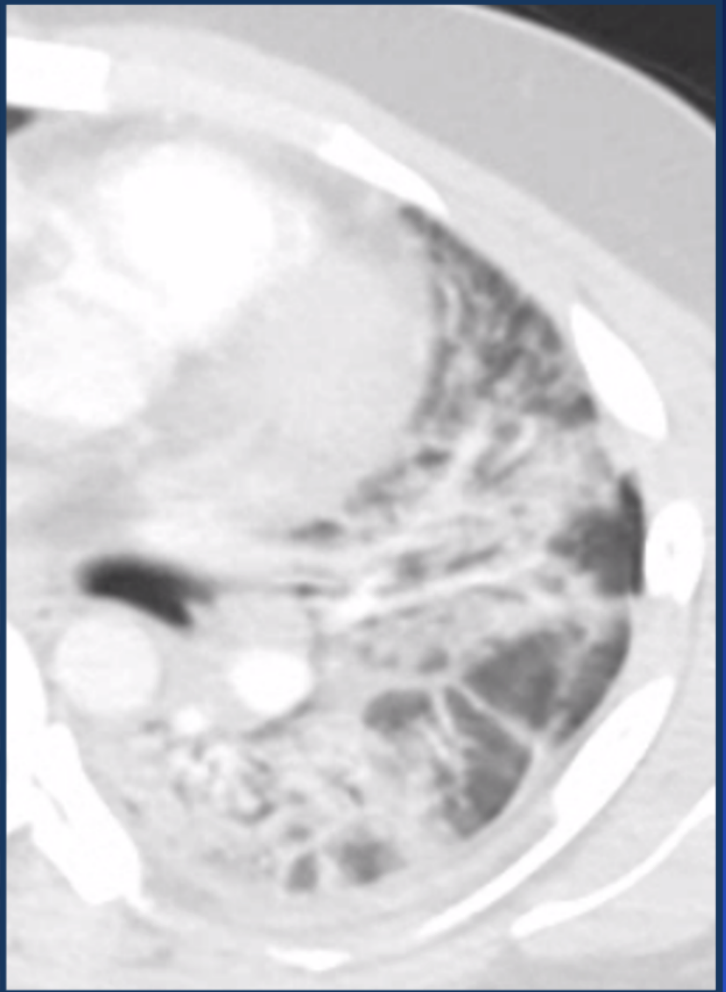
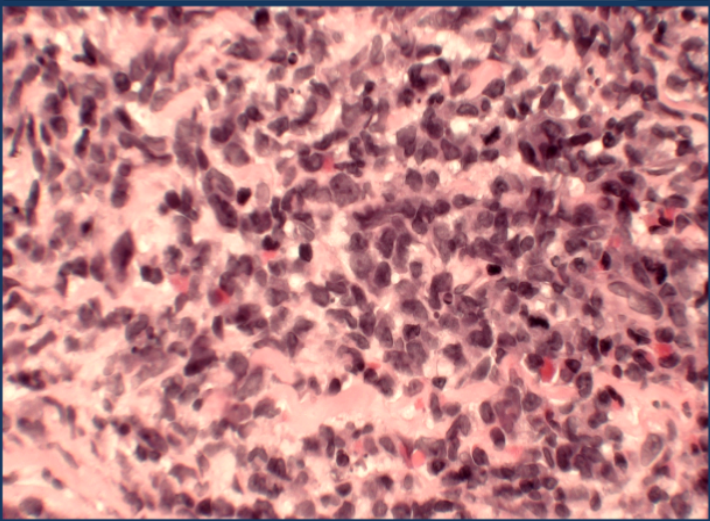


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- Preface -

May 28, 2021

Welcome back! It is my pleasure to welcome you to **Arrowhead Regional Medical Center's 15th Annual Resident Research Day**. Despite the unexpected hiatus the event had to take in 2020, it is heartening to see our Research Day return in this virtual format. There is no question that this past year and the Covid-19 pandemic have brought many new challenges to the forefront. Regardless, it is a testament to the resiliency of our ARMC Resident Physicians that they have continued to deliver outstanding care to our patients in extremely trying circumstances, without abandoning their research commitments. In total, ARMC Residents have submitted over 750 research projects since our inaugural event back in 2006.

I encourage you to read through these Proceedings, and view the posters associated with each submission on ARMC's dedicated Research Day website. Just as some of these projects derived their genesis from past year's projects, I hope that those residents who are in the discovery phase of their own research journey will look to this year's submissions for inspiration. We have already seen examples where results of research at past years Research Day have gone on to change clinical practice at our institution; it will be exciting to see if some of this year's contributions do the same.

I am deeply grateful for each of the authors whose work is represented here today, and for their faculty mentors. Likewise, we owe a debt of gratitude to the large and diverse patient population we are privileged to serve at ARMC, and from whom we are able to draw our research. Special thanks also to our Editorial Board. Several have provided steadfast support since our very first event; and we welcome several new members. The work of the Graduate Medical Education office in promoting today's event, led by Dr. Dotun Ogunyemi, is also appreciated. I would be remiss to not also direct specific appreciation to Teckah Lawrence, Erin Managbanag and Jessi Newell for being the driving forces behind coordinating this year's Research Day, and undertaking the logistics required to launch this first virtual version of the event. And finally, as always, a tremendous thank you to Dr. Edward Lee whose continued commitment to this event remains unmatched and inspiring!

Again, welcome back, and thank you for being part of today's event.

David Lanum, MD
Editor-in-Chief



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Katherine Bourbeau
Saloni Gupta
Sharon Wang
Infectious Diseases, ARMC
Internal Medicine, ARMC

Candida albicans is found to be part of the normal flora in human skin, oral, and respiratory tract, and is known to be an opportunistic infection in immunocompromised populations; rarely is it a cause of meningitis. This case of a patient with Acquired Immune Deficiency Syndrome (AIDS) and *Candida albicans* meningitis illustrates the subtle symptoms and insidious onset of fungal meningitis. This case and review of literature identify the importance of early identification and therapy.

2

PATIENT PERCEPTION OF THE SAFETY OF OUTPATIENT AMBULATORY CLINICS AND COVID-19 VACCINES DURING THE COVID-19 PANDEMIC

Irene Chen
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Background

The COVID-19 pandemic has exacerbated problems with access to healthcare. Telehealth and contact-free methods for healthcare delivery have become more prevalent since the start of COVID pandemic. The objective is to describe patient experience and perception towards clinic visits, telehealth and vaccines.

Methods

A survey was created via Amazon M Turk, an electronic crowdsourcing resource. 501 people in California participated in the survey during a peak death rate period in the United States, January 2021. Perceptions between the 'Unsafe to return to clinic' and 'Safe to return to clinic' group were compared.

Results

Of the people surveyed, approximately half did not believe it was safe to return to in-person clinic visits. Of this group, there were fewer healthcare appointments made, concerns for cleanliness of clinics, and perceived lower quality of telehealth visits compared to in-person. This group also had more members who earned a salary less than \$50,000 per year. The use of video capability is also preferred than not in a majority of encounters, with a few exceptions. Both groups viewed the vaccines with hesitation and there were no statistically significant differences between the two.

Conclusions

The data show that there is a lot more we can do as healthcare providers to not only reassure patients, but also to increase public awareness as to what measures are being done to keep them safe and healthy. Allowing patients access to both clinic visits and to telehealth is important in the delivery of patient-centered healthcare.

3

EMERGENT NEEDLE THORACOSTOMY IN PREHOSPITAL TRAUMA PATIENTS, A REVIEW OF PROCEDURAL EXECUTION THROUGH COMPUTED TOMOGRAPHY SCANS

Christina Cheung
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 Keeyon Hajjafar
 Rodney Borger
 Brandon Woodward
 Louis Tran
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 Surgery, ARMC

Introduction

Traumatic tension pneumothoraces (TPT) are one of the most serious causes of death in traumatic injuries, requiring immediate treatment with a needle thoracostomy (NT). Improperly placed NT insertion into the pleural cavity may fail to treat a life-threatening TPT.

Methods

A retrospective chart review was performed on 84 consecutive trauma patients who had received NT by prehospital personnel. The primary outcome was to assess the accuracy of NT placement by prehospital personnel. Comparisons of various variables were conducted between those who survived vs expired, and proper vs improper needle insertion separately.

Results

Proper NT placement into the pleural cavity was noted in 27.4% of the adult trauma patients. In addition, more than 19% of the procedure performed by the prehospital providers appeared to have not been medically indicated.

Conclusion

Long term strategies may be needed to improve the capabilities and performance of the prehospital providers capabilities in this delicate lifesaving procedure.

4

THE EFFECT OF PHYSICIAN-LED ENHANCED CARE TEAMS IN PREHOSPITAL TRAUMA RESUSCITATION

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Trauma is the leading cause of morbidity and mortality for those under 45 years of age in the United States with half of the deaths in trauma being attributed to hemorrhagic shock. The use of enhanced care teams (ECTs) that include physicians in selective prehospital settings has allowed the delivery of advanced critical care interventions in the field. We present a unique case where a young driver involved in a motor vehicle accident was trapped under the weight of his vehicle, causing extended extrication time. An ECT from the closest trauma center was able to deliver massive transfusion and definitive airway care while the patient was being extricated. While previous literature regarding the benefit of ECTs has been debated, this case suggests a unique niche where rapid deployment of an ECT to the scene made a pronounced difference in survival of the patient.

5

EVALUATING THE IMPACT OF REMDESIVIR ON COVID-19 PATIENT OUTCOMES: AN INPATIENT COUNTY HOSPITAL ANALYSIS

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Background

Remdesivir was announced by the National Institute of Health (NIH) as a recommended therapy for COVID-19 patients in July of 2020. Since this recommendation, mixed clinical outcomes have been observed, prompting a need to investigate its role in treating COVID-19 patients, particularly given its high cost and limited availability.

Methods

We performed a retrospective chart review on COVID-19 patients treated at Arrowhead Regional Medical Center (ARMC) in Colton, California from January through October 2020. Two outcomes were measured: time to recovery and mortality outcome. Models were subsequently generated to investigate the role of remdesivir on these patient outcomes.

Results

While initial research indicated that remdesivir decreased time to recovery, we found no such appreciable decrease in our study population. Our data corroborates existing studies on the lack of remdesivir's impact on mortality. When controlling for days from symptom onset to administration of this medication, these outcomes do not change.

Conclusion

Our data demonstrate that remdesivir does not significantly alter time to recovery or mortality in COVID-19 patients. While the National Institute of Health (NIH) has sanctioned remdesivir's use for certain COVID-19 populations, we do not observe any appreciable effects of this implementation at our county hospital. Increasing sample size and investigating inclusion criteria may help elucidate this observed lack of effect.

6

EVALUATION OF CONTRACEPTION USE IN POSTPARTUM WOMEN

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In 2011, nearly half (45%, or 2.8 million) of the 6.1 million pregnancies in the United States were unintended (5). Unintended pregnancy disproportionately affects minority populations, and it has been found that women with lower education levels, women of color, and women at or below the poverty line are all more likely to experience unplanned pregnancy (2). Adolescent and teens experience the highest percentage of unplanned pregnancy (6), and alarmingly, Black and Latina teenagers are more than twice as likely as white teenagers to experience a pregnancy, with half of black and Latina teens becoming pregnant before age 20 (2). San Bernardino County largely consists of a female population that would be considered high risk for unplanned pregnancy. The majority of our county identifies as Hispanic (52%) (1). Almost 21% of the county's population is living below the federal poverty level, and median income is 16% less than the average for the state of California (1). Ultimately, the population of San Bernardino County is at risk for unplanned pregnancy, and subsequently, higher rates of poor outcomes related to pregnancy, and higher rates of abortion. Unintended, teen, and short-interval pregnancies have substantial negative health and socioeconomic impacts on women and their families. These outcomes include higher rates of maternal depression, intimate partner violence, low birth weight infants and lower rates of breastfeeding. In addition, lower educational attainment for the mothers, fathers, and their children lead to higher rates of poverty and need for federal aid (2). Indeed, the Office of Disease Prevention and Health Promotion has listed improving pregnancy planning and spacing, and preventing unintended pregnancy as their number one family planning objective in the HealthPeople2020 goals (7). The use of highly effective methods of birth control (such as LARC) has the potential to impact the rates of unplanned pregnancies, lower adolescent birth rates, and decrease the rate of short interval pregnancies. In the CHOICE trial, Non-LARC users (women using short-acting contraception such as the pill, patch and/or ring), were more than 22 times as likely to experience an unintended pregnancy compared to their LARC counterparts. Furthermore, adolescent (<21 years) users of the pill, patch, or vaginal ring were twice as likely as older women using the same method to experience an unintended pregnancy. This was not true in LARC users, where there was no difference in the risk of unintended pregnancy by age (10). Data shows that despite the effectiveness of LARC, women are less likely to use it and providers are less likely to recommend it, despite The American College of Obstetricians and Gynecologists encouraging the consideration of LARC in all appropriate candidates, including adolescent and nulliparous women (11). This discrepancy may be due to both provider and patient education regarding contraception, cultural and social barriers regarding contraception, as well as ease of access in obtaining the contraception. Previous research has shown that clinics and providers that impart dedicated contraceptive counseling results in an increase in the amount of women choosing LARC (8); other studies have shown increased uptake of LARC in postpartum women when dedicated counseling is included in the patient's care prior to discharge (9). Although discussion regarding contraception choice is included in the routine care of postpartum women at ARMC, it is unknown how effective this counseling is on the uptake of birth control and specifically LARC use in our patient population. This research was intended to evaluate postpartum women's choice in birth control, and evaluate for possible opportunities to enhance our contraception counseling program and thus increase the uptake of birth control, specifically LARC, in our postpartum patient population.

7

MYELOID SARCOMA OF THE PANCREAS PRESENTING AS BILIARY OBSTRUCTION: A CASE REPORT AND REVIEW OF THE LITERATURE

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Myeloid sarcoma (MS) is a rare and aggressive tumor of immature extramedullary myeloid cells. It can occur simultaneously with acute myeloid leukemia or in solitarily. Due to variability in presentation, diagnosis is difficult. In this report we describe a case of myeloid sarcoma presenting with biliary obstruction. Cross-sectional imaging studies revealed a pancreas head mass with dilatation of intra- and extra-hepatic biliary system. Peripheral blood smear study to investigate severe leukocytosis (62 k) was consistent with blast crisis (69%). Ultimately, endoscopic ultrasound guided biopsy of the pancreas mass with bone marrow biopsy led to the diagnosis of myeloid sarcoma of pancreas with concomitant acute myeloid leukemia, respectively. The patient underwent systemic chemotherapy with a satisfactory response. Involvement of gastrointestinal tract is an uncommon presentation of MS. Of note, involvement of multiple gastrointestinal organs is a very rare pattern that can complicate the presentation even further. The diagnosis of myeloid sarcoma is challenging and requires a high index of suspicion.

8

GRADUATE MEDICAL EDUCATION-LED CONTINUOUS ASSESSMENT OF BURNOUT AND LEARNING ENVIRONMENT TO IMPROVE RESIDENTS' WELLBEING

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Background

Promoting residents' wellbeing and decreasing burnout is a focus of Graduate Medical Education (GME). Studies on institutional assessments and outcomes are needed.

Objective

We report on a longitudinal wellbeing assessment of all GME residents and associations with demographic and institutional factors.

Methods

From November 2017 to December 2019, 271 GME residents were assessed at 5 points by Maslach Burnout Inventory (MBI); Connor Davidson Resilience Scale; program and demographic factors. Institutional initiatives included focus groups, organization-directed workplace interventions, personal health care support and system-wide wellness events.

Result

MBI parameters improved over time in all GME but the trend was only statistically significant for emotional exhaustion. One program had statistically significantly desirable trends for all 3 MBI factors. Regression analysis showed that residents who perceived more autonomy had desirable MBI parameters, whereas residents who perceived impaired personal relations, self-defined burnout, and no back-up support had more undesirable MBI parameters. Resilience scores were independently significantly associated with decreasing depersonalization scores and emotional exhaustion but increasing personal accomplishment. Female residents compared to male residents perceived their learning environment as less favorable and had significantly higher emotional exhaustion scores (27.11 vs. 24.45, $p=0.002$). Married compared to single residents had more desirable MBI scores (for example: emotional exhaustion: 24.29 vs. 27.93; $p<0.001$) and were more resilient (32.61 vs. 31.17, $p=0.017$). Parents compared to others perceived their learning environment as more favorable and were less emotionally exhausted (24.23 vs. 28.13, $p=0.016$).

Conclusion

Learning environment factors and resilience were predictive of burnout and wellbeing. Residents that thrive best were married with children with suggestion of gender disparity.

9

A RANDOMIZED CONTROLLED TRIAL OF 10, 30, AND 70 ML TRANSCERVICAL FOLEY CATHETERS FOR CERVICAL RIPENING DURING INDUCTION OF LABOR: TIME TO DELIVERY AND PATIENT SATISFACTION

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In 2018, the ARRIVE trial showed that a gestational age of 39 weeks is the optimal time for delivery in low-risk pregnancies. Since then, the number of patients undergoing labor induction has increased significantly. This change in practice has been associated with increased Labor & Delivery volumes, longer hospital stays, decreased patient satisfaction, increased pain with delivery, and likely increased costs. Therefore, it is important that obstetricians use the safest, most effective, and most practical methods of labor induction, while also taking into account patient satisfaction.

Several methods of cervical ripening for labor induction are commonly used. These include mechanical methods such as cervical dilators, osmotic dilators, and foley catheters as well as pharmacologic methods using prostaglandins and oxytocin. Prior research has shown that mechanical methods are as effective as pharmacologic methods in achieving cervical ripening without as many associated adverse maternal and neonatal effects. Additionally, transcervical Foley catheter placement with simultaneous administration of oxytocin or prostaglandins has been shown to result in a shortened time to delivery when compared to sequential methods of cervical ripening.

Foley catheters are available in many different sizes and are often inflated to varying volumes based on availability or attending preference. Different sizes of foley catheters for cervical ripening have previously been compared. However, these studies have greatly varied in their protocols. Administration of either prostaglandins or oxytocin was not standardized, many different sizes of Foley catheters were used, and in many cases, the studies were underpowered.

In this study, our primary objective is to compare time to delivery following transcervical Foley catheter placement - 10, 30, or 70 mL, when used for cervical ripening during induction with simultaneous administration of Oxytocin.

Our secondary objective is to determine differences in pain and maternal satisfaction scores amongst the varying transcervical Foley catheter sizes.

We hypothesize that we will find a shortened time to delivery but a higher pain score in the larger 70 mL transcervical Foley catheter group with greater satisfaction scores in the smaller transcervical Foley catheter groups.

Here, we present our initial findings.

10

IMPACT OF OBESITY ON MORTALITY IN ADULT TRAUMA PATIENTS

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Shawhin Beroukhim

Reza Hajjafar

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Introduction

Trauma is a major cause of morbidity and mortality amongst all populations in the United States. With the widespread increase of obesity in the United States, studies have been conducted to compare different body mass index (BMI) groups and their clinical outcomes for traumatic injuries. The goal of this study was to retrospectively compare mortality between adult trauma patients with a high BMI to those with a lower BMI as well as investigate whether the mechanism of trauma had an effect on the outcome.

Method

This study was a retrospective review of all adult trauma patients presented to the emergency department at Arrowhead Regional Medical Center (ARMC) between January 2014 and October 2019. The outcome was all-cause mortality. Patients were grouped according to BMI and mechanisms of injury, including blunt trauma, low velocity penetrating trauma, and

Results

Among the 9642 patients assessed in this study, majority (88%) of patients sustained blunt trauma. The number of patients among the three different BMI groups was appropriately equal with 34.4% of normal BMI, 34.6% overweight, and 31.1% obese. The overall mortality of all patients studied was 2.6% (n=248). There was no statistically significant difference in mortality among the three different BMI groups for blunt trauma, penetrating trauma, and subgroup analyses stratified by ISS score (ISS<16 or ISS ≥ 16).

Conclusion

Our study found no statistically significant differences in mortality among the three BMI groups in regard to mortality, even when stratified by ISS, or mechanism of injury, and traumatic velocities.

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PREHOSPITAL TRAUMA CARE IN DISASTERS AND OTHER MASS CASUALTY INCIDENTS – A PROPOSAL FOR HOSPITAL-BASED SPECIAL MEDICAL RESPONSE TEAMS

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Current mass casualty incident (MCI) response in the United States calls for rapid deployment of first responders, such as law enforcement, fire, and emergency medical services personnel, to the incident and simultaneous activation of trauma center disaster protocols. Past investigations demonstrated that the incorporation of advanced trauma-trained physicians and paramedics into prehospital teams resulted in improved mortality during routine emergency medical care in Europe and in the combat setting. To date, limited research exists on the incorporation of advanced trauma-trained physicians and paramedics into prehospital teams for civilian MCIs. We proposed the concept of Special Medical Response Teams, which would rapidly deploy advanced trauma-trained physicians and paramedics to deliver a higher level of medical and surgical care in the prehospital setting during civilian mass casualty incidents.

12

VARIATION IN TRAUMA TEAM RESPONSE FEES IN UNITED STATES TRAUMA CENTERS: AN ADDITIONAL UNDISCLOSED VARIABLE COST IN TRAUMA CARE

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The rising costs associated with trauma care in the United States is an important topic in today's healthcare environment. Factors such as innovations in technology, increasing governmental and organizational regulations, and the specialization of care have led to increasing costs to the patient. A component of trauma cost is the one-time trauma team response fee (TTRF). The determination process of TTRF's dollar amount is elusive as no apparent standardized process exists and the literature is scant regarding this aspect of trauma care. A nationwide survey of American College of Surgeon verified trauma centers (TC) was conducted to clarify the variation level in TTRF's and Hospital Medical Director and Trauma Director knowledge of fee amount. Only 46 out of 525 trauma centers, or 18.2% of those surveyed shared their scheduled fees. Comparisons of TTRF's among different TC's, activation levels, and geographical locations were not statistically significant due to poor response rate. Improved policies are needed to improve TTRF transparency and expand the understanding of trauma care costs.

13

NEWLY DIAGNOSED DIABETES TYPE 1, KETOSIS, AND ACUTE PANCREATITIS IN A COVID-19 PATIENT

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Introduction

Diabetic ketoacidosis (DKA) is a potentially lethal complication of type 1 diabetes due to relative insulin deficiency which may be precipitated by moderate to severe illness, including viral infections. In particular, COVID-19 is suggested to have cytopathic effects on the pancreas contributing to DKA and pancreatitis. We present a case of diabetic ketoacidosis, acute pancreatitis, and COVID-19 presenting simultaneously in a patient with newly diagnosed type 1 diabetes mellitus.

Case Description

A 19 year old African American male with no significant past medical history presented to the emergency department with congestion and headache for 1 week and subsequently developed epigastric abdominal pain, nausea, vomiting, and shortness breath. The patient was septic on room air on initial presentation and on clinical examination, he had diffuse abdominal tenderness with no rebound tenderness or guarding. BMI was 34 kg/m². The patient denied any history of alcohol use. He tested positive for COVID-19 (PCR). On admission, VBG showed pH 7.03, pCO₂ 20 mmHg, pO₂ 70 mmHg, HCO₃ 5 mmol/L, lactate 3.34 mmol/L. Labs were significant for glucose 670, beta-hydroxybutyrate 10.26 mmol/L, lipase 906 U/L, triglycerides 365 mg/DL, calcium 10.1 mg/DL, AST 93 U/L, ALT 108 U/L, alkaline phosphatase 215 U/L, anion gap 18, and white blood cells 15.4 TH/UL. Hemoglobin A1c was 15.6 and GAD-65 antibody was positive. Chest x ray was negative. CT abdomen and pelvis without contrast showed fatty liver and no obvious pancreatitis. Blood cultures were negative. Sputum culture grew MSSA. Patient gradually improved with insulin drip, intravenous fluid, cefepime, azithromycin, remdesivir, and therapeutic enoxaparin. He was noted to have persistent sinus tachycardia with heart rate 130-200s. Transthoracic echocardiogram was negative. CT thorax showed diffuse bilateral lung infiltrates and was negative for pulmonary embolism. Cardiology was consulted and sinus tachycardia thought to be related to recent DKA and sepsis and autonomic dysfunction from diabetes and they recommended 2 weeks event monitor and intravenous fluids. He was discharged with subcutaneous insulin, 2 weeks course of rivaroxaban and 3 days course of cefalexin.

Discussion

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has shown to bind to the angiotensin converting enzyme 2 receptor found in organs, such as the lung, kidneys, heart, and pancreas. It is hypothesized that SARS-CoV-2 damages pancreatic islet cells leading to insulin deficiency, pleiotropic alteration of glucose metabolism, and an immune-mediated inflammatory response which may trigger DKA and acute pancreatitis. DKA patients may present with abdominal pain and increased amylase and lipase occurs in 16-25% of patients which may obscure the presence of acute pancreatitis which occurs in 10-15% of cases. Acute pancreatitis in DKA patients contributes to worsening severity and intravascular volume depletion. Given that COVID-19 patients with acute pancreatitis and diabetes have significant morbidity and mortality, a high clinical suspicion is critical for timely diagnosis and treatment.

14

ANALYSIS OF EMERGENT CRICOTHYROTOMY TECHNIQUES USED IN THE HOSPITAL EMERGENCY AIRWAY MANAGEMENT

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Emergent cricothyrotomy (EC) is a rare and lifesaving procedure to secure a difficult airway. There are many techniques which have been discussed in the literature. This paper reports on the clinical experience of physicians with emergency and general surgery experience with regards to EC. The two major techniques identified among are the scalpel bougie technique (SBT) and the surgical cricothyrotomy technique (SCT). We found no significant difference between the two methods with regards to mortality and complications in the 51 adult patients who underwent EC. All procedures were successful to secure an emergent airway. We did note that emergency physicians preferred SBT while surgeons preferred SCT. Given the rarity of the procedure, we conclude that the practitioner should choose the method that they are most comfortable with.

15

SAN BERNARDINO COUNTY YOUTH OPIOID RESPONSE: IMPROVING ACCESS TO EVIDENCE-BASED MEDICAL TREATMENT FOR OPIOID USE DISORDER

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Opioid use disorder (OUD) and related overdose deaths have become a crisis of epidemic proportions in the United States. In 2018, over 10 million people age 12 years or older misused opioids. Substance use is also correlated with increased physical and mental health disorders, and developmental challenges among youths. Medication-assisted treatment (MAT) has been reported to reduce mortality, opioid use, and human immunodeficiency virus and hepatitis C virus transmission while increasing treatment retention in adults. The San Bernardino County Youth Opioid Response (SBCYOR) program was formed to explore best practices for youths at risk of opioid use disorders and/or overdose. SBCYOR is a coalition of professionals in healthcare, behavioral health, public education, law enforcement, emergency medical services (EMS) agencies, and juvenile detention centers throughout San Bernardino County, California. SBCYOR focuses on high-risk and addicted individuals between the ages of 12 to 24 years in San Bernardino County's correctional system. It utilizes a strategy of collaboration, prevention, risk mitigation, medication, psychological treatment, and community outreach. This study aimed to evaluate the implementation and progress of SBCYOR.

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THE PSYCHOLOGICAL IMPACT OF COVID-19 ON HOSPITAL STAFF

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Introduction

The coronavirus 2019 (COVID-19) pandemic has created a mental health crisis among hospital staff who have been mentally and physically exhausted by uncertainty and unexpected stressors. However, the mental health challenges and complexities faced by hospital staff in the United States has not been fully elucidated. To address this gap, we conducted this study to examine the prevalence and correlates of depression and anxiety among hospital staff in light of the COVID-19 pandemic.

Methods

The design is a single-center, cross-sectional, online survey evaluating depression and anxiety among all hospital employees ($n = 3,500$) at a safety-net hospital with a moderate cumulative COVID-19 hospitalization rate between April 30–May 22, 2020. We assessed depression with the Patient Health Questionnaire-9. Anxiety was measured with the Generalized Anxiety Disorder-7 scale. Logistic regression analyses were calculated to identify associations with depression and anxiety.

Results

Of 3,500 hospital employees, 1,246 (36%) responded to the survey. We included 1,232 individuals in the final analysis. Overall, psychological distress was common among the respondents: 21% and 33% of staff reported significant depression and anxiety, respectively, while 46% experienced overwhelming stress due to COVID-19. Notably, staff members overwhelmed by the stress of COVID-19 were seven and nine times more likely to suffer from depression and anxiety, respectively. In addition to stress, individuals with six to nine years of work experience were two times more likely to report moderate or severe depression compared to those with 10 or more years of work experience. Moreover, ancillary staff with direct patient contact (odds ratio [OR] 8.9, confidence interval (CI), 1.46, 173.03) as well as administrative and ancillary staff with indirect patient contact (OR 5.9, CI, 1.06, 111.01) were more likely to be depressed than physicians and advanced providers.

Conclusion

We found that a considerable proportion of staff were suffering from psychological distress. COVID-19-associated depression and anxiety was widespread among hospital staff even in settings with comparatively lower COVID-19 hospitalization rates. Ancillary staff, administrative staff, staff with less job experience, and staff overwhelmed by the stress of COVID-19 are particularly susceptible to negative mental health outcomes. These findings will help inform hospital policymakers on best practices to develop interventions to reduce the mental health burden associated with COVID-19 in vulnerable hospital staff

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OBSESITY IN PRIMARY CARE: HOW EFFECTIVELY ARE PRIMARY CARE PHYSICIANS ADDRESSING AND TREATING OBESITY?

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Introduction

Obesity is one of the most concerning and growing health problems in America and abroad. According to the CDC, "the prevalence of obesity was 40.0% among young adults aged 20 to 39 years, 44.8% among middle-aged adults aged 40 to 59 years, and 42.8% among adults aged 60 and older." The prevalence of obesity has increased in most recent years. The consequences of obesity have proven to be very detrimental to an individual's health with complications of micro- and macrovascular complications compounding medical comorbidity as well as decreased level of function and independence. It is also an indirect cause of high medical expenditure. According to the CDC, "the estimated annual medical cost of obesity in the United States was \$147 billion in 2008 US dollars; the medical cost for people who have obesity was \$1,429 higher than those of normal weight." With the increase in prevalence and the cost it has on the healthcare system, are primary care physicians doing all that they can in combating this growing pandemic? Are their efforts at addressing them even effective?

In order to help decrease its prevalence and to improve patients' health, primary care physicians must identify causes of obesity, promote screening, and provide effective interventions. There are multiple causes or classification of obesity. Some of these are genetic disorders or iatrogenic causes such as weight-inducing drugs, dietary obesity due to feeding practices, progressive hyperplastic obesity, frequency of eating, high fat or high sugar diets, and overeating. Obesity can also be caused by neuroendocrine problems such as thyroid abnormalities, hypothalamic involvement, Cushing's, PCOS, and others. However, as noticed in practice, the most important factors that contribute and/or cause obesity are social and behavioral factors. Eating disorders such as bingeing, psychological factors, socioeconomic status have all contributed remarkably in the increase in prevalence of obesity. Socioeconomic status is a huge influence in obesity as most obese patient's eating habits are dependent on their financial status. Many Americans for example are used to fast food diets that are high in fat or sugar solely because they offer larger portions of food for a lower cost. Most Americans are also found to have either a sedentary lifestyle versus a fast-paced busy lifestyle that pushes them into ordering food instead of preparing their own healthy meals.

Obesity presents major detrimental consequences, such as an increase in morbidity and mortality. For example, heart disease is the most common cause of preventable death in America. Heart disease is one of many obesity related illnesses. Other obesity related illnesses that are commonly being treated and which have become more prevalent include hypertension, stroke, Type 2 Diabetes Mellitus, Osteoarthritis, Dyslipidemia, Gallbladder disease, and Obstructive Sleep Apnea to only mention a few. Obesity has also been linked to over 13 forms of cancer. Therefore, obesity must be addressed and this starts with screening by the PCP and followed by a proven method of intervention.

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IMPROVING WELLNESS: DEFEATING IMPOSTER SYNDROME USING AN INTERACTIVE REFLECTIVE WORKSHOP

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Purpose: Impostor syndrome is a psychological term characterized by chronic feelings of self-doubt and internalized fear of being exposed as an intellectual fraud. Implications of impostor syndrome in academic medicine includes correlations with burnout, decreased performance, health and psychological defects. The purpose of this program was to determine if a reflective and interactive educational workshop can improve awareness, perceptions and knowledge regarding impostor syndrome.

Methods: At educational workshops; participants: 1) completed Young Imposter Syndrome (YIS) & Competence Quiz surveys; 2) watched animated video presentation on the psychologic basis and prevention strategies for the impostor syndrome; 3) participated in an interactive presentation; 4) self-identified and discussed impostor subtypes; 5) participated in small group discussions using case-based scenarios and thought questions to deliberate on corrective intervention strategies for impostor syndrome and 6) completed a post intervention perception, knowledge and behavior-based survey using Kirkpatrick levels 1,2,3.

Results: This is an ongoing approximately 90-minute workshop series. Of the 54 participants so far, there were 65% females, 35% males, 53% residents, 33% medical students, 10% faculty and 4% staff. Overall, 50% were positive for Imposter syndrome (IS) on YIS. The 3 commonest determinants were: "hate making a mistake, or not doing things perfectly" in 89%, "believe that competitors are smarter and more capable" in 79% and "secretly worry that others will find out that you're not bright and capable" in 70%. For the impostor subtypes, participants classified as: Superwoman/man = 43%; Expert = 33%; Soloist = 24%; Natural Genius = 13%, and Perfectionist = 12%. Life events that participants perceived as a cause of IS included: parent expectations = 56%, academic rat race = 33%; female gender = 35%, first generation to college = 30% and academic transitions, career change or minority status = 19%. Post-intervention awareness of the negative impact of IS on stress, personal goals and teamwork was a mean of 3.9 (Liekart scale of 1-5). Participants also scored their ability to change behavior regarding personal IS and in the workplace as 3.2 (Liekart scale of 1-5). In group discussions, participants deliberated on processes to decrease impostor syndrome. Pre and post intervention Imposter syndrome knowledge survey scores was 4.55(SEM=0.53) versus 5.59 (0.37), $p=0.44$.

Discussion: In this pilot cohort from academic medicine, impostor syndrome was relatively common. The highest subtypes observed were superwoman/man and expert. Major contributors to IS were childhood expectations by parents, academic competition/promotion and female gender. Post workshop, there was a statistically significant increase in knowledge of IS. Participants demonstrated awareness of the negative personal effects of IS; the willingness to change behavior and strategized on practical suggestions to combat both personal and workplace impostor syndrome.

Significance:

The prevalence of impostor syndrome in academic medicine with the implications on team wellness and performance highlights the need for effective interventions. This pilot study provides objective data that a brief reflective and interactive workshop can be a first step.

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VARIATIONS IN SURVIVAL RATE OF EMERGENT RESUSCITATIVE THORACOTOMY BETWEEN UNITED STATES AND OTHER ADVANCED INTERNATIONAL TRAUMA SYSTEMS

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Persistent low survivability rates in trauma patients undergoing emergent resuscitative thoracotomy (ERT) in the United States (U.S.) prompted an ongoing debate regarding the procedural guidelines for trauma teams. International trauma centers (ITC) reported higher survivability rates of ERT for both blunt and penetrating injuries, while overall survival rates in the U.S. remain consistently less than 10%. An in-depth review of international published studies suggests that deviation from the recommended guidelines for performing ERT may contribute to increased survivability. The aims of this review are to compare ERT indications between the U.S. and international trauma centers, and to further identify common factors associated with improved survivability in both blunt and penetrating injuries. Databases used in the study included PubMed and Google Scholar, comprising around 15 total articles and reviews. The topics for the literature search included: resuscitative thoracotomy, thoracotomy, European, international, and U.S. Boolean and MeSH terms were used. Articles selected were English language only and no date limitations were set in order to capture as many studies as possible. Overall survival rate post-ERT at U.S. trauma centers were reported from 7.7%-8.5% compared to European trauma centers' post-ERT survival rates as high as 88.3%. The overall survival in penetrating trauma in United States were reported between 9 -27%, compared to European trauma centers of nearly 70%. Furthermore, the survival rates in blunt trauma in U.S. trauma centers were reported from 0.1-6%, compared to European trauma centers rates at 0% to 25.4%. The review identified a significant variation in post-ERT survival rates in the U.S. trauma centers compared to other advanced ITC. Results may suggest that the use of less restrictive criteria for ITC may improve survival rates.

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EXPLORING CULTURAL IDENTITY AND INTEGRATING CULTURAL HUMILITY INTO PATIENT CARE: THE ROLE OF A STRUCTURED, REFLECTIVE, AND INTERACTIVE WORKSHOP

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Background

Cultural humility is a lifelong commitment to self-evaluation, to redress power imbalances in the patient-physician dynamic and develop mutually trusting beneficial partnerships.

Objective

The objective of this study was to determine the feasibility and efficacy of cultural humility training.

Methods

From July 2020-March 2021, a 90-minute educational workshops attended by 133 participants which included 1) pre intervention surveys; 2) interactive presentation on core equity and cultural humility principles; 3) participants explored sociocultural identities and power, 4) reflective group discussions and 5) post intervention surveys.

Results

There were significant increases from pre to post intervention assessments for perception scores (3.89 [SEM= 0.04] versus 4.22 [0.08], $p<0.001$) and knowledge scores (0.52 [0.02] versus 0.67 [0.02], $p<0.001$). The commonest cultural identities acknowledged were gender in 92%, race/ethnicity in 84%, age in 76% and place of birth in 73%. The commonest identities that participants recognized as changing over time were personality = 40%, appearance = 36%, and age =35%. Commonest identities recognized as oppressed/subjugated were race/ethnicity= 54%, gender = 40% and religion = 28%; whilst the commonest identities recognized as privileged were gender= 49%, race/ethnicity = 42% and appearance= 25%. Male participants assigned a mean power score of 73% to their gender identity compared to a mean power score of -8% by female participants ($P<0.001$). Non- Hispanic Whites had a mean power score for race identity of 62% compared to mean power score of 13% for non-white participants ($p<0.001$). English as a second language as an oppressed/subjugated identity was only acknowledged by those born outside the United States ($p<0.001$).

Conclusions

An interactive educational workshop can increase participants knowledge and perceptions regarding cultural humility. Participants can self-reflect to recognize cultural identities that are oppressed, privileged, or have changed over time. Race, gender and birth of place privileges and subjugation were highlighted by participants.

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COMBINED ENDOSCOPIC LAPAROSCOPIC SURGERY (CELS) PROCEDURE FOR REMOVAL OF DIFFICULT TO ACCESS COLONIC POLYPS

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In the United States, colorectal cancer (CRC) is the third leading cause of cancer-related deaths. The majority of CRCs arise from colonic polyps, signifying the role of screening colonoscopy in prevention and early detection of the CRCs. The colonic polyps which are not amenable to complete colonoscopy removal, will require surgical resection. In this report, we describe a novel method of combined endoscopic laparoscopic surgery (CELS) as an alternative for formal surgical resection with higher rate of morbidity. A 56-year-old male presented to the ER with complaint of abdominal pain and severe weight loss and found to have marked rectosigmoid junction wall thickening in cross-sectional imaging. Colonoscopy showed a circumferential mass of the rectosigmoid colon causing complete luminal obstruction with pathology findings consistent with moderately differentiated invasive adenocarcinoma. Following a laparoscopic diverting loop sigmoid colostomy, the patient underwent neoadjuvant chemotherapy followed by chemoradiation. Prior to index surgery, screening colonoscopy showed a large semi-pedunculated polyp of the proximal colon not amenable to colonoscopy removal. Due to concern for malignancy, any surgical resection would include subtotal colectomy with very high rate of morbidity. A CELS procedure was performed and cecal polyp was removed. The pathology revealed tubulovillous adenoma and he was discharged home on post-operative day one. A week later, the patient returned to the hospital for subsequent low anterior resection without need for subtotal colectomy.

Traditionally, polyps are removed endoscopically through a colonoscopy using different tools that can be passed through the scope itself. However, sometimes due to location or size, removal through endoscopic techniques alone isn't feasible. CELS blends the expertise of both a to reach polyps without the need for formal removal of the colon. Using a hybrid approach, the gastroenterologist (or endoscopically trained surgeon) will approach the polyp endoscopically, while the surgeon approaches it laparoscopically to more easily remove it while also sparing the colon. The combined approach allows the physicians to view both the inside and outside of the bowel wall to more easily locate and treat the polyp and avoid the need for a much larger surgery

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UNDERUTILIZATION OF THE EMERGENCY DEPARTMENT DURING THE COVID-19 PANDEMIC

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Introduction

The novel coronavirus 2019 (COVID-19) pandemic in the United States (US) prompted widespread containment measures such as shelter-in-place (SIP) orders. The goal of our study was to determine whether there was a significant change in overall volume and proportion of emergency department (ED) encounters since SIP measures began.

Methods

This was a retrospective, observational, cross-sectional study using billing data from January 1, 2017-April 20, 2020. We received data from 141 EDs across 16 states, encompassing a convenience sample of 26,223,438 ED encounters. We used a generalized least squares regression approach to ascertain changes for overall ED encounters, hospital admissions, and New York University ED visit algorithm categories.

Results

ED encounters decreased significantly in the post-SIP period. Overall, there was a 39.6% decrease in ED encounters compared to expected volume in the pre-SIP period. Emergent encounters decreased by 35.8%, while non-emergent encounters decreased by 52.1%. Psychiatric encounters decreased by 30.2%. Encounters related to drugs and alcohol decreased the least, by 9.3% and 27.5%, respectively.

Conclusion

There was a significant overall reduction in ED utilization in the post-SIP period. There was a greater reduction in lower acuity encounters than higher acuity encounters. Of all subtypes of ED encounters, substance abuse- and alcohol-related encounters reduced the least, and injury-related encounters reduced the most.

ASSOCIATIONS BETWEEN STRUCTURAL AND SOCIAL DETERMINANTS OF HEALTH WITH COVID INFECTION RATES AT A SAFETY NET HOSPITAL

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Background

The reported disproportionate impact of COVID-19 infections on minority populations may be due to living in disinvested communities with high level of poverty, pollution, inadequate unsafe employment, and overcrowded housing.

Objective

To determine the association of county, city, and individual risk factors with COVID-19 infection rates.

Methods

Retrospective chart review on COVID-19 tests performed from March through July 2020 at Arrowhead Regional Medical Center, Colton, California.

Results

A total of 7104 tests were performed with 69% in the drive-through testing center. The mean duration of test-to-results time was 2.36 (± 0.02) days. COVID-19 positive tests occurred in 1095 (15.4%). At least one symptom occurred in 414 (33%) with sensitivity of 37.8, specificity of 86.02, positive predictive value of 33.01, and negative predictive value of 72.76. Individual factors significantly associated with testing positive for COVID-19 were diabetes, Hispanic ethnicity, and male gender. Younger age was significantly associated with testing COVID positive with the highest risk in children <10 years. COVID-19 positive persons significantly resided in cities with higher population density, household members, poverty, non-English speaking homes, disability, lower median household income, lack of health insurance and decreased access to a computer and WIFI services. County health rankings showed significant positive association between testing positive for COVID-19 with increased smoking, air pollution, violent crimes, physical inactivity, decreased education and access to exercise.

Conclusion

Adverse county health rankings; socially and economically disadvantaged cities are associated with an increased risk of testing positive for COVID-19. This information can be used in strategic planning and invention mitigation.

DISPARITY IN DERMATOLOGY – A RETROSPECTIVE ANALYSIS OF BASAL CELL CARCINOMA PREVALENCE IN THE INLAND EMPIRE

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Basal Cell Carcinoma (BCC) is the most prevalent form of skin malignancy in Caucasians in the United States, with a growing incidence in other populations¹. Looking at Basal Cell Carcinoma in a commercially insured population in the United States in 2012 estimated prevalence of BCC of 226 and 343 per 100,000 persons per year (18). The incidence of BCC is also increasing globally². In a U.S. female cohort, the Nurses' Health Study (1986-2006), and a U.S. male cohort, the Health Professionals' Follow-up Study (1988-2006), age-adjusted BCC incidence rates increased from 519 cases per 100,000 person-years to 1,019 cases per 100,000 person-years for women and increased from 606 cases per 100,000 person-years to 1,488 cases per 100,000 person-years for men during the follow-up period (19). Although BCC is inherently resistant to metastasis, it is locally destructive³. Diagnosis of BCC often burdens patient populations with significant morbidity, placing strain on health systems managing patients with active diagnoses². Moreover, associational analyses have revealed BCC diagnosis to be correlated with greater likelihood of other malignant skin neoplasm including malignant melanoma⁴. Although the pathophysiology of BCC is unclear, many theories point to the influence of ultraviolet (UV) radiation on BCC incidence^{5,6}. The lower incidence of BCC in Black and LatinX populations has been attributed to denser networks and sizes of subepithelial melanosomes in relation to Caucasians⁷.

In research that has tracked incidence of BCC in such populations, studies have demonstrated that BCC occurrence in Black Americans is more common in women^{8,9}. Other studies have identified that minority populations are typically diagnosed at later stages of BCC, due to the low prevalence and difficulty in early identification¹⁰. However, little research has identified whether the best practice recommendations for clinical diagnosis of BCC have been employed by academic health systems with large Black and LatinX patient populations. There is also a paucity of population databases for BCC epidemiology in such populations¹¹, especially those concentrated in urban centers with high poverty rates. Given the direct impact of environmental factors such as UV radiation on BCC incidence, socioeconomic factors that influence patient activities (and thus exposure to such radiation) may become proposed risk factors for BCC. Furthermore, outcome tracking (such as incidence of metastasis or other malignant neoplasm) in Black and LatinX patients with BCC (or at risk of BCC) remains incomplete in such systems.

The aim of this retrospective study is to identify associations between demographic variables and differences in basal cell carcinoma prevalence & stage at diagnosis within the Inland Empire population, specific to the primary care setting in Arrowhead Regional Medical Center. By identifying social and epidemiological determinants associated with BCC in this urban center population, we hope that we will be able to ameliorate clinical best practices and orient them towards patient minorities, leading to improved diagnostic capability and reduced burden on the hospital system. The population served by Arrowhead Regional Medical Center Family Medicine clinics is in general an underserved population composed of mostly minorities, people with low income, limited education, and low health literacy. Low health literacy is one of the social determinants of health associated with cancer related disparities

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ASSOCIATION BETWEEN ABO AND RH BLOOD GROUPS AND RESPIRATORY FAILURE OR MORTALITY IN COVID-19 HOSPITALIZED PATIENTS

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Background

The outbreak of SARS-CoV-2, the virus that causes COVID-19 disease, has rapidly spread worldwide, leading to a catastrophic global pandemic. Morbidity and mortality from COVID-19 is largely related to acute viral pneumonitis leading to fulminant respiratory failure. Given the considerable variation in disease presentation and severity, we further investigated the relationship between ABO blood type and degree of respiratory failure and mortality in COVID-19.

Objective

Our aim was to determine whether ABO and Rh blood groups are associated with the severity of respiratory failure and/or mortality rates in hospitalized patients with COVID-19.

Study Design

This is a Retrospective Cohort Study using adult patients with known blood type hospitalized with COVID-19 related illness at Arrowhead Regional Medical Center in San Bernardino, California between 04/01/2020 - 11/30/2020.

Results

A total of 4,016 (N = 4,016) charts were reviewed, with 287 (n = 287) patients meeting inclusion criteria. There was no association between degree of respiratory failure and ABO grouping when analyzing each ABO group individually, or grouped into Non-O versus Type O [χ^2 (12, n=287) = 7.55, p = 0.82] and [χ^2 (4, n=287) = 2.73, p = 0.60]. However, we noted a statistically significant association between the mortality rates and Non-O versus Type O groups [χ^2 (1, n=287) = 3.57, p = 0.059] at p < 0.10. Our risk ratio noted that Non-O had 1.55 times the risk of mortality compared to Type O, indicating a 55% increase in risk of mortality in Non-O. Further, the mortality rate of Non-O was 1.9 σ above the mortality rate of Type O, suggestive of a significant difference between the mortality rate of Non-O and Type O [z = 1.9, p = 0.029] at p < 0.05.

Conclusion

There was no noted difference between ABO blood groups and level of respiratory failure in hospitalized COVID-19 patients. Type O groups may be associated with lower mortality rates than Non-O blood groups.

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A RETROSPECTIVE STUDY IN THE SEVERITY OF COVID-19 INFECTION IN OBESE PATIENTS AT ARROWHEAD REGIONAL MEDICAL CENTER

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The coronavirus pandemic (COVID-19) became widespread beginning in 2019. Multiple studies have shown a positive correlation between obesity and the severity of COVID-19 infection. In San Bernardino county, the prevalence of obesity is higher than the overall prevalence of obesity in California.

This is a retrospective cohort study of patients admitted to ARMC with a diagnosis of COVID-19 that was confirmed with either a nasopharyngeal swab or RT-PCR. Exclusion criteria for this study are: BMI less than 18.5, pregnant at the time of admission, did not receive standard of care treatment for COVID-19, end stage renal disease on hemodialysis, decompensated liver cirrhosis, respiratory failure with oxygen dependence, heart failure with reduced ejection fraction of less than 30% or actively receiving chemotherapy.

A total of 308 patients were included in the final analysis. More than half (56.8%, n=175) were males. The average age was 59.5 (SD=15.19) years and the average BMI was 33.2 (SD=9.07) kg/m². More than half (58.7%, n=181) were obese (BMI \geq 30 kg/m²). Ages were categorized into <45 (15.9%, n=49), 45-64 (47.4%, n=146), and \geq 65 (36.7%, n=113). Overall, there was no statistically significant association between BMI and intubation status, ICU admission or mortality (all p-values>0.05). For subgroup analyses stratified by age, there was no statistically significant association between BMI and intubation status, ICU admission, or mortality (all p-values>0.05). However, advance age is a significant predictor of increasing COVID-19 infection severity. In addition, patients with COVID-19 infection and acute kidney injury (AKI) are more likely to have a more severe complications including higher mortality rate.

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DEFEATING UNCONSCIOUS BIAS: THE ROLE OF A STRUCTURED, REFLECTIVE, AND INTERACTIVE WORKSHOP

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Purpose

To determine if an educational workshop on unconscious bias can impact awareness, perceptions and knowledge regarding unconscious bias.

Background

Unconscious or Implicit Bias refers to the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner. Unconscious Biases are universal and have adverse consequences on the workplace, healthcare and the learning environment.

Methods

At educational workshops attended by medical education faculty, participants: 1) completed a pre intervention survey; 2) participated in an interactive presentation on unconscious bias; 3) were shown images of 5 individuals and recorded their first impressions regarding if the person was trustworthy and their likely profession; 4) watched a video which used vignettes to demonstrate the impact of unconscious biases in the workplace; 5) taught five tools (first thoughts, logic, pause, change behaviors, and cultivate common ground) that participants can use to counter their own unconscious biases; and 6) completed a post intervention survey.

Results

Of 68 participants, there were significant increases from the pre to the post intervention assessments for perception scores (29.19 [SEM= 0.716] versus 32.94 [0.703], $p < 0.001$) and knowledge scores (5.89 [0.245] versus 7.33 [0.182], $p < 0.001$). For a white male physician community advocate covered in tattoos; only 2% correctly identified him as a physician, 70% thought he was a blue-collar worker and 60% felt he was untrustworthy. For a smiling African American woman astronaut; only 13% correctly identified her as an astronaut but 80% felt she was trustworthy. Of a brooding white male serial killer, 50% found him trustworthy. For a Cameroonian attorney and LGBTQ advocate, many incorrectly assumed she was Maya Angelou, thus labelled her a writer while only 30% correctly identified her as a lawyer.

Conclusion

An interactive unconscious bias workshop can increase awareness, perceptions and knowledge in the immediate short term. The findings also confirmed incorrect first impression stereotypical assumptions based on ethnicity; outward appearances, couture and media influences.

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THE EFFECT OF MATERNAL HYPER-OXYGENATION ON VASCULAR RESISTANCE OF GROWTH RESTRICTED FETUSES

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Purpose

To study the effects of maternal hyper-oxygenation on fetal circulation as measured by Doppler ultrasonography in the growth restricted fetus.

Methods

Patients were positioned in low-fowlers position with the head of the bed elevated between 15 and 30 degrees. Seventy to eighty percent oxygen was delivered at a flow rate of 8 l/min through a close-fitting face-mask (with a reservoir and non-rebreathing valve) for a duration of 10 minutes. Fetal doppler ultrasonography was performed just prior to and 20 minutes after administration of supplemental oxygen. Doppler values for umbilical artery, middle cerebral artery, ductus venosus, were obtained during a period of fetal apnea. At least three consecutive waveforms attempts were gathered.

Results

Seventeen patients with growth restricted fetuses (<1% to 9.7%ile for gestational age) were enrolled. We found no statistically significant differences in umbilical artery peak systolic flow, resistance index, pulsatility index, or systolic to diastolic ratio before and after maternal hyper-oxygenation, with a mild increase in end diastolic velocity (13.6 cm/s pre-oxygenation to 15.5 cm/s2 post-oxygenation, $P=0.013$). We also found no difference in middle cerebral artery peak systolic flow, end diastolic flow, resistance index, and pulsatility index before and after maternal hyper-oxygenation. Similarly, we found no significant changes in ductus venosus dopplers with the exception of an increase in peak velocity index for veins (PVIV, 0.83 cm/s2 pre-oxygenation, 1.24 cm/s2 post-oxygenation, $P=0.027$). Of note, we were unable to consistently measure fetal ductus venosus doppler flow in 5/17 (29%) of fetuses due to hyperactivity of the fetus following maternal oxygen administration.

Conclusion

Maternal hyper-oxygenation caused a noted increase in fetal movements in the growth restricted fetus, and often precluded acquisition of fetal ductus venosus assessment following oxygen administration. We found no clinically significant differences in umbilical artery, middle cerebral artery doppler, and ductus enosis flow measurements following maternal hyper-oxygenation.

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AN UNUSUAL CASE OF PROGRESSIVE SHORTNESS OF BREATH AND DYSPHAGIA CAUSED BY A PANCREATIC PSEUDOCYST

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Background

A pancreatic pseudocyst is a mature fluid collection with a well-defined wall that does not contain solid material or necrosis but rather high concentrations of digestive enzymes. Most pseudocysts remain asymptomatic, but some may produce abdominal pain, small intestinal obstruction and early satiety. Very rarely does a pancreatic pseudocyst present as progressive shortness of breath and dysphagia caused by extrinsic compression of the esophagus and formation of a pleural effusion by a pancreatico-pleural fistula. Given the rarity of this condition, it is important for physicians to be aware of this possibility to aid in early diagnosis and treatment.

Case description

The patient is a 65 year old female with a past medical history of diet-controlled type 2 diabetes mellitus, hypertension, COPD not on home oxygen, and recurrent pancreatitis of unknown etiology that presented for three weeks of progressive shortness of breath and three years of dysphagia. She states only being able to walk 20 feet before having to rest during this time span. The dysphagia was to both solids and liquids and has resulted in a 70-pound weight loss over three years causing significant burden in her life.

Initial laboratory work showed a mildly elevated lipase at 62 and ESR of 65. A CBC, BMP and hepatic function panel were all unremarkable. An initial chest x-ray showed a large left-sided pleural effusion with near complete opacification of the lung field. A diagnostic and therapeutic thoracentesis was performed which showed an exudative effusion per Light's criteria with a very elevated amylase of 430. The fluid was green which raised suspicion for an abdominal etiology. A CT thorax was subsequently obtained which showed a large 8.7x3.9 cm pancreatic pseudocyst extending into the thorax through the diaphragmatic hiatus with extrinsic compression of the esophagus and a likely pancreatico-pleural fistula leading to the large left-sided pleural effusion. The patient had significant improvement in her shortness of breath and dysphagia after the thoracentesis where 1.5 liters were removed.

General surgery was consulted and recommended no acute surgical intervention. GI was consulted thereafter and recommended an endoscopic ultrasound for evaluation of the recurrent pancreatitis and cystgastrostomy drainage. Furthermore, it was unclear why the patient had a history of recurrent pancreatitis. She did not have a history of gallstones, alcohol abuse or bouts of diabetic ketoacidosis. Triglycerides were also normal. An IgG4 level was obtained to rule out IgG-4 related pancreatitis, which was normal. The patient was transferred to an outside hospital for the procedure in stable and improving condition after the initial thoracentesis and workup.

Conclusion

As evident, pancreatic pseudocysts can present very differently from person to person. It is important to recognize the rare but life-threatening presentation as seen in this patient. Dysphagia and shortness of breath in any patient with a history of pancreatitis should warrant imaging studies to evaluate for a pancreatic pseudocyst and its local complications.

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EMERGENT INPATIENT ADMINISTRATION OF CASIRIVIMAB AND IMDEVIMAB ANTIBODY COCKTAIL FOR THE TREATMENT OF COVID-19 PNEUMONIA: A CASE REPORT AND LITERATURE REVIEW

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Infection by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is known to have the highest mortality rate among the elderly and those with pre-existing medical conditions. Viral load has been directly correlated with increased risk of mortality in hospitalized patients. Once infected, symptoms first arise approximately 6-7 days later followed by IgM antibodies appearing 8-12 days after onset of clinical symptoms. Monoclonal antibodies bind to specific surface proteins on SARS-CoV-2 to neutralize its pathogenic effects. Recent studies have noted that the monoclonal antibody combination of casirivimab and imdevimab (REGN-COV2) effectively reduces viral load in infected seronegative patients. The utilization of REGN-COV2 for treatment of COVID-19 is based on the EUA of the United States Food and Drug Administration (FDA) for care of patients in the outpatient setting. However, research supporting the use of REGN-COV2 in an inpatient setting is limited.

We present the case of a 45-year-old male with polymerase chain reaction confirmed SARS-CoV-2 infection with moderate dyspnea and progressive worsening of his symptoms over a one-week period. On presentation to the emergency department, his initial labs showed that he was seronegative for antibodies to SARS-CoV-2 via electrochemiluminescence immunoassay. After consulting infectious disease and pulmonology/critical care specialists, and assessing the patient's clinical prognosis, the decision was made to administer the REGN-COV2 cocktail as an off-label therapy with the patient's full informed consent. He showed drastic improvement of his symptoms after a single low-dose regimen of REGN-COV2 infusion while admitted to the hospital and was subsequently discharged without further medical complications. This case helps elucidate the potential benefits of inpatient administration of REGN-COV2 in the management of seronegative patients with diagnosis of COVID-19. Clinicians may consider the use of monoclonal antibody cocktails infusion in hospitalized and outpatient care for patients at risk for progression to severe disease.

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DECREASING NEONATAL SEPSIS WORK-UP BASED ON SEPSIS RISK CALCULATOR FOR MANAGEMENT OF NEWBORNS AT RISK FOR EARLY-ONSET SEPSIS AT ARROWHEAD REGIONAL MEDICAL CENTER

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Background

National incidence of Early Onset Sepsis (EOS) in neonates has declined in the past 30 years due to the introduction of Centers for Disease Control and Prevention (CDC) guidelines regarding universal GBS screening and preventative maternal intrapartum antibiotics. However, the overtreatment with empiric antibiotics as well as excessive laboratory workups continue to be a significant clinical problem, posing risks of increased healthcare costs, increased drug toxicity and bacterial resistance, and delayed maternal bonding.

Objective

Our study aims to determine whether the current Categorical Risk Assessment algorithm for early onset sepsis screening in neonates born at Arrowhead Regional Medical Center (ARMC) results in over testing when compared to the current CDC/AAP recommendation of utilizing a Multivariate Risk Assessment tool (SRC).

Method

This retrospective study reviews neonates of gestational age > 35 weeks born from March 1, 2018 to March 1, 2019 in Labor and Delivery at ARMC. Neonates were placed into interventional groups based on ARMC outcomes and predicted outcomes with use of multivariate risk assessment (SRC). A paired t-test was then used to form a direct comparison between these two sets of groups.

Results

A total of 175 (N=175) charts were reviewed, with 148 (n = 148) meeting inclusion criteria. There was a 90% decrease (relative risk 0.09 [95% confidence interval (CI) 0.0119 - 0.695]) for empiric antibiotic use and 95% decrease (relative risk 0.05 [95% CI 0.012 - 0.20]) for laboratory work-up when using SRC. These are statistically significant reductions based on p-values < 0.05.

Conclusion

Based on the results of this study, it is evident that neonates born at ARMC are over tested for EOS. Use of a Multivariate Risk Assessment tool such as the SRC may dramatically reduce the number of infants who require empiric antibiotics at birth, ultimately decreasing the need for laboratory testing and improving antimicrobial stewardship

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HEALTH OUTCOMES WITH DIFFERENT DIABETIC MEDICATIONS IN THE SETTING OF FAMILY HEALTH CENTERS SERVING LOW-INCOME POPULATION

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Purpose

The purpose of the study is to compare the clinical outcomes of adding second line anti-hyperglycemic medications to the medication regimens of diabetic patients on Metformin monotherapy. Measured outcomes will include weight/BMI, renal function, and hemoglobin A1c (HgbA1c). We hypothesize that patients with SGLT2-inhibitors in addition to Metformin have better outcomes in our FHC population.

Methods

A 5-year retrospective study of patients from Arrowhead Regional Medical Center with type 2 diabetes medication regimen was analyzed. Inclusion criteria consisted of dual therapy with Metformin for at least 6 months with SGLT-2 inhibitors or sulfonylureas, age 18 years and older, and a family health center patient. Statistical factors excluded from this study include history of pancreatectomy or other pathology affecting beta cell function causing secondary diabetes, use of insulin therapy in addition to monotherapy, those on additional oral diabetic medication outside of the Metformin combinations, history of hereditary glucose-galactose malabsorption, history of hereditary glucose-galactose malabsorption, and history of bariatric surgery. Data parameters regarding renal function, HgbA1c, weight/BMI factors were extracted where the R of an outcome was compared between the three treatment groups.

Results

Of 57 patients on Metformin combination with Glipizide, there was an average HgbA1c change of 2%, average increase in weight of 0.7kg, and negligible renal changes. Of 29 patients on Metformin combination with Steglatro, there was an average HgbA1c change of 1.7% and average weight loss of 2.1kg, with again negligible change in renal function observed.

Conclusions

Benefits of dual therapy of Metformin with either Glipizide or Steglatro has overall shown to be more beneficial in regards to change in HgbA1c as opposed to Metformin monotherapy alone. Although the Glipizide combination was shown to have a slightly improved reduction in average HgbA1c over the Steglatro combination, Steglatro was shown to have a more significant impact on weight loss. For both combinations, the renal studies were shown to be negligible, likely due to not enough time lapse between data points.

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EVALUATION OF THE PREVALENCE OF DEPRESSION AND ANXIETY RATES IN NURSING STAFF DURING THE COVID-19 PANDEMIC

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Introduction

Nurses are working in unprecedented high pressure environments as a result of the COVID-19 pandemic. This study aims to determine the prevalence of depression and anxiety in nurses and identify at risk nursing populations.

Methods

472 nurses participated in the single center, cross-sectional, online survey. PHQ-9 and GAD7 scales were used to measure depression and anxiety levels.

Results

48.7% ($n=227$) of nurses' reported feeling overwhelmed by COVID-19 and were associated with 4.06 folds odd (95%CI= (2.63, 8.41)) increased odds of having PHQ9 \geq 8. Clinical Assistants (CA)/Student Nurse (SN) and Licensed Vocational Nurse (LVN) had statistically significant higher scores of GAD \geq 8 results of 41.4% and 45% respectively compared to RN, 27.1%, and APN 11.1%. Clinical assistant/SNs' and LVNs' were associated with 1.68 folds odd (95%CI= ((1.02,2.76)) of having GAD \geq 8. Participants who did not have patient contact ($p=0.0344$), had higher PHQ9 score \geq 8 ($p<0.0001$), and had higher GAD7 \geq 8 ($p<0.0001$) compared to nurses with patient contact.

Conclusions

This study noted a correlation between nurses reporting feeling overwhelmed and educational levels correlated to different rates of depression and anxiety. Development and implementation of a nursing mental health plan for epidemic/pandemic situations should be a priority for nursing leadership to strengthen the nursing workforce and longevity.

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THE ROLE OF PAST SUICIDAL BEHAVIOR ON CURRENT SUICIDALITY: A RETROSPECTIVE STUDY IN THE ISRAELI MILITARY

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Past suicide attempts are a significant risk factor for future suicidality. Therefore, the present military-based study examined the past suicidal behavior of soldiers who recently made a severe suicide attempt. Our sample consisted of 65 active-duty soldiers (61.5% males), between the ages of 18 and 28 years old ($M = 20.4$, $SD \pm 1.3$). The inclusion criterion was a recent severe suicide attempt, requiring at least a 24 h hospitalization. This sample was divided into two groups, according to previous suicidal behavior, namely whether their first suicide attempt was before or after enlistment ($n = 25$; 38.5% and $n = 40$; 61.5%, respectively). We then examined the lethality and intent of the recent event in regard to this division. Four measures were used to assess the subjects' suicidal characteristics: the Columbia Suicide Severity Rating Scale, the Self-Harm Behavior Questionnaire, the Suicidal Behaviors Questionnaire-Revised, and the Beck Scale for Suicide Ideation. No significant difference in the severity of the suicide attempts (either actual or potential severity) were found between those who had suicide attempts before enlistment and those who had their first attempt in the service. As a matter of fact, most of the suicide attempts that occurred for the first time during military service had used a violent method (58.3%, $n = 21$). Finally, using multivariate analyses, we found that current thoughts and behavior, rather than past suicidality, was the strongest predictor for the lethality of suicide attempts.

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UNUSUAL PRESENTATION OF PULMONARY COCCIDIOIDOMYCOSIS PRESENTING AS A SPONTANEOUS PNEUMOTHORAX: A CASE REPORT

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We present a case of pulmonary coccidioidomycosis presenting as a spontaneous pneumothorax. The patient presented to the emergency department with complaints of chest and back pain. On chest CT scan, he was found to have a large, right hydropneumothorax with a right upper lobe cavitary lesion. A right sided chest tube was placed. A diagnosis of pulmonary coccidioidomycosis was made when complement fixation for *Coccidioides* spp. returned positive. The patient was started on fluconazole and the chest tube was removed with resolution of the pneumothorax. As the incidence of pulmonary coccidioidomycosis increases, practitioners should be aware of the more unusual complications of this disease.

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TRACHEOBRONCHITIS DUE TO INVASIVE *ASPERGILLUS FUMIGATUS* IN A HIV MAN WITH MINIMAL IMAGING FINDINGS

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Aspergillosis tracheobronchitis (AT) is a rare manifestation of invasive aspergillosis infection. We present a case of tracheobronchitis caused by *Aspergillus fumigatus* in a 33-year-old man with neutropenia, known human immunodeficiency virus infection (HIV) and acquired immunodeficiency syndrome (AIDS). *Case*. A 33-year-old man with HIV/AIDS presented to the hospital with symptoms of a productive cough for over two months associated with subjective fevers, chills and body aches. Computed tomography (CT) of the chest was significant for scattered sub-centimeter bilateral upper lobe nodules but otherwise normal. Patient underwent an extensive evaluation for his respiratory symptoms including an initial sputum culture which grew *Hemophilus parainfluenzae* in addition to preliminary fungal growth, prompting further evaluation with bronchoscopy. Bronchoscopy revealed diffuse adherent, obstructive pseudomembranous plaques in the trachea and bilateral upper lobe segmental bronchi and bronchoalveolar lavage cultures growing *Aspergillus fumigatus*. Tracheobronchitis due to *Aspergillus* species is a rare cause of infection in the HIV population. We believe this case underscores the importance of further evaluation utilizing bronchoscopy in AIDS patients with respiratory symptoms despite mild abnormalities on chest CT. This approach can be used to rule out atypical endobronchial infections such as tracheobronchitis due to *Aspergillus* species.

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PROVIDER FACTORS RACIAL DISPARITY IN PRIMARY CESAREAN DELIVERIES

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Background

Cesarean section is the most frequently performed surgery in the hospital in the United States. When analyzed by race, black women have been reported to have an estimated 22 to 64% increased incidence of cesarean section when compared to that of white women. ARMC ranks in the top 10th percentile in the state for reducing cesarean section deliveries for low-risk, first time mothers, from June 2019 – 2020 according to data from the CMQCC. While we have done well to reduce the overall primary cesarean rate at our institution, we recognize that significant racial disparities may still exist just as they do for the remainder of the US.

Objective

The objective of this study is to assess the trends in primary cesarean section by race at our institution, and to determine if provider factors such as age, gender, race, or length of practice may contribute to disparate primary cesarean rates by race.

Results

Provider factors such as age, gender, race or length of practice did not affect disparate rates of primary cesarean delivery.

Discussion

Racial disparities are common in medical practice and outcomes, but the underlying reasons for these discrepancies are largely unknown. In our obstetric practice, we know we perform a disproportionate number of primary cesarean deliveries in minority race groups. However, we did not find an association between provider demographics and NTSV cesarean deliveries in our preliminary analysis. Going forward, we plan to incorporate markers of unconscious bias to better understand the causes of health care disparities.

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THE IMPACT OF QUALITY IMPROVEMENT MEASURES IN THE MANAGEMENT OF ASTHMA PATIENTS IN JUVENILE DETENTION FACILITIES

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Asthma is a serious chronic lung disease with a significant economic burden. The population of the San Bernardino County Juvenile Detention and Assessment Centers have higher odds of asthma as compared to the general population. Research has shown that a significant number of patients with a prior history of asthma were misdiagnosed. A protocol using objective testing, along with the detailed patient's history, was successfully implemented to verify the diagnosis and guide more effective medical care. After the implementation of those steps, the prevalence of asthma was found to be lower with the new protocol, from 18.1% in the pre-protocol period to 11.2% in the post-protocol period. This decrease resulted in an associated reduction in both direct and indirect healthcare costs and more efficient medical care.

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Extremely Low Hemoglobin in an Ambulatory GI Bleed Patient

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A 51-year-old male with no reported medical history presented with palpitations progressing over a span of 6 months. The patient also developed generalized weakness, fatigue, and bilateral lower extremity edema during this time period. He did report intermittent melena during this time period as well. He does report drinking since his teen years, currently 1-2 alcoholic beverages daily, at times 12 drinks in one day. He denied lightheadedness, presyncope or syncope, shortness of breath at rest or on exertion, hematemesis, hematochezia, NSAID use. He also denies a prior history of alcohol withdrawal (anxiety, tremulousness, hallucinations, seizures).

The patient's vitals on admission revealed tachycardia of 102 and was otherwise unremarkable as he was afebrile, normotensive at 110/56, with respirations at 18 and oxygen saturation of 100% on room air. CBC revealed hemoglobin 1.7, platelets 232, and MCV 62. INR 1.3. Initial VBG revealed pH 7.46, pCO₂ 29, pO₂ 20, bicarbonate 20, lactate 3.67.

An EGD showed a 3cm hiatal hernia, a Schatzki ring in the distal esophagus, erosive gastritis in the antrum with gastropathy in the fundus and cardia, with a normal duodenum. Colonoscopy revealed an ascending colon sessile polyp, diverticulosis of the sigmoid colon, and grade II internal hemorrhoids. A pathology report of the gastric mucosa later revealed positive for *H. pylori*.

In total, the patient received 7 units PRBC's, with hemoglobin 8.2 at discharge. He was prescribed supplemental iron, folic acid, multivitamins, and quadruple therapy.

What is most striking about this case is the severity of the patient's anemia while still remaining ambulatory with relatively mild symptoms and normal vitals outside of his tachycardia. There have been prior reported cases of extreme anemia in which the patient survived. Among the lowest levels of hemoglobin recorded was 0.6 g/dL during a liver transplantation, which was accompanied by a serum lactate of 100 and ST depressions; this patient was maintained with transfusion, supplemental oxygen administration, and inotropic support. Among ambulatory patients, a 39-year old woman had a hemoglobin of 1.8 attributed to chronic abnormal uterine bleeding from a 5.9cm uterus, and a 34-year-old man had a hemoglobin of 1.8 found to have colon cancer; the latter being tachycardic and hypotensive to 80/30. Among the most extreme cases was a 39-year-old male who was a Jehovah's Witness with a hemoglobin of 2 and severe GI bleed from enteric fever who underwent right hemicolectomy and recovered without blood transfusion.

This case report is among the relatively few patients reported to have recovered from such significant anemia, especially while ambulatory and without supplemental oxygen or inotropic support. This case report would also like to review the physiology of the human body's oxygen consumption, oxygen delivery, oxygen content, and how patients such as this have possibly survived with such a condition.

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A RARE CASE OF MILLER-FISHER SYNDROME PRESENTING AS FACIAL DIPLEGIA WITH COVID-19 CO-INFECTION.

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COVID-19 has been reportedly associated with various neurological manifestations, including unilateral facial palsy, and very rarely, the presentation of facial diplegia. We present a unique case of Miller-Fisher Syndrome (MFS), a variant of Guillain-Barre Syndrome (GBS) that was noted in conjunction with a COVID-19 infection. In this case a patient presented with bilateral facial palsy, dysarthria, right-sided hemiparesis, ataxia and confirmation of SARS-CoV-2 infection. His computerized tomography (CT) scan of brain and serology test results did not support alternate etiologies for facial palsy and furthermore, his cerebrospinal fluid studies demonstrated cytoalbuminologic dissociation suggestive of GBS. A five days of intravenous immunoglobulin (IVIG) therapy combined with physical, occupational and speech therapy improved his recovery.

41: LATE-BREAKING

EVALUATION OF PRAXIS APPLICATION OF LIFESTYLE MODIFICATIONS IN NEWLY DIAGNOSED PRE-DIABETES IN A RESOURCE-POOR COMMUNITY

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Introduction

For decades, research has held that at the time of diagnosis with diabetes, standard of care is to recommend lifestyle recommendations including weight loss, decreasing concentrated carbohydrate intake, and regular exercise. Multiple studies have validated the recommendation for both pre-diabetes and type-two diabetes.

Effective "lifestyle modifications" in diet and exercise decrease the rate of progression from pre-diabetes to diabetes, decrease weight, and reduce the risk of complications. However, while such studies have demonstrated the efficacy of highly controlled programs, few studies have explored the effectiveness of these recommendations in praxis.

This retrospective study explores how diagnosis of pre-diabetes and initial provider-facilitated patient-education in the Family Medicine Department of Arrowhead Regional Medical Center (ARMC) impacts progression of A1c. The null hypothesis will reflect the current assumption that standard of care provider-based-education on diet and exercise will result in behavioral changes adequate for improvement or control of diabetes. The study hypothesis will reflect failure of the standard of care physician-provided education to impact HbA1c.

Methodology

This study collected data from the patient community of ARMC Family Medicine. The study included all individuals age 18 and older, with initial diagnosis of pre-diabetes. Individuals were not excluded on basis of race, ethnicity, or sex/gender. Individuals were categorized based on whether they were prescribed the first-line medication metformin along with education, or provided education without medication (Standard of Care). Standard of Care is routinely limited to a 15-minute appointment.

Results

The cohort of patients who received no medication but instructions on lifestyle modifications included 329 patients; the cohort of patients who received instructions and Metformin included 56 patients. A two-sample *t*-test compared change in before and after diagnosis between the two categories of care (Standard of Care or Medication).

Patients who did not receive metformin had a median change of A1c of +0.1. Those who did receive metformin had a median change of -0.1. The difference was not statistically significant ($p = 0.09$).

Conclusion

This study failed to demonstrate superiority of lifestyle modifications over Metformin, or vice versa; in the primary care setting with little control over patient's resources, understanding, literacy, and engagement with physician instructions.

The failure to demonstrate superiority of lifestyle modifications over medication, in contrast to the 2002 diabetes prevention program (DPP), is notably a pertinent negative finding. This study demonstrates that, without a well-funded, closely monitored lifestyle modification regimen, a different approach may be

- Past Winners -

1st Annual Research Day Winners – 2006

- 1st Place – **Edward Lee, MD** (Transitional Year)
“Intraoperative Hepatic Radiofrequency Ablation of Metastatic Sarcoma”
- 2nd Place – **Jonathan Kelling, MD** (Transitional Year)
“A Prospective Study to Evaluate The Depth Of Sedation In Patients Undergoing Procedural Sedation”
- 3rd Place – **Lisa Barden, DO** (OB/GYN)
“Retrospective Study of Second trimester Intrauterine Fetal Demise (IUFD)”

2nd Annual Research Day Winners – 2007

- 1st Place – **Hansie Wong, MD** (Family Medicine)
“Effectiveness of ARMC’s “Quit Clinic” for Smoking Cessation”
- 2nd Place – **Nicole Adair, DO** (OB/GYN)
“Incidence of Abnormal Blood Gases Among Patients Undergoing Elective Cesarean Section Without Medical Complications”
- 3rd Place – **Patricia Kahn, DO** (Emergency Medicine)
“Utilization of the Rapid HIV Test in the Emergency Department”

3rd Annual Research Day Winners – 2008

- 1st Place – **Maria “Angie” Loza, MD** (Transitional Year)
“Evaluation of Pre-Hospital and emergency Department Systolic Blood Pressure As a Predictor of In-Hospital Mortality”
- 2nd Place – **Lauren Prewitt, DO** (OB/GYN)
“A Retrospective Study of Maternal ICU Admission In A County Hospital Setting from 2004 – 2007 and Review of Literature”
- 3rd Place – **Bichson Pham, DO & Camelia Wogu, MD** (Family Medicine)
“The Effect of Breastfeeding on the Number of Sick Visits in the First Six Months of Life for Infants Born at ARMC”

4th Annual Research Day Winners – 2009

- 1st Place – **Uma Devaki, DO** (Family Medicine)
“Effects Of Implementation Of A Rapid Response Team at Arrowhead Regional Medical Center”
- 2nd Place – **Linda Lam, PharmD** (Department of Pharmacy)
“Protocol Development: Comparison Of Continuous Versus Intermittent Vancomycin Infusion For Methicillin-resistant Staphylococcal Infections
- 3rd Place – **Chiado Nguyen, DO & Glenn Niegas, DO** (Internal Medicine)
“Troponin Elevation In Severe Sepsis And Septic Shock”

5th Annual Research Day Winners – 2010

- 1st Place – **Kevin Felix, DO** (Family Medicine)
“Are Health Care Providers Clearly Communicating The Risks Of Obesity And Benefits Of Exercise And Diet To The Patient Population”
- 2nd Place – **Scott Fujimoto, DO** (Transitional Year)
“Radiographic Presentations And Patterns In Hospitalized Patients Infected With The Novel H1N1 Influenza Virus”
- 3rd Place – **Katie Huynh, DO & Ravi Shah, DO** (Department of Surgery)
“Bedside Ultrasound In The Surgical Assessment Of Acute Biliary Disease”

6th Annual Research Day Winners – 2011

- 1st Place - **Andrew McCague, DO** (General Surgery)
“Safety Analysis of Percutaneous Dilational Tracheostomies In The Obese”
- 2nd Place – **Katrina Platt, DO** (Internal Medicine)
“Evaluation of Involuntary Psychiatric Hold (5150) Among Elderly Patients (Greater Than 65 Years of Age) from 2009-2010
- 3rd Place – **Lisa McAfee, DO** (Emergency Medicine)
“Do Patients Expect To Be Tested For HIV?”



- Past Winners -

7th Annual Research Day Winners – 2012

- 1st Place – **Lena Hong Tran, Pharm.D.** (Pharmacy)
 “Effect of Pharmacist Intervention On Patient Experience”
- 2nd Place – **Tanya Minasian, DO & Yoav Ritter, DO** (Neurosurgery)
 “Use Of A Tubular Retractor System During An Awake Craniotomy For Resection Of A High Grade Neoplasm”
- 3rd Place – **Ahmed Dehal, MD** (General Surgery)
 “Racial Disparities in Clinical Presentation, Treatment, and Outcome Of Women With Breast Cancer: Analysis Of National Inpatient Sample Database”
- Audra Budde, DO** (Family Medicine)
 “Effect On Patient Satisfaction Of Osteopathic Manipulation Therapy For Musculoskeletal Complaints in The Primary care Setting: A Survey Based Study”

8th Annual Research Day Winners – 2013

- 1st Place – **Manal Elkarra, MD** (Family Medicine)
 “The Effect Of Three Years Of Arrowhead Regional Medical Center Heath Fair Screening On Breast Cancer Incidence”
- 2nd Place – **Timothy O’Kelley, DO & Nojan Toomari, DO** (Emergency Medicine /General Surgery)
 “A Ten-year Retrospective Review of Resuscitative Thoracotomy At A Level- Two Trauma Center”
- 3rd Place – **Patrick Welch DO & David Diep, DO** (Family Medicine)
 “Evaluating ARMC Mobile Clinic’s Effectiveness In Helping To Lower The Rate Of Medically Uninsured In The San Bernardino County Through Arrowcare.”

9th Annual Research Day Winners – 2014

- 1st Place – **Michelle Brunnabend, DO & Kristy Roloff, DO** (Women’s Health)
 “VBAC vs Repeat Cesarean Delivery: Did The NIH Consensus Statement Impact TOLAC Rates At An Institution Already Offering TOLAC?”
- 2nd Place – **Arsineh Khachekian, DO & Michelle Nowrozi, DO** (Internal Medicine)
 “The Use Of Granulocyte-Stimulating Factors In Decreasing Overall Morbidity Associated With Febrile Neutropenia – A Meta Analysis”
- 3rd Place - **Andrew Lin, MD** (Transitional Year)
 “Sulfasalazine And Thalidomide Inhibit Extracellular Trap Formation By Human Neutrophils”
- Ryan Villegas, DO** (Traditional Year)
 “Distinguishing Stroke from Stroke Mimics: What Do Patients Know?”

10th Annual Research Day Winners – 2015

- 1st Place – **Eric Schluederberg, DO & Matthew Diaz, DO** (Family Medicine)
 “Contacting Patients After Discharge: Does It reduce Overall Readmission?”
- 2nd Place – **Joseph Collins, DO** (Traditional Year)
 “What Are The Greatest Predictive Factors For Disposition After A Hospitalization At A Large County Hospital In Patients That Should require Acute Rehabilitation?”
- 3rd Place - **Andrew Crouch, DO** (Emergency Medicine)
 “Cost-Effective Health Care In The Era Of Healthcare reform: Do Physicians Need Routine Education regarding The Cost Of Medical Care?”

11th Annual Research Day Winners – 2016

- 1st Place – **Andrew Boulos, DO & Sarah Boulos, DO** (Internal Medicine & Emergency Medicine)
 “Initial Volume Resuscitation In Severe Sepsis And Septic Shock: A Three Year Analysis Of In-Patient Mortality And Hospital Length Of Stay At A County Medical Center”
- 2nd Place – **Caroline Brown, DO & Swathi Challa, DO** (Women’s Health)
 “Effects Of Delayed Cord Clamping And Cord Milking On Cord Blood Gas At Scheduled Cesarean Section”
- Kareem Aboutalib, DO & Samiksha Choudhary, DO** (Internal Medicine)
 “Benefits Of Long Acting Insulin In DKA Patients”
- 3rd Place - **Gohar Majeed, DO & Raed Sweiss, DO** (Neurosurgery)
 “Development Of A Radiographic Scale For Ventriculostomy Placement In Patients With Severe Traumatic Brain Injury And No Significant Space Occupying Lesion On Initial Cranial Imaging”



- Past Winners -

12th Annual Research Day Winners – 2017

- 1st Place – **Diana Le, PharmD** (Pharmacy)
 “Implementation Of A Procalcitonin Guided Therapy Protocol In Patients Hospitalized With Pneumonia In The Intensive Care Unit”
- 2nd Place – **Erik Jones, DO** (Women’s Health)
 “The Prevalence Of Chlamydia In Delivered Patients At ARMC”
- 3rd Place – **Eric Seachrist, DO & Lauren Bennalack, DO** (Emergency Medicine)
 “Effective Strategies To Reduce The Incidence Of Sacral Decubitus Ulcers In Adult Trauma Patients”

13th Annual Research Day Winners – 2018

- 1st Place – **Jeffrey Kopstein, DO & Vincent Rowley, MD** (Internal Medicine)
 “Cardiac Arrest And Death In hospitalized Patients With Pneumonia, Treated With Azithromycin Versus Levofloxacin”
- 2nd Place – **Hesam Hekmatjou, MD & Eman Ahmad, MD** (Family Medicine)
 “Increased Healthcare Cost And Burden Incurred Due To Inappropriate use of ANA Testing, A Retrospective Review”
- 3rd Place – **Julian Choi, DO & Julie Smithwick, DO** (Internal Medicine)
 “Phase II In Decreasing Blood Culture Contamination rates At ARMC – An Ongoing Quality Initiative”

14th Annual Research Day Winners – 2019

- 1st Place – **Joseph Salameh, DO & Jannelle Aquino, DO** (Emergency Medicine)
 “Utilization of Tranexamic Acid In Civilian Adult Trauma Resuscitation In The Hospital Setting”
- 2nd Place – **Inessa Dombrovsky, DO** (Women’s Health)
 “Can We Reduce The Number Of Low Risk Cesarean Births Among First Time Pregnant Women By Notifying Individual Providers Of Their Cesarean Delivery Rates In Nulliparous, Term, Singleton Vertex (NTSV) Patients?”
- 3rd Place – **Stacey Podkovik, DO, Harjot Toor, DO & James Brazdzionis, DO** (Neurosurgery)
 “Prevalence Of Catheter Associated Urinary Tract Infections (UTI) In Neurosurgical ICU Patients – The Overuse And Over-Diagnosis Of The UTI”



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