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Emergency Department and Patient Flow Current Awareness Bulletin

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The impact of the Covid-19 epidemic on all-cause attendances to emergency departments in two large London hospitals: an observational study

This report aimed to assess how the reorganisation of hospital care and admission policies to respond to the Covid-19 epidemic affected emergency attendances and emergency hospital admissions. The report uses administrative patient-level clinical hospital records from two large London hospitals from Imperial College Healthcare NHS Trust (St Mary's and Charing Cross) to analyse trends in attendances to emergency departments and emergency admissions pre- and post-implementation of lockdown policies in England.

Rebuilding the NHS: improving medical pathways for acute care

The RCEM, together with the Royal College of General Practitioners, Royal College of Physicians and the Society for Acute Medicine, have made recommendations for the immediate transformation of the urgent and emergency care pathway. As the Covid-19 pandemic continues, the public must be confident that they will receive urgent and emergency care in a safe environment. The statement sets out some principles and makes ten recommendations.

Title: Artificial Intelligence in Emergency Medicine: Surmountable Barriers With Revolutionary Potential.

Citation: Annals of Emergency Medicine; Jun 2020; vol. 75 (no. 6); p. 721-726
Author(s): Grant ; McParland, Aidan; Mehta, Shaun; Ackery, Alun D.

Title: Design of the Academic Emergency Department.

Citation: Emergency medicine clinics of North America; Aug 2020; vol. 38 (no. 3); p. 617-631
Author(s): Marshall, Kenneth D; Imhoff, Bryan; Zilm, Frank

Abstract: This article introduces a clinical audience to the process of emergency department (ED) design, particularly relating to academic EDs. It explains some of the major terms, processes, and key decisions that clinical staff will experience as participants in the design process. Topics covered include an overview of the planning and design process, issues related to determining needed patient capacity, the impact of patient flow models on design, and a description of several common ED design types and their advantages and disadvantages.

Title: Delphi assessment of audit and research priorities in an emergency department.

Citation: Emergency medicine Australasia : EMA; Aug 2020; vol. 32 (no. 4); p. 556-561
Author(s): O'Donnell, Sinéad M; Carison, Anna; Adams, Jessica; Long, Elliot; Babl, Franz E

Objective: Audit and research projects in the ED are important to improve patient care but can be time and resource consuming. We identified and prioritised audit and research topics

among multidisciplinary ED staff to fill perceived knowledge gaps, encourage engagement, reduce duplication and facilitate translation of evidence into clinical practice.

Methods: A two-stage electronic Delphi survey process was undertaken by senior medical, nursing, education and social work staff at the Royal Children's Hospital, Victoria. Survey 1 collected demographic data and audit and research ideas following a series of open-ended questions. Priority themes were defined as those that had more than four responses. Survey 2 used a 7-point Likert ranking of these themes to generate a departmental audit and research prioritisation list.

Results: 72/89 (82%) available senior staff responded to survey 1 and 63/83 (76%) responded to survey 2. Survey 1 yielded 208 audit and 130 research topics. Survey 2 established a prioritised list of 17 audit and 14 research topics. Top audit themes were mental healthcare, patient flow, management of sepsis and delays in ED specialist referrals. Top research priorities were the management of sepsis, mental healthcare, management of patients with autism and the management of severe asthma.

Conclusions: This Delphi study has provided departmental audit and research priorities that are perceived to be of importance across the multidisciplinary ED team. This methodology allows strategic allocation of limited resources and may increase staff engagement.

Title: Burns and Scalds Assessment Template: standardising clinical assessment of childhood burns in the emergency department.

Citation: Emergency Medicine Journal; Jun 2020; vol. 37 (no. 6); p. 351-
Author(s): Hepburn ; Bennett, Verity; Kemp, Alison Mary; Hollen, Linda Irene; Nuttall, Diane; Roberts, Zoe; Farrell, David; Mullen, Stephen
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Objectives: The Burns and Scalds Assessment Template (BaSAT) is an evidence-based proforma coproduced by researchers and ED staff with the aim of (1) standardising the assessment of children attending ED with a burn, (2) improving documentation and (3) screening for child maltreatment. This study aimed to test whether the BaSAT improved documentation of clinical, contributory and causal factors of children's burns.
Methods: A retrospective before-and-after study compared the extent to which information was recorded for 37 data fields after the BaSAT was introduced in one paediatric ED. Pre-BaSAT, a convenience sample of 50 patient records of children who had a burn was obtained from the hospital electronic database of 2007. The post-BaSAT sample included 50 randomly selected case notes from 2016/2017 that were part of another research project. Fisher's exact test and Mann-Whitney U tests were conducted to test for statistical significance.
Results: Pre-BaSAT, documentation of key data fields was poor. Post-BaSAT, this varied less between patients, and median completeness significantly ($p<0.001$) increased from 44% (IQR 4%-94%) to 96% (IQR 94%-100%). Information on 'screening for maltreatment, referrals to social care and outcome' was poorly recorded pre-BaSAT (median of 4% completed fields) and showed the greatest overall improvement (to 95%, $p<0.001$). Documentation of domestic violence at home and child's ethnicity improved significantly ($p<0.001$) post-BaSAT; however, these were still not recorded in 36% and 56% of cases, respectively.
Conclusion: Introduction of the BaSAT significantly improved and standardised the key clinical data routinely recorded for children attending ED with a burn

Title: Emergency Department Operations II: Patient Flow.

Citation: Emergency medicine clinics of North America; May 2020; vol. 38 (no. 2); p. 323-337
Author(s): Berg, Evan; Weightman, Adam T; Druga, David A

Abstract: Emergency departments have always been busy, but persistent annual increases in volume and rates of admission have led to high levels of boarding patients, adding additional risk to the situation. This article reviews specific areas of risk as patients progress through their care in the emergency department and methods by which to mitigate this risk. Beginning with an overview of the current state, commonly used throughput metrics are reviewed before proceeding to a discussion of best practice strategies to decrease risk exposure at input, throughput, and output phases of the patient visit.

Title: Reducing Blood Culture Contamination in the Emergency Department.

Citation: Journal of Nursing Care Quality; Jul 2020; vol. 35 (no. 3); p. 245-251
Author(s): McLeod

Abstract: Blood culture contamination results in delayed or unnecessary treatments, increased morbidity risk, extended lengths of hospital stay, and increased health care costs. Collecting 2 sets of blood cultures from separate sites helps differentiate bloodstream infections (BSIs) from contamination. Blood culture contamination rates trailed the national threshold of less than 3% in one southeastern US emergency department (ED). Same-site and single-set collection issues were also identified. This pre-/postintervention quality improvement study included 1137 patients (preintervention: n = 560; postintervention: n = 577) of all ages with blood culture orders in a 13-bed tertiary care ED. Interventions: A staff educational program, blood culture collection checklist with protocol, and monthly collective and individual feedback were implemented. Blood culture contamination rates decreased from 3.39% to 2.6%. Same-site collection rates decreased from 15.13% to 4.14%. The interventions effectively reduced blood culture contamination rates and same-site blood culture collections in the ED, enhancing the quality of care for patients with BSIs.

Title: The Discharge Lounge: A Patient Flow Process Solution.

Citation: Journal of Nursing Care Quality; Jul 2020; vol. 35 (no. 3); p. 240-244
Author(s): Woods ; Sandoval, Rebecca; Vermillion, Gregory; Bates-Jackson, Brenda; Nwankwo, Audrey; Canamar, Catherine P.; Sarff, Laura

Objective: Patient flow, from emergency department admission through to discharge, influences hospital overcrowding. We aimed to improve patient flow by increasing discharge lounge (DL) usage. Local problem: Patients need to receive a continuum of nursing care to encourage compliance with follow up care after discharge from the acute care setting.
Methods: Baseline data revealed inefficient use of the DL. We targeted the medical-surgical unit with the lowest DL use and trialled interventions over sequential Plan-Do-Study-Act cycles.
Interventions: After surveying the nursing staff, we assessed the influence of 3 interventions on DL usage: educating staff on patient eligibility, engaging a recruitment scout, and displaying a visual cue notifying staff when a patient's discharge order was written.
Results: The unit's average DL use increased from 18% to 36%, while hospital overcrowding and discharge turnaround time decreased.
Conclusion: The DL is an effective tool to improve patient flow and decrease hospital overcrowding.

Title: Lean Process Improvement in the Emergency Department.

Citation: Emergency medicine clinics of North America; Aug 2020; vol. 38 (no. 3); p. 633-646 PubMedID: 32616284
Author(s): Breen, Lorna M; Trepp, Richard; Gavin, Nicholas

Abstract: Lean engineering is based on a process improvement strategy originally developed at Toyota and has been used in many different industries to maximize efficiency by minimizing waste. Lean improvement projects are frequently instituted in emergency departments in an effort to improve processes and thereby improve patient care. Such projects have been undertaken with success in many emergency departments in order to improve metrics such as door-to-provider time, left without being seen rate, and patient length of stay. By reducing waste in the system, Lean processes aim to maximize efficiency and minimize delay and redundancy to the extent possible.

Title: Queuing Theory and Modeling Emergency Department Resource Utilization.

Citation: Emergency medicine clinics of North America; Aug 2020; vol. 38 (no. 3); p. 563-572
Author(s): Joseph, Joshua W

Abstract: Queueing theory is a discipline of applied mathematics that studies the behavior of lines. Queueing theory has successfully modeled throughput in a variety of industries, including within the emergency department (ED). Queueing equations model the demand for different processes within the ED, and help to factor in effects of variability on delays and service times. Utilization is a measure of the throughput of a process relative to demand, and provides a quick means of comparing the demand for certain resources. Although there have been some significant successes in applying queueing theory to EDs, the field remains underused within ED operations.

Title: Using data mining to predict emergency department length of stay greater than 4 hours: Derivation and single-site validation of a decision tree algorithm.

Citation: Emergency Medicine Australasia; Jun 2020; vol. 32 (no. 3); p. 416-421 Available at Emergency medicine Australasia : EMA - from Wiley Online Library Medicine and Nursing Collection 2020
Author(s): Rahman ; Honan, Bridget; Glanville, Thomas; Hough, Peter; Walker, Katie

Objectives: Health services have an imperative to reduce prolonged patient length of stay (LOS) in ED. Our objective is to develop and validate an accurate prediction model for patient LOS in ED greater than 4 hours using a data mining technique.
Methods: Data were collected from a regional Australian public hospital for all ED presentations between 1 January 2016 and 31 December 2017. A decision tree algorithm was built to predict patients with an ED LOS >4 hours. A total of 33 attributes were analysed. The performance of the final model was internally validated. Clinically relevant patterns from the model were analysed.
Results: The accuracy of the model was 85%. We identified that patients at our site who were at high risk of ED LOS >4 hours were those who were waiting in ED for a medical consultation, or those who were waiting for a urology, surgical, orthopaedic or paediatric consultation if the request for consultation occurred more than 2 hours after the patient was first seen by an ED doctor.
Conclusion: This model performed very well in predicting ED LOS >4 hours for each individual patient and demonstrated a number of clinically relevant patterns. Identifying

patterns that influence ED LOS is important for health managers in order to develop and implement interventions targeted at those clinical scenarios. Future work should look at the utility of displaying individual patient risk of ED LOS >4 hours using this model in real-time at the point-of-care.

Title: "Working Against Gravity": The Uphill Task of Overcapacity Management.

Citation: Health Services Insights; Jun 2020 ; p. 1-6
Author(s): Kreindler ; Star, Noah; Hastings, Stephanie; Winters, Shannon; Johnson, Keir; Mallinson, Sara; Brierley, Meaghan; Goertzen, Leah Nicholson; Anwar, Mohammed Rashidul; Aboud, Zaid

Abstract: While most health systems have implemented interventions to manage situations in which patient demand exceeds capacity, little is known about the long-term sustainability or effectiveness of such interventions. A large multi-jurisdictional study on patient flow in Western Canada provided the opportunity to explore experiences with overcapacity management strategies across 10 diverse health regions. Four categories of interventions were employed by all or most regions: overcapacity protocols, alternative locations for emergency patients, locations for discharge-ready inpatients, and meetings to guide redistribution of patients. Two mechanisms undergirded successful interventions: providing a capacity buffer and promoting action by inpatient units by increasing staff accountability and/or solidarity. Participants reported that interventions demanded significant time and resources and the ongoing active involvement of middle and senior management. Furthermore, although most participants characterized overcapacity management practices as effective, this effectiveness was almost universally experienced as temporary. Many regions described a context of chronic overcapacity, which persisted despite continued intervention. Processes designed to manage short-term surges in demand cannot rectify a long-term mismatch between capacity and demand; solutions at the level of system redesign are needed.

Title: Distributed situation awareness: a health-system approach to assessing and designing patient flow management.

Citation: Ergonomics; Jun 2020; vol. 63 (no. 6); p. 682-709
Author(s): Alhaider ; Lau, Nathan; Davenport, Paul B.; Morris, Melanie K.

Abstract: Patient flow management is a system-wide process but many healthcare providers do not integrate multiple departments into the process to minimise the time between treatments or medical services for maximum patient throughput. This paper presents a case study of applying Distributed Situation Awareness (DSA) to characterise system-wide patient flow management and identify opportunities for improvements in a healthcare system. This case study employed a three-part method of data elicitation, extraction, and representation to investigate DSA. Social, task, and knowledge networks were developed and then combined to characterise patient flow management and identify deficiencies of the command and control centre of a healthcare facility. Social network analysis provided centrality metrics to further characterise patient flow management. The DSA model helped identify design principles and deficiencies in managing patient flow. These findings indicate that DSA is promising for analysing patient flow management from a system-wide perspective. Practitioner summary: This article examines Distribution Situation Awareness (DSA) as an analysis framework to study system-wide patient flow management. The DSA yields social, task, and knowledge networks that can be combined to characterise patient flow and identify deficiencies in the system. DSA appears promising for analysing communication and coordination of complex systems. Abbreviations: CDM: critical decision

method; CTaC: carilion transfer and communications center; EAST: event analysis systematic teamwork; ED: emergency department; DES: discrete event simulation; DSA: distributed situation awareness; SA: situation awareness; SNA: social network analysis

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Title: The Inpatient Discharge Lounge as a Potential Mechanism to Mitigate Emergency Department Boarding and Crowding.

Citation: Annals of Emergency Medicine; Jun 2020; vol. 75 (no. 6); p. 704-714
Author(s): Franklin ; Vakili, Sharif; Huckman, Robert S.; Hosein, Sarah; Falk, Nicholas; Cheng, Katherine; Murray, Maria; Harris, Sheila; Morris, Charles A.; Goralnick, Eric

Abstract: Delayed access to inpatient beds for admitted patients contributes significantly to emergency department (ED) boarding and crowding, which have been associated with deleterious patient safety effects. To expedite inpatient bed availability, some hospitals have implemented discharge lounges, allowing discharged patients to depart their inpatient rooms while awaiting completion of the discharge process or transportation. This conceptual article synthesizes the evidence related to discharge lounge implementation practices and outcomes. Using a conceptual synthesis approach, we reviewed the medical and gray literature related to discharge lounges by querying PubMed, Google Scholar, and Google and undertaking backward reference searching. We screened for articles either providing detailed accounts of discharge lounge implementations or offering conceptual analysis on the subject. Most of the evidence we identified was in the gray literature, with only 3 peer-reviewed articles focusing on discharge lounge implementations. Articles generally encompassed single-site descriptive case studies or expert opinions. Significant heterogeneity exists in discharge lounge objectives, features, and apparent influence on patient flow. Although common barriers to discharge lounge performance have been documented, including underuse and care team objections, limited generalizable solutions are offered. Overall, discharge lounges are widely endorsed as a mechanism to accelerate access to inpatient beds, yet the limited available evidence indicates wide variation in design and performance. Further rigorous investigation is required to identify the circumstances under which discharge lounges should be deployed, and how discharge lounges should be designed to maximize their effect on hospitalwide patient flow, ED boarding and crowding, and other targeted outcomes.

Title: Improving Patient Experience of Wait Times and Courtesy through Electronic Sign-in and Notification in the Phlebotomy Clinic.

Citation: Archives of Pathology & Laboratory Medicine; Jun 2020; vol. 144 (no. 6); p. 769-775
Author(s): Le ; Wagar, Elizabeth A.; Phipps, Ron A.; Del Guidice, Robert E.; Han Le; Middleton, Lavinia P.

Abstract: The phlebotomy clinic, which sees on average 900 patients a day, was faced with issues of congestion and noise due to inefficient workflow and processes. The staff called each patient name for his or her turn, and patients were unsure of wait time and position in line. These factors led to unfavorable patient satisfaction regarding wait times and courtesy of the staff.

Objective: To improve patients' experience of wait times and courtesy in the phlebotomy clinic through an electronic sign-in and notification system, redesign of the area, and training of employees.

Design: An electronic sign-in and notification system was implemented in the phlebotomy clinic. Several sign-in stations and whiteboard wall monitors were installed in the clinic, along with a redesign of the patient flow. A Press Ganey survey was given to patients after their visit which included 3 questions related to wait times, courtesy, and information about delays, respectively. The mean responses for each month between March 2016 and December 2018 were aggregated and compared for each measure.

Results: Overall, wait time saw a 7.7% increase in satisfaction score, and courtesy saw a 1.0% increase in satisfaction score during the course of the several interventions that were introduced. The operational efficiency of the clinic also saw a veritable increase because the percent of patients processed within 20 minutes increased by 27%, from 62% (8212 of 13 245 blood draws) to 89% (11 703 of 13 143 blood draws).

Conclusions: The interventions implemented proved to increase the patient satisfaction in each of the measures. The electronic sign-in and whiteboards provided valuable information to both patients and staff.

Title: Nurse-led chest pain hot clinics: improving patient flow in the emergency department.

Citation: British Journal of Cardiac Nursing; May 2020; vol. 15 (no. 5); p. 1-11
Author(s): Taylor ; Kopanska, Agnieszka; Cobb, Tessa

Abstract: This article describes the authors' experiences of a specialist pathway for low-risk patients with chest pain admitted to the emergency department. This pathway uses a modified HEART score and highly sensitive troponin I testing to categorise patients. This was introduced to facilitate safe and speedy discharge of these patients within the 4-hour target. The aim was to demonstrate a reduction in length of stay and a reduction in overcrowding in the emergency department. This also included the introduction of a new nurse-led chest pain hot clinic to provide a specialist cardiology review within 72 hours of discharge. This clinic enabled more appropriate targeted investigation and treatment for patients. As a new initiative, it was important to ensure patient safety with a <1% incidence of major adverse cardiac event at 30 days, which was achieved. The modified HEART score also enabled more low-risk patients to be rapidly discharged from the emergency department. The chest pain hot clinics ensure patients are appropriately assessed and investigated for coronary artery disease reducing the number of unnecessary investigations. It also demonstrated a reduction in the number of computerised tomography coronary angiogram requests enabling more appropriate and timely investigations. In addition, there was a reduction in medical admissions and emergency department overcrowding. These initiatives also reduced the overall length of stay and increased the number of patients discharged within the 4-hour target from the emergency department

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Title: Ability of triage nurses to predict, at the time of triage, the eventual disposition of patients attending the emergency department (ED): a systematic literature review and meta-analysis.

Citation: Emergency medicine journal : EMJ; Jun 2020
Author(s): Afnan, Michael Anis Mihdi; Netke, Tejas; Singh, Parminder; Worthington, Helena; Ali, Fatima; Kajamuhan, Changavy; Nagra, Arjan

Objective: Exit block is the most significant cause of poor patient flow and crowding in the emergency department (ED). One proposed strategy to reduce exit block is early admission predictions by triage nurses to allow proactive bed management. We report a systematic review and meta-analysis of the accuracy of nurse prediction of admission at triage.

Methodology: We searched MEDLINE, Cochrane, Embase, CINAHL and grey literature, up to and including February 2019. Our criteria were as follows: prospective studies analysing the accuracy of triage nurse intuition-after gathering standard triage information-for predicting disposition for adult ED patients. We analysed the results of this test-nurse prediction of disposition-in a diagnostic test analysis review style, assessing methodology with the Quality Assessment of Diagnostic Accuracy Studies 2 checklist. We generated sensitivity, specificity and likelihood ratios (LRs). We used LRs and pretest probability of admission (baseline admission rate) to find positive and negative post-test probabilities. **Results:** We reviewed 10 articles. Of these, seven had meta-analysable data (12 282 participants). The studies varied in participant selection and admission rate, but the majority were of moderate quality and exclusion of each in sensitivity analyses made little difference. Sensitivity was 72% and specificity was 83%. Pretest probability of admission was 29%. Positive and negative post-test probabilities of admission were 63% and 12%, respectively.

Conclusion: Triage nurse prediction of disposition is not accurate enough to expedite admission for ED patients on a one-to-one basis. Future research should explore the benefit, and best method, of predicting total demand.

Title: Value Mechanisms in the Implementation of Intelligent Patient Flow Management System - A Multiple Case Study.

Citation: Studies in health technology and informatics; Jun 2020; vol. 270 ; p. 708-712
Author(s): Tanila, Tuomo; Tenhunen, Henni; Hirvonen, Petteri

Abstract: The purpose of this study was to investigate the value mechanisms in implementing a digital health intervention (DHI) in different contexts and countries. We utilized realist evaluation and the CIMO logic (Context, Intervention, Mechanism, Outcome) to analyze the mechanisms explaining the value capture of Klinik Pro, an Intelligent Patient Flow Management system (IPFM), which is a DHI for seeking of treatment and triage purposes. The study was conducted as a multiple case study using semi-structured interviews to research four market expansions in three countries. In total, seven healthcare mechanisms were discovered: co-creation, proper competence level, coordination, evidence-based medicine, integration, proper timing, demand management. The first four mechanisms were the same in all cases. CIMO framework proved to be useful in the value formulation of the IPFM.

Title: Assessment of patient flow and optimized use of lean thinking transformation from the perspective of graph theory and spectral graph theory: A case study.

Citation: Technology and health care : official journal of the European Society for Engineering and Medicine; Jun 2020
Author(s): Papp, Csaba; Harsanyi, Szilvia; Gesztelyi, Rudolf; Emri, Miklos; Zsuga, Judit

Background: Hospital re-engineering initiatives aiming to meet the requirement for patient-centered care often face significant barriers. Opportunities from the optimization of patient flow logistics are often overlooked due to the perception that patient transport related services are ancillary.

Objectives: To reorganize patient pathways by optimizing inpatient assignment and outpatient unit relocation.

Methods: Our analysis was conducted in a campus-based hospital hosting 1694 inpatient beds. Patient flow data was used for algorithm-based optimization to minimize the sum of the distances due to visits to outpatient units and visits by consulting physicians. Inpatients

were reordered and outpatient units were relocated to minimize transport need. Optimized schemes were analyzed using graph- and spectral graph theory.

Results: Both optimizations yielded an altered hospital layout in which the need for patient transfers decreased (over 30% and 23% in terms of total distance and transfer episodes, respectively). The optimized systems gave rise to buildings with greater specialization, higher importance in terms of contributing to the network architecture, greater synchronization and robustness.

Conclusions: The top-down algorithm-based optimization scheme yielded a system in which the need for cross-building patient transfer decreased. We suggest that network analysis may be a useful tool for capacity planning.

Title: Patient Flow Analysis Using Real-Time Locating System Data: A Case Study in an Outpatient Oncology Center.

Citation: JCO oncology practice; Jul 2020 ; p. OP2000119
Author(s): Kang, Hyojung; Haswell, Ethan

Objective: Electronic health records (EHRs) have been mainly used to analyze bottlenecks in care processes of outpatient oncology clinics. However, EHR data lead to some limitations in understanding patient flow because they are manually entered and not updated in real time. Data generated from a real-time location system (RTLS) can supplement EHR data. This study aims to demonstrate how RTLS data combined with EHR data can be used to evaluate potential interventions to improve patient flow in an outpatient cancer center.

Methods: EHR and RTLS data obtained from a large cancer center in central Virginia were analyzed to estimate process times and determine the various patient paths patients follow during their visit for infusion. Using the input data, we developed a discrete-event simulation (DES) model and assessed 5 what-if scenarios involving changes in staff scheduling and care processes.

Results: Raw RTLS data including > 3.5 million observations were preprocessed to remove noise and extract meaningful information. The DES results showed that new nursing schedules for the infusion center and improved pharmacy processes have positive impacts on reducing patient waiting times by approximately 20% and overall length of stay by approximately 3.4% to 4.6%, compared with the current system.

Conclusion: Combining EHR and RTLS data, we were able to capture dynamic aspects of patient flow more realistically. DES models that represent a complex system based on accurate input data can help decision making on determining operational changes to improve patient flow.

Title: Interprofessional barriers in patient flow management: an interview study of the views of emergency department staff involved in patient admissions.

Citation: Journal of interprofessional care; Jun 2020 ; p. 1-9
Author(s): Boiko, Olga; Edwards, Matthew; Zschaler, Steffen; Miles, Simon; Rafferty, Anne Marie

Abstract: Patient flow in emergency departments (EDs) is notoriously difficult to manage efficiently. While much of the attention has focused on the procedures, protocols and pathways in which patients receive their first hours of care, less attention has been paid to the relational factors that make it happen. Our study is the first, to our knowledge, to consider the role of interprofessional barriers, defined as suboptimal ways of working, as

perceived by ED staff in patient flow management. Drawing on 19 interviews with hospital staff in an acute tertiary trauma center hospital in England, we established three flow-related types of interprofessional barriers: ED teamwork barriers, performance-driven coordination barriers, and referral-related collaborative barriers. Knotworking was recognized as a form of interactions and asset to teamworking, coordination, and collaboration. Identifying processes such as chasing, escalating, and advocating enabled our investigation to highlight a very complex set of interprofessional interactions, and signpost what the suboptimal practices of flow management are. Our analysis holds promise for hospitals beyond the National Health Service in England.

Title: The Impact of Advanced Practice Provider Staffing on Emergency Department Care: Productivity, Flow, Safety, and Experience.

Citation: Academic emergency medicine : official journal of the Society for Academic Emergency Medicine; Jul 2020
Author(s): Pines, Jesse M; Zocchi, Mark S; Ritsema, Tamara; Polansky, Maura; Bedolla, John; Venkat, Arvind; US Acute Care Solutions Research Group

Objective: We examined emergency department (ED) advanced practice provider (APP) productivity and how APP staffing impacted ED productivity, safety, flow, and experience.

Methods: We used 2014-18 data from a national emergency medicine group. The exposure was APP coverage: APP hours as a percentage of total clinician hours at the ED-day level. Multivariable regression was used to assess the relationship between APP coverage and productivity outcomes (patients/clinician hour, relative value units [RVU]/clinician hour, RVUs/visit, and RVUs/salary-adjusted hour), flow outcomes (length of stay & left without treatment), safety (72-hour returns, incident reports), and experience (Press-Ganey scores), adjusting for patient and facility characteristics.

Results: In 13.02 million patient visits in 105,863 ED-days across 94 EDs from 2014 to 2018, nurse practitioners (NP) and physician assistants (PA) managed 5.4% and 18.6% of visits independently, 74.6% by emergency physicians alone, and 1.4% jointly. APP visits had lower RVUs/visit (2.8 v. 3.7) and lower patients/hour (1.1 v. 2.2) compared to physician visits. Higher APP coverage (by 10%) at the ED-day level was associated with lower patients/clinician hour by 0.12 (95% confidence interval [CI] -0.15 to -0.10) and lower RVUs/ clinician hour by 0.4 (CI -0.5 to -0.3). There was no impact of increasing APP coverage on RVUs/salary-adjusted hour or RVUs/visit. There was also no effect of increasing APP coverage on flow, safety, or patient experience.

Conclusion: In this group, APPs treated less complex visits and half as many patients/hour compared to physicians. Higher APP coverage allowed physicians to treat higher acuity cases. We found no economies of scale for APP coverage, suggesting that increasing APP staffing may not lower staffing costs. However, there were also no adverse observed effects of APP coverage on ED flow, clinical safety or patient experience, suggesting little risk of increased APP coverage on clinical care delivery.

Title: Responding to the COVID-19 Pandemic: A New Surgical Patient Flow Utilizing the Preoperative Evaluation Clinic.

Citation: American journal of medical quality : the official journal of the American College of Medical Quality; Aug 2020
Author(s): Pai, Sher-Lu; Irizarry-Alvarado, Joan M; Pitruzzello, Nancy E; Bosch, Wendelyn; Aniskevich, Stephen

Abstract: During the coronavirus disease 2019 (COVID-19) pandemic, the study institution recognized the importance of providing preoperative COVID-19 testing and symptom screening to ensure patient safety. A multidisciplinary quality improvement team used Define, Measure, Analyze, Improve, and Control methodology to understand the issues, identify solutions, and streamline patient flow. The existing preoperative evaluation (POE) clinic was utilized as a centralized entity to provide COVID-19 testing, symptom screening, and infection prevention education in addition to routine preoperative medical optimization. With the new process, the percentage of patients with COVID-19 testing results returned before surgery increased from 10% to 100%. Of the 593 asymptomatic patients screened by the POE clinic, 2 were found to have positive results. These patients had their surgeries postponed until proper recovery. The study institution has extended this new process to all surgical patients, warranting facility readiness for the resumption of elective surgery.