

UTSouthwestern
Medical Center™

Office of Institutional Compliance
and Audit Services

Epic In-Basket Management Assessment

Internal Audit Report 24:16

July 18, 2024



Executive Summary

UT Southwestern’s (UTSW) Electronic Health Record (EHR), Epic, has a primary communication function known as MyChart that allows patients to schedule appointments, request prescription refills, submit inquiries related to billing and insurance, and seek medical advice. Within Epic, health care providers have access to “In-Basket” to receive and send messages. During calendar year (CY) 2023, approximately 28.5 million messages were received, and 35.4 million messages were sent.

Audit Results

The Office of Institutional Compliance & Audit Services (OICAS) conducted an Epic In-Basket Management Audit focusing on evaluating the program design, identifying opportunities to optimize system functionality, and enhancing message management capabilities. OICAS conducted interviews, reviewed documentation, and analyzed billing and reimbursement data during the scope period of CY 23 (January 1, 2023 - December 1, 2023) to determine existing levels of charging activity associated with medical advice messages through In-Basket and MyChart. Due to data limitations, OICAS was unable to complete comprehensive analysis or testing to provide additional insights or quantitative support for identified observations.

Overall, OICAS identified that billed e-visits are resulting in reimbursement, although the frequency of such visits is currently low. The OICAS also identified opportunities to improve the program design and controls related to In-Basket message management. These improvements aim to gain operational efficiencies, improve the patient and provider experience, and increase revenue.

A summary of observations is outlined below:

AREA	OPPORTUNITIES	RISK RATING
<i>In-Basket Message Resolution</i>	<ul style="list-style-type: none"> • Premature message completion • Ineffective Key Performance Indicators (KPIs) • Message routing and volume management • Message management governance 	HIGH
<i>Medical Advice Messages Criteria</i>	<ul style="list-style-type: none"> • E-visit criteria 	MEDIUM
<i>Usable Data</i>	<ul style="list-style-type: none"> • Data analytics and insight 	MEDIUM
<i>Patient Communication</i>	<ul style="list-style-type: none"> • Care team expectations 	LOW

Further details are outlined in the Detailed Observations section.

Management Summary Response:

Management agrees with the observations and recommendations and has developed action plans to be implemented on or before February 28, 2025.

Appendix A outlines the objective, scope, methodology, stakeholder list, and audit team for the engagement.

Appendix B outlines the Risk Rating Classifications and Definitions.

The courtesy and cooperation extended by the personnel across numerous departments (see Appendix A) are appreciated.

Natalie A. Ramello, JD, CHC, CHPC, CHRC, CHIAP
Vice President, Chief Institutional Compliance Officer & Interim Chief Audit Executive
Office of Institutional Compliance & Audit Services
July 18, 2024

DETAILED OBSERVATIONS

In-Basket Message Resolution

Some messages are not being addressed in a timely manner. During walkthroughs, stakeholders indicated that message response expectations can be particularly challenging for clinicians that do not have traditional clinic schedules. Moreover, message routing processes are not standardized, nor is any automation utilized to manage messages. This increases the risk of patient safety and experience issues and operational inefficiencies.

HIGH

1. Premature Message Completion	Recommendation	Management Action Plan
<p>Some messages are marked “complete” before a response is provided to the patient in order to meet established benchmarks.</p> <ul style="list-style-type: none"> As a result, the number of acute encounters that were contacted in one business day and closed in three business days is falsely inflated. 	<p>Management should establish criteria under which a message may be marked as “closed”.</p> <p>Management should ensure all updates are distributed to all clinics and staff impacted.</p>	<p>Action Plan Owners: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Action Plan Executives: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Due Date: Jan. 31, 2025</p> <p><i>Management will document criteria for when an In-Basket message can be marked as “closed” or “complete” and will modify KPIs accordingly.</i></p> <p><i>Updates to current procedures will be distributed to all clinics and staff with duties that involve responses to In-Basket messages.</i></p>

2. Key Performance Indicators	Recommendation	Management Action Plan
<p>Existing performance indicators provided limited insights on current In-Basket Message management performance.</p> <ul style="list-style-type: none"> • UT Southwestern (UTSW) expects more than 90% of messages to be closed within three business days. • Per the Clinical Scorecard, 85% of acute encounters were contacted in one business day and closed in three business days during November and December 2023. <p>These KPIs are not currently capturing all the relevant and useful information that is available for analysis, such as response rates.</p>	<p>Management should evaluate and revise KPIs that are utilized to track performance.</p> <p>Examples of KPIs that can be helpful for management include:</p> <ul style="list-style-type: none"> • Number of messages that are resolved in a single response • Percent of messages with additional responses after message closure / completion • Number of messages converted to chargeable e-visit 	<p>Action Plan Owners: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Action Plan Executives: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Due Date: Jan. 31, 2025</p> <p><i>Management will review current KPIs related to In-Basket messaging and determine if they are appropriate performance indicators to measure message handling responsiveness and efficiency.</i></p> <p><i>Management will document updated KPIs and revise dashboards to align with any modifications made.</i></p>
3. Message Routing / Volume Management	Recommendation	Management Action Plan
<p>In-Basket message management is not optimized. As a result, there is an opportunity to gain operational efficiencies by streamlining processes to better handle volumes as well as improve message response and closure rates.</p> <ul style="list-style-type: none"> • Message routing is designed based on provider preference, instead of by pod, message volume, provider schedule. • AI is not currently leveraged to manage or reply messages. 	<p>Management should evaluate opportunities to utilize AI and optimize message routing workflow to enhance operational efficiencies.</p>	<p>Action Plan Owners: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Action Plan Executives: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Due Date: Jan. 31, 2025</p>

		<p><i>The Epic MyChart Optimization workgroup will determine feasibility of AI options for assistance with workflow routing. If appropriate, the workgroup will develop a strategic plan for AI integration into In-Basket messaging.</i></p>
4. Message Management Governance	Recommendation	Management Action Plan
<p>While there are monitoring mechanisms in place, the In-Basket message governance structure and monitoring procedures are not formally documented.</p> <ul style="list-style-type: none"> There are no defined escalation processes including potential disciplinary actions that may be taken in the event clinicians do not address assigned patient messages in a timely manner. 	<p>Management should establish formal In-Basket message management governance structure, policies, and procedures.</p> <p>Once established, management should provide education to impacted end users.</p>	<p>Action Plan Owners: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Action Plan Executives: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Due Date: Jan. 31, 2025</p> <p><i>Management will establish formal In-Basket message management governance structure, policies, and procedures.</i></p> <p><i>Once established, management will provide education to impacted end users.</i></p>

Medical Advice Messages Criteria

To bill for such communications, known as “medical advice messages” or “e-visits”, messages must meet certain clinical criteria and documentation requirements. However, the decision to transition a medical advice message to a chargeable e-visit is currently at the provider’s discretion. There is opportunity to capture provider productivity and increase revenue.

MEDIUM

5. E-Visit Criteria

Recommendation

Management Action Plan

Criteria to determine which messages qualify for an e-visit is not defined.

Management should define criteria used to determine if a medical advice message may qualify to be a chargeable e-visit.

Action Plan Owners:
Hicham Ibrahim, MD
DuWayne Willett, MD

Action Plan Executives:
Hicham Ibrahim, MD
DuWayne Willett, MD

Due Date: Jan. 31, 2025

MyChart Optimization workgroup, in collaboration with Compliance, will review criteria for both patient and provider-initiated e-visits and develop guidance / education for e-visit requirements.

Usable Data

Reportable Epic In-Basket Message content data is needed to complete analysis and provide insights such as the volume of messages that may qualify for a chargeable e-visit, message content and response patterns, and opportunities to leverage Artificial Intelligence or Robot Process Automation to gain message management efficiencies. While “message content” detail can be extracted, the data was not in a format that could be easily aggregated or cleaned to use for analysis. Data export limitations may impact the organization’s ability to effectively complete analysis, monitor performance, and make informed business decisions.

MEDIUM

6. Data Analytics & Insight

Recommendation

Management Action Plan

Without Epic In-Basket message content data that can be easily analyzed, it is challenging to understand:

- Message prioritization and response patterns.
- The volume of potentially urgent messages received.
- The volume of medical advice messages that may qualify for billing to be billed as an e-visit.

Management should evaluate mechanisms to extract data in a format that allows for meaningful analysis to support performance monitoring and business decisions.

Action Plan Owners:
Hicham Ibrahim, MD
DuWayne Willett, MD

Action Plan Executives:
Hicham Ibrahim, MD
DuWayne Willett, MD

Due Date: Feb. 28, 2025

Management will review current data extracted from In-Basket messaging and determine potential benefits of obtaining message content in a format that would allow for increased data analysis. If it is deemed beneficial for the message content to be included in data extracts, management will work with appropriate data teams to obtain data.

Patient Communication

Patients are informed to call 911 in the event of an emergency and to expect that it may take two days to receive a response when a patient initiates a message within MyChart. However, patients are not informed that medical questions may be received and responded to by someone on their care team other than the provider. As a result, patient experience may be impacted.

LOW

7. Care Team Expectations	Recommendation	Management Action Plan
<p>Patients are not informed that medical questions may be received and responded to by someone on their care team other than the provider.</p>	<p>Management should update MyChart patient communication to indicate messages are received and responded to by a member of their care team other than their provider.</p>	<p>Action Plan Owners: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Action Plan Executives: Hicham Ibrahim, MD DuWayne Willett, MD</p> <p>Due Date: Nov. 30, 2024</p> <p><i>Management will update MyChart patient communication and the patient-facing MyChart webpage to provide clarification that messages are received and responded to by a member of their care team, which may be someone other than their provider.</i></p>

Appendix A

Objective, Scope, & Methodology:

The objective of the audit was to review UTSW's Epic In-Basket operating model and associated processes, including relevant controls, to determine whether systems and controls are functioning effectively, as intended, and delivering optimal results.

The audit scope period included activities of UT Southwestern Medical Center clinical and non-clinical staff, as well as Information Security and Technology personnel, from Jan. 1, 2023 to Dec. 21, 2023.

As part of the audit, the following areas were reviewed:

- Roles and responsibilities for oversight and accountability
- System configuration(s)
- Policies and procedures
- Assessment of current program against leading practices
- Patient safety
- Message chargeability
- Message management and prioritization
- User training

Our procedures included but were not limited to the following:

- Interviewed key personnel to understand the current program design and system processes.
- Reviewed relevant organizational policies to understand existing guidelines around Epic In-Basket.
- Reviewed training reports to understand system processes behind user training.
- Performed data analytics on billing and reimbursement reports to determine trends and existing levels of charging activity.
- Reviewed performance metrics to understand the current evaluation and monitoring process.

We conducted our examination according to guidelines set forth by the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*.

Executive Sponsor:

Hicham Ibrahim, MD, Associate Vice President & Chief Medical Officer, Ambulatory Services

Key Stakeholder List:

Alfred Aghayere, Information Resources Manager, IR Enterprise Data Services

Amanda Almeida, Manager, Ambulatory Analytics Team

Ling Chu, MD, Assistant Professor, Internal Medicine
Jordon Delatorre, Ambulatory Nursing Supervisor, Ambulatory Services
Cindi Donahue, Information Resources Manager, IR Health Revenue Cycle
Toni Eby, Associate Vice President & Chief Operations Officer, Ambulatory Services
Kathryn Flores, Assistant Vice President and Chief Information Officer, University Hospitals
Kyle Gabriel, Supervisor Business Analyst, IR Health Systems EMR
Cecilia Hernandez, Information Resources Manager, IR Health Technical Services
Hicham Ibrahim, MD, Associate Vice President & Chief Medical Officer, Ambulatory Services
Brittany Kennedy, Clinician Practice Analyst, Ambulatory Nursing Operations
Olasunkanmi Kolawole, Clinician Practice Analyst, Ambulatory Nursing Operations
Chelsea Landon, Director, Health System Emerging Strategies
Chris Matta, Director, Revenue Cycle & Business Systems
Curtis McCallister, Director, Telehealth Strategy & Operations
Christopher McLarty, Associate Vice President & Chief Nursing Officer, Ambulatory Services
Robert McMullen, Director, Health System Data Services
Scott Minnerly, Director, Clinical Decisions Support EMR
Padraig O'Suilleabhain, MD, Professor, Neurology
Jeff Schneider, Manager, Ambulatory Training
Kory Termine, Assistant Vice President, Ambulatory Services in Patient Access
Brent Townsend, Director, Front-End Medical/Surgical Billing, Medical Group Revenue Cycle
Tammi Viancos, Manager, Clinical Workflow Informatic Systems
Duwayne Willett, MD, Professor, Internal Medicine
Josh Youngblood, Director, Electronic Medical Records

Audit Team:

Natalie Ramello, J.D., Vice President, Chief Institutional Compliance Officer & Interim Chief Audit Executive
Abby Jackson, Assistant Vice President, Compliance & Audit Operations
Philippa Krauss, Senior Project Manager, Internal Audit
Louise Labrie, Engagement Principal, Grant Thornton
Hayley Oakes, Senior Manager, Grant Thornton
Alexander Renner, Senior Manager, Grant Thornton
Fariyah Chowdhury, Manager, Grant Thornton

Jerica Zhang, Associate, Grant Thornton

Appendix B

Risk Classifications & Definitions

Each observation has been assigned a risk rating according to the perceived degree of risk that exists based upon the identified deficiency combined with the subsequent priority of action to be undertaken by management. The following chart is intended to provide information with respect to the applicable definitions, color-coded depictions, and terms utilized as part of our risk ranking process:

Degree of Risk & Priority of Action	
Priority	An issue identified by Internal Audit that, if not addressed immediately, has a high probability to directly impact achievement of a strategic or important operational objective of a UT institution or the UT System as a whole.
High	A finding identified by Internal Audit that is considered to have a high probability of adverse effects to the UT institution either as a whole or to a significant college / school / unit level. As such, immediate action is required by management to address the noted concern and reduce risks to the organization.
Medium	A finding identified by Internal Audit that is considered to have a medium probability of adverse effects to the UT institution either as a whole or to a college / school / unit level. As such, action is needed by management to address the noted concern and reduce the risk to a more desirable level.
Low	A finding identified by Internal Audit that is considered to have minimal probability of adverse effects to the UT institution either as a whole or to a college / school / unit level. As such, action should be taken by management to address the noted concern and reduce risks to the organization.

It is important to note that considerable professional judgment is required in determining the overall ratings. Accordingly, others could evaluate the results differently and draw different conclusions. It is also important to note that this report provides management with information about the condition of risks and internal controls at one point in time. Future changes in environmental factors and actions by personnel may significantly and adversely impact these risks and controls in ways that this report did not and cannot anticipate.