

## 2021 CCAG Summer Fellowship Projects

<b>Project 1</b> .....	<b>2</b>
- Adverse outcomes of intra-articular and peri-tendon corticosteroid injections	
<b>Project 2</b> .....	<b>3</b>
- Evidence Based Recommendations for Stop the Bleed Kits in Schools	
<b>Project 3</b> .....	<b>4</b>
- Patient Disposition and Resources Utilized for those Requiring Emergency Department Transfer	
<b>Project 4</b> .....	<b>5</b>
- Resource Utilization for patients who arrive via EMS vs. Private vehicle to Freestanding Emergency Departments	
<b>Project 5</b> .....	<b>6</b>
- Impact of medication deprescribing on 30-day readmission rates after a traumatic fall: A multicenter cohort study	
<b>Project 6</b> .....	<b>7</b>
- Impact of desmopressin for antiplatelet reversal on the functional outcomes in traumatic brain injuries: Multicenter cohort study	
<b>Project 7</b> .....	<b>8</b>
- Evaluation of post-operative pain control in patients who have received the breast enhanced recovery after surgery protocol	
<b>Project 8</b> .....	<b>9</b>
- A Protocol for the Care of Adhesive Small Bowel Obstructions	

**2021 Cleveland Clinic Akron General  
Research Fellowship Projects**

## Project 1

**Project Title:**

Adverse outcomes of intra-articular and peri-tendon corticosteroid injections

**Specific skills/training/education required/desired:**

Request for minimum of M1 year completion. Experience with medical terminology, electronic chart review (Epic), data collection (REDCap), and data analysis (SPSS)

**Abstract of Research Plan:**

Osteoarthritis (OA) of large joints such as the hips and knees is an extremely common problem in the United States. Significant morbidity can be associated to the incidence and complications arising from OA, particularly of the knee and hip joints. Intra-articular corticosteroid injections (IACS) are commonly used to relieve pain due to OA in the hip and knee. There is no consensus among various medical specialties as to when and under what conditions IACS should be performed. The objective of this study is to determine whether IACS increases the rate of OA progression. A secondary objective is to determine if IACS is associated with increased rates of other complications to include subchondral insufficiency fractures, and osteonecrosis. Our hypothesis is that the use of IACS is associated with an increase in the speed of progression of OA of the knee and hip joints. This will be measured with the standard Kellegren-Lawrence system of classification.

**Student responsibilities:**

Electronic Chart Review (EPIC) and Data Entry (REDCap). Statistical analysis of preliminary data using SPSS with assistance from study team. Opportunity to contribute to drafting of presentation and publication.

**Clinical opportunities for the students:**

Didactic and shadowing opportunities in the department of Family Medicine

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**2021 Cleveland Clinic Akron General  
Research Fellowship Projects**

## Project 2

**Project Title:**

Evidence Based Recommendations for Stop the Bleed Kits in Schools

**Specific skills/training/education required/desired:**

This position is open to all qualified applicants at the collegiate level. Student must be driven and possess the ability to work independently and meet deadlines for successful completion of objectives. Student will participate in other studies in addition to this one and may reach out regarding those opportunities.

**Abstract of Research Plan:**

Current literature supports that Stop The Bleed (STB) has been effective in increasing confidence and willingness for participants to intervene in a casualty event but data supports that only few obtain supplies to apply their skills most commonly due to barriers of time, cost, or accessibility in time of need. Regarding accessibility, there is a gap in knowledge of both where to place kits in schools and the quantity needed based on locations with highest prevalence of mass violence and resulting injury/death. This study will address both limitations by conducting a review of all school shootings from 2010 - present to provide evidence-based recommendations for placement of kits by determining the locations where shootings take place and how many injuries occurred. As resources are limited, it is imperative that the kits are used in the most effective manner to assist with life saving measures following a fire-arm related incident.

In the past decade, Northeast Ohio has had seven reported school shootings, with 8 out of 13 injured individuals dying. The Northern Ohio Trauma System has made a goal to teach Stop the Bleed in local schools in addition to bystanders, law enforcement, and other healthcare professionals. Schools participating in STB that obtain kits are left with the decision of where they should be placed. In an ideal situation, there would be a STB kit placed in every classroom, facility, and student-populated area, but many are not fiscally capable of this. With limited STB kits, this study conducted through Cleveland Clinic Akron General aims to provide evidence-based recommendations for STB kit placement in schools for maximum benefit in the event of mass violence.

**Student responsibilities:**

The student will be responsible for completing various components of the research process, including literature review, data abstraction, writing of results, and preparation of presentations/abstracts under the guidance of faculty members.

**Clinical opportunities for the students:**

The student will be expected to attend didactics and group lectures with resident physicians during their time at Cleveland Clinic Akron General and will be offered shadowing experience as physician schedules permit.

**2021 Cleveland Clinic Akron General  
Research Fellowship Projects**

## Project 3

**Project Title:**

Patient Disposition and Resources Utilized for those Requiring Emergency Department Transfer

**Specific skills/training/education required/desired:**

This position is open to all qualified applicants at the collegiate level. Student must be driven and possess the ability to work independently and meet deadlines for successful completion of objectives.

**Abstract of Research Plan:**

Previous studies have shown that transfer to higher levels of care decreases rates of morbidity and mortality in myocardial infarction, stroke, and severe trauma.<sup>3</sup> Although patient transfer has shown to be beneficial, various factors negatively impact both the patient and transferring facility. Cost is a major implication in transporting a patient as it can have negative financial ramifications for the patient, transferring and receiving facilities, and the overall healthcare system.<sup>2</sup> Contributing to the high cost of transfer are the resources it requires. From the mode of transportation to the staff scheduling and completing the transfer, there are many aspects that contribute to the cost of moving a patient to another facility.<sup>7</sup> In addition to the financial costs, there are risks involved with the physical transport of the patient: decompensation of the patient en route to the second facility, unexpected motor vehicle collisions or accidents, unanticipated delays in transportation, etc. With the inherent risk of patient transfer, it is important to fully understand the components that affect and contribute to the process. To further understand and characterize ED to ED transfers, we will analyze ED patient encounters resulting in transfer to another facility using patient information from a single, large healthcare system. With access to patients' full clinical encounters, we will better be able to determine the appropriateness of the transfers and evaluate the care patients receive at the receiving facility..

**Student responsibilities:**

The student will be responsible for completing various components of the research process, including literature review, data abstraction, writing of results, and preparation of presentations/abstracts under the guidance of faculty members.

**Clinical opportunities for the students:**

The student will be expected to attend didactics and group lectures with resident physicians during their time at Cleveland Clinic Akron General and will be offered shadowing experience as physician schedules permit.

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## **2021 Cleveland Clinic Akron General Research Fellowship Projects**

### **Project 4**

#### **Project Title:**

Resource Utilization for patients who arrive via EMS vs. Private vehicle to Freestanding Emergency Departments

#### **Specific skills/training/education required/desired:**

This position is open to all qualified applicants at the collegiate level. Student must be driven and possess the ability to work independently and meet deadlines for successful completion of objectives.

#### **Abstract of Research Plan:**

Freestanding emergency departments (FSEDs), which were first designed in the 1970s, have been gradually increasing in popularity. Originally developed to provide emergency services to rural areas, FSEDs now provide care to urban and suburban populations. FSEDs are structurally separate from a hospital, but provide 24/7 access to an emergency physician, moderate complexity laboratory testing, and advanced imaging

FSEDs are often the transport destination of emergency medical services (EMS) after patients are evaluated in the field. To date, there have been no known studies that illustrate the difference in characteristics between patients who arrive at a FSED via EMS and patients who arrive via private vehicle. Understanding these differences can be essential to providing maximum quality emergency care in the community.

EMS is a critical and costly resource which can be over-utilized in certain situations. Given the lower acuity seen at FSED's, describing the circumstances under which patients are transported to FSED's via EMS is an important step in continuing efforts to appropriately utilize health care services

The primary objective of this study is to evaluate demographics and resource utilization for patients transferred via EMS to FSEDs. This will be done by providing a description of the patients that come via EMS to both FSEDs and HBEDs and the services they receive while in the ED. This is a descriptive study of patients presenting to an FSED vs a FSED. Data to be evaluated includes laboratory testing, CT imaging, X-ray imaging, and disposition. This will be compared to patient who arrive via private vehicle at a freestanding emergency department vs. those who are seen at hospital-based emergency departments within Cleveland Clinic Health System.

#### **Student responsibilities:**

The student will be responsible for completing various components of the research process, including literature review, data abstraction, writing of results, and preparation of presentations/abstracts under the guidance of faculty members.

#### **Clinical opportunities for the students:**

The student will be expected to attend didactics and group lectures with resident physicians during their time at Cleveland Clinic Akron General and will be offered shadowing experience as physician schedules permit.

## 2021 Cleveland Clinic Akron General Research Fellowship Projects

### Project 5

**Project Title:**

Impact of medication deprescribing on 30-day readmission rates after a traumatic fall: A multicenter cohort study

**Specific skills/training/education required/desired:**

Pharmacy/MS/PhD/Medical students all welcome to apply. Good communication and time management skills. The student should have CITI training completed prior to this experience. The student will receive additional training for literature review, REDCap data collection, statistical analysis, and manuscript writing.

**Abstract of Research Plan:**

**Background:** Falls in older adult patients can be serious events that poorly impact outcomes and affect quality of life. Medication changes at discharge are common but the true benefit of long-term changes to regimens after the acute phase of care is not well established. Furthermore, polypharmacy in older adults is a frequent practice, leading to higher likelihood of medication changes occurring at transitions of care. A limited amount of research has been done on the impact of medication changes at discharge that suggests not only is there no benefit for older adult patients and potential for harm. However, there has not been an analysis of the effect of such changes on the readmission rates of older adults who are admitted status post traumatic fall. The primary objective is to determine the effect of medication de-prescribing at hospital discharge in patients with post-traumatic falls on hospital 30-day readmission rates.

**Methods:** This is a multicenter, retrospective cohort in three adult trauma centers between 1/1/2018 and 12/31/2020. Study groups will include those with de-prescribing of home medications at discharge (de-prescribe group) versus no de-prescribing (control group). All patients age 65 and older hospitalized for traumatic falls identified through trauma registry databases are eligible for inclusion. Based on a power of 80%, alpha of 0.05, 2-sided testing, a sample size of 870 patients is needed to meet power for the primary outcome in order to detect a 5% difference between the groups.

**Discussion:** It is unclear whether de-prescribing impacts hospital readmissions for elderly patients hospitalized for a traumatic fall. Further research is needed to further evaluate whether de-prescribing medications is associated with a decreased 30-day readmissions.

**Student responsibilities:**

Data collection using REDCap; Data analysis and statistics; Manuscript writing of study design/methods

**Clinical opportunities for the students:**

The student would have clinical opportunities to round on the SICU team with the clinical pharmacist or round with the pharmacy resident. Educational experiences would be available, including trauma grand rounds, general surgery resident didactics and pharmacy resident didactics. These clinical opportunities will be limited up to 0.5 day per week.

**2021 Cleveland Clinic Akron General  
Research Fellowship Projects**

## Project 6

**Project Title:**

Impact of desmopressin for antiplatelet reversal on the functional outcomes in traumatic brain injuries: Multicenter cohort study

**Specific skills/training/education required/desired:**

Request for minimum of M2 year completion. PharmD, MS, and PhD students also welcome to apply. Microsoft Word, Excel, and PowerPoint experience required. Must be able to navigate medical charts and have a basic understanding of medical terminology.

**Abstract of Research Plan:**

**Background:** Desmopressin has been investigated for the reversal of antiplatelet agents in the setting of major bleeding. Existing literature has focused on hematoma expansion as a surrogate for clinical outcomes, with mixed results. Patients with traumatic brain injury (TBI) have been excluded from most of these studies, despite an increasing rate of antiplatelet-related intracranial hemorrhage in trauma. The primary objective of this study is to evaluate the impact of desmopressin on functional outcomes of patients with TBI.

**Methods:** This is a retrospective, observational cohort study to evaluate the safety and efficacy of desmopressin in patients with TBI. Study groups will include desmopressin (DDAVP group) administration within the initial 12 hours of admission and no desmopressin (control group). Descriptive statistics will be performed as appropriate.

**Discussion:** Previous research has demonstrated a benefit of desmopressin regarding hematoma expansion; however, it is unclear whether it impacts clinical outcomes in a TBI population. Further research is needed to evaluate the safety and efficacy of desmopressin versus no desmopressin for patients with TBI on pre-injury anti-platelet therapy.

**Student responsibilities:**

Data collection using REDCap; Data analysis and statistics; Manuscript writing of study design/methods

**Clinical opportunities for the students:**

The student would have clinical opportunities to round on the SICU team with the clinical pharmacist, emergency room with the clinical pharmacist, or round with the EM resident. Educational experiences would be available, including trauma grand rounds, EM resident didactics and pharmacy resident didactics. These clinical opportunities will be limited up to 0.5 days per week.

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**2021 Cleveland Clinic Akron General  
Research Fellowship Projects**

## Project 7

**Project Title:**

Evaluation of post-operative pain control in patients who have received the breast enhanced recovery after surgery protocol

**Specific skills/training/education required/desired:**

Request for minimum of M1 year completion. Experience with medical terminology, electronic chart review (Epic), data collection /entry (REDCap), literature reviews, and writing (protocols and manuscripts)

**Abstract of Research Plan:**

This is a retrospective chart analysis to determine the efficacy of the breast enhanced recovery after surgery (BERAS) protocol when evaluating for pain control in the post-operative setting. This chart review covers a time span of two years from January 1, 2016 to June 30, 2019. February 2017 was when the BERAS protocol was first implemented at our institution. The required fields are entered into a REDCap data base.

**Student responsibilities:**

The student will be responsible for completing chart reviews, data entry, literature reviews for other breast surgery related research projects, and opportunities to assist in writing protocols and manuscripts

**Clinical opportunities for the students:**

The student may be able to shadow surgeons in the Breast Center. Opportunities to shadow general surgeons as well

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**2021 Cleveland Clinic Akron General  
Research Fellowship Projects**

## Project 8

**Project Titles:**

A Protocol for the Care of Adhesive Small Bowel Obstructions

**Specific skills/training/education required/desired:**

Request for minimum of M1 year completion. Interest in general surgery. Prior research experience is not required. Preferred experience with literature searches, chart reviews, data entry, and scientific writing

**Abstract of Research Plan:**

Adhesive small bowel obstructions (ASBO) are common complications after intraperitoneal surgical procedures. When severe, they may lead to prolonged hospital stay and emergent surgery with significant morbidity and mortality for the patients. In order to provide high quality care to our patients at Akron General, an evidence based ASBO protocol was created considering many levels of patient care including admission and ongoing treatment with a focus on early recognition of surgical necessity. The protocol was implemented in July 2018 and given a six-month implementation window. The protocol was considered to be fully implemented in January 2019. The full ASBO protocol applies to patients presenting with obstipation greater than 24 hours, a history of abdominal surgery, and nausea/vomiting, distention, or abdominal pain. The goal of this protocol was to increase non-operative management of ASBO and decrease hospital length of stay.

Our main objective is to observe how the ASBO protocol effects non-operative management of ASBO and hospital length of stay for all patients. The secondary objective is to observe the effects of the protocol on the time to the operating room for patients receiving surgical treatment. We hypothesize that the ASBO protocol results in an increased proportion of non-operative management patients, reduced length of stay for all patients, and reduced time to the operating room for operative patients.

**Student responsibilities:**

The student will be responsible for completing various components of the research process, including literature review, chart reviews, REDCap data entry, writing discussion, and summary

**Clinical opportunities for the students:**

Clinical chart reviews, can observe in operating room if desired.

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