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Hospital Development of a Hybrid Emergency Department - Inpatient Care Observation Unit

Abstract

Objective: Design and implement an Emergency Department (ED) managed observation unit that improves inpatient bed and ED stretcher capacity, decreases observation patient length of stay, earns high patient satisfaction scores, and generates a positive fiscal impact on the organization.

Methods: This quality improvement project followed a one group, pre- post-program implementation design.

Results: In the first year of operations, this unit saw 40% of the total observation patients treated in this hospital. ED observation unit length of stay across all patient complaints was half of the average length of stay for observation patients located on hospital inpatient units. In most cases, the ED observation unit was in the top 25 percentile of hospital Press-Ganey inpatient satisfaction categories. The hospital estimates a contribution margin of three quarters of a million dollars in the first year.

Conclusion: This effective and efficient hybrid observation unit possessed specific aspects of inpatient and ED patient care models. Placing providers and nurses at the workstation for faster communication expedited care. Prioritizing all observation patient testing, transportation, phlebotomy, and IV services shortened disposition times. Emergency nurses transitioning to the observation unit were challenged to acquire inpatient care knowledge. Observation unit management struggled to maintain staffing while under an inpatient productivity model managed by the inpatient House Supervisor. Reducing patient disposition time required clear communication between observation unit and inpatient staffing managers, physician consultants and advanced practice nursing providers, and between nurses, patients, and providers. Observation units are one solution to decrease observation patient length of stay and improve ED capacity.

Keywords (MeSH): Clinical Observation Units, Emergency Service (Hospital), Hospital Bed Capacity, Quality Improvement, Length of Stay, Patient Satisfaction, Emergency Nursing

Contributions to Emergency Nursing Practice

- By using evidence-based, pre-set treatment protocols and ED Observation unit inclusion criteria, Emergency Department-based observation units (ED observation unit) can treat patients with a wide variety of diagnoses such as cardiac (chest pain, congestive heart failure, atrial fibrillation, etc.) neurological (head trauma, headache, seizure, etc.), gastric-related (gastrointestinal bleed, abdominal pain), as well as other diagnoses (vaginal bleeding, deep vein thrombosis, etc.).
- Observation patient length of stay reductions occurred by supporting a hybrid emergency department-inpatient care model and by assigning high priority status to ED observation medical consultations and diagnostic testing.
- To expedite patient disposition in less than 24 hours, ED observation unit management must advocate for an ED-like productivity staffing model despite being managed by inpatient staffing managers.

Introduction

Problem Description

Emergency Departments (EDs) continue to experience increases in patient census as well as high patient acuity.¹ ED capacity continues to decrease² when admitted ED patients cannot be moved out of the ED because of a lack of inpatient beds. As a result, hospitals are seeking innovative solutions to increase both inpatient and ED patient bed capacity.

This hospital experienced increasing times of ED patients waiting to be transferred to an inpatient bed in the hospital because of a greater number of higher acuity inpatients requiring longer treatment times. ED patients admitted to inpatient or observation status beds waited

extended periods in the ED. Compounding this problem was high lengths of stay (LOS) for observation patients admitted to the main hospital because these patients were treated on the same units with fully admitted, higher acuity patients requiring more resources. To reduce observation patient's LOS, hospital leaders financed and built an ED observation unit.

Observation units, which treated an assortment of patient populations, existed with a variety of names, which include 23 Hour Observation Unit, Holding Units, Chest Pain Decision Unit, among other names. These units have been in place in a multiplicity of forms since the early 1970s.³ Implementing evidence and best practices from observation unit studies allowed this community-based urban medical center to develop an innovative observation unit that merged inpatient and ED models of patient care.^{4,5,6,7,8} This hybridized inpatient/ED care model allowed for lower acuity Emergency Department patients that met pre-established criteria to continue to receive around-the-clock testing, treatments, nursing care, and consultations. The hybrid model was implemented in a newly created ED observation unit. The ED observation unit's goal was to provide patient disposition within 24 hours but no more than 2 midnights.^{4,5} Rapid treatment in the ED observation unit allowed for faster patient discharge, freeing up bed capacity in both inpatient units and the ED.

Available Knowledge

Best practice evidence generated from other observation units has accrued. A unit with dedicated physical space and located in close proximity to the ED encourages patient comfort, cost savings, and faster transfers out of the ED, increasing ED bed capacity.^{6,7} Patient care beds in a dedicated observation unit increase hospital patient capacity, because they do not count toward the total of licensed hospital beds.⁶ A closed unit ensures that metrics used to gauge patient satisfaction come from observation unit patients and not from other patient populations

that occupy observation unit beds, such as ED or surgical patients awaiting assignment for an inpatient bed.⁸ Evidence-based, protocol-driven treatments provide a direct path to a diagnosis during the short patient stay in the observation unit.^{7,9} Pre-existing observation patient treatment protocols can be collected from a healthcare system's other observation units' or from their EDs.⁷

Typical observation unit inclusion criteria include likely patient discharge within two midnights or 24 hours to meet Centers for Medicare and Medicaid Services requirements for observation patient status.⁷ Additional criteria include stable condition with low likelihood of clinical decompensation, no significant diagnostic uncertainties or active comorbidities, incomplete response to initial therapy in the ED, or no anticipated requirement for extensive workups or serial testing that will take the patient beyond the 24-hour discharge window.⁸ Early observation units only admitted patients with specific diagnoses, but evidence indicates that observation unit criteria can work with a variety of pulmonary, cardiac, GI, renal, headache, acute infection, circulation, and psychiatric conditions and diagnoses.^{4,7}

Diagnostic testing and follow-up consults must have a priority just below ED and critical care patients or stat orders to provide faster disposition times, decreasing patient LOS.⁸ Physician staffing recommendations include staffing by a single practice group, assuring observation unit patients are treated by providers accustomed to the care requirements of this population in this environment.^{7,8} In this hospital observation unit, nurses follow inpatients care guidelines, which are different from ED patient care guidelines with focused assessment and care.⁶ In other words, in the ED a patient complaining of abdominal pain would receive an assessment focused on the abdomen, whereas any patient in the ED observation unit, regardless of their diagnosis or chief complaint, would receive a full head to toe assessment along with

other inpatient screenings such as medication reconciliation, nutritional screening, etc. The observation unit must be sufficiently staffed to meet inpatient assessment and patient care guidelines, but to allow for rapid disposition and high patient turnover. Staffing recommendations range from a 4:1 patient to nurse ratio⁶ to a 5:1 ratio with one nursing assistant to every nurse⁸, or either a 4:1 or 5:1 ratio⁷.

Purpose and Aims

The purpose of this quality-improvement project was to design a novel, emergency-department managed observation unit that improves ED and inpatient capacity, focuses on rapid patient disposition, earns high patient satisfaction scores, and does not incur increased costs. Specific aims were to have a LOS no greater than 24 hours, receive high patient satisfaction scores, and have a positive impact on hospital finances.

Methods

Context

This quality improvement project occurred between October of 2019 and September of 2021 with current and ongoing addition of observation unit beds. This summary follows the structure of the Squire 2.0 reporting guidelines.¹⁰ The project followed a one group, pre- post-program implementation design. This community-based Emergency Department is part of an urban medical center licensed for just under 520 beds and is situated in a southeastern United States city with a regional population of one million people. The department has 52 beds with a nursing staff of over 80 that treated over 56,000 patients in 2021. Evidence-based protocols were used to provide consistent treatment to patients meeting certain criteria.

Intervention

Creating an ED observation unit for continued care of observation patients, which potentially opened up an inpatient bed, began with assembling a consultation group of expert-stakeholders (Table 1). This diverse group of consultants provided perspectives unique to their position to develop and implement this complex unit. Consultants provided input on ED observation unit patient medical management, nursing care operations, unit efficiency, quality analysis, patient satisfaction monitoring, and financial health assessment.⁸ The ED observation unit was constructed in a space located next to the ED, allowing close proximity of the two units for quick transfer from the ED. Close proximity can shorten ED stay and prevent issues with staffing, consultations, imaging, and transfer of care.⁶ ED observation unit inclusion and exclusion criteria along with 29 evidence-based treatment protocols streamlined the process of deciding to admit the patient to the ED observation unit or to an inpatient bed (Table 2). In order to improve efficiency and expedite patient disposition, the hospital agreed to prioritize ED observation unit patient diagnostic testing and imaging at a level just below that of stat hospital orders, and orders for critical care and ED patients.⁸ Best practices for shortening time to disposition and LOS include physician practice agreements to provide ED observation unit consults during any time and on every day of the week.⁸ These agreements were in place prior to the opening of the ED observation unit. The ED observation unit director hired a nursing manager with both inpatient and ED management and patient care experience. The ED observation unit director and nursing manager both supervised the hiring of a nursing staff that had a mix of ED and medical-surgical inpatient experience. Hybrid staff, defined as nurses, technicians, and monitor technicians with both ED and inpatient care skills, training, and experience, provided patient care only in the ED observation unit. The only time these staffs

provided patient care outside of the ED observation unit was if they were reassigned to inpatient units because of low ED observation unit patient census. ED observation unit staffs were tasked with providing hospital mandated inpatient care and charting with the ED expectation that they collect their patient's biological test specimens as well as provide transport to/from radiological procedures, treatments, consultations, and patient discharge.⁶ Nursing staff ratios were set at a four patients to one nurse, consistent with recommendations from other reports on successful ED observation units.⁶ Quality monitoring, essential to assess patient satisfaction processes and efficiency was carried out by comparing ED observation unit Press-Ganey¹¹ patient satisfaction scores with hospital inpatient units. The Press-Ganey¹¹ quality scores would not allow observation patients on inpatient floors to be isolated and compared to ED observation unit patient satisfaction scores. Therefore, this comparison was not of equal groups (inpatient observation patients and ED observation unit patients), but of hospital inpatient and ED observation unit patient satisfaction scores.

Timeline

Unit development started with a business plan in October 2019, which included improving ED throughput, analysis of care costs calculated by averaging the costs for each patient per day of hospital care, and ED observation unit-based reimbursements. Within the first six months of 2020, unit design was completed, evidence was gathered to finalize treatment protocols and inclusion/exclusion criteria (Table 2), and the medical consultant coverage process was completed. In July 2020, physical construction began, and 12 months later, an ED observation unit manager was hired who finalized ED observation unit staffing. A four bed ED observation unit opened in September 2021 and was expanded to eight beds in October. In January 2022 a third expansion brought the total number of beds up to 12, and the unit reached

its current number of beds (16) in March 2022. Currently, 18 ED observation unit nurses (16 full-time and two part-time PRN) four monitor techs, and eight ED observation unit techs staff this unit.

Measures and Analysis

To assess whether this ED observation unit would meet project aims, several metrics were analyzed. A financial analysis was undertaken of the costs of observation patients treated in the hospital both in the year prior to the ED observation unit's opening and during the first fiscal year of the ED observation unit's operation. This analysis was compared with costs of operating the ED observation unit in the first fiscal year of operation. Patient LOS along with average time from discharge order written to actual discharge were also examined. Patient satisfaction data included inpatient unit's and ED observation unit's Press-Ganey satisfaction scores. The hospital business analytics director calculated ED observation unit fiscal impact through assessing cost avoidance related to decreased LOS and increased capacity.

Data analysis included descriptive statistics for select patient complaints, while *t*-tests were used to compare differences between the pre-and post-program data. Comparisons of LOS, discharge written to actual discharge times, satisfaction scores, and financial data were made between hospital observation patients and ED observation unit patients. These comparisons provided program directors an assessment of whether the investments in the ED observation unit were meeting project aims and worth the investment of finances and personnel in this unit.

Ethical Compliance

The project did not meet the federal definition of human subjects research because it was not deemed a systematic investigation, did not include research questions or hypothesis testing, and was not intended to create generalizable knowledge. The Nursing Research Oversight Team

of the Research and Evidence-Based Practice Council at this hospital, following Hastings Center Guidelines, established that this project was not subject to Institutional Review Board oversight, and provided ethical approval for this quality improvement project. The hospital's analytics department removed Protected Healthcare Information from the data provided to the project directors.

Results

Since October 2021 and through September 2022 (hospital fiscal year), 2,640 patients, or 40.7% of ED patients admitted to observation beds, were admitted to the ED observation unit. Of these ED observation unit patients, just under 20% required an inpatient admission. Hospital inpatient units that received ED observation patients during the same period treated 3,836 patients (Table 3). Thus, 6,476 observation patients were admitted to the ED observation unit and hospital inpatient observation beds, an increase of 2,049 patients, or 46% more observation patients treated than in the previous fiscal year before the ED observation unit opened.

ED observation unit patient LOS ranged from 23.75 hours (chest pain) to 29.93 hours (gastro-intestinal bleed) (Table 4.) Across all patient complaints, ED observation unit LOS was half the time of the LOS for hospital observation patients. Compared to hospital observation patients, ED observation unit patient's LOS with rule out trans-ischemic attack was 54% lower, with chest pain was 52% lower, with gastro-intestinal bleeding was 64% lower, and with general gastro-intestinal complains was 53% lower (Table 4.) These lower LOS were all statistically significant. The range of ED observation unit discharge-order to actual discharge times was 64 minutes (for chest pain) to 80 minutes (for patient complaints, not specified). In contrast, the range of hospital observation patient discharge order to discharge times was 193 minutes for

patients with general GI to 263 minutes for patients with a trans-ischemic attack (Table 4). With an only one patient with a foreign body complaint in each time-period, the category “foreign body” was not considered.

ED observation unit patient satisfaction scores were, at minimum, better than two thirds of the hospital inpatient units and in most cases were in the top 25% of all units (Table 5).¹¹ Patient satisfaction ratings of the hospital, based on their ED observation unit experience, were in the 68th percentile of all hospital units. *Care Transition, Cleanliness of Environment, and Communication with Nurses* satisfaction ratings were in the 79th percentile. *Response of Hospital Staff* satisfaction ratings were in the 74th percentile. *Communication with Doctors* satisfaction ratings were in the 84th percentile (Table 5).¹¹

The hospital engaged data analytics and hospital finance personnel to assess costs and savings related to the ED observation unit. Factoring in the LOS decrease, additional incremental margin from backfilling the bed from the specific patient complaints, and reduced labor, capital, and other cost components related to direct patient care, the ED observation unit was able to show a positive revenue impact of over three-quarters of a million dollars for the fiscal year October 2021 – September 2022.

Discussion

Evidence from previously successful ED observation units was incorporated into this ED observation unit, and positive outcomes ensued. LOS decreased, which was similar to results found in other reports.^{6,12} ED observation unit patient LOS was much lower than inpatient unit observation patients, thus increasing ED and inpatient unit capacity. Patients diagnosed with and treated for COVID-19 related complaints were almost entirely excluded from the ED observation

unit related to IV antiviral and oxygen treatments requiring multiple day admission. Inpatient beds that would have been occupied by patients treated in the ED observation unit were freed up, allowing inpatients being treated for COVID-19 related infections to occupy these hospital beds.

The ED observation unit's strong patient satisfaction scores were in the top 25th-percentile ranking in 4 Press-Ganey Categories, and in the top 66th percentile in two other categories.¹¹ The ED observation unit outperformed most of this hospital's 19 inpatient units. While the satisfaction scores of ED observation patients are being compared against all inpatients, a reasonable assertion can be made that the excellent performance and efficiency in the ED observation unit did not come at the cost of low-quality patient care.

The ED observation unit significantly and positively affected hospital finances. Shortened LOS meant decreased patient care costs. The opening of the ED observation unit allowed for 146% more observation patients to be seen than in the year prior to its opening (4,427 in fiscal year 2020 versus 6,476 patients in fiscal year 2021 (Table 3). Moving patients from the ED to the ED observation unit increased ED capacity and could have contributed to shorter ED waiting room time for patients. There were 13% fewer hospital observation patients in fiscal year 2021 (3,836) than in fiscal year 2020 (4,427) after the opening of the ED observation unit. Patients with acuity higher than observation patients were able to be placed in inpatient beds previously occupied by hospital observation patients (Table 3). Greater ED volume and larger inpatient capacity increased overall revenue. Decreasing the patient LOS provides more inpatient capacity and can generate more revenue, allowing hospitals to afford the increased expenses of creating an ED observation unit. Dedicated ED observation units with

protocols that demonstrate these outcomes prevented the outflow of significant healthcare systems revenue.⁵

Hybridization of ED and Inpatient Care Models

Nursing, medical, and senior hospital leadership carefully planned the hybridization of inpatient and ED patient care models. This hybridization allowed the ED observation unit to meet patient LOS, patient satisfaction, and financial goals. Hybridization involved the combination of hospital inpatient charting and care requirements with ED patient care provision requirements, the understanding of ED flow, and emphasis of rapid treatment and testing turnaround times. ED observation unit patients received an inpatient model of patient assessment and care. They also experienced ED-like patient flow processes that increased the speed of diagnostic test results and disposition times.

Leadership fused not only inpatient and ED patient care models but also interprofessional working environments. Advanced practice nurses (APRN), medical consultants, nurses, nursing assistants, and monitor techs were located in one, central location. This work area allowed staffs to be immediately available to each other and provide input on the patient's care and discharge plans. Staffs also learned each other's work patterns and talents, further reducing delays in patient care provision. Arranging staffs work area in this way contributed to faster patient dispositions.

One aspect of ED patient care in this hybridized care model is the use of APRNs. Around-the-clock, APRN presence allowed care decisions to be made 24 hours a day and 7 days a week. APRNs are ideally suited to provide care alongside medical consultants and ED physicians. Advanced nursing knowledge and standardized treatment protocols allowed APRNs

to rapidly reach a disposition decision. ED observation unit care decisions and dispositions were imminently expected at any point in any shift, shortening LOS and reducing the length of time for an ED observation patient to see a provider or receive discharge orders.

APRNs and nurses with both inpatient and ED patient care experience detected patient decompensation more quickly allowing earlier intervention before a patient safety concern occurred. Additionally, the ED observation unit patient selection criteria placed stable, lower acuity patients in this unit. Lower nurse-to-patient staffing ratios provided more frequent contact between patients and nurses or APRNs. All of these factors contributed to safer patient care provision, leading to minimal patient care issues and safety concerns on this unit.

To expedite care and to meet the 24-hour disposition time goal, ED observation unit leadership worked closely with medical consultant groups and various hospital departments such as environmental services, laboratory, radiology, etc. They ensured that ED observation unit patient testing, consults, and housekeeping requests were prioritized after ED, intensive care units, and inpatient stat orders without increasing testing time or delaying care of inpatients. Additional time savings occurred as ED observation unit nurses and nursing assistants completed EKGs/ phlebotomy/ other specimen collection and transported patients from the ED to the ED observation unit as well as to/from diagnostic testing. The ED observation unit discharge culture is similar to that of the ED: discharge and physical movement of patient out of the ED at any time of the day or night by ED observation unit staff to their transportation, ambulance, etc. LOS decreased because biological specimen collection, patient transportation to-from testing and during physical discharge were carried out by ED observation unit staff and not hospital care staff external to the ED observation unit (phlebotomy, transport, volunteers, etc.).

302 *Hybrid Care Model Challenges*

303 The ED observation unit presented unique nursing challenges. The hybrid ED/ inpatient
304 care model created a steep learning curve for emergency nurses, who had to adapt to inpatient-
305 specific patient care requirements that were quite different from ED patient care requirements.
306 Emergency nurses had to relearn more extensive (when compared to ED charting) inpatient
307 charting requirements, how to complete a full assessment rather than a focused ED assessment,
308 and how to educate patients on the importance of preventative care (for example, sequential
309 compression devices). Medication reconciliation and administration of home medications
310 presented a challenge to emergency nurses who were more accustomed to providing treatment-
311 related medications or emergent IV medications.

312 Maintaining productivity was a particular and early challenge for this unit. The ED
313 observation unit was expected to make disposition decisions and discharges in under 24 hours.
314 The ED observation unit experienced census variations and patient turnover similar to an ED;
315 however, the inpatient House Manager made staffing decisions based on inpatient productivity
316 metrics at 5:00 AM and 5:00 PM, two times of the day when the ED observation unit varied in
317 patient census. To prevent staff from being assigned to inpatient units during low ED
318 observation unit census times, ED observation unit leadership and House Management agreed
319 (and learned) to trust the ED observation unit flow process, maintaining ED observation unit
320 staffing even during low census times. An additional concession to maintain ED observation
321 unit staffing was made by ED observation unit nursing leadership, allowing ED observation unit
322 nursing staff to change from a 4:1 to a 5:1 patient to nurse ratio when census demanded. In
323 return, House Managers agreed not to assign ED observation unit staff to other inpatient units.

However, because few other inpatient units discharge and admit the volume of patients as the ED observation unit, the temptation will always exist for the House Manager to cap ED observation unit census and reassign ED observation unit staff to other inpatient units.

ED observation unit nurses educated medical consultants, such as cardiologists, neurologists, etc., about the hybrid model that focused on making a disposition within 24 hours. Making an observation patient disposition within 24 hours is very different from an exclusively inpatient care model in which providers will wait, often until day-shift staff are present, to do additional testing. Providers may then wait an additional 12 to 24 hours before ordering follow-up testing on observation patients in the hospital. Once the consultants better understood the hybrid model and the necessity of patient dispositions within 24 hours, they more readily coordinated care with the APRNs for much faster dispositions.

Limitations

During the planning phase, this quality improvement project did not employ a formal quality improvement model, which would have strengthened the implementation and evaluation of this project. Additionally, quality improvement projects by nature are designed for specific facilities. These results, while providing valuable elements for consideration by other hospitals contemplating the development of an ED observation unit, are not generalizable beyond this hospital.

This unit was planned and implemented during the COVID-19 pandemic. Because of limited resources, there was no measurement process in place to assess how individual variables (e.g., the influence of standardized medical management or the dedicated prioritization of

support services) impacted time to disposition. Future projects could plan and measure how individual variables impact specific metrics, such as LOS.

Implications for Emergency Nurses

Emergency nurses and APRNs play a vital role in reducing patient LOS while providing high quality, safe ED observation unit patient care. The hybrid model provides a unique set of challenges to emergency nurses, who have to (re)learn inpatient assessment and care provision skills. However, active participation in planning for and care provision in an ED observation unit is a unique opportunity for emergency nurses. Being involved in all aspects of patient care (phlebotomy, providing EKGs, transportation, and inpatient assessments and direct care) and facilitating team communication to ensure APRNs are immediately aware of all testing results and treatment outcomes leads to faster disposition times and shortened patient LOS. Emergency nurses and leaders in the ED observation unit bring excellent knowledge of fast patient flow. These skills can be used to educate inpatient nursing staff officers on the necessity of maintaining ED staff ratios in this observation area which is considered inpatient unit. Emergency nurses are an indispensable and vital part of the ED observation unit meeting LOS, patient care quality, and financial goals.

Conclusions

The ED observation unit decreased observation patient LOS, maintained higher patient satisfaction markers, increased ED and inpatient bed capacity, and demonstrated a positive financial revenue impact. This unit proved its sustainability and will soon expand from 16 beds to 32 beds. Leadership will continue to monitor the effect on hospital consultants and ancillary staff. Next steps include expanding this ED observation unit to other hospitals in this system.

367 As the hybrid model ED observation unit is implemented in other hospitals of this system,
368 continuous metric monitoring will improve ED and inpatient bed capacity, produce a positive
369 fiscal impact, and deliver high quality, efficient care.

370

TABLE 1.**Expert Stakeholder Consultation Group**

Advanced Practice Nurses
 Business Analytics Director
 Chief Nursing and Chief Operating
 Officers
 Emergency Nurses and Physicians
 Hospital President
 Inpatient Nursing Director
 Observation Unit Medical Director
 Medical Administrator
 Patient Experience Director

TABLE 2.**ED observation unit Observation Patient Abdominal Pain Inclusion/ Exclusion Criteria, Protocols, and Disposition Criteria¹³**

Exclusion Criteria	Inclusion Criteria	Protocol Flow Chart	Disposition Criteria
<ul style="list-style-type: none"> - Unstable vital signs (heart rate greater than 110, systolic blood pressure less than 100, respiratory rate greater than 22) - Immunocompromised patient (Acquired Immune Deficiency Syndrome, currently on active chemotherapy, transplant) - Pregnant patient - Suspected other causes of abdominal pain (bowel obstruction, cholecystitis, appendectomy, acute coronary syndrome) - Surgical abdomen – free air, rigidity, rebound tenderness 	<ul style="list-style-type: none"> - Stable vital signs - Ancillary signs/symptoms – anorexia, nausea, and vomiting - Negative pregnancy test for women of childbearing age - Non-surgical abdomen - High likelihood of discharge within 24 hours 	<p><i>Emergency Department Interventions</i></p> <ul style="list-style-type: none"> - Monitor vital signs - Intra-venous fluids, oxygen - Telemetry heart monitoring - Labs (complete blood count, complete metabolic panel, lipase, lactic acid, urinalysis (if urinary tract infection, kidney stone, or pyelonephritis is suspected), urine pregnancy) stable - electrocardiogram and cardiac work up, if indicated - Antiemetics started - Imaging negative - Consultation with a specialist (Surgical or 	<p><i>Home</i></p> <ul style="list-style-type: none"> - Labs stabilized, if ordered - Stable vital signs - Negative work up - Improved in clinical symptoms (pain resolved and/or nausea and vomiting resolved within 24 hours) - Able to tolerate solids and liquids by mouth <p><i>Consider admission to the Inpatient Hospital Admission</i></p> <ul style="list-style-type: none"> - No improvement in clinical symptoms despite intravenous fluids, antiemetics, and analgesics within 24 hours - Unstable vital signs

<ul style="list-style-type: none"> - History of frequent ED visits for abdominal pain – suspected habitual patient/narcotic abuse - Large volume gastro-intestinal bleed – active hematemesis, melanotic stools 		<p>Gastro-Intestinal) if indicated</p> <ul style="list-style-type: none"> - Complete documentation in the chart prior to transfer to observation unit <p><i>Observation Unit</i></p> <p><i>Interventions</i></p> <ul style="list-style-type: none"> - Monitor vital signs - IV hydration, oxygen - Telemetry - Antiemetics - Analgesics on prn basis - Nothing by mouth - Follow up consultant recommendations (Surgical or Gastro-Intestinal), if consulted by the ED or as needed - Serial abdominal exams every 4 hours while awake and as indicated 	<ul style="list-style-type: none"> - Work up shows an alternative cause that requires inpatient admission - Cannot tolerate solids and/or liquids by mouth - Surgical abdomen - Consultant preference
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TABLE 3.
Discharge Order Written to Actual Discharge Time in Minutes for Hospital-Located
Observation Patients versus ED Observation Unit-Located Observation Patients

Time Period	October 2020 to September 2021*	October 2021 to September 2022	
	Hospital Observation Patients	Hospital Observation Patients	ED Observation Unit Patients
Patient Complaint	minutes (<i>n</i>)	minutes (<i>n</i>)	minutes (<i>n</i>)
Rule Out TIA	211 (158)	263 (44)	70 (303)
Chest Pain	154 (444)	200 (281)	64 (658)
GI Bleed	208 (84)	291 (63)	77 (23)
General GI	190 (409)	193 (442)	78 (196)
Not Specified	197 (3,331)	260 (3,005)	80 (1,459)
Foreign Body	72 (1)	103 (1)	29 (1)
N	4,427	3,836	2,640

*Fiscal year prior to opening of ED observation unit

Calculations excluded encounters missing discharge order to discharge info and emergency department patients assigned to the ED observation unit but awaiting an inpatient bed assignment, left against medical advice, or expired patients.

KEY: *n* = Total of each group. *N* = Total number of all groups. TIA = trans-ischemic attack GI = gastro-intestinal

TABLE 4.
Length of Stay in Hours for Hospital-Located Observation Patients versus ED Observation
Unit-Located Observation Patients
October 2021 – September 2022

Patient Complaint	Hospital Observation Patient LOS mean hours (<i>SD</i>)	ED Observation Unit Patient LOS mean hours (<i>SD</i>)	<i>t</i> -test t-value (<i>DF</i>)
Rule Out TIA	54.04 (57.4)	24.82 (24.8)	3.58 (49)*
Chest Pain	49.65 (49.7)	23.75 (9.28)	11.55 (327)**
GI Bleed	82.59 (48.4)	29.93 (14.2)	7.91 (85)**
General GI	56.74 (56.7)	26.44 (13.5)	15.44 (649)**
Not Specified	63.9 (45.0)	27.9 (17.6)	39.02 (4561)**

p*<.001, *p*<.000

KEY: LOS = Length of stay. *SD* = standard deviation. *DF* = degrees of freedom. TIA = trans-ischemic attack. GI = gastro-intestinal

TABLE 5.
Press Ganey Patient Satisfaction Scores¹¹: Compared to Inpatient Hospital Units
(Observation Unit Patients and Inpatients)
November 2022

Press Ganey Category	ED Observation Unit Rank (Out of 19 Inpatient Units)	Percentile Rank
Communication with Doctors	3	89%
Care Transition	4	79%
Cleanliness of Environment	4	79%
Communication with Nurses	4	79%
Response of Hospital Staff	5	74%
Rate the Hospital Based on the Unit	6	68%

KEY

- **ED Observation Unit Rank:** Indication of the ED observation unit's Percentile Rank as compared to the hospital's 19 inpatient units
- **Percentile Rank:** the "Top Box" score or the percent of patients that checked "Always" compared to other hospitals in the Press Ganey database¹⁴

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