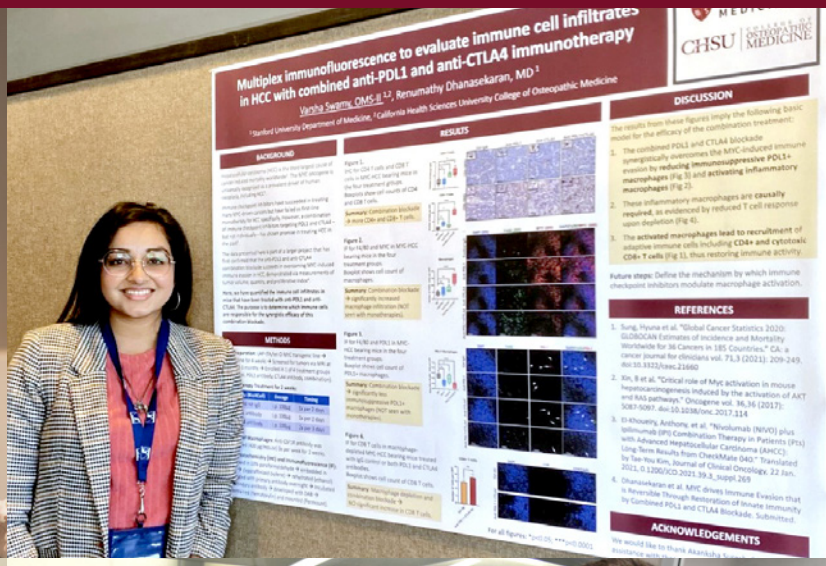
CHSU CALIFORNIA HEALTH SCIENCES UNIVERSITY

# Research Day

May 7, 2022




## Welcome Attendees and Presenters,

On behalf of the CHSU Research and Scholar Committee, we thank you for attending this research showcase and hope you enjoy learning about research projects in our local area, many of which are from CHSU faculty and students.

We are excited about this year's CHSU Research Day program and have lots of share with you! We have 3 keynote speakers and more than 60 poster presentations for you to enjoy.

We are honored to have Dr. Jaswant (Jas) Basraon, DO, MPH, FACC, who is a local clinician at The Heart Group, Cardiovascular Associates Inc. His presentation is titled "Innovations and Technology in Cardiology."

After a short break, we will begin poster presentations with odd-numbered posters. Feel free to browse the program booklet to determine which you would like to visit.

We will have a second keynote presentation from Dr. Parthiban Munnainathan, MD, a clinician at Omni Family Health. His presentation is titled "Physician 2.0." Refreshments and appetizers will be served. Once recharged the even numbered poster presentations will begin.

We will conclude with the final keynote which will be delivered by Juan Bautista, MD, physician at North Fresno Primary Care and Bautista Medical Group. He will deliver a speech titled "From Fresno to Columbia: Delivering to the Underserved During the Pandemic."

After these presentations, poster competition awards will be presented to the winners in each category: Faculty, Resident Physician/Pharmacist, and Student.

We look forward to meeting you and appreciate your support in making our Research Day a success!

### The CHSU Research Day Taskforce Members:

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### CHSU Mission Statement

We exist to improve the health care outcomes of people living in the Central Valley by:

1. Inspiring diverse students from our region to commit to health care careers that serve our region;

2. Developing compassionate, highly trained, intellectually curious, adaptive leaders capable of meeting the health care needs of the future through a performance-based education;

3. Empowering people to teach, serve, research, innovate, and practice collaboratively in areas of skill and expertise.

# CHSU Research Day Agenda
## May 7, 2022
## 8:00 am – 1:00 pm

**7:30 – 8:00** **Continental Breakfast Served**

**8:00 – 8:10** **CHSU Leadership Welcome**
Florence Dunn, President
Brian G. Kim, JD, Provost and Vice President for Academic Affairs
John Graneto, DO, MEd, Dean of College Osteopathic Medicine
Mark Okamoto, PharmD, Dean of College of Pharmacy
Edward Merino, PhD, Associate Professor and COM Director of Scholarly Activity

**8:10 – 9:00** **Keynote Address by Jaswant (Jas) Basraon, DO, MPH, FACC**
**"Innovations and Technology in Cardiology"**

**9:00 – 9:50** **Poster Session I (Odd Numbered Poster Presentations)**

**9:50 – 10:00** **Break**

**10:00 – 10:45** **Research Podium Address by Parthiban Munnainathan, MD**
**"Physician 2.0"**

**10:45 – 11:35** **Poster Session 2 (Even Numbered Poster Presentations)**

**11:35 – 12:00** **Break (Refreshments Served)**

**12:00 – 12:45** **Global Health Closing Address by Juan Bautista, MD**
**"From Fresno to Colombia: Delivering to Underserved During the Pandemic"**

**12:45 – 1:00** **Awards Ceremony**

## Keynote Speakers

### Jaswant (Jas) Basraon, DO, MPH, FACC
### The Heart Group, Cardiovascular Associates Inc

Dr. Jaswant (Jas) Basraon has fifteen years of experience in clinical medicine. His training includes internal medicine and specialty training in cardiovascular disease and further sub-specialization training in advanced heart failure and transplant cardiology.

### Parthiban Munnainathan, MD
### Omni Family Health

Dr. Parthiban Munnainathan is an established and highly skilled physician with over 5 years of experience in Family Medicine & Lifestyle Medicine. He also has 3 years of experience as a Physician Leader, currently serving as an Associate Medical Director with Omni Family Health, an FQHC located in Bakersfield, CA. His passion for medicine is only matched by his passion for anything techy. He is currently working on projects that improve access to care using technology through remote patient monitoring and telehealth. As a practicing physician he understands the provider user-experience matters when it comes to uptake of new tech. He makes this a high priority when creating processes and workflows that affect the day-to-day operations of his providers. He is self-taught in clinical informatics and utilizes his experience and education in helping oversee quality improvement projects that involve innovative technology.

### Juan G. Bautista, MD
### Bautista Medical Group & North Fresno Primary Care

Born just outside of Milwaukee, WI, Dr. Juan Bautista eventually moved to Fresno. He was actively involved in sports throughout high school and his undergraduate studies, eventually earning a football scholarship at Fresno State. After graduation, he completed his premedical studies at Columbia University in New York then earned his MD from Northwestern University Feinberg School of Medicine. He returned home and trained at UCSF Fresno. He has worked in primary care for over 9 years at his two offices balancing working half the time dedicated to the underserved and elderly and the other half practicing functional and anti-aging medicine. His major interests are in nutrition, exercise, and Global Health – completing global medical trips to Belize, Guatemala, Honduras, Cuba and Colombia.

## Poster Session I - Odd Numbered

9:00 am – 9:50 am
Poster #1

**Joel Gonzalez, MPH, MPP**
**Health Professional**
**UC Merced Health Sciences Research Institute**
**Title:** Improving Asthma Knowledge: A Promotora-Led Virtual Health Education Program
**Author(s):** J. Gonzalez, M. Yepez, A. Aguilar, R. Manzo
**Affiliations:** University of California, Merced, Health Sciences Research Institute

**Abstract:** Background: San Joaquin Valley counties are ranked low on a composite index of health factors reflecting health/risk behaviors, physical environment, access to care, and socioeconomic factors.

During the COVID-19 pandemic, access to technology and transportation limited the attainability to care and education. As a collaborate effort between the UC Merced and Camarena Health, we implemented a Promotora-led virtual home visitation asthma education and management program. This study describes the characteristics of the study participants and overall change in asthma knowledge before and after the intervention.

Methods and Analysis: Camarena Health Promotoras led a 4-week virtual home visitation program in June 2021. Nine participants completed Qualtrics pre-surveys at baseline and post-surveys after the home visitation program. Surveys include demographic and asthma control questions, and 39 asthma knowledge-based questions. Data analysis was performed using IBM SPSS, ver. 28.0.

Findings: Out of the nine adults who participated, six (67%) had asthma. Two of those adults also had children with asthma. The remaining three adults (33%) without asthma participated to gain a better understanding for their children who had asthma. Of the 6 adults with asthma, 5 (83.3%) were female. The median age was 45.0 (IQR 29.8 – 57.0) years. Adult asthma participants have lived with asthma long-term, since adolescence or early adulthood (Median 28.0 years; IQR 10.8 – 48.5 years). Compared to the pre-test, participants increased their asthma knowledge and skills by answering 7 additional questions correctly and improved 17 percentage points. Overall, participants improved from 71.8% (IQR: 61.5 – 75.6%) to 87.1% (IQR: 76.9 – 91.2%).

Poster #3

**Nohemi Barriga, PsyD**
**Faculty**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Evaluating Medical Residents' Perspectives on the Advantages and Limitations of Practicing in California's Central Valley
**Author(s):** S. Meykler, N. Barriga, C. Liu, R. Kamboj, Y. Mohammadi
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** California's Central Valley has historically had a shortage of physicians which continues to this day. As residency programs in the Valley continue to expand in size, scope, and number retention remains a key issue. We aim to survey the Central Valley's resident physician population to evaluate their perspectives about what limitations they face while practicing medicine in the Central Valley. We administered an anonymous survey using Qualtrics to assess resident physicians interested in practicing within the Central Valley upon completion of training to quantitively determine why they may not stay. We found the following to positively correlate to staying in the Central Valley: Family ties/proximity to support system; financial compensation; cost of living; and positive work environment. Interestingly, the most selected factor in deciding future location of practice was positive work environment. Subsequent surveys will be performed give annual snapshots over several years. We will publish the results in a national journal as well as present them at either a local or statewide conference.

This project will foster collaboration between our university and the local residency programs, help CHSU-COM and the other stakeholders better prepare and counsel our students in their transition to residency, and increase the diversity of the local physician population. This project was approved by CHSU IRB #: 2021-029

Poster #5

**Hany Ibrahim, MD**
**Faculty**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Enhancing TBL Online Delivery Using Photo-realistic 3D Virtual Reality Avatars
**Author(s):** H. Ibrahim, K. Steed
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Intro: Distant learning has been on the rise over the past few decades, highlighting a need to continue enhancing the online TBL learning experience. This need was magnified by the COVID-19 Pandemic which created a sudden dramatic shift towards remote learning with limited opportunities for face-to-face interactions. This shift opened the door to further integrate virtual reality technologies in education to enhance the learning environment.

Methods: We provide a comparison between video-conferencing and augmented reality platforms utilizing photo-realistic 3D avatars in enhancing learner interactivity and promoting communication in remote learning environments. Results: Emerging technological tools provide opportunities for face-to-face interactions both between the instructor and the learner and among learners themselves.

Discussion: The misconception that remote learning lacks adequate interactivity is outdated. Using Photo-realistic 3D avatars allow for in-the-moment interaction and communication in dynamic learning environments such as Team-based learning closely resembling in-class delivery. The use of avatars carries multiple evidence-based benefits in virtual learning environments including the facilitation of learner-learner and learner-instructor interactions, enhanced opportunities for learners and instructors to express themselves, promoting a feeling of co-presence among learners. These benefits highlight the need for additional research to incorporate the use of avatars in virtual or augmented reality to enhance the engagement level in remote learning environments, especially where active learning and small group instructional strategies provide students with opportunities to apply conceptual knowledge such as Team-based learning.

Poster #7

**Samantha Lynch, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Development of a Self-Measured Blood Pressure Program Unique to the Needs of California's Rural Central Valley Patient Population
**Author(s):** S. Lynch, B. Patel, L. Gutierrez, H. Saleh, S. Stoll, G. Miller, J. Kim, L. Dohil, A. Nijjer-Sidhu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** In Madera, California, in the heart of the Central Valley, Camarena Health's patient population consists of mostly Hispanic/Latino individuals and migrant farmworkers. The current literature on self-measured blood pressure (SMBP) programs for this type of population is limited. In order to address the needs of Camarena's more than 1,000 patients with uncontrolled hypertension and to address this knowledge gap, we have developed this SMBP program to be implemented by Camarena as a quality-improvement measure. For this project, we have made sure to include several forms of carefully selected and reviewed educational materials. The patients will be provided with in-person education upon enrollment by a health educator including receipt of a Drive BP3400 BP monitor and education on how to use it. They will also practice goal-setting and discuss motivation and lifestyle modifications. Patients will continue in the program for three months, meeting once a month with a health educator for check-ins, meeting with a provider once a month to review their BP log and make treatment plan adjustments, and will meet with the on-site clinical pharmacists as needed. By utilizing these methods, and through continuous evaluation of the program's obstacles and successes, we hope to develop a protocol that can serve as a foundation for those seeking to implement their own SMBP program for similar patient populations in the future.

Poster #9

**Caio Sarmento, PT, PhD**
**Faculty**
**California State University, Fresno**
**Title:** Patient's Perceived Efficacy of the Most Common Treatments for the Management of Fibromyalgia Symptoms: An Ongoing Nationwide Survey
**Author(s):** CVM. Sarmento, J. Alvarado, J. Adame-Walker, T. Valdez
**Affiliations:** California State University, Fresno, Department of Physical Therapy

**Abstract:** In this ongoing cross-sectional study, a survey was created to record the symptoms of patients with fibromyalgia (FM) severity, including chronic pain, chronic fatigue, and sleep disturbances, on a scale from 0 (no symptom) to 10 (worst intensity). Furthermore, patients' satisfaction with pharmacological and non-pharmacological interventions using a scale from 1 (very unsatisfied) to 10 (very satisfied) has been used. The survey has been disseminated among local and state-level patient support groups. The survey has been recording data from June 2020 and is expected to close in June 2023, targeting the final sample size of 1,000 participants. Results: The survey has recorded responses from 116 participants from 32 states. 94% of the participants were females and self-identified as Caucasians. The most common reported symptoms were: chronic fatigue (96%), widespread muscular pain (94%), and sleep disturbances. The most frequent pharmacological treatments were: celecoxib (31%), duloxetine (29%), gabapentin (22%), and opioids (30%). 67% of the participants have been practicing physical exercise as a means of symptom management. 24% of the participants were unaware that physical therapy (PT)could treat FM symptoms. Among the participants taking opioids for pain management, 36% of them were unaware that PT could help with pain management. The satisfaction levels with non-pharmacological interventions were significantly higher than the satisfaction with pharmacological interventions (p < 0.05). Conclusions: Preliminary data show an alarming number of patients with FM taking opioid medications for pain management. The preliminary data also suggests that non-pharmacological interventions are perceived as more effective than pharmacological interventions.

Poster #11

**Kevin Steed, PhD**
**Faculty**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Virtual Learning “face-to-face” using Augmented Reality – A Pilot Study
**Author(s):** K. Steed, H. Ibrahim, J. Takemoto, L. Coyne, T. Merritt
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** PURPOSE: Online learning has steadily grown in popularity suggesting a need to optimize online Team Based Learning (TBL) delivery techniques. This need was highlighted during the COVID-19 pandemic when instructors rapidly transitioned to online teaching. Extended reality has seen a similar growth in popularity in education. We investigated student perceptions on the effectiveness of a TBL session in augmented reality compared to conferencing software.

METHODS: We presented two virtual TBL exercises to medical students, one using AR through the Microsoft HoloLens 2™ device and the application, ‘Spatial’. The second session used video conferencing software ‘Zoom’. After the sessions, student perceptions were obtained through a questionnaire of 20-questions on a Likert scale and 3 free response questions. Statistics were analyzed using JASP statistical software. Students were given a $25 gift card for their participation.

RESULTS: Overall, our pilot group showed no statistical significance in student response between the two methods. Students tended to agree slightly more with statements about ‘Zoom’ compared to ‘AR’. There was a trend towards significance when asked if the student would take a course offered in the format, with a preference for ‘Zoom’. Several students mentioned a heightened level of engagement in AR because of the realistic avatars ‘revealing’ their level of engagement to peers. A few of the features of AR (such as automated clapping and confetti) were very distracting to the students.

CONCLUSIONS: Students were positive about the increased engagement and connectivity, despite some distracting features, and liked the realistic avatars and body language that they conveyed. Continued investigations are required, especially into virtual reality platforms.

Poster #13

**Lakai Banks-Dean, MD**
**Resident/Fellow**
**Kaweah Health**
**Title:** Retrospective Review of Emergency Department and Urgent Care-Related Admissions in Adolescents and Young Adults By Substance Type and Mental Health Co-morbidity
**Author(s):** L. Banks-Dean, P. Havard, Y. Yan, J. Halsey, M. Ramirez
**Affiliations:** Kaweah Health; University of California, Merced

**Abstract:** Purpose: Establish the prevalence of substance use with & without mental health diagnoses (MHD) in patients 11-24 years old from 2017-2019 at the Kaweah Health Emergency Department (ED) and Urgent Cares (UC). Secondary evaluations include the link between substance use & MHD with the length of stay (LOS)& recurrent visits.

Methods: After reviewing 3206 de-identified medical records, we used logistic regression (LR) with the following variables: age, sex, race/ethnicity, urine drug screen, serum alcohol level, & MHD. Age groupings were 11-13, 14-18, & 19-24. Multivariate analysis for demographic predictors of substance use & MHD yielded odds ratios at 95% confidence intervals.

Results: The most common MHD were suicidal ideation (SI)(23.64%), depressive disorders(12.26%),& anxiety disorders(9.11%). The 14-18-year-old (OR: 1.85 [1.20, 2.85]) & 19-24-year-old age (OR: 2.60 [1.65, 4.10]) groups were more likely than the 11-13 age group to have evidence of substance use. White(0.53[0.41, 0.70]) & Black patients(0.59[0.35, 0.97])were less likely than Hispanic patients to present with substance use. Cannabinoids were the most frequently identified substance on UDS at 69.88% of initial visits, followed by amphetamines at 13.10%. LOS was positively associated with manic disorders & SI, while alcohol use & adjustment disorders were negatively associated. Patients with manic disorders were in the hospital for 1.88 hours longer, & patients with SI were in the hospital for 1.32 days longer than patients without these diagnoses.

Conclusion: Cannabinoids & amphetamines were most frequently used substances. SI, depressive disorder, & anxiety disorders were the most common MHD. This data can help guide ED & UC level interventions to connect patients to appropriate follow-up care.

Poster #15

**Juan Deras, MD**
**Resident/Fellow**
**Adventist Health Hanford Family Medicine Residency Program**
**Title:** Hereditary Hemorrhagic Telangiectasia: A Rare Cause of Severe Iron Deficiency Anemia
**Author(s):** J. Deras, I. Vanegas, L. Mohammed, J. Patri
**Affiliations:** Adventist Health

**Abstract:** Introduction: Hereditary hemorrhagic telangiectasia (HHT) also known as Osler-Weber Rendu is a genetic disorder that causes arteriovenous malformations. The most common presentation is epistaxis from small AVMs. [1] Large AVMs are common in lungs, liver or brain. Clinical presentation of patients with HHT range from epistaxis, mucocutaneous telangiectasia, and a tendency to develop iron deficiency anemia from GI losses. [2]

Case presentation: We present a case of a 58 yo F who presented to the emergency department with generalized weakness, fatigue and intermittent dizziness for 2 days duration associated with intermittent black stool which appears to be chronic according to the patient.

On evaluation the patient was found to be hemodynamically stable in no acute distress. Heart rate was 96 per minute and blood pressure 109/46 mm Hg. EKG with sinus rhythm and frequent ventricular premature complexes. Ct Angio Chest/Abdomen/Pelvis showed a large AVM in the right. Cardiomegaly likely due to high output CHF from a large right AVM. Labs were remarkable for hemoglobin of 4.7, hematocrit 14.4%, MCV 79.9, and retic count of 3.7, The patient was admitted to the medical unit and transfused with five units of PRBC. Repeat labs showed a hemoglobin level of 8.4. Patient underwent EGD with Argon plasma coagulation (APC) ablation of multiple telangiectasia in the stomach and duodenum and finally was discharged on day 3 with: ferrous sulfate, PPI, and Vitamin B12 prescriptions.

Poster #17

**Elora Mallick, OMS-I**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Long-term absence of progression as a complementary outcome in multiple myeloma
**Author(s):** C. Blau, G. Nam, L. Chhun, C. Zheng, J. Piboonvaranggoon, J. Wren, E. Mallick, L. Zelko, C. Lopez, S. Namburi, S. Blau, R. McCroskey, F. Senecal, M. Moezi, A. Ayed, R. Lopez-Barquilla, J. Richter, W. Bensinger, P. Richardson, K. Anderson, M. Wolcott
**Affiliations:** All4Cure; Northwest Medical Specialties; Cancer Specialists of North Florida; Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai; Myeloma and Transplant Program, Swedish Cancer Institute; Jerome Lipper Multiple Myeloma Center, LeBow Institute for Myeloma Therapeutics, Dana-Farber Cancer Institute, Harvard Medical School; Msight Analytics

**Abstract:** Despite the availability of many effective agents, multiple myeloma remains largely incurable. The complexity of combining and sequencing multi-agent regimens presents a major challenge in optimizing treatment. Access to high-quality real-world data can help address this problem.

All4Cure has created an ecosystem and a community with more than 1800 participants consisting of patients, clinicians, and researchers in an online platform focused on multiple myeloma. Patients provide access to their medical records from which information is extracted for display on their personalized, deidentified dashboards that include a discussion panel that allows for asynchronous communication about the patient's specific circumstances.

We studied the longitudinal and cross-institutional data from the All4Cure platform in an exploratory analysis. With a cohort of 298 patients who initiated myeloma therapy on or after June 1, 2015, the study sought to identify preliminary insights into areas for further exploration by analyzing demographic and disease characteristics as well as therapy choices.

Multiple outcomes were considered: progression-free survival (PFS), overall survival (OS), and a newly proposed outcome, long-term absence of progression (LTAP). These findings suggest LTAP, which focuses on sustained absence of disease progression, may have value as an additional parameter for informing therapy decisions. Intensive front-line therapy was associated more strongly with LTAP than OS, and despite their similarity, LTAP and PFS were not consistently associated with the same covariates. Even with the limited cohort size, these preliminary findings support the potential of this approach for gaining insight into real-world treatments and outcomes in myeloma.

Poster #19

**Zachary Josse, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Use of Street Medicine to Reduce Emergency Department Use Among Homeless Populations
**Author(s):** D. Quesada, A. VanGarsse, N. Peña-Brockett, S. Holzmann, Z. Josse, J. Dertinger
**Affiliations:** Kern Medical; California Health Sciences University College of Osteopathic Medicine

**Abstract:** Access to health care has become increasingly difficult for homeless populations due to numerous barriers that limit ability to seek proper care. Street medicine is a rising intervention in health care in which health screenings and treatments are completed within patient homeless encampments. This study will look at unhoused individuals seeking health care treatment in local emergency departments (ED) in Bakersfield, CA. Identifying the characteristics and barriers to healthcare in the homeless population will allow for increased utilization of street medicine and decreased overflow of the ED. Quality assessments and evaluation of street medicine efficacy will allow for better allocation of community resources for this population and within the ED. Patient data from the ED (n=55) showed 14.5% of patients were level 4/5 traumas that could have likely been treated by the street medicine team. 34.5% of the patients are uninsured and could benefit from the street medicine team's resources to help with insurance enrollment. 23.6% of patients have 5 or more ED visits in the last 3 years. Preliminary surveying of Clinica Sierra Vista's street medicine (SM) patients (n=13) showed that 84.6% cited SM team rapport as the primary reason for continued use of the service. Our initial data assessment suggests that there is the potential for the street medicine program to eliminate several barriers to care experienced by this community while increasing patient satisfaction and trust.

Poster #21

**Onkar Mudhar, MD**
**Resident/Fellow**
**St. Joseph's Medical Center**
**Title:** Incidence of Barotrauma in COVID-19 Patients Requiring Mechanical Ventilation: A Retrospective Study in a Community Hospital
**Author(s):** O. Mudhar, S. Goswami, J. DeMellow
**Affiliations:** St. Joseph's Medical Center

**Abstract:** Rationale: Acute Respiratory Distress Syndrome (ARDS) is a severe complication of SARS-CoV-2 and traditional ventilation strategies using ARDSNet protocol, including low tidal volumes, appear to cause barotrauma in COVID19 patients at a higher rate than non-COVID19 ARDS patients. The purpose of our retrospective chart review is to identify the incidence of barotrauma in COVID19 patients with ARDS requiring mechanical ventilation here at SJMC.

Methods: This study was a retrospective chart review of all patients admitted to critical care units at SJMC with COVID19 infection and requiring mechanical ventilation from March 1, 2020-September 30, 2020. The sample included adult patients (over age 18) with ICD 10 Code for COVID19 (U07.1) and patients who were placed on mechanical ventilation for greater than 24 hours, from March 1, 2020 to September 30, 2020.

Results: 140 COVID19 patients underwent mechanical ventilation for greater than 24 hours from March 1, 2020 to September 30, 2020 at our facility. 26 COVID19 patients (18.6%) met our inclusion criteria, developing barotrauma during their hospital admission, of which 25 (17.9%) underwent mechanical (invasive and/or non-invasive) ventilation. 80% of the patients were on non-invasive mechanical ventilation prior to intubation and invasive mechanical ventilation. The categorical breakdown of barotrauma was as follows: Pneumothorax 65.4%, subcutaneous emphysema 61.5%, pneumomediastinum 34.6%. At the time of barotrauma, 17 patients were on a volume control mode, but only 1 patient was above the ARDSNet guideline of 6-8 mL/kg IBW.

Conclusions: Patients with COVID19 who underwent mechanical ventilation developed barotrauma at a higher rate than reported in literature for non-COVID19 patients with ARDS.

Poster #23

**Onkar Mudhar, MD**
**Resident/Fellow**
**St. Joseph's Medical Center**
**Title:** Pulmonary Embolism Response Team - Improving Outcomes at a Community Hospital
**Author(s):** O. Mudhar, J. Chong, P. Khanna, J. DeMellow, C. King
**Affiliations:** St. Joseph's Medical Center

**Abstract:** Rationale: The Pulmonary Embolism Response Team (PERT) is a multidisciplinary group tasked with providing a rapid assessment as well as treatment recommendations for PE. It is unclear whether a PERT is truly cost-effective or leads to improved survival. Our institution is a 355-bed community-hospital in Stockton CA, and our PERT protocol was instituted in July 2018. The purpose of our retrospective chart review is to determine if the PERT has led to improved outcomes at SJMC.

Methods: This study was a retrospective analysis of all patients over the age of 18 who received emergency department or inpatient care at SJMC from 8/1/2016 through 7/30/2020 and were diagnosed with submassive/massive Pulmonary Embolism. The PERT was implemented at SJMC in July 2018 and our study sought to compare the Pre-PERT period to the Post-PERT period to determine if there were improved outcomes with the PERT protocol.

Results: A total of 325 patients received care at our facility for pulmonary embolism during our study period. 144 patients were in the pre-PERT period and 181 were in the post-PERT period; Mortality rates in these 2 groups were 9% and 3.9% respectively. In the Pre-PERT group there were 13 cases of massive PEs with a 53.8% mortality rate and 131 submassive PEs with a 3.8% mortality rate. In the Post-PERT group there were 11 massive PE's with a 45.5% mortality rate and 170 submassive PE's with a 1.2% mortality rate. We did not find any statistically significant association between PERT and mortality (p value 0.1425) or PERT and length of stay (p value 0.4801).

Conclusions: Patients who underwent treatment for PE at SJMC during the Post PERT period were found to have a lower mortality rate however the difference in mortality was not found to be statistically significant.

Poster #25

**Katayun Fethat, BS, OMS-I**
**Student**
**California Health Sciences University College of Osteopathic Medicine**

**Title:** Eyecare practices and glaucoma patient care trends in the face of a global pandemic, COVID-19.

**Author(s):** M. Safi, K. Fethat, J. Bacharach
**Affiliations:** Department of Ophthalmology, California Pacific Medical Center; University of California, Davis; North Bay Eye Associates

**Abstract:** Objective: To understand the effects of the COVID-19 pandemic on glaucoma eyecare practices and patient care trends.

Design: Cross-sectional

Participants: Comprehensive and glaucoma trained ophthalmologists

Method: This was an internet-based statewide survey distributed to comprehensive and glaucoma-trained ophthalmologists in California. The survey consisted of 10 questions designed to address the effect of the pandemic on the volume of patient care visits, laser utilization, teleophthalmology trends, and frequency of routine, urgent and emergent glaucoma surgical procedures, among others.

Main outcome measure: Not-applicable

Results: Most ophthalmologists reported decreased patient volume as they focused primarily on seeing urgent and emergent glaucoma cases. While most respondents noted a significant decrease in routine surgical procedures, a majority reported a similar volume of urgent and emergent procedures comparable to the pre-COVID-19 era. Notably, most ophthalmologists responded that they did not change their prescription filling habits during the pandemic. Selective laser trabeculoplasty (SLT) utilization decreased, paralleling the reported decrease in patient volume. Finally, just over half of the ophthalmologists surveyed implemented teleophthalmology into their practice.

Conclusion: Discovering patient care trends shed light on areas of needed advancement, such as teleophthalmology, and provides necessary insight into how ophthalmologists are coping with the challenges brought on by the pandemic.

Poster #27

**Tia Abu Sham, BS, MA, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Damaged Patient Identity & Immigrants of Color in Healthcare
**Author(s):** T. Abu Sham, J. Stramondo
**Affiliations:** California Health Sciences University College of Osteopathic Medicine; San Diego State University

**Abstract:** This poster aims to examine how healthcare and physicians negatively impact patients and lead to the conferral of a damaged patient identity on individuals in healthcare, specifically Immigrants of Color. This harm is a form of epistemic injustice. Epistemic injustice is harm that affects a person as a knower. Immigrants of Color suffer both testimonial and hermeneutical injustice based on the hardships they face. Testimonial injustice is harm that affects the speaker's credibility; this is seen in healthcare with language barriers among first-generation immigrants. Hermeneutical injustice is seen as harm when an individual's personal experience or experience isn't accepted or understood. In healthcare, this is seen with cultural differences in Immigrants of Color and how those translate into harm in healthcare. These harms contribute to a damaged patient identity that affects people's autonomy and agency in healthcare. These harms contribute to the systematic oppression seen in healthcare including healthcare disparities. Both harms coupled together contribute to a damaged patient identity that treats persons as inferior and reduces their autonomy.
This topic is extremely relevant to ongoing conversions about healthcare disparities and inequities, especially how it affects particularly vulnerable patient groups. This introduces a framework to discuss how Immigrants of Color are affected in healthcare and the connections these harms contribute to healthcare disparities. Healthcare disparities are a system-wide problem that has individual implications for patient-physician interactions. These implications are described through epistemic harm that leads to patient vulnerability and autonomy. This ties into the question and issue of physician mistrust and why it continues

Poster #29

**Najiha Alam, MPH, OMS-I**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Condoms, Trust and Stealthing: The Meanings Attributed to Unprotected Hetero-Sex
**Author(s):** N. Alam, P. Alldred
**Affiliations:** California Health Sciences University College of Osteopathic Medicine; Nottingham Trent University School of Social Sciences

**Abstract:** University students tend to have greater sexual health knowledge than the general public, yet condom use among this group continues to be a public health concern because effective condom use could reduce sexually transmitted infections and, for heterosexual women, unwanted pregnancies. We report findings from a small, qualitative study of condom use among sexually active heterosexual university students in the UK. This paper identifies some of the meanings attributed to condom use in the accounts of nine heterosexually active 20–25 year-olds. Participants explained that when they felt comfortable communicating with their partners, they were more likely to use condoms, and those with negative sexual experiences or under social or psychological pressure were less likely to use them. The findings highlight issues of trust and power between men and women in heterosexual relationships and describe contexts for dishonest sexual practice, including the traditional notions of femininity that were linked to condom use by this group. The issue of stealthing arose in one woman's account of her experience and in several others' reports of what occurs commonly. Stealthing, the secretive removal of a condom by a partner during sexual intercourse without a partner's knowledge or permission, produces non-consensual unprotected sex. We present stealthing as a product of the sexual double-standards described and as a form of interpersonal violence (IPV) and, among these heterosexual partners, as a form of gender-based violence. This study provides a glimpse into university students' decision-making regarding condom use and highlights how gendered inequalities shape heterosex, in particular, communication about safer sex, that in some cases, compromise women's decisions about (safer) sex.

Poster #31

**Sankhya Amaravadi**
**Student**
**AT Still University Kirksville College of Osteopathic Medicine**
**Title:** A Case For Psychiatric Screening Tools in Electronic Medical Record Systems
**Author(s):** S. Amaravadi, J. Bermudez
**Affiliations:** AT Still University Kirksville College of Osteopathic Medicine

**Abstract:** Psychiatric conditions often have variable presentations, especially as many of these disorders have similar symptoms and significant comorbidity. Multiple psychiatric disorders occurring concurrently are often mistaken as a single disease process. In this case, an adolescent patient's initial diagnosis was bipolar disorder with mixed features, and he was referred for electroconvulsive therapy (ECT). Upon reevaluation, he was found to have Attention-Deficit/ Hyperactivity Disorder (ADHD), depression, and concerns for pervasive developmental disorder - likely Autism Spectrum Disorder.

This patient had been receiving treatment for bipolar disorder for two years, and had suffered from many adverse medication effects. Had the patient's differential diagnoses been expanded to include co-morbid conditions, this might have been avoided.

Improvements in screening recommendations could result in more accurate assessments and more precise treatments.

Poster #33

**Khalid Azizi, BS, MS, OMS-I**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Role of Endoplasmic Transcription Factor ATF6 in Myocardial Ischemia/Reperfusion Damage
**Author(s):** K. Azizi, J. Jin, E.A. Blackwood, D.J. Thuerauf, A. Fahem, C. Hofmann, R. Paxman, R. Kaufman, S. Doroudgar, L. Plate, J. Kelly, L. Wiseman, C. Glembotski
**Affiliations:** San Diego State University Heart Institute and the Department of Biology; San Diego State University; Department of Chemistry, The Scripps Research Institute; Department of Molecular Medicine, The Scripps Research Institute

**Abstract:** Endoplasmic reticulum (ER) stress causes the accumulation of misfolded proteins in the ER, activating the transcription factor, ATF6 (activating transcription factor 6 alpha), which induces ER stress response genes. Myocardial ischemia induces the ER stress response; however, neither the function of this response nor whether it is mediated by ATF6 is known. Using a mouse model of myocardial ischemia/reperfusion, we show that selective pharmacologic activation of the ATF6 arm of the unfolded protein response (UPR) during reperfusion, a typical clinical intervention point after myocardial infarction, transcriptionally reprograms proteostasis, ameliorates damage and preserves heart function. These effects were lost upon cardiac myocyte-specific Atf6 deletion in the heart, demonstrating the critical role played by ATF6 in mediating pharmacologically activated proteostasis-based protection of the heart. Pharmacological activation of ATF6 is also protective in renal and cerebral ischemia/reperfusion models, demonstrating its widespread utility. Thus, pharmacologic activation of ATF6 represents a proteostasis-based therapeutic strategy for ameliorating ischemia/reperfusion damage, underscoring its unique translational potential for treating a wide range of pathologies caused by imbalanced proteostasis.

Poster #35

J**effrey Storm, BS, OMS-II; Briana Martinez, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Pediatric Asthma Education in Madera County Health Department, Pilot at CHSU
**Author(s):** B. Martinez, K. Basmajian, J. Storm, S. Goldgraben
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Background: Asthma is a prevalent health condition within Madera County. This study is piloted with CHSU faculty and staff with 3 education sessions. Next year, an education intervention will be carried out with the target population at Madera County Public Health Department ages 13-21 diagnosed with asthma with the smart aim of a 20% increase in asthma-related knowledge.

Methods: Sessions contain group learning techniques with a pre-test and post-test for weeks 2-5. The pre-tests and post-tests demonstrate if there is an increase in participants' asthma knowledge after each session. The education interventions include asthma overview, asthma treatment, diet and exercise, and asthma prevention.

Results: The mean difference between pre and post-test for weeks 2-5 are 9.1% increase, 9% increase, 3.6% increase, and 17.11% increase, respectively. There was an increase in asthma knowledge each week after the education interventions. The p-value range is less than 0.05 for a one-tailed test. The p-values for weeks 2-5 are 0.008, 0.12, 0.22, and 0.018, respectively. Therefore, only weeks 2 and 5 are statistically significant.

Discussion: While every session demonstrated improvement, the smart aim was not met. Limitations of the pilot include a participant sample with increased reasoning skills, resulting in higher test results, inconsistent participant attendance, and COVID restrictions denying the ideal participant group of asthma patients aged 13-21. This study will refine the education tests to make them more correlated with each learning session.

Poster #37

**Megan Chisesi, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Diabetes Lifestyle Education for HbA1c Reduction
**Author(s):** M. Chisesi, D. Brown, M. Lansman, W. Kim
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** As nutrient-poor food and fast-paced lifestyles continue to dominate modern life, the increasing number of patients diagnosed with type 2 diabetes mellitus has prompted several studies to seek innovative interventional methods. 37.3 million people in the United States have diabetes (11.3% of US population) and an additional 96 million people aged 18 years and older have prediabetes (38.0% of US population). Several meta-analyses of studies that utilized educational materials to improve metabolic control have shown that lifestyle interventions can demonstrate a meaningful change in glycemic control. This study plans to examine the effectiveness of an educational program administered via email with the purpose of improving patient management of type 2 diabetes. Educational material will contain information on nutrition and exercise related to type 2 diabetes. We hypothesize that providing a 6-week educational program with evidence-based lifestyle interventions to patients with poorly controlled type 2 diabetes will result in increased patient diabetes awareness and education. In the future, the methods used in this pilot project could be implemented in a larger and longer study that correlates patient knowledge with changes in hemoblobinA1c.

Poster #39

**Kirun Chohan, BS, OMS-I**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Early case ascertainment and prospective multidisciplinary review for management of new melanoma diagnoses within an integrated healthcare system: The Kaiser Permanente Northern California experience
**Author(s):** T. Truong, K. Chohan, A. Price, H. Fevrier, P. Peng, M. Kavanagh, M. Jones, A. Soni, M. Price, B. Rasgon, B. Adad, Paul. Martin, J. Rangel, J. Kavecansky, M. Reddy, S. Wang, L. Herrington, T. Kolevska, J. Morris, C. Chang
**Affiliations:** Kaiser Permanente Northern California, Vallejo, CA; Kaiser Permanente Northern California, Division of Hematology/Oncology, Vallejo, CA; Kaiser Permanente Northern California, Division of Research, Oakland, CA; Kaiser Permanente Northern California, Department of Surgery, Oakland, CA; Kaiser Permanente Northern California, Department of Surgery, Santa Clara, CA; Kaiser Permanente Northern California, Department of Surgery, Vallejo, CA; Kaiser Permanente Northern California, Division of Plastic Surgery, Napa, CA; Kaiser Permanente Northern California, Department of Head and Neck Surgery, Oakland, CA; Kaiser Permanente Northern California, Department of Head and Neck Surgery, Walnut Creek, CA; Kaiser Permanente Northern California, Department of Head and Neck Surgery, Vallejo, CA; Kaiser Permanente Northern California, Department of Dermatology and Dermatopathology, San Francisco, CA; Kaiser Permanente Northern California, Division of Hematology/Oncology, Antioch, CA; Kaiser Permanente Northern California, Division of Hematology/Oncology, Oakland, CA; Kaiser Permanente Northern California, Division of Hematology/Oncology, Sacramento, CA

**Abstract:** Background: Appropriate surgical treatment of early-stage melanoma yields a high cure rate, but this management can be nuanced. In particular, surgical management, including sentinel lymph node biopsy (SLNB), of thin melanoma (≤1.0mm) is not well-defined. Methods: Biopsies with new melanoma diagnoses were identified electronically and manually reviewed. In a community oncology setting, we organized a review panel of physicians specialized in melanoma from dermatology, medical oncology, nuclear medicine, radiation oncology, and surgical subspecialties (oncology, plastics, head and neck). Patients were assigned to care pathways based on NCCN and ASCO guidelines, including guidance on SLNB for thin melanomas with high-risk features like lymphovascular invasion, high mitotic rate, positive deep margin, and ulceration. These recommendations were documented in the chart and communicated directly to the patient's care team. Results: From 11/2016 through 10/2018, our multidisciplinary committee reviewed 3626 patients with new melanoma from 22 sites in our integrated, regional hospital system. Median age was 66 (range 19-99); 60% were male. cT2N0 tumors comprised 7%, cT3 3%, and cT4 2%. Thin melanomas ≤1.0mm represented 71% of cases, of which 34% were ≤0.5mm. SLNB was performed in 9.8% of thin melanomas, and 18% were positive, much higher than historical positive rates of 3-4%. Conclusions: Early case ascertainment and prospective multidisciplinary review in a community oncology setting resulted in increased identification of high-risk thin melanoma, and consequently increased identification of nodal disease through SLNB. Positive SLNB triggers important clinical decision-making regarding need for node dissection versus clinical surveillance, and need for adjuvant therapy.

Poster #41

**Hugh Dang, BS, OMS-III**
**Student**
**Kansas City University College of Osteopathic Medicine**
**Title:** Finding Myelodysplastic Syndrome and Dyskeratosis Congenita in a Resource-Limited Setting: Case Report
**Author(s):** H. Dang, R. Arora
**Affiliations:** Kansas City University; Sequoia Family Medical Center Department of Internal Medicine

**Abstract:** Myelodysplastic syndrome (MDS) has been seen in U2AF1 mutations in patients younger than 50 with high risk of developing Acute Myeloid Leukemia. It is a rare complication associated with dyskeratosis congenita along with features of avascular necrosis and pulmonary fibrosis. The infrequency upon which MDS, DC, avascular necrosis, and pulmonary fibrosis are being assessed specifically in a younger patient in a resource-limited setting makes this a unique case. We present a 30-year-old male seen for syncope and found to have pancytopenia. He displayed symptoms later found to be consistent with dyskeratosis congenita. Initial bone marrow biopsy and aspiration showed megakaryocytic and erythroid dysplasia. After persistent anemia and thrombocytopenia, he initiated Rituximab but had worsening thrombocytopenia. Repeat bone marrow biopsy conducted over 3 years after initial presentation showed mild hypocellular marrow with trilineage hematopoiesis and erythroid and megakaryocytic dyspoiesis, 4% blasts. Heme-STAMP demonstrated U2AF1 mutation consistent with MDS. He was started on Azacitidine, which improved cell counts. He underwent allogeneic hematopoietic cell transplantation and is continuing to be monitored. This case illustrates a rare patient case that necessitated an extensive, multi-disciplinary approach to diagnose and treat MDS and its complications to attain optimal patient outcomes. It is a multi-faceted team effort to help patients with complicated systemic diseases. In an era of an increasing number of cancer patients and shortages of oncologists, especially in resource-limited settings with lower accessibility and convenience of specialty care, PCPS are actively involved and can improve access and quality care in patients with MDS.

Poster #43

**Thu Dang, OMS-I**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** High Flow Nasal Cannula in Carbon Monoxide Poisoning
**Author(s):** T. Dang, M. Wu, E. Merino
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Carbon monoxide (CO) is an odorless and colorless poisonous gas produced from many common uncomplete combustions processes in poorly ventilated areas, including fumes from car engines, gas stoves, or burning charcoal. Acute CO poisoning is responsible for 4.6 deaths per million worldwide and affects approximately 50,000 people in the United States annually. CO is a difficult-to-diagnose respiratory poison due to abnormally high oxygen saturation in arterial blood, owing to the binding characteristic of carboxyhemoglobin (COHb). Efforts to investigate this issue are necessary to offer treatment for those afflicted with this condition. This study aims to determine the half-life of COHb under the different settings of high-flow nasal cannula (HFNC) utilizing in-vitro studies. The transition from carboxyhemoglobin to oxyhemoglobin will also be evaluated. Once determined, we will investigate the effectiveness of HFNC as a method to deliver oxygen which can serve as the basis of an operable device to treat acute CO poisoning.

Poster #45

**Jake Dertinger, BS, MS, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Introduction to Nutrition Support for Preclinical Osteopathic Medical Students
**Author(s):** J. Dertinger, F. Ibarra, E. Johnston
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Promising Approach: Osteopathic Healthcare Delivery, Trainee Readiness?

Challenge/issue: Malnutrition conservatively affects approximately 30% of hospitalized patients. Consequences of malnutrition may include longer hospital length of stay, greater risk of hospital readmission, and higher overall cost of care. Benefits of nutrition support may include improved wound healing, reduction in complications, length of stay, and mortality. There are few published materials for teaching this topic to osteopathic medical students.

Objective: To create and assess an introductory lesson on nutrition support for osteopathic medical students within the OMS-II gastroenterology course.

Approach: A pharmacy faculty member and a nutrition faculty member collaborated on an introductory level nutrition-support focused session for second year osteopathic medical students. We created a slide set and video (Panopto) recording with pre and post-quiz questions embedded within the video. The presentation includes a practice patient case, description of selected nutrition support formulas, and a discussion of the roles of members of the interdisciplinary care team in providing nutrition support for a patient in the inpatient setting. The post-quiz also includes questions on the effectiveness of the educational materials and opportunity for students to submit subjective feedback.

Results: This is the first iteration of this module. Data from surveys will be analyzed and presented. Course faculty will update the materials in accordance with student feedback. Due to the lack of established curricula for introducing nutrition support to medical students, these findings will constitute an important contribution to medical education literature.

Poster #47

**Hend Hashem**
**Student**
**California State University, Fresno**
**Title:** The Effects of Breaking Up Prolonged Sedentary Periods with Alternating Bouts of Standing on Cardiometabolic Markers
**Author(s):** H. Hashem, C. Sarmento, C. Viner
**Affiliations:** California State University, Fresno

**Abstract:** Physical inactivity has been directly implicated in prominent lifestyle diseases such as type II diabetes, cardiovascular disease, hypertension, and has been shown to increase premature mortality. Current guidelines stipulate a minimum of 150 mins of moderate intensity activity and 2-3 days of resistance training per week, however these requirements have been challenging to maintain in sedentary individuals. Moreover, adherence to the physical activity guidelines alone have been shown to be less effective at mitigating the cardiometabolic risk associated with increased periods of sedentary time throughout the day. Recent studies have found that reducing sitting time and breaking up sedentary periods with purposeful activity can be impactful in improving cardiometabolic risk factors such as glucose levels, blood pressure, lipid profile, and overall cardiorespiratory fitness. The purpose of this cross-over study is to investigate the effects of breaking up prolonged sitting periods throughout the workday in comparison to light daily walking in sedentary individuals on cardiometabolic measures such as HbA1c, lipid profile, and glucose. It aims to evaluate the effects of integrating stand up desks within the participants' daily work environment without changes in dietary habits. It was hypothesized that both interventions would show improvements in the cardiometabolic measures being assessed, however that the intermittent standing protocol may produce more prominent effects. Preliminary analysis from three participants show trends of improvement, however further recruitment is underway and a larger sample size is necessary to extrapolate meaningful data interpretation.

Poster #49

**Brianna Mae Holcomb, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Improve the quality of care and effectiveness in diabetes mellitus patient encounters for positive health outcomes
**Author(s):** B. Holcomb, A. Simpson, T. Thredgill, T. Samaya, A. VanGarsse, L. Perry
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Providers are working to improve the quality of care and effectiveness of patient encounters in order to meet the guidelines for positive health outcomes in patients with diabetes mellitus. The following study considers the effectiveness of implementing a chart prep sheet specific to diabetic patients as a quality improvement tool in a diabetic population.

This Quality Improvement study was performed at the Adventist site in Lemoore, California. The patient sample consisted of randomly selected patients with type II diabetes (n= 85). The prep sheet included the patients' hemoglobin A1C measurements for the last year, diabetes-related exams due, comorbidity data, current diabetic medications, and recent diabetic education received. The goal of including this specific data was to emphasis key pieces of information that are obstacles in improving HbA1Cs.

The average HbA1C before implementation of the diabetic patient-specific chart sheet was 32.1% poorly controlled (HbA1Cs were greatly than 9%). Following the implementation, HbA1Cs were reported in June as 28.4%; July as 28.4%; and August as 26.8%. Resulting in a decrease of 3.7%, 0.0%, and 1.6% respectively and 5.3% overall. Based on the current research, continuing to implement a form of chart prep that is specific to a patient population alongside an additional intervention method (such as team huddles, reminder sheets for goal lab values, or reserving weekly time to call on overdue labs) would be further beneficial.

Poster #51

**Obaid Khan, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Improving Breast Cancer Screening Rates in Central Valley through Examining Social Determinants of Health
**Author(s):** O. Khan; A. Nijjer-Sidhu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Breast cancer screening (BCS) rates are below the Healthcare Effectiveness Data and Information Set (HEDIS) baseline target of 75th percentile in Central Valley (California). Breast cancer is the leading cancer diagnosis for women in the United States and late-stage diagnoses can cause difficulties in providing correct treatment. Rural communities face a clear disadvantage of care in comparison to non-rural areas. Women who reside in rural areas experience three main obstacles to health care access: entry, structural and cultural barriers. The proposed research problem is identifying the barriers towards the low performing BCS rates in the rural population of Adventist Health Clinic in Kerman, CA. This is a cross-sectional study using a survey for obtaining qualitative data on identifying two barriers contributing to the low breast cancer screening rates in Fresno County. EMR records were accessed to identity women who had not completed mammograms for 2021. The survey developed was not tested for liability and validity. The survey type is exploratory and was conducted via phone with structured questions. The targeted population in this study were women aged from 50-74 that were patients at the Adventist Health Clinic in Kerman. Out of 20 women called, 11 women were surveyed in which 7 were Caucasian and 4 were Hispanic. The responses for the women who did not receive their mammograms are varied; however, 2 of the 6 responses did conclude issues with insurance as being one of the causes for not receiving screening. Even with a small sample size, findings from the survey responses suggest that health literacy (n=2) and financial strain (n=3) due to insurance status are the two barriers that prevent women from receiving their breast cancer screening.

Poster #53

**Rahil Khasgiwale, MS, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Multimedia Educational Intervention for HbA1c Reduction in a T2DM population
**Author(s):** R. Khasgiwale, R. Llenado, E. Johnston
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Aim: Nearly 10% of California's adult population has diabetes. In California's Central Valley, patients with T2DM face disproportionate challenges to diabetes management. Lifestyle education and modifications have been shown to lower HbA1c. We aim to extend knowledge on the benefits of multimedia interventions in T2DM education and care through a 6-week multimedia pilot study.

Material and Methods:
Primary Intervention includes short infotainment videos relating to nutrition, exercise, and lifestyle change tips adapted from CDC National Diabetes Prevention Program. Participants will complete 3 surveys over the 6 weeks, baseline, midpoint, and endpoint. The survey data will be assessed to measure participant changes, participant knowledge, attitudes, and behaviors related to their diabetes management.

Hypothesis and Discussion:
A 6-week multimedia intervention pilot study on diabetes education will improve knowledge, attitudes, and behavior in adults with uncontrolled T2DM and HbA1c of >9%. The data collected from this pilot study will allow us to understand the relationship between education delivery and retention as well as allow us to study expanded cohorts.

Poster #55

**Rosie Kumar, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Barriers Preventing Hypertension Management in Caruthers, CA
**Author(s):** R. Kumar, E. Hu, A. Nijjer-Sidhu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Hypertension is the leading cause of cardiovascular disease, which is an ever-growing issue that continues to plague the United States. This issue is amplified in rural, medically underserved areas, in which patients often face several obstacles preventing them from obtaining proper care and management plans to treat their hypertension. Our SMART aim was to identify two barriers that are prevalent in the rural community of Caruthers, CA, that are preventing hypertensive patients from accessing care and adequately managing their blood pressure. We designed and implemented a survey written at a 5th grade reading level to determine the barriers to hypertension management. We surveyed 42 patients, of which 20 had controlled blood pressure and 22 patients with uncontrolled hypertension, and determined a primary barrier was medication compliance. This project informs future clinical care by demonstrating possible barriers and solutions that could be employed to improve health outcomes for those with hypertension and other chronic conditions within other rural, medically underserved communities.

Poster #57

**Tyler W Laws-Mahe, OMS-II and MyKha Pham, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Improving HbA1c testing rates in diabetic patients
**Author(s):** T. Laws-Mahe, M. Pham, A. Nijjer-Sidhu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** The Central Valley of California has a rate of diabetes that is higher than the national average. Patients who have been diagnosed with diabetes must maintain blood sugar levels within a set range to avoid complications. There are a variety of methods used to analyze and control sugar levels, but the Hemoglobin A1c (HbA1c) analysis is the gold standard and should be completed a minimum of two times annually according to the American Diabetes Association. However, not all patients are able to report to their doctor's office in order to take this test with the requisite frequency. As a substantial agricultural area with a large population of migrant workers, California's Central Valley has a wide array of unique healthcare barriers that may interfere with a patient's ability to get routine HbA1c testing. Current studies are lacking data from rural areas such as the California Central Valley, where clinics can be far and few between.

Despite all these barriers that make it more difficult for patients to maintain their regularly scheduled office visits, the Adventist Healthcare System of the Central Valley has less than a 10% no-show rate. This study found this low truancy rate to be due to a rigorous system for contacting and following up with diabetic patients and the emphasis placed on building strong rapport with patients.

Poster #59

**Jonathan Wongsavanh, OMS-II and Raj Patel, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** The Effectiveness of Educational Intervention in Increasing COVID-19 Vaccination Compliance
**Author(s):** J. Wongsavanh, R. Patel, A. Almeida
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Existing literature is limited on the efficacy and compliance of COVID-19 vaccines. Most current research studies were trials, which limited access to higher analysis studies to develop a project's aim. To solidify the understanding of current and previous vaccination compliance, this project was derived from studies of research based on influenza vaccination rates in different populations which found discrepancies among different racial groups. This discrepancy is the target addressed in this quality improvement project focused on providing education in order to improve vaccination rates and understanding; it is hypothesized that informing Hispanic adult outpatients between the ages of 19-74 at Golden Valley Health Centers (GVHC) of the COVID-19 vaccine via educational materials will improve vaccination compliance rates by 20% by 2023 using pre/post-surveys.

In the surveys, metrics of willingness would be measured through rating-styled questions where patients would describe their skepticism on a 1-5 scale. Scores of 1-2 would be rated as being more skeptical than that of 3-5. For those who collectively seemed skeptical across the range of questions marking 1-2, an educational brochure would be administered. Although the project remains unfinished, if the data proved to be supportive of our hypothesis, a greater population would be surveyed to draw more appropriate conclusions.

## Poster Session 2 - Even-Numbered

10:45 am – 11:35 am

Poster #2

**Obaid Khan, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Improving Breast Cancer Screening Rates in Central Valley through Examining Social Determinants of Health
**Author(s):** O. Khan; A. Nijjer-Sidhu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Breast cancer screening (BCS) rates are below the Healthcare Effectiveness Data and Information Set (HEDIS) baseline target of 75th percentile in Central Valley (California). Breast cancer is the leading cancer diagnosis for women in the United States and late-stage diagnoses can cause difficulties in providing correct treatment. Rural communities face a clear disadvantage of care in comparison to non-rural areas. Women who reside in rural areas experience three main obstacles to health care access: entry, structural and cultural barriers. The proposed research problem is identifying the barriers towards the low performing BCS rates in the rural population of Adventist Health Clinic in Kerman, CA. This is a cross-sectional study using a survey for obtaining qualitative data on identifying two barriers contributing to the low breast cancer screening rates in Fresno County. EMR records were accessed to identity women who had not completed mammograms for 2021. The survey developed was not tested for liability and validity. The survey type is exploratory and was conducted via phone with structured questions. The targeted population in this study were women aged from 50-74 that were patients at the Adventist Health Clinic in Kerman. Out of 20 women called, 11 women were surveyed in which 7 were Caucasian and 4 were Hispanic. The responses for the women who did not receive their mammograms are varied; however, 2 of the 6 responses did conclude issues with insurance as being one of the causes for not receiving screening. Even with a small sample size, findings from the survey responses suggest that health literacy (n=2) and financial strain (n=3) due to insurance status are the two barriers that prevent women from receiving their breast cancer screening.

Poster #4

**Sameer Narula**
**Student**
**Kern Medical Center**
**Title:** COVID19 Vaccine Failure in a patient with chronic Prednisone therapy for Giant Cell Temporal Arteritis
**Author(s):** S. Narula, L. Moosavi
**Affiliations:** Kern Medical Center

**Abstract:** Introduction: While corticosteroids are effective for inflammatory or autoimmune diseases, it presents an issue with vaccinations. We present a case of COVID19 vaccine failure, and suggestions for the future.
Case Presentation: Patient is a 71 yo M with a PMH of giant cell temporal arteritis on chronic prednisone therapy, Tested positive for COVID19. CXR consistent with multifocal PNA. Patient's oxygen requirements fluctuated and declined rapidly and required intubation. Of note, patients received Moderna vaccine 3 months prior. Multiple code blues were called during the hospital course, patient eventually expired.

Discussion: Although corticosteroids dampen autoimmune and inflammatory disorders, chronic use predisposes patients to infections. This effect can be impacted by dosage, use, etc. In addition, patients on corticosteroids are more susceptible to invasive fungal and viral infections.

It has shown if a patient receives doses of prednisone ≤20 mg/day patients can receive vaccines and have sufficient immune response. However if patients require doses ≥20mg/day, it is better to vaccinate the patient, when receiving the lowest dose of corticosteroids, ≤20mg, with/without the concomitant addition of steroid sparing drugs. This allows the patient to receive vaccines, and provide immunity. It has been shown in cases of autoimmune hepatitis, with the addition of Azathioprine, Prednisone dosage can be decreased by 50%.

Conclusion: While corticosteroids have become a mainstay of treatment for inflammatory and autoimmune disorders, it is important to consider this when providing patients with vaccinations. In addition, as medical providers, understanding immunosuppressive effects of corticosteroids in patients while receiving vaccines should be considered and po

Poster #6

**Sameer Narula**
**Student**
**Kern Medical Center**
**Title:** Intractable Leg Pain on A Diabetic Patient
**Author(s):** S. Narula, N. Quillatupa
**Affiliations:** Kern Medical Center

**Abstract:** Introduction: Diabetic muscle infarction, describes spontaneous ischemic necrosis of skeletal muscle secondary to uncontrolled Diabetes Mellitus (DM). It is a rare complication, most patients will also present with nephropathy, neuropathy, retinopathy, and/or hypertension.

Case Presentation: A 67-year-old F reported to clinic for routine visit. PMH of hypertension, DM, neuropathy, nephropathy, and retinopathy. Right leg pain has persisted for one year, however in past 2 weeks worsened. Pain rated 10/10 (from 4/10), localized to anterior of the leg, characterized as sharp, worse with walking or touch, improves with rest. No attempted pain medications for relief at the time.

Upon PE, patient is an elderly obese F, ambulates with walker, in acute distress.

Lower extremities.
•Right leg: tenderness to light palpation diffusely around extremity, (-) straight leg test, tenderness to manipulation of hip. +1 pitting edema.
•Left leg: +1 pitting edema, no tenderness

Discussion: Due to the rarity of diabetic myonecrosis, it is not considered a differential when treating patients with lower extremity pain. This pathology should be considered due to the pathogenesis of the conditions related to uncontrolled glucose levels.

Patient was not maintaining glucose control - developed diabetic vascular complications. Due to non-compliance, symptoms progressed and will continue without improved management. Management could include higher frequency of visits and labs to track progression, and requesting extensive glucose logs between visits.

Conclusion: Diabetic myonecrosis presents in poorly controlled DM patients. Although a rare complication of DM, should be considered in patients presenting with muscle pain, specifically in the lower extremities, broadening differentials of lower.

Poster #8

**Taylor Nunes, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Health and Reproductive Concerns in Women with Celiac Disease
**Author(s):** T. Nunes, E. Davis, K. Lund, S. Meykler, L. Benoit
**Affiliations:** California Health Sciences University College of Osteopathic Medicine; State Center Community College District

**Abstract:** Background: Celiac Disease (CD) is a common disorder that predominantly affects females. While typically thought of as a gastrointestinal (GI) disease, many CD patients present with a myriad of extraintestinal manifestations, leading to significant diagnostic challenges and morbidity, especially in patients manifesting subclinical and atypical presentations of CD.

Methods: A primary literature review was performed using the combined search terms: CD and autoimmunity, CD and infertility, CD and nutrition, as well as CD and osteopathic manipulative therapy (OMT) by interrogating PubMed, Google Scholar, and the Cochrane database. OMT information was supplemented by the textbooks Foundations of Osteopathic Medicine and Atlas of Osteopathic Techniques.

Results: A malabsorptive phenotype leads to deficiencies in calcium, iron, and vitamins A, D, E, K, B9, and B12 and their associated disorders. Of these, the most concerning are anemia (>50% of CD patients at diagnosis) and osteoporosis (2.9% of female CD patients compared with 0.2% in non-CD female patients). Other manifestations include arthralgias (20–30% of CD patients) and hypothyroidism (3X more likely in CD patients). CD patients show an increased risk of infertility (25 fewer pregnancies/1000) and recurrent miscarriage (11 extra miscarriages/1000 pregnancies). Evidence shows improvement of these reproductive sequelae after a gluten-free diet. CD confers some protection against breast (hazard ratio (HR) = 0.85), endometrial (HR = 0.6), and ovarian (HR = 0.89) cancers.

Conclusion: This review highlights the impact of CD on female health and unique considerations when diagnosing and managing female CD patients. We also identify complementary OMT and nutritional considerations that can be used to manage female CD patients

Poster #10

**Taylor Nunes, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Impact of an Educational Intervention on DASH Diet Comprehension in Patients with Uncontrolled Hypertension Living in Medically Underserved Areas of the Central Valley of California
**Author(s):** T. Nunes, A. Yaqub, J. Hansen, A. Mann, C. Casas, E. Johnston
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** There is a high prevalence of uncontrolled hypertension (HTN) in California's medically underserved central valley. Affordable and straightforward lifestyle interventions, such as the Dietary Approaches to Stop Hypertension (DASH) diet, may improve overall health, well-being, and quality of life in patients with HTN. The DASH diet can contribute to up to 90% and 91% reductions in systolic blood pressure (BP) and diastolic BP, respectively. We have designed a pilot intervention study to investigate the effects of an education intervention on DASH diet comprehension. We predict that for patients with uncontrolled HTN located in medically underserved areas (MUAs) in the central valley of California, an educational intervention will improve subjective and objective measurements of comprehension of the DASH diet. We intend to use this study design to assess an educational intervention's impacts on under-resourced communities. We plan to expand this study to a full-scale intervention to address uncontrolled HTN in patients in MUAs of the central valley of California.

Poster #12

**Joshua Pak, OMS-III**
**Student**
**Kansas City University**
**Title:** Head Abscess and Suspected Secondary Syphilis
**Author(s):** J. Pak, M. Ham
**Affiliations:** Kansas City University

**Abstract:** Introduction: This case presents an unreliable historian who arrived to establish care with a vast array of symptoms. The patient is a 64 year old male who has a history of methamphetamine abuse and homelessness presenting with multiple moth eaten lesions on the scalp and a large posterior scalp abscess. Initial symptoms included splinter hemorrhages, multiple open excoriations on the scalp with associated alopecia, Janeway lesions, and a large, tender abscess on the left posterior scalp. This poster seeks to educate medical students and clinicians on this unique presentation of possible syphilis.

Case Presentation: The patient's history of homelessness, methamphetamine use, and unknown sexual history paints a picture that points to multiple, ongoing diagnoses. Curiously, while the patient's drug use and homelessness may explain the endocarditis-like picture and the superficial scalp excoriations, the patient's sexual history hints towards another etiology that was considered on the differential: Secondary Syphilis. Moth-eaten alopecia is a presentation that is not commonly taught as a classic sign of Secondary Syphilis and can therefore be easily mistaken for excoriations related to different causes. This poster seeks to educate medical students and clinicians on this unique presentation of possible syphilis.

Discussion: Without a thorough history and understanding of a patient's circumstances, skin conditions can be difficult to diagnose and treat, leading to prolongation of care or lack of resolution of symptoms.

Poster #14

**Joshua Pak, OMS-III**
**Student**
**Kansas City University**
**Title:** MTHFR on Psychiatric Conditions
**Author(s):** J. Pak
**Affiliations:** Kansas City University

**Abstract:** Introduction: This case illustrates a middle aged male patient with a unique course of psychiatric workup, who displays bipolar disorder with predominant depressive episodes that reach suboptimal levels of elevated mood by medication and therapy alone. Recently, the field of psychiatry has seen a shift in understanding that seeks to view the whole patient and take into account different etiologies that may contribute to psychiatric pathologies. Due to the vast variety of presentations, individual circumstances, and etiologies, clinicians may occasionally find it difficult to pinpoint exactly what they are encountering from the beginning. This unique patient case seeks to demonstrate a distinct, yet easily manageable condition associated with mood disorders that are not always considered initially.

Case Presentation: A 36 year old male patient with a past medical history of unspecified bipolar disorder presents to the clinic for a follow-up on depressive moods. He has a history of attempting trials and dose adjustments of aripiprazole, bupropion, escitalopram, and lamotrigine. Patient has been stable and reporting better moods with medication for about 2 years until recently reported mood swings to be more intense and trouble concentrating. Routine labs were checked and revealed increased TSH levels as well as heterozygosity for the MTHFR gene. The patient was recommended to take multivitamins and a folate supplement. In a follow-up visit, the patient reports improved moods following the intake of multivitamins, folate supplements, and probiotics.

Discussion: Studies have revealed an association with the MTHFR gene mutation with psychiatric conditions such as mood disorders associated with folic acid and vitamin B12 levels. This gene affects neurotransmitter signaling pathways including dopamine, serotonin, and norepinephrine which play a large part in mood disorders such as schizophrenia, bipolar disorder, and depression.
Atypical presentations of various underlying pathologies as with this case, can be often overlooked by a simple diagnosis of depression. Rather than simply prescribing antidepressants for patients who present with depressive moods, a comprehensive evaluation and workup may be necessary.

Poster #16

**Natalie Pardo, MPH, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** COVID-19 Vaccine Perceptions
**Author(s):** N. Pardo, M. Berri, A. Tanousian, C. Carpenter. A. Almeida
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Vaccines are considered one of the greatest public health achievements – contributing to the eradication of childhood diseases and significantly reducing the disease burden of many infectious diseases. Despite these advances, vaccine hesitancy remains a significant barrier to achieving a fully inoculated population to combat disease. Vaccines played and will continue to serve a pivotal role in reducing disease spread, namely COVID-19 and its variants. This project aims to understand and identify attitudes and potential hesitancies in receiving the COVID-19 vaccine within the Central Valley. Demographic characteristics will inform future interventions for those most likely and least likely to receive the COVID-19 vaccine. By understanding why individuals choose to receive or not receive the COVID-19 vaccine, this project can inform future intervention programs to increase vaccine uptake within the Central Valley.

Poster #18

**Victoria Parrilli, OMS-I**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Astrocyte injury-defined (AID) biomarker assays for preclinical neurotrauma models and diagnostic monitoring of TBI patients
**Author(s):** V. Parrilli, T. Van Meter, N. Mirshahi, V. Cabra-Hodge, J. Green, G. Shaw, R. Bitolas, K. Ranat, M. Walker, N. Harris, I. Wanner
**Affiliations:** Semel Institute, Intellectual & Developmental Disabilities Research Center, UCLA; Brain Box Solutions Inc,; EnCor Biotechnology Inc.; Brain Injury Research Center, Department of Neurosurgery, UCLA

**Abstract:** Diagnosis, monitoring and outcome prediction are essential for translating novel TBI treatments from rodent to man. Our objective was to develop and validate immunoassays for quantitative assessment of novel Astrocyte Injury Defined (AID) neurotrauma biomarkers useful for both animal models and TBI patients. AID biomarkers include ALDOC, FABP7 and small breakdown products of GFAP (sGFAP-BDP, Halford et al., 2017). Species-differences exist for biofluids, and biomarker protein sequences and kinetics. We established species-specific CSF and serum preparations and validated both assay standards and novel AID biomarkers antibodies (Ab). Serum albumin depletion was optimized using albumin-binding magnetic beads for rat serum, and immunoaffinity columns for human serum, while retaining biomarkers in eluates. Custom-Ab to AID biomarkers were each validated separately for specificity and sensitivity using rat and human analytes, and recombinant proteins. Antibody specificity was determined using tissue lysates, dilution studies, recombinant biomarkers, isoforms and similar proteins using antigen-Ab-microarrays and western blotting. The best performing Ab pairs were then selected for MSD platform assay prototypes. Rodent AID biomarker detection was optimized by pre-adsorbing Ab with rat Ig before interrogation in immunoassays. The assays detected injury-specific elevation of AID biomarkers in CSF and serum after rat CCI compared to sham samples. Pilot biomarker kinetic studies showed elevated ALDOC, GFAP and FABP7 at 1.5hrs post-injury, while BDPs of ALDOC and GFAP accumulated by 24hrs post-injury. These studies provide critical authentication of custom-made Ab for translational neurotrauma models and enable future clinical diagnosis and prognosis for TBI patients.

Poster #20

**Jonathan Shahbazian, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Street Medicine Model for People without Housing in a Rural Health Care Setting
**Author(s):** P. Dang; Z. Kurdieh; J. Shahbazian; A. Almeida
**Affiliations:** California Health Sciences University College of Osteopathic Medicine; Golden Valley Health Centers

**Abstract:** Golden Valley Health Centers (GVHC) serves the population of California's Central Valley. The mission of the clinic is to deliver health care to people from all walks of life in the surrounding area. This project aims to help reduce barriers for patients suffering from mental health disorders.

A particularly disadvantaged population that GVHC serves is the homeless population. This can be a rather complex task, especially with the COVID-19 pandemic having a detrimental impact on the surrounding area, making it more difficult for these patients to get access. GVHC has designed a mobile clinic that is able to gain access to disadvantaged populations who are unable or unwilling to seek care at the clinic due to a multitude of reasons. This model has been built around the inequity and diminished care because of the COVID-19 pandemic and the unique characteristics of the population in the surrounding rural area.

After attending site visits with the mobile clinic team, we were able to collect information on the mobile clinic model, population of interest, and location. It is our hope that this project can be used as a stepping stone to for GVHC to further improve health care delivery, in addition to serving as a model for street medicine in a rural health care setting. Ultimately this model may be used by health care institutions in search of reaching marginalized populations that may have trouble navigating through an intimidating health care system.

Poster #22

**Laura Sainz Merin**
**Student**
**University of California, Los Angeles**
**Title:** Impact of Promotora-led Health Education Programs in Aiding Under-Resourced Patients' Asthma Control
**Author(s):** L. Sainz Merin,; R. D. Manzo, M. Velasco Sandoval, M. Yepez, J. Gonzalez, A. Aguilar,; P. Navarro
**Affiliations:** University of California, Los Angeles; University of California, Merced; University of California, Berkeley

**Abstract:** Background: Promotora-led programs are a vital component of health education programs for management of chronic diseases in under-resourced communities. Nonetheless, the literature on the importance of promotora-led health education programs is scant for asthma management. In collaboration with Camarena Health, a promotora-led virtual home visitation asthma education and management program was implemented with patients in the San Joaquin Valley. In this study, we assess the impact of this promotora-led program on participants' overall asthma control.

Methods and Analysis: Camarena Health Promotoras led 13 participants through a 5-week virtual home visitation program on asthma in Summer 2021. Pre and post-program surveys were conducted to evaluate participants' asthma control and maintenance. Individual interviews were conducted to further assess the quality and impact of the program. Interview data was analyzed using Dedoose, and the survey data using IBM SPSS, ver. 28.0.

Results: Similarities between participant interviews focused on the positive experience and impressions participants had during the program. Positive experience yields improvement in asthma control during a 4-month period. At follow-up, half (3/6; 50%) of adults reported less frequent asthma symptoms that affect life at work, school, or at home. Three adults who reported shortness of breath ">1x per day" improved to less frequent "1-2x per week." Overall asthma control in two patients improved from "somewhat controlled" to "well controlled." In addition, it was expressed how essential and significant it was to participate in these programs to obtain valuable information on asthma. Patients felt more in control of their asthma after the program.

Poster #24

**Saumya Shah, BA, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** A Comparison of BMI and Treatment Modalities in Obese Pediatric Patients Based on Insurance
**Author(s):** T. Van Es; S. Shah, N. Vashishtha, MD; A. VanGarsse, MD
**Affiliations:** California Health Sciences University College of Osteopathic Medicine; Pediatrics Adventist Health

**Abstract:** Central California is among the world's largest producers of nutrient-rich foods, yet this region sees higher rates of pediatric obesity compared to the national average. This study aims to analyze pediatric patient data in a rural agricultural town in Central California, to determine if there is an association between a pediatric patient's government-funded insurance and obesity statuses.

This is a retrospective study conducted at an Adventist Health outpatient pediatric clinic in Reedley, CA. Patient diagnosis codes, insurance plans, and financial codes were gathered for all patient encounters between January 2019 and September 2021. A Pearson chi-square statistical test will be run to determine if there is an association between government-funded insurance and obesity statuses.

Total patients, after duplicate patient encounters were identified/filtered, were 11732, 5700, and 4278 for 2019-2021, respectively. Total obese patients, after identification/filtering of duplicate patient encounters, were 1301, 843, and 738 for 2019-2021, respectively. The association between government insurance and obesity statuses was determined to be statistically significant in 2019 (p < .02), while no statistically significant association was found in 2020 and 2021. Outpatient visits across most specialties have decreased since the beginning of the COVID-19 pandemic, with the largest decrease seen in pediatrics. Additionally, the percentage of obese pediatric patients in our study population increased each year as the COVID-19 pandemic progressed. Our data suggests there may be an association between government-funded insurance status and obesity status in the pediatric patient population.

Poster #26

**Saumya Shah, BA, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** From Pregnancy Pains to Paralysis: A Case of Erroneous Intrathecal Digoxin Administration
**Author(s):** R. Shah, S. Shah, B. Holcomb
**Affiliations:** Department of Neuro Critical Care, Bakersfield Memorial Hospital; California Health Sciences University College of Osteopathic Medicine

**Abstract:** Digoxin is a Na+/K+ ATPase inhibitor commonly used to treat heart failure and atrial fibrillations. It is typically administered intravenously or intrathecally. There are only three previously reported cases of erroneous intrathecal administration of Digoxin in literature. We present a case of erroneous intrathecal Digoxin administration following an elective caesarian section. Post-delivery, the patient's mental status deteriorated; she became unresponsive and remained comatose for 11 days. Magnetic resonance imaging (MRI) brain showed diffuse, patchy hyperintensities involving bilateral frontotemporal lobes and basal ganglia. MRI spine showed extensive cervical and thoracic cord edema. At discharge, the patient was paraplegic with no sensation or motor response below the T10 level. At 90-day follow-up, she had intact mental status and minimal improvement in motor strength and sensation below T10 and was reportedly breastfeeding. This is a case of severe neurological deficits resulting from medical error.

Poster #28

**Dina Shakran, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Identifying Barriers to Hypertension Management
**Author(s):** S. Alnagar, V. Muradyan, D. Shakran, A. Nijjer-Sidhu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Significant barriers remain in primary care practice that make hypertension control a difficult goal to achieve. Barriers to hypertension management are defined as any factor that limits the performance of a required behavior by patients or providers to achieve hypertension awareness, treatment, or follow-up care. Research identifies transportation, culture, community, and socioeconomic factors as the primary barriers to hypertension management in patients. Previous studies have shown a variety of methods and techniques used to identify barriers, however, there are restrictions with small sample sizes and limited information with regards to gender, race, and socioeconomic status. The main question we would like to address with our research is what the barriers are that prevent patients of the Omni Family Health Merced Clinic in Fresno County from managing their blood pressure. By May 2022, we aim to identify a minimum of 2 barriers preventing patients of this specific population from managing their blood pressure. This research has the potential to establish a framework for other public health studies in the future as well as providing information for current health care professionals to better manage their patients' health. This research can also be extended to other areas of determinants of social health throughout the San Joaquin Valley.

Poster #30

**Sukhmani Sidhu, OMS-I**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Characterizing Mitotic Progression and Phragmoplast Development in Kinectin Mutants
**Author(s):** S. Sidhu, M. Bellinger, C.G. Rasmussen
**Affiliations:** University of California, Riverside

**Abstract:** Cell division is a fundamental process for all forms of life. Many technological advances have been made in the field of research in order to visualize cellular processes. Confocal microscopy allows for live-cell imaging of mitosis and cytokinesis by the use of fluorescently tagged proteins that act as proxies for organelle positioning and dynamics. By using maize epidermal cells, an ER resident protein, GLOSSY 8, and an alpha-tubulin fusion protein, a plant specific structure necessary for the completion of cytokinesis, the phragmoplast, can be analyzed. Previous research showed that KINECTIN (KNN) interacted with microtubule associated motor proteins and was essential for normal ER anatomies in animals. Loss of microtubule associated proteins like, TANGLED1 (TAN1) showed mitotic progression delays and slower phragmoplast expansion rates in maize. I hypothesize that knn mutants will have a mitotic progression delay, which can be observed by studying the phragmoplast. I observed phragmoplast development in knn using the dual fluorescent marker system to see phragmoplast initiation, expansion, and disassembly. Previous data that I collected in wild-type maize plants served as a benchmark for observations on typical phragmoplast development and allowed me to assess possible knn mutant phenotypes. Using this dual marker system, I observed the dynamic restructuring of the ER and microtubules during phragmoplast development. I observed that knn epidermal leaf cells in the meristematic zone appear to have all of the mitotic microtubule structures that were present in wild-type; however, the knn cells did have abnormal cell shapes.

Poster #32

**Pulkit Singhal, MS, OMS-I**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** CD8+ Encephalitis causing relapsing status epilepticus
**Author(s):** R. Sharma, N. Kapoor, P. Singhal
**Affiliations:** University of Arkansas for Medical Sciences; University of Arkansas for Medical Sciences; California Health Sciences University College of Osteopathic Medicine

**Abstract:** An HIV positive patient was readmitted three times due to encephalitis. The underlying cause was speculated upon and treatment provided each time with full recovery and discharge, only to have the patient return. The third time a novel pathology report indicated a disease which wasn't on any physician's radar and was often only heard of in post-mortem brain fixation reports. Although CD8+ Encephalitis is a zebra, physicians must be ready to consider the corner-cases after the frequent offenders have been ruled out so that they may address some very treatable conditions such as this one.

CD8+ encephalitis (CD8+E) is a steroids responsive subacute encephalopathy associated with HIV infection which can be fatal if untreated. In this case, treatment with steroids was deferred by family due to concern of worsening behavior and infections.

Poster #34

**Victoria Sun, PhD, OMS-II; Hayley Vietti, BS, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Supporting the Healthcare Transition From Adolescence to Adulthood for Patients Requiring Seizure Care Under California Children's Services in Madera County, A Pilot Study at CHSU
**Author(s):** V. Sun, ; H. Vietti, ; S. Goldgraben, MD, MPH, MBA
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** In California's Central Valley, there are approximately 12,000 children living with epilepsy. Studies show that the adolescent/young adult (AYA) population benefits from transition programs and social support groups. For children under the care of California Children's Services (CCS), there is a paucity of federally or state funded programs to offer patients these services in the form of an educational/peer support group. Efforts were aimed at establishing a new program in Madera County to address the unmet needs of Central Valley residents under the management of CCS, requiring chronic seizure care. The authors present a novel 8-week educational program to help participants recruited from CCS gain both confidence and improved knowledge of their disease management, with the goal of obtaining improvement scores of over 50%. The series of educational sessions was consolidated into 3 sessions and piloted at CHSU to participants with unknown seizure status. Confidence scores improved by over 50%, with statistical significance in all learning sessions. Performance scores for the educational content improved in 4/6 topics, with statistical significance in the topics of "Responding to a Seizure" (p-value < 0.001), "Transitioning to Adult Care" (p-value < 0.001), and "Social Concerns of Epilepsy" (p 0.004). Given the small size of the cohort, the results indicate at minimum anecdotal evidence in support of educational intervention. The pilot program enabled the opportunity for the authors to refine the educational content prior to implementation at Madera County Public Health. The project aims to be a longitudinal outcome study correlating successful transition into adulthood with decreased emergency room visits or decreased cost of care incurred. This is an IRB approved project 2021-030

Poster #36

**Varsha Swamy, BS, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Multiplex immunofluorescence to evaluate immune cell infiltrates in HCC with combined anti-PDL1 and anti-CTLA4 immunotherapy
**Author(s):** V. Swamy; R. Dhanasekaran, MD
**Affiliations:** California Health Sciences University College of Osteopathic Medicine; Stanford University Department of Medicine

**Abstract:** Hepatocellular carcinoma (HCC) is the third largest cause of cancer-induced mortality worldwide. The MYC oncogene is a prevalent driver of human neoplasia, including HCC. Immune checkpoint inhibitors have succeeded in treating many MYC-driven cancers but have failed as first-line monotherapy for HCC. Despite the failure of immune checkpoint inhibitors targeting PDL1 and CTLA4 as monotherapies, their combination has shown promise in treating MYC-driven HCC. The success of this combination blockade has been confirmed via measurements of tumor volume, quantity, and proliferative index.

Here, we have quantified the immune cell infiltrates in mice with HCC treated with the combination of anti-PDL1 and anti-CTLA4, in order to determine which immune cells are responsible for the synergistic efficacy of this combination blockade.

Immunofluorescence and immunohistochemistry experiments showed that the combination blockade results in significantly increased macrophage infiltration while also yielding significantly decreased immunosuppressive PDL1+ macrophages. Both of these results are not seen when treating with either monotherapy. In addition, the blockade results in greater recruitment of CD4+ and CD8+ T cells, which was precluded by macrophage depletion.

These findings suggest the following model for the efficacy of the treatment: The combined PDL1 and CTLA4 blockade reduces immunosuppressive macrophages and increases inflammatory macrophages, which are causally required. This leads to recruitment of T cells, thus restoring immune activity and overcoming the MYC-induced immune evasion.

Poster #38

**Varsha Swamy, BS, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Promoting Cultural Competence and Osteopathic Medicine Awareness Among Premedical Students Through a Summer Premedical Rural Enrichment Program (PREP)
**Author(s):** V. Swamy, W. Kim, R. Llenado, T. Nunes, S. Kadavakollu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Context: Premedical preparatory programs at osteopathic medical schools that recruit students from medically underserved areas (MUAs) may promote interest in practicing osteopathic medicine in underserved areas. In these programs, fostering greater prioritization of cultural competence may decrease healthcare disparities in the future.

Methods: An eight-week summer PREP was hosted at California Health Sciences University (CHSU-COM) in Clovis, California. 78 participants were recruited from the Central Valley, a MUA of California. Attendees went through an application process and were recommended to have completed medical school prerequisite courses. The curriculum included Medical College Admission Test (MCAT) and medical school application preparation, osteopathic education, anatomy, physiology, and cultural competence. Survey data was collected before and after the program using statements that students rated on a Likert scale.

Results: Of 78 students, 74 completed both surveys. There was a significant increase in agreement to statements evaluating medical school preparedness (P < 0.01), osteopathic familiarity (P < 0.02), and desire to practice in the Central Valley (P < 0.05) due to PREP. In the cultural competence post-survey, 75.0% of responses agreed on the positive effect of the course. Participants' MCAT scores averaged higher than the national mean and 16 (59.2%) of 27 participants who reported acceptance data matriculated into osteopathic medical schools.

Conclusion: After completing PREP, participants showed a greater understanding of cultural competence, osteopathic medicine, medical school preparation, and interest in serving MUAs. Similar programs can have a profound impact on MUAs by shaping diverse and culturally competent osteopathic physicians.

Poster #40

**Sushil Talreja, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Shingles Vaccine Response
**Author(s):** S. Talreja
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Shingles is the reactivation of the chicken pox virus in the body leading to a painful rash along a nerve pathway. Shingles can lead to postherpetic neuralgia (PHN) which is a complication due to shingles. It occurs if your nerve fibers are damaged during an outbreak of shingles. It can be a mildly itchy to an intensely painful rash. The currently available shingles vaccine is called Shingrix. Shingrix is more than 90% effective at preventing shingles and PHN, once someone gets vaccinated, they are protected more than 85% for at least the first 4 years. My hypothesis is ""After educating the geriatric patients of Adventist at Oakhurst, California with an informational pamphlet on the shingles vaccine, at least 75% of them will display an increased understanding and comfort with the shingles vaccine by answering "yes" to the first 3 questions of the attached questionnaire."" The hypothesis will be tested by the questions in the questionnaires, the first 3 questions will be the main identifiers of a change in thought and attitude toward shingles and the vaccine. The last 4 for the "before pamphlet questions" will be different from the 3 questions for "after pamphlet questions", these will be used to help identify the general idea of the patient's knowledge before and after the pamphlet. Lastly, there was an obvious change in responses with the first question it had a 5% increase for answering "Yes" to question 1, a 2% decrease for answering "No", a 9% decrease for answering "Unsure", and 6% did not answer for after the pamphlet. The percentage of patients that answered "No", "Unsure" and did not answer before the pamphlet was 25% and after was 20%, this 5% change may depict that the pamphlet was able to decrease the number of negative or complacent opinions on vaccines.

Poster #42

**John Tawfik, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Barriers to HbA1c Testing at a Federally Qualified Health Center
**Author(s):** J. Tawfik, J. Garcia, M. Fedeli, S. Kats, A. Nijjer-Sidhu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** This pilot observational study examines the effect of the COVID-19 restrictions, transportation, and health literacy (HL) during the pandemic on HbA1c testing rates at a local Federally Qualified Health Center (FQHC). We hypothesize that identifying the impact of these barriers will provide opportunities for action to improve the HbA1c testing rates among adult patients with diabetes at FQHCs.

Inclusion criteria includes HbA1c ≥ 7% and non-compliance (no follow-up scheduled for ≥ 6 months). Exclusion criteria included Spanish speakers and age <18 Y/O. We performed a ten-question phone survey using the 5-point Likert scale at variable days and times of the week. The impact of the COVID-19 pandemic restrictions was gauged using the number of missed appointments and missed medication doses. The effects of transportation were measured by whether transportation led to missing appointments and the mode of transport used. HL was analyzed based on the numerical value assigned to a specific answer choice. A lower value correlated to Inadequate/Marginal HL.

We contacted 27 patients and 7 consented to survey completion. HL was the most significant concern, with 6 patients displaying Inadequate/Marginal HL. These same patients had low HbA1c testing rates (did not schedule an appointment within the last six months) and abnormal HbA1c levels (≥7%).

HL is a major social determinant of health that impacts HbA1c testing rates. The restrictions during the COVID-19 pandemic perhaps contributed to this finding, but this study showed no correlation. Transportation did not hinder HbA1c testing rates, as all had a vehicle. For future interventions, patients who suffer from poor HL may benefit from educational material like HbA1c brochures and increased follow-up from the FQHC.

Poster #44

**John Wagner, OMS-III**
**Student**
**AT Still University Kirksville College of Osteopathic Medicine**
**Title:** Amiodarone-Induced Hypothyroidism
**Author(s):** J. Wagner
**Affiliations:** AT Still University Kirksville College of Osteopathic Medicine

**Abstract:** Hypothyroidism is a frequent occurrence in medicine. Autoimmune destruction, iodine deficiency/excess, radiation exposure, and drug induction are some common causes of this disease. A 54 year old man presented to the clinic with acute onset of fatigue, swelling, unintentional weight gain, cold intolerance, and dry skin. In this case, the patient's diagnosis was Amiodarone-Induced Hypothyroidism (AIH). Unknown to us, a cardiologist was treating the patient with amiodarone for atrial fibrillation. Despite warning signs and opportunities for preventative measures, the patient was left on the max dose of the medication due to a lack of communication between primary care and specialists. Implementing measures to avoid medical mismanagement could reduce the number of similar errors in the future.

Poster #46

**Loren Wines, BS, OMS-III**
**Student**
**Kansas City University**
**Title:** What's Bugging Me?
**Author(s):** L. Wines
**Affiliations:** Kansas City University

**Abstract:** Delusional parasitosis is a delusional disorder subtype in which patients have a fixed, false belief that they are infested with some living organism, often parasite, worms, mites, bacteria, or fungus. Delusional disorders carry poor prognosis with challenging treatment options. This case report is on a patient with delusional parasitosis in the Urgent Care setting. This case was deemed worthy of presentation as it exemplifies the often repetitive evaluations and workup in primary and specialty care, despite presenting with classic features. Current standard treatments include therapeutic alliance, antipsychotic medications, and psychotherapy; however, adherence remains challenging. Hence, techniques in interpersonal communication and rapport building will be emphasized, as is often vital in improving adherence.

Poster #48

**Mack Wu, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Secondary Depression In Central Valley Patients With Chronic Pain
**Author(s):** M. Wu, M. Salehzai, A. Nijjer-Sidhu, A. VanGarsse, L. Perry
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Secondary depression resulting from chronic pain can linger because of poor consideration of the primary cause, leading to increased morbidity and functional limitation. Recent studies indicate that 20% of U.S. adults experience chronic pain, and 8% report high-impact pain17. Furthermore, 8.1% of adults report experiencing depression3. This study within the fields of physical medicine and rehabilitation and psychiatry investigates the association between chronic pain and secondary depression within an adult population of California's Central Valley. By uncovering the prevalence and severity of secondary depression, more directed treatment protocols can be developed that lead to efficient resource distribution and improved patient well-being. Benefits include reduced opioid use, reduced ER utilization, and restoration of functionality for patients. We believe that investigating patient charts for diagnoses and history of physical illness will reveal a significant patient population in the Central Valley with chronic pain and secondary depression. We believe that further investigation will reveal a strong correlation of disproportionate opioid use and more frequent office visits within this population. A validated positive correlation between duration and severity of chronic pain and severity of depression would provide evidence to prioritize treatment and management of chronic pain over the treatment of secondary depression for more effective treatment and better patient outcomes.

Poster #50

**Carter Yang, MPH, OMS-II; Michelle Tan, MA, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Assessment of a Diabetes Education Intervention for Madera County Residents, piloted at CHSU
**Author(s):** C. Yang, M. Tan, S. Goldgraben
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Diabetes has been an increasing public health concern. Clinical trials from Community Diabetes Education led by community healthcare workers have been a cost-effective way of reducing diabetes complications in Mexican Americans. Culturally tailored diabetes education showed marked improvement in HbA1c levels, blood pressure, lipid levels, and BMI. Based on 2013 data, Madera County has a diabetes prevalence of 7.7 per 100 population, which is higher compared to the national prevalence of 6.2 per 100 population. To address this community, a six-week support group curriculum for enrollees of the California Children Services (CCS) at Madera County Department of Public Health (MCDPH) was developed. The six sessions include: 1) diabetes overview, 2) diabetes management, 3) nutrition, 4) exercise, 5) forum discussion, and 6) setting personal goals. The goal of this project is to improve diabetes health outcomes and hypothesized that at least 75% of participants will improve their confidence in managing their diabetes after completing one session. Due to the COVID-19 pandemic and delays with patient data, the project was postponed from being implemented at Madera County and was piloted with California Health Sciences University (CHSU) student, staff, and faculty for feedback and efficacy. Based on survey results, ≥ 95% participants found the sessions informative, easy to understand, and relevant to those with and without diabetes. There was improved confidence ≥75% in all aspects except one objective: how to interpret glucose results. We identified confidence gaps in three key areas from session 2 and 4, which will be revised. Next step for the project is to translate the material to Spanish and fully implement the six-week curriculum at MCDPH.

Poster #52

**Lilly Klahs, BS, OMS-III**
**Student**
**A.T. Still University Kirksville College of Osteopathic Medicine**
**Title:** Preventive Health Practices in the Fresno Metropolitan Region: A Needs Assessment Study
**Author(s):** L. Klahs, J. Lee, A. Jammu, H. Dang, M. Ham, S. Rajan, D. Ha, S. Goldgraben
**Affiliations:** A.T. Still University Kirksville College of Osteopathic Medicine; Kansas City University College of Osteopathic Medicine; California Health Science University College of Osteopathic Medicine

**Abstract:** The Central Valley is one of the least healthy regions of California with prominent health disparities in obesity, mental health, and substance abuse. With these areas in need of improvement, it is increasingly important that physicians engage in more conversations about preventive care during medical visits while providing the necessary resources and education to address these problems. However, there is currently insufficient data exploring the specific strategies physicians utilize in this region and what factors that might be contributing to access to care. Thus, we performed a needs assessment from January to March 2022 in the Fresno Metropolitan region. We gave a survey to family medicine and internal medicine physicians that assessed how often patients are screened for physical health, mental health, and substance abuse as well as how the physicians address these preventive measures and what obstacles they face in doing so. We used this data to identify three priority areas that can be targeted for improvement, which are: standardized screenings at clinical visits that evaluate diet, exercise, and weight loss for patients to expedite management of physical health issues, providing more education on the role a primary care provider plays in managing mental health to decrease reliance on mental health referrals to the limited providers in the Central Valley, and provide training on how to set plans and goals effectively with patients in order to address substance abuse while forming a therapeutic alliance. These three priority areas can be developed into action plan projects to improve and optimize preventive medicine practices in the Central Valley.

Poster #54

**Thu Dang, OMS-I; Dominic Giuliani, OMS-I; Sherese Richards, MD, MBA, MEd**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** A Review of the Pathophysiology of Complex Regional Pain Syndrome
**Author(s):** T. Dang, D. Giuliani, S. Richards
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** One of the most fascinating and perplexing chronic pain syndromes is Complex Regional Pain Syndrome (CRPS). Patients exposed to minor trauma or injury present with a syndrome marked by persistent, disproportionate, and progressive pain. While this disorder has been controversial and confusing for researchers, recent evidence has increased our understanding about the possible underlying mechanisms. Studies have narrowed down to biological pathways that result in inflammation, vasomotor dysfunction, maladaptive neuroplasticity and associated immune response to the initial injury (1). There is currently no cure or one hundred percent effective therapy for CRPS and researchers have called for consideration of multiple structures and mechanisms as the basis for more targeted therapeutic interventions (2). This poster highlights the structural and biochemical basis for clinical manifestations. Isolating the anatomical structures and biochemical components involved in CRPS is a starting point to more targeted therapeutic trials.

Poster #56

**Varsha Swamy, BS, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** An Analysis of Barriers to Patient Attendance in a Rural California Health Clinic
**Author(s):** V. Swamy, A. Nijjer-Sidhu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine

**Abstract:** Background: “No-show rate” refers to the percentage of scheduled appointments that patients did not attend. The process of reducing a clinic’s no-show rate often begins with identifying patients’ reasons for not attending their appointments. This study extends current understanding of this topic by addressing this specific population. At the Adventist Health Clinic in Hanford, the no-show rate - nearly 30% - is higher than that of other Adventist Health clinics in the California Central Valley.

SMART Aim: By May 1, 2022, identify two main barriers which result in the high no-show rate among patients at the Adventist Health Clinic at Hanford to decrease the current patient non-attendance rate.
Methods: Patients who missed appointments during set periods of time were contacted via phone call and asked to answer questions in a retrospective survey format. Answers were recorded via Google Forms and analyzed via Microsoft Excel graphs.

Results: The two main barriers causing the high no-show rate at Hanford Adventist Health Clinic were forgetting that the appointment was scheduled and family-related emergencies. These were followed by transportation-related emergencies and insurance-related issues.

Discussion: An implication of the main barrier of forgetting is that it might be helpful to change the current reminder system, especially since many participants were not receiving reminders. The clinic should make sure all contact information is updated and accurate. To address emergencies, the clinic should make sure the rescheduling process is quick and easy. Finally, transportation being a key barrier means that the clinic should consider transitioning more appointments to virtual, as well as better advertise free shuttle service.

Poster #58

**Marissa Monazzami, BS, OMS-II; Grant Mello**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title: Post-COVID-19 Outcomes in Patients from the San Joaquin Valley: Clinical Outcomes and Features Unique to Rural America**
**Author(s):** G. Mello, M. Monazzami, L. Strong, L. Beniot, V. Daniel
**Affiliations:** California Health Sciences University College of Osteopathic Medicine; Pulmonary and Critical Care Medicine, LLC

**Abstract:** Background: There is a growing body of evidence outlining the symptomatic evolution and long-term health complications following Sars-CoV-2 infection. There is a greater risk of developing persistent symptoms following recovery from COVID-19 in patients with pre-existing airway diseases. Given known detrimental effects of air quality on cardiopulmonary health, we wanted to assess potential compounding 3ffects of poor air quality on COVID-19 outcomes in patients with pre-existing airway diseases.

Methods: This cross-sectional study included COVID-19 patients from the California San Joaquin Valley, a region of California with poor air quality. Participants completed a survey via telephone that assessed changes in their functional status and symptomatology following recovery from Sars-CoV-2 infection. This included a persistent symptom questionnaire and three validated tests: the Modified Medical Research Council Dyspnea Scale (mMRC), COPD Assessment Test (CAT), and Post-COVID-19 Functional Status Scale (PCFS). Data pertaining to patient demographics, medical history, and COVID-19 disease course were collected via the electronic medical record (EMR).

Results: The results of our study, compared to previous studies, demonstrate a unique pattern of outcomes for patients from the California San Joaquin Valley. This relates to both the unique demographics of the area, as well as the air quality concerns that are inherent to this region. As such, these findings extend our understanding of the concurrent challenges present in at-risk COVID-19 patients, living in areas with poor air quality.

Conclusion: As such, these findings begin to extend our understanding of the concurrent challenges present in at-risk COVID-19 patients, living in areas with poor air quality.

Poster #60

**Ton Dang Nguyen, BS, OMS-II**
**Student**
**California Health Sciences University College of Osteopathic Medicine**
**Title:** Barriers to Hypertension Management in Rural California
**Author(s):** T. Nguyen, P. Carrey, X. Heng, D. Garcia, T. Perez, V. Jones, A. Nijjer-Sidhu
**Affiliations:** California Health Sciences University College of Osteopathic Medicine; Adventist Health Selma

**Abstract:** Selma, CA is one of the most underprivileged and under-served communities in America. Furthermore, rural populations are at higher risk of developing hypertension (HTN), and its corollary diabetes. In this study, we seek to identify social factors that may serve as barriers to receiving optimum care. We designed and distributed a short 18-question survey designed along five dimensions: demographics, health literacy, education, socio-economics, and family/social support. Surveys were handed out to patients diagnosed with HTN. Patients were asked to return after six weeks for follow-up blood pressure check. We then separated our data into three groups: Compliant, Non-compliant, and Absent depending on blood pressure control and appointment adherence. Survey answers were then compared across groups to determine significant patterns. These patterns may shed light on social determinants of health in California's Central Valley.

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