Medical Equipment.*

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