

Streamlining Medical Clearance for Psychiatric Patients in the Emergency Department: A Quality Improvement Initiative

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Introduction and Problem

Well-established relationship between prolonged emergency department stays and effectiveness of patients' care.^{1,2}

Over the past decade, the length of stay for psychiatric and behavioral patients has increased.³

Studies have shown limited usefulness of extensive medical workups for purely psychiatric patients, even with abnormal findings.^{4,5}

Patients that require medical workup as part of their psychiatric clearance can wait hours longer for their care.⁶⁻⁸

Longer ED stays can have especially detrimental effects on emergency psychiatric patients such as increased medication or restraint use.^{9,10}

Rationale

Hospitals have limited control over arrival rates. Reducing the length of stay is the primary lever for improving flow (Little's Law)

For psychiatric patients, medical clearance is a modifiable subprocess that directly drives length of stay

Extensive diagnostic workups rarely change disposition yet meaningfully increase visit times

A standardized, criteria-driven clearance process reduces that burden without compromising patient safety

Shorter stays reduce overcrowding, lower agitation risk, and free up capacity across the department.

Purpose and Aim

Reduce ED length of stay by 60 minutes

Reduce patients that require repeat psychiatric evaluations from 14% to under 10%

Decrease use of urine drug screens and overdose screening labs by 50%

Methods and Theories

Setting: General hospital in upstate New York

Population: All patients that arrived in the ED that required a psychiatric evaluation as part of their ED care

Patients that had MSE (excluded LWBS)

Excluded patients whose LOS > 5 days

Intervention: More targeted MSEs. This was facilitated by use of the SMART Form to guide use of diagnostic testing^{11,12}

Data & Analysis: Outcome, process, and balancing measures were tracked via run charts and reviewed with the project team at weekly status meetings. Pre- and post-intervention data were compared using the Yuen-Welch test for continuous outcomes (length of stay, time to medical clearance) and chi-square tests for categorical outcomes (repeat evaluations, UDS rates, overdose lab rates). Statistical significance was set at $p < .05$.

Theories

Queuing Theory / Little's Law:
 $L = \lambda W$

The average number of patients in an ED (L) equals the arrival rate (λ) multiplied by the average length of stay (W). Reducing time spent in any subprocess, such as medical clearance, directly reduces overall throughput time. While hospitals have limited control over arrival rates, they can influence length of stay through standardized, targeted care processes.

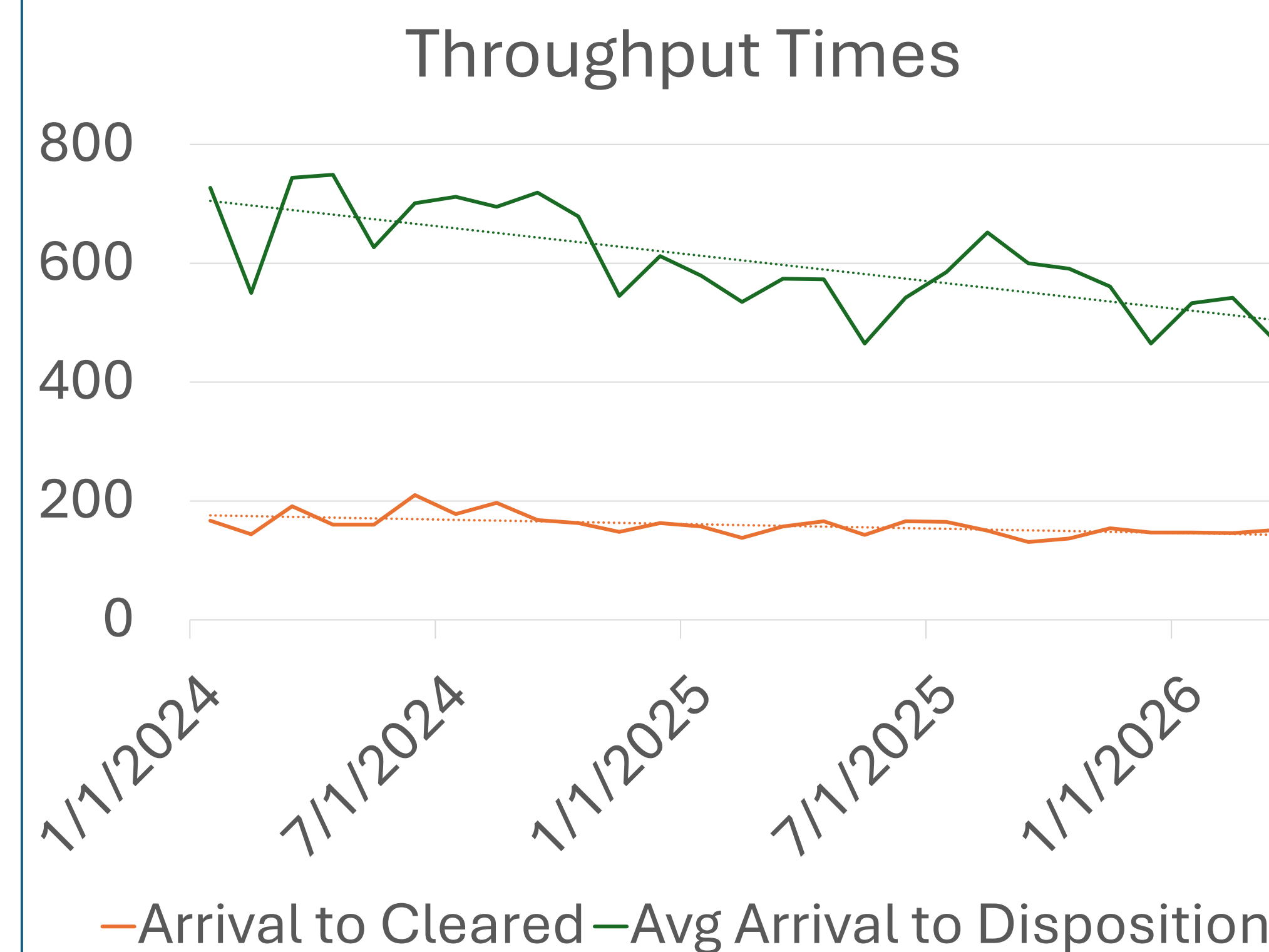
Plan-Do-Study-Act: Iterative PDSA cycles were used to drive change, monitor outcomes, and refine the implementation of the SMART Form

Lewin's Change Model guided implementation. Clinicians were unfrozen by building awareness of the limited utility of extensive psychiatric workups. The change phase introduced the SMART form into the EHR and multidisciplinary education. Refreezing is ongoing to prove sustainability.



Results

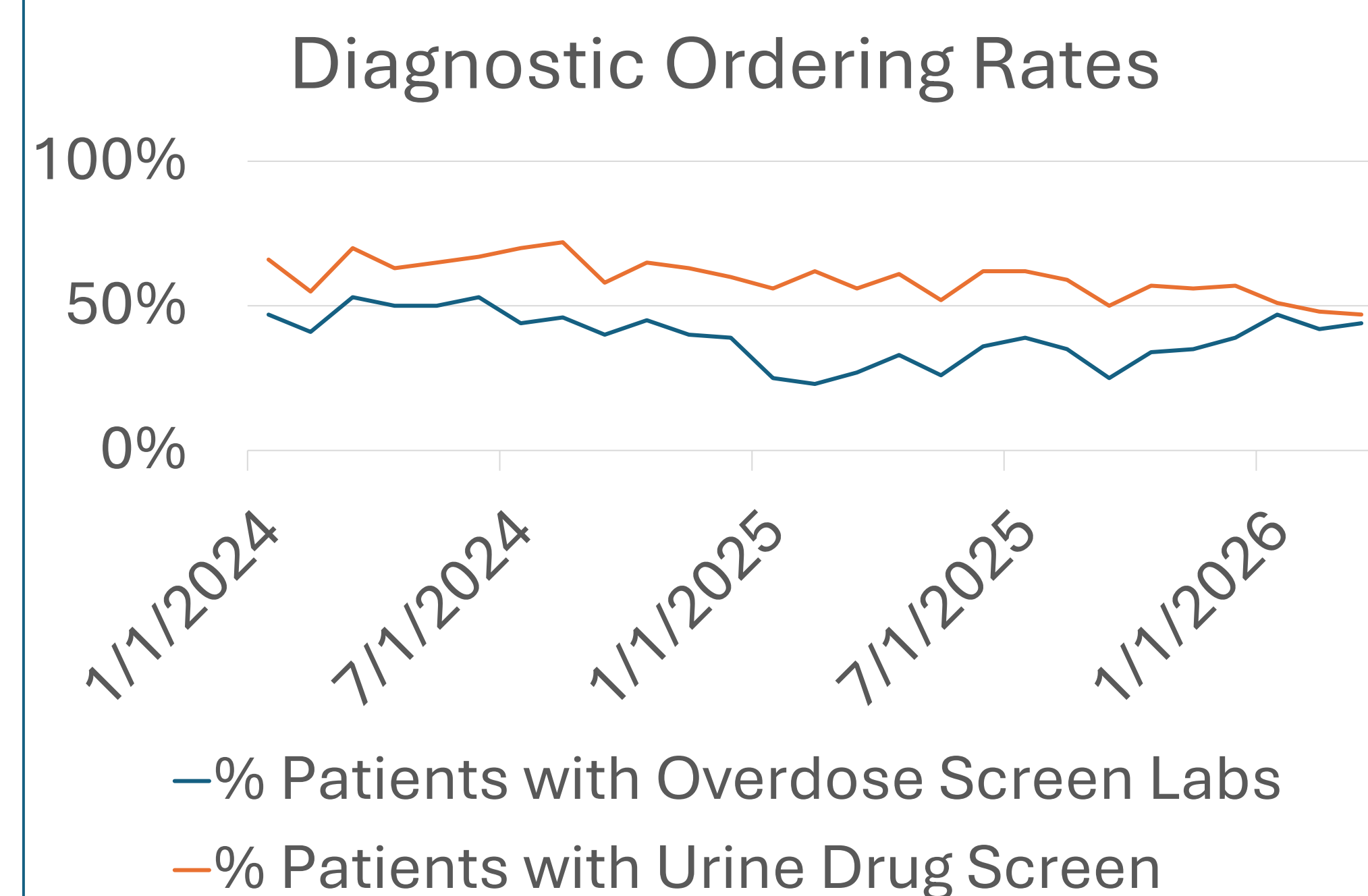
4,023 patients in the pre-intervention baseline (Jan–Sep 2024); 6,444 patients in the post-intervention period (Sep 2024–Mar 2026). Groups were similar in age (~35 years), sex, arrival time, acuity, and disposition.



Arrival-to-Disposition (LOS): 694 → 495 min (-199 min), $p < .001$

Arrival-to-Medical Clearance: 175 → 144 min (-31 min), $p < .001$

Extended Clearance Time (>3 hrs): 31% → 24%, $p < .001$



Urine Drug Screens: 65% → 48%, $p < .001$

Overdose Screening Labs: 47% → 43%, $p = .03$

Repeat Psychiatric Evaluations: 14% → 13%, $p = .41$ (not significant — clearance quality preserved)

Discussion and Implications

The 199-minute LOS reduction aligns with evidence that standardizing psychiatric clearance reduces delays without compromising safety.

Fewer UDS and overdose lab orders reflect a shift toward targeted, clinically indicated testing.

Per Little's Law, reducing time in the clearance subprocess directly reduces total visit duration and decreases overcrowding, agitation risk, and restraint use for this vulnerable population.

Conclusion

The SMART clearance process reduced ED length of stay by 199 minutes without compromising care quality.

Repeat evaluation rates remained unchanged. However shorter LOS with this stability may indicate that less time was needed between repeat evaluations.

This process is now being implemented at additional EDs within the health system.

The LOS reduction is can potentially yield over 30 additional bed-hours per day. Implementation was low-cost (existing staff and IT).

Future work will target repeat evaluation rates and explore application at non-psychiatric EDs for pre-transfer clearance.

Limitations: No control group; concurrent ED initiatives may have contributed to observed changes; single-site design limits generalizability.

References

