**Project Update – BMIN 5070**

**Student:** Nicolas Lescano, MD  
**Title:** Measuring the Invisible Work of Epic In-Basket Messaging in Outpatient Psychiatry

**Progress to Date**

Since the initial prospectus, I have worked with the institutional analytics team to formalize my data request. Departmental leadership approval has been obtained, and the request is now pending fulfillment. The team asked for a specific provider list to ensure accuracy, which I have submitted. Once data preparation begins, I will be able to review provider type groupings (Physician, Psychiatrist, Nurse Practitioner, Resident/Fellow) for sub-analysis.

The requested dataset (aggregated, de-identified, July 2024 – June 2025) includes:

* Monthly counts of in-basket messages by type (patient calls, advice requests, results, refills/authorizations, Rx responses, cosignatures, CC’d charts, unviewed results, refill errors).
* Aggregated time spent on messages (total and/or mean per message type).
* Provider panel size (active patients per provider per month).
* Timing of message handling (weekday vs. weekend, business hours vs. after-hours).
* Turnaround time to closure when available.

No patient-level data is included. Providers will be coded anonymously, allowing workload comparisons without risk of identification.

**Literature Review Update**

A growing body of research highlights how in-basket workload drives hidden cognitive demands and contributes to burnout:

* Inbox notifications can exceed 70 per day, creating high risk of missed information and cognitive overload (Murphy et al., 2016).
* Audit log studies show physicians spend nearly half of their workday on EHR tasks, including “desktop medicine” such as messages, often equal to patient-facing time (Tai-Seale et al., 2017).
* Heavy messaging correlates with higher EHR time, increased multitasking, and greater burnout risk (Tai-Seale et al., 2019; Shanafelt et al., 2016).
* In-basket usability remains poor, with design flaws that increase memory burden and delay prioritization (Murphy et al., 2019).
* Psychiatry practices in particular have seen rapid growth in portal messaging volume since COVID-19, with message rates rising sixfold per patient (Bernstein et al., 2023).

Together, these strongly suggest that messaging is both invisible in standard productivity metrics and central to clinician strain.

**Next Steps**

* **Week of Sep 22–29:** Receive dataset; confirm groupings and completeness.
* **Week of Sep 30–Oct 6:** Conduct descriptive analyses; summarize totals, trends, and normalized workloads.
* **Week of Oct 7–13:** Draft results/discussion with figures; apply human factors frameworks.
* **Oct 15:** Finalize paper and present findings.

**Significance**

This project will provide the first quantitative profile of Epic in-basket workload for outpatient psychiatry at Penn. By connecting message volume, time burden, and after-hours effort to human factors theory, it will expose the gap between official productivity metrics and lived provider workload. The analysis will support a more realistic and human-centered approach to defining provider capacity.

**References**

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