

Addressing Health Disparities in a Student-Run Free Clinic and Research Opportunities

Melissa G. Pearce, D.O., Chiara Rosenbaum, OMS2, Timothy Kim, OMS2

Melissa G. Pearce, D.O., C-NMM/OMM, C.S.

Melissa Pearce, D.O. is excited to be teaching at Touro University College of Osteopathic Medicine-California where she is an Assistant Professor and Vice Chair of the OMM Department. A Touro alumnus, she trained in Family Medicine in CA and Neuromusculoskeletal Medicine/Osteopathic Manipulative Medicine (NMM/OMM) at St. Barnabas Hospital in NY.



Chiara Rosenbaum, MS, OMS II

After receiving her masters in Narrative Medicine at Columbia University, Chiara developed a strong passion for social justice and health advocacy. During her time at Touro University in California, she has become involved in the Student-Run Free Clinic and now oversees the clinic's operations. With a desire to bring public health concepts to the clinic, Chiara has worked with her cohort and faculty advisors to implement a structurally competent service at the local Vallejo clinic.



Timothy Kim, MS, OMS II

Timothy Kim has worked in both domestic and international settings creating and implementing healthcare delivery models that focus on social determinants of health. He is passionate about addressing upstream factors to patient health, and is currently working to tackle food insecurity and nutrition by developing a Food Pharmacy in Vallejo under the Albert Schweitzer Fellowship. Timothy is a dual-degree osteopathic medical student earning his MPH degree, and serving as the Executive Director of the Student-Run Free Clinic. He and his team are working to integrate a structurally competent approach to patient care in the clinic, and utilize generated data to better understand what their patients may need to improve patient motivation, active participation, and wellness.



Financial Disclosures

- Melissa G. Pearce, D.O. is the Principal Investigator for the Reducing Inflammation with Osteopathic Treatment (RIOT) trial
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- Chiara Rosenbaum, MS, OMS II and Timothy Kim, MS, OMS II
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TOURO UNIVERSITY
CALIFORNIA

FREE CLINIC

SCREENING EXAMS
BLOOD PRESSURE CHECK
BLOOD SUGAR CHECK
MEDICATION REVIEW

EVERY THURSDAY
FROM 4:30-8:00PM



STUDENT-RUN



FREE CLINIC

Touro University California Student-Run Free Clinic (SRFC)
Melissa G. Pearce, D.O., C-NMM/OMM, C.S.

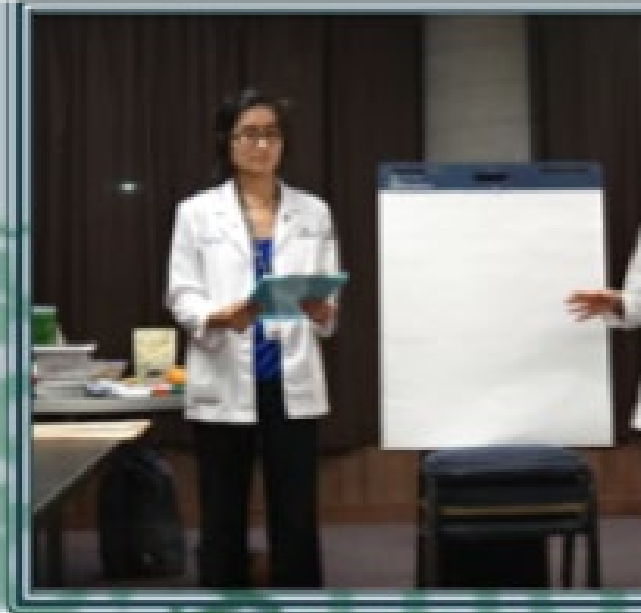
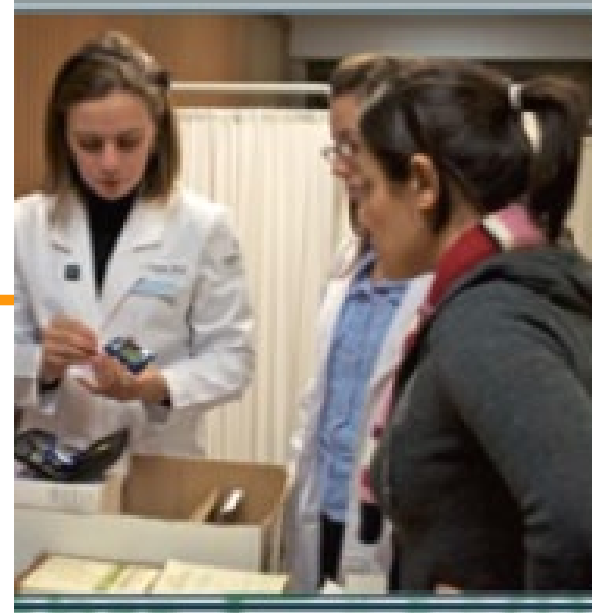
Touro University California Student-Run Free Clinic

- Founded on October 6th, 2010
- Location
 - Norman C. King Community Center
 - 545 Magazine St., Vallejo
 - Medically underserved area
 - 10 minutes from TUC campus
- Hours
 - Thursdays 4:30p – 8:30pm
 - Education classes vary



Touro University California Student-Run Free Clinic

- Mission: To provide **free medical services** to meet the needs of the Vallejo area while enhancing the clinical and educational skill of the students that volunteer
- Vision: To foster an atmosphere of interprofessional education for all students, to provide respectful and knowledgeable patient care, to continue to expand our services to meet the needs of the Vallejo community, and to remain interprofessionally **student-run**.



Special Thanks to Donna Louise, Photographer



PILOT DIABETES PATIENT EDUCATION
A 7 week DM course for the Vallejo community

Evolving Services Touro University Student-Run Free Clinic

Free Services Offered at the SRFC:

- Blood pressure checks
- Blood glucose screening
- Acute illness history and physical exams
- Chronic disease assessment and patient education
- Osteopathic Manipulative Medicine (OMM)
- Diabetes Education classes (DEEP, DPP)
- Over-the-counter medication w/consultation, Medication Therapy Management (MTM)
- Flu vaccinations
- Providing referrals/recommendations for health care and treatment
- Opportunities for research participation

Expanding Services Planned at the SRFC:

- Clinical case management through RNs in TUC's advanced nursing degree program
- Extending connections with community collaborators
- Addressing structural competencies with the Health Opportunities and Patient Evaluation (HOPE) program
- Increasing research



Student-Run Free Clinic

In 2017, SRFC held 32 clinic days resulting in **144 clinic hours**

- 561 Student volunteers, totaling 1,406 student volunteer hours
- 19 preceptors, who accrued 393 hours
- At least 231 patients seen

Student participation:

- College of Osteopathic Medicine: 948 volunteer hours
- College of Pharmacy: 393 volunteer hours
- College of Education and Health Sciences: 60 hours

- 13 outreach events totaling 33 hours



TOURO UNIVERSITY
CALIFORNIA

Napa Health Fair

Date
Sunday, April 23, 2017

Time
9 am - 3 pm

Location
Napa Flea Market
303 S. Kelly Rd
American Canyon, CA 94503

Free Services Include:
OMM, Blood Pressure, Blood Glucose
Screening, and Health Education

STUDENT-RUN
FREE CLINIC

TUC IPC
for Diabetes Outreach

SSP
SIGMA SIGMA PHI NATIONAL
OSTEOPATHIC HONORS SOCIETY





SRFC Needs Assessment

Melissa G. Pearce, D.O. contribution from Selene Jamall, OMS3



Touro California Student-Run Free Clinic: An Investigation of Actual vs. Target Patient Demographic

Brandon Ang, OMS-I, Selene Jamall, OMS-I, James Victor Kimpo, OMS-I, Benfie Liu, OMS-II, Eric Donn, OMS-II, Henry Szeto, OMS-II, James Devanney, OMS-II, Dr. Stacey Pierce-Talsma, DO, Melissa Pearce, DO

Touro University California, College of Osteopathic Medicine

Background

The Student-Run Free Clinic's mission is to provide free healthcare primarily to the medically underserved demographic of Vallejo, which we define as patients who do not have access to a primary care provider, or who do not have health insurance. The clinic provides basic healthcare services including screening/physical exams, immunizations, medication review, and Osteopathic Manipulative Medicine (OMM). Since the clinic opened in 2010, it has not yet been examined if the actual patient demographic is consistent with the intended demographic of the clinic's mission.

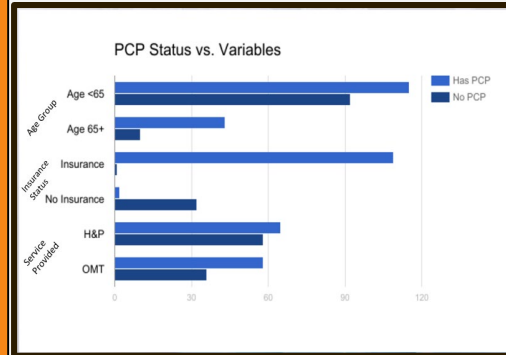
Hypothesis

Hypothesis 1: The Student-Run Free Clinic (SRFC) serves the medically underserved population of Vallejo.
Hypothesis 2: The SRFC primarily provides osteopathic manipulative medicine (OMM) to the community compared to other services.

Methods

Data was collected from registration forms in consenting patients' files and recorded in a spreadsheet using Microsoft Excel. Patients responded to a host of demographic questions, including age (categorized as adults < 65 years of age or ≥ 65 years of age as determined by the generally accepted age to distinguish 'elderly' from 'non--elderly'), whether they currently have a primary care provider (PCP), and whether or not they have health insurance. The service given during their clinic visit (history and physical exam, or OMM) was also recorded, and all responses were compared.

Results



Chi Square Test	p value
PCP Status vs. Age	p = 0.0007
PCP Status vs Insurance	p <0.0001
PCP Status vs. Service Provided	p = 0.012



Conclusion

We reject our first hypothesis that the clinic primarily addresses its intended population, the medically underserved in Vallejo. The majority of patients seen by the Student-Run Free Clinic tend to be patients who already have health insurance (76.4%) and access to a PCP (60.8%). The consistent presence of patients with access to a PCP and health insurance at the clinic may indicate that they seek extra care, possibly in the form of OMM.

We also reject our second hypothesis that the clinic primarily provides OMM to its patients. 54.9% of patients who have PCP and 38.3% of patients without PCP receive OMM treatment instead of H&P only. However, 48.3% of patients overall at SRFC receive OMM treatment. While the overall difference between those receiving OMM treatment and H&P only is small, the difference between those with and without PCP receiving OMM could be due to more patients with PCP utilizing the SRFC as additional healthcare in the form of OMM, and those patients without PCP utilizing the SRFC more as a source of routine medical evaluation without necessarily the intent or clinical indication for receiving OMM treatment.

In order to more adequately address the medically underserved of our community, these insights are the beginning of a focused effort to improve our outreach throughout Vallejo, potentially through partnering with local health advocacy programs. Future data collection through patient surveys will also evaluate whether patients exclusively receive OMM treatment through SRFC or through other means in order to better understand the current and future role of the clinic's offerings in the broader Vallejo healthcare spectrum.

Acknowledgements

The Student-Run Free Clinic would like to thank our Medical Directors, Dr. Melissa Pearce and Dr. Stacey Pierce-Talsma, for their guidance and support in all of the clinic's endeavors. We would especially like to thank all the clinic directors, coordinators, preceptors, and student volunteers who are dedicated to preserving and upholding the continued mission of the clinic.

Research Question: Do the services provided by the SRFC align with the Mission?

Conclusions:

- More patients than expected presenting to the SRFC have either health insurance or a PCP or both
- Opportunities to further access the intended underserved patient population exist
- Further needs assessment and interventions are planned



SRFC Community Needs Assessment

- Collaborative assessment conducted with potential community partners
- Areas of greatest need
 - Wound care
 - Hygiene needs
 - Mental health access
 - Case management



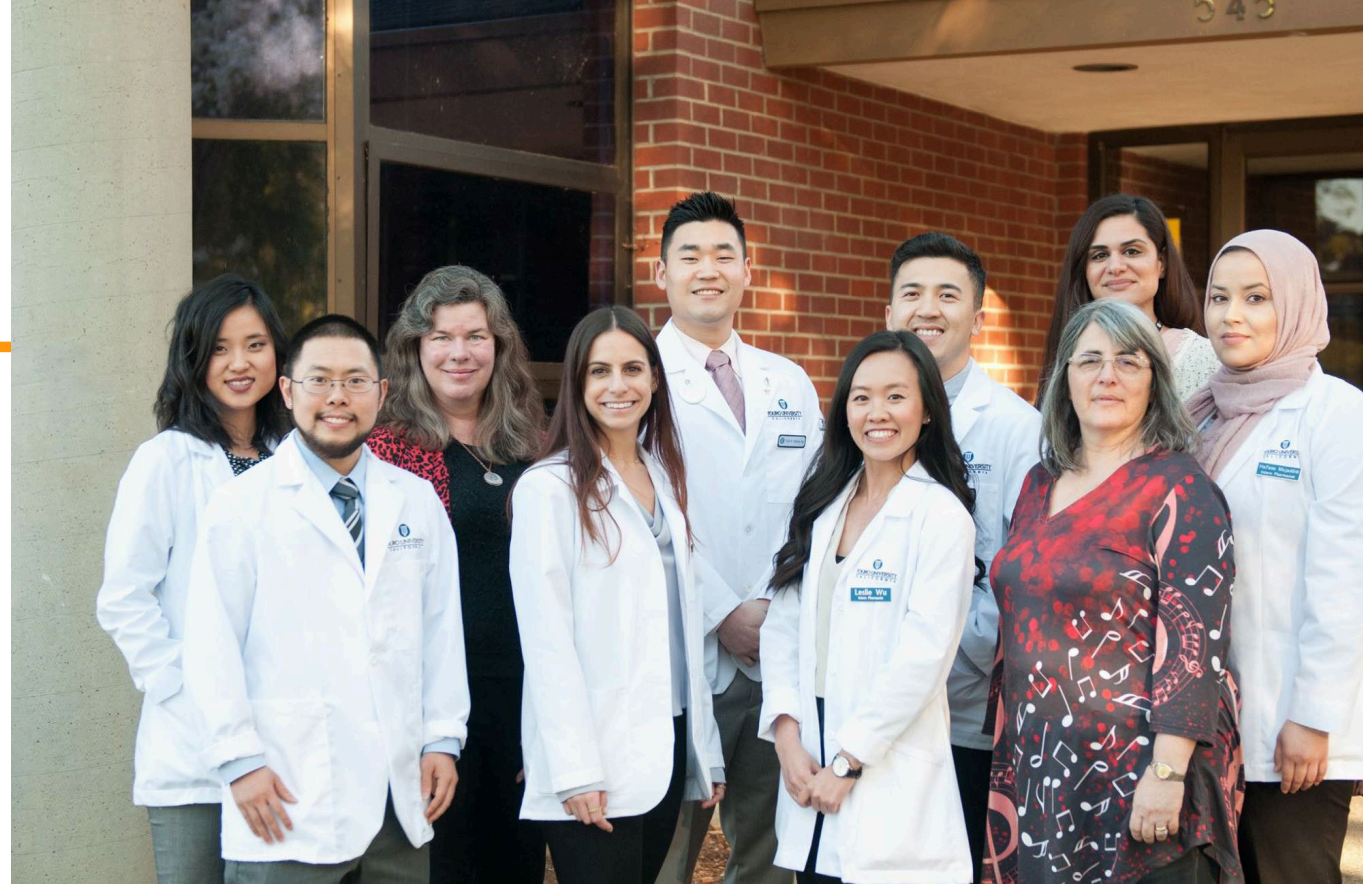
**Students Address
Barriers to Health**

**at the Student-Run
Free Clinic**



2018 Leadership

- New leadership team = new opportunities!
- Continue Interprofessional Education
- Welcome new programs
- Continue to support existing efforts
- Build community connections
- Expand services



**Students Address
Barriers to Health
at the Student-Run
Free Clinic**





HOPE Project

Chiara Rosenbaum, MS, OMS2, Director of Operations

Social Determinants of Health

- Socioeconomic status
- Income inequality
- Racialized hierarchies
- Institutional policies
- Per capita gross national product
- International trade relations
- Military disruptions

What is Structural Competency?

- The ability for health professionals to recognize and respond with self-reflexive humility and community engagement to the ways negative health outcomes and lifestyle practices are shaped by larger socioeconomic, cultural, political, and environmental forces
- Promotes a shift in medical education to address the stigma and inequalities affecting health disparities and individual patient outcomes

Structural Competency

Defined by Jonathan Metzl and Helena Hansen in the Social Science & Medicine Journal article “Structural competency: theorizing a new medical engagement with stigma and inequality”

- Recognize upstream forces
- How structures affect health
- Address downstream outcomes
- Develop innovative solutions
- Practice humility

Cultural vs. Structural Competency

- Competency implies end-point
- Cross cultural communication is important
- Counteracts marginalization of patients by considering “culturally specific sources of stigma”
- Re-defines competency as humility
- Recognizes structural constraints patient and clinicians operate within
- Additionally addresses the complex relationship between clinical symptoms and socioeconomic and political systems

A Structurally Competent Clinic

- Space for patients to talk
- Build and deepen relationships
- Interprofessional endeavor
- Learning opportunity
- Expand patient base
- Gain insight into population needs
- Community outreach and collaboration



Upstream Care

- A service that identifies obstacles to healthy lifestyle
- Assesses negative health outcomes
- Develops treatment plans that address these structural vulnerabilities
- Student clinicians may feel less helpless and frustrated

HOPE

Chart 1
Structural Vulnerability Assessment Tool*

Domain	Screening questions and assessment probes*
Financial security	<p>Do you have enough money to live comfortably—pay rent, get food, pay utilities/telephone?</p> <ul style="list-style-type: none"> • How do you make money? Do you have a hard time doing this work? • Do you run out of money at the end of the month/week? • Do you receive any forms of government assistance? • Are there other ways you make money? • Do you depend on anyone else for income? • Have you ever been unable to pay for medical care or for medicines at the pharmacy?
Residence	<p>Do you have a safe, stable place to sleep and store your possessions?</p> <ul style="list-style-type: none"> • How long have you lived/stayed there? • Is the place where you live/stay clean/private/quiet/protected by a lease?
Risk environments	<p>Do the places where you spend your time each day feel safe and healthy?</p> <ul style="list-style-type: none"> • Are you worried about being injured while working/trying to earn money? • Are you exposed to any toxins or chemicals in your day-to-day environment? • Are you exposed to violence? Are you exposed regularly to drug use and criminal activity? • Are you scared to walk around your neighborhood at night/day? • Have you been attacked/mugged/beaten/chased?
Food access	<p>Do you have adequate nutrition and access to healthy food?</p> <ul style="list-style-type: none"> • What do you eat on most days? • What did you eat yesterday? • What are your favorite foods? • Do you have cooking facilities?
Social network	<p>Do you have friends, family, or other people who help you when you need it?</p> <ul style="list-style-type: none"> • Who are the members of your social network, family and friends? Do you feel this network is helpful or unhelpful to you? In what ways? • Is anyone trying to hurt you? • Do you have a primary care provider/other health professionals?
Legal status	<p>Do you have any legal problems?</p> <ul style="list-style-type: none"> • Are you scared of getting in trouble because of your legal status? • Are you scared the police might find you? • Are you eligible for public services? Do you need help accessing these services? • Have you ever been arrested and/or incarcerated?
Education	<p>Can you read?</p> <ul style="list-style-type: none"> • In what language(s)? What level of education have you reached? • Do you understand the documents and papers you must read and submit to obtain the services and resources you need?
Discrimination	<p>[Ask the patient] Have you experienced discrimination?</p> <ul style="list-style-type: none"> • Have you experienced discrimination based on your skin color, your accent, or where you are from? • Have you experienced discrimination based on your gender or sexual orientation? • Have you experienced discrimination for any other reason? <p>[Ask yourself silently] May some service providers (including me) find it difficult to work with this patient?</p> <ul style="list-style-type: none"> • Could the interactional style of this patient alienate some service providers, eliciting potential stigma, stereotypical biases, or negative moral judgments? • Could aspects of this patient's appearance, ethnicity, accent, etiquette, addiction status, personality, or behaviors cause some service providers to think this patient does not deserve/want or care about receiving top quality care? • Is this patient likely to elicit distrust because of his/her behavior or appearance? • May some service providers assume this patient deserves his/her plight in life because of his/her lifestyle or aspects of appearance?

Health Opportunities and Patient Evaluation

- Patient Intake
- Student Checklist
- Structural Vulnerability Assessment

Risk environments

Do the places where you spend your time each day feel safe and healthy?

- Are you worried about being injured while working/trying to earn money?
- Are you exposed to any toxins or chemicals in your day-to-day environment?
- Are you exposed to violence? Are you exposed regularly to drug use and criminal activity?
- Are you scared to walk around your neighborhood at night/day?
- Have you been attacked/mugged/beaten/chased?

Food access

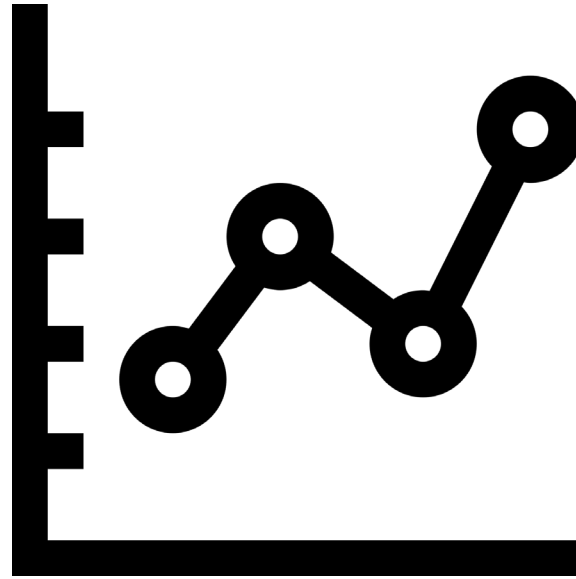
Do you have adequate nutrition and access to healthy food?

- What do you eat on most days?
- What did you eat yesterday?
- What are your favorite foods?
- Do you have cooking facilities?

HOPE

- Collect Resources
- Assess risk of reconfirming biases
- Strive for clinician humility
- Conduct more interviews
- Get students involved
- Collect data
- Collaborate with community





HOPE Project Metrics Analytics

Timothy Kim, MS, OMS2, Executive Director

Quantitative Analysis of HOPE Metrics

- Concomitant data collection
- Utilize a binary points system defined by a criteria
- Does not direct care, but contextualizes patient's current presentation
- Let's follow our patient, Mr. Kim
 - 55yo Male, PMH of HTN, status post MI 2 years ago, hypercholesterolemia, presenting today for general check up

Chart 1
Structural Vulnerability Assessment Tool* Patient Name: Mr. Kim

Domain	Screening questions and assessment probes*
Financial security	<p>Do you have enough money to live comfortably—pay rent, get food, pay utilities/telephone?</p> <ul style="list-style-type: none"> • How do you make money? Do you have a hard time doing this work? • Do you run out of money at the end of the month/week? • Do you receive any forms of government assistance? • Are there other ways you make money? • Do you depend on anyone else for income? • Have you ever been unable to pay for medical care or for medicines at the pharmacy?
Residence	<p>Do you have a safe, stable place to sleep and store your possessions?</p> <ul style="list-style-type: none"> • How long have you lived/stayed there? • Is the place where you live/stay clean/private/quiet/protected by a lease?
Risk environments	<p>Do the places where you spend your time each day feel safe and healthy?</p> <ul style="list-style-type: none"> • Are you worried about being injured while working/trying to earn money? • Are you exposed to any toxins or chemicals in your day-to-day environment? • Are you exposed to violence? Are you exposed regularly to drug use and criminal activity? • Are you scared to walk around your neighborhood at night/day? • Have you been attacked/mugged/beaten/chased?
Food access	<p>Do you have adequate nutrition and access to healthy food?</p> <ul style="list-style-type: none"> • What do you eat on most days? • What did you eat yesterday? • What are your favorite foods? • Do you have cooking facilities?
Social network	<p>Do you have friends, family, or other people who help you when you need it?</p> <ul style="list-style-type: none"> • Who are the members of your social network, family and friends? Do you feel this network is helpful or unhelpful to you? In what ways? • Is anyone trying to hurt you? • Do you have a primary care provider/other health professionals?
Legal status	<p>Do you have any legal problems?</p> <ul style="list-style-type: none"> • Are you scared of getting in trouble because of your legal status? • Are you scared the police might find you? • Are you eligible for public services? Do you need help accessing these services? • Have you ever been arrested and/or incarcerated?
Education	<p>Can you read?</p> <ul style="list-style-type: none"> • In what language(s)? What level of education have you reached? • Do you understand the documents and papers you must read and submit to obtain the services and resources you need?
Discrimination	<p>[Ask the patient] Have you experienced discrimination?</p> <ul style="list-style-type: none"> • Have you experienced discrimination based on your skin color, your accent, or where you are from? • Have you experienced discrimination based on your gender or sexual orientation? • Have you experienced discrimination for any other reason? <p>[Ask yourself silently] May some service providers (including me) find it difficult to work with this patient?</p> <ul style="list-style-type: none"> • Could the interaction style of this patient alienate some service providers, eliciting potential stigma, stereotypical biases, or negative moral judgments? • Could aspects of this patient's appearance, ethnicity, accent, etiquette, addiction status, personality, or behaviors cause some service providers to think this patient does not deserve/want or care about receiving top quality care? • Is this patient likely to elicit distrust because of his/her behavior or appearance? • May some service providers assume this patient deserves his/her plight in life because of his/her lifestyle or aspects of appearance?

Binary Points System

- Binary vs. Scaling
- Each category =
 - 12 points / # of questions
- Each question either: (+) or (-)
 - (+)/(-) defined by criteria that evaluate a patient's response
- (-) hits receive points
- Summated scores represent the category

Food Access:

- How do you define nutrition, and do you have access to healthy food?
 - (+) = patient has access to healthy food, and definition of nutrition may or may not have respects to health and growth, fruits and vegetables, and consequences of processed foods (+0 points)
 - (-) = patient does NOT have access to healthy food, and definition of nutrition is incomplete (+3 points)
- Where do you get your food? (How close is the grocery store, do they offer affordable options, or do they eat fast food because it's cheaper). Does this access affect your ability to take medication/follow treatment plans?
 - (+) = food access does NOT negatively affect their ability to take medication/follow treatment plans (+0 points)
 - (-) = food access negatively affects their ability to take medication/follow treatment plans (+3 points)
- What do you eat on most days (for breakfast, lunch, dinner)?
 - (+) = contains under 25% processed, refined or fast foods with more than 33% fresh produce (fruits and vegetables) (+0 points)
 - (-) = contains over 50% processed, refined or fast foods with less than 25% fresh produce (fruits and vegetables) (+3 points)
- What are your favorite foods? Do you have cooking facilities? If so, are you cooking for yourself or many people?
 - (+) = Possesses cooking facilities and is able to utilize it to fulfill their cooking and meal preparation responsibilities without difficulty (+0 points)
 - (-) = does NOT possess cooking facilities or is unable to meet the responsibilities of their meal preparation and cooking demands without difficulty (+3 points)
- **Category Points Total:** 6 / 12

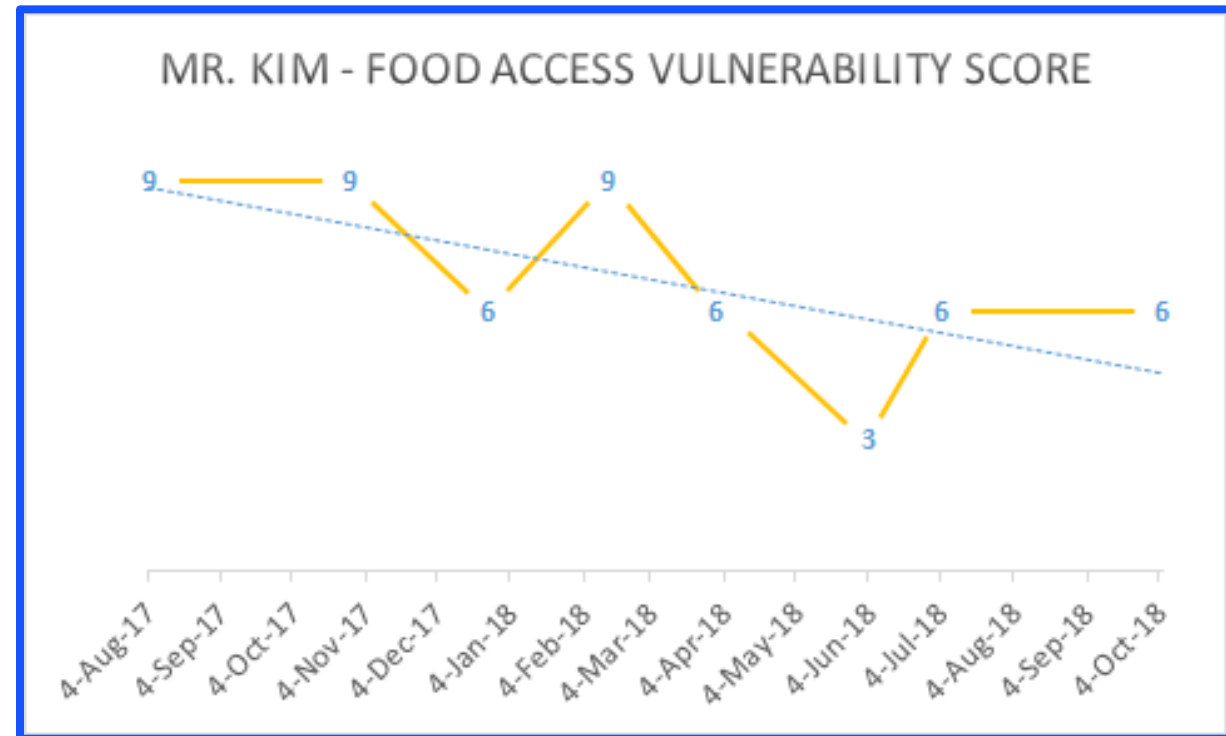
Degree of Vulnerability Over Time

- An overview of these structural components glanced over time to see improvement or changes
- Resource pairing fine-tuning
- Better understanding of the environment of our patient



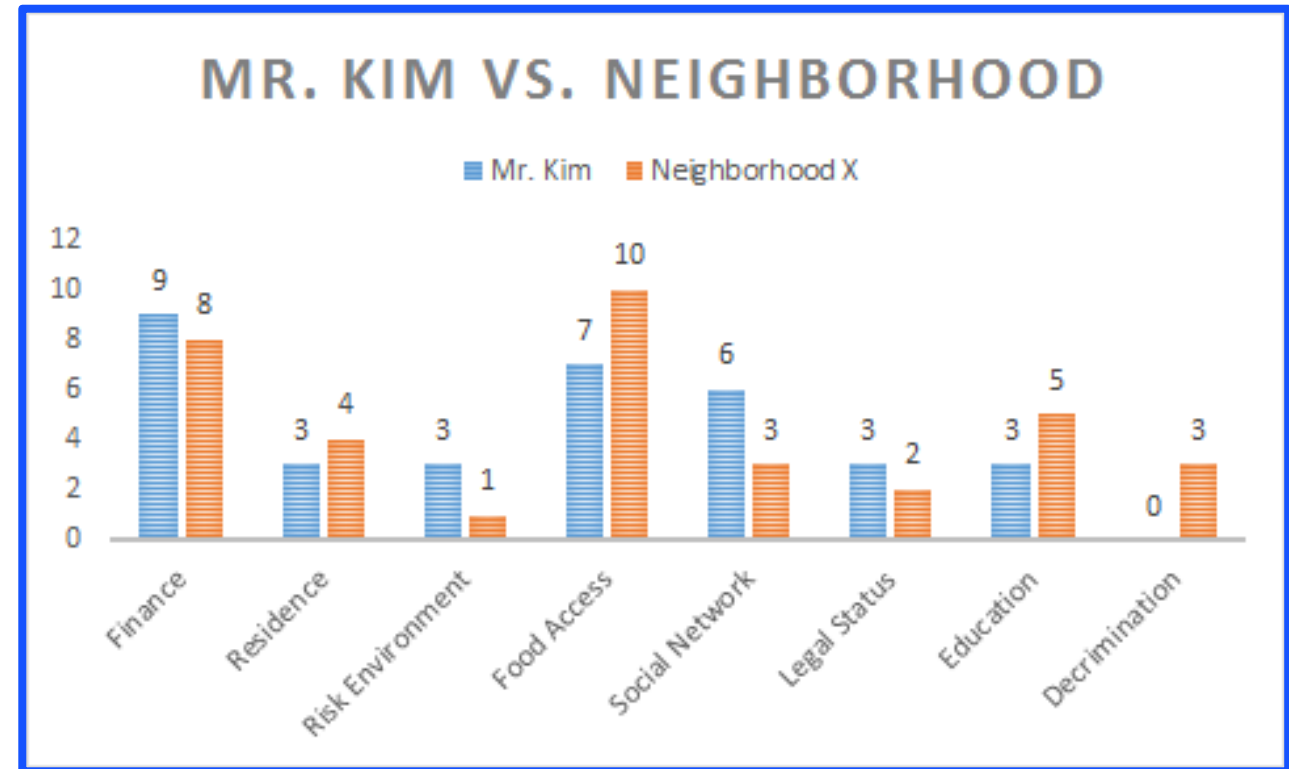
Fai+h Food Fridays

A Ministry of Faith Bible Church of Vallejo



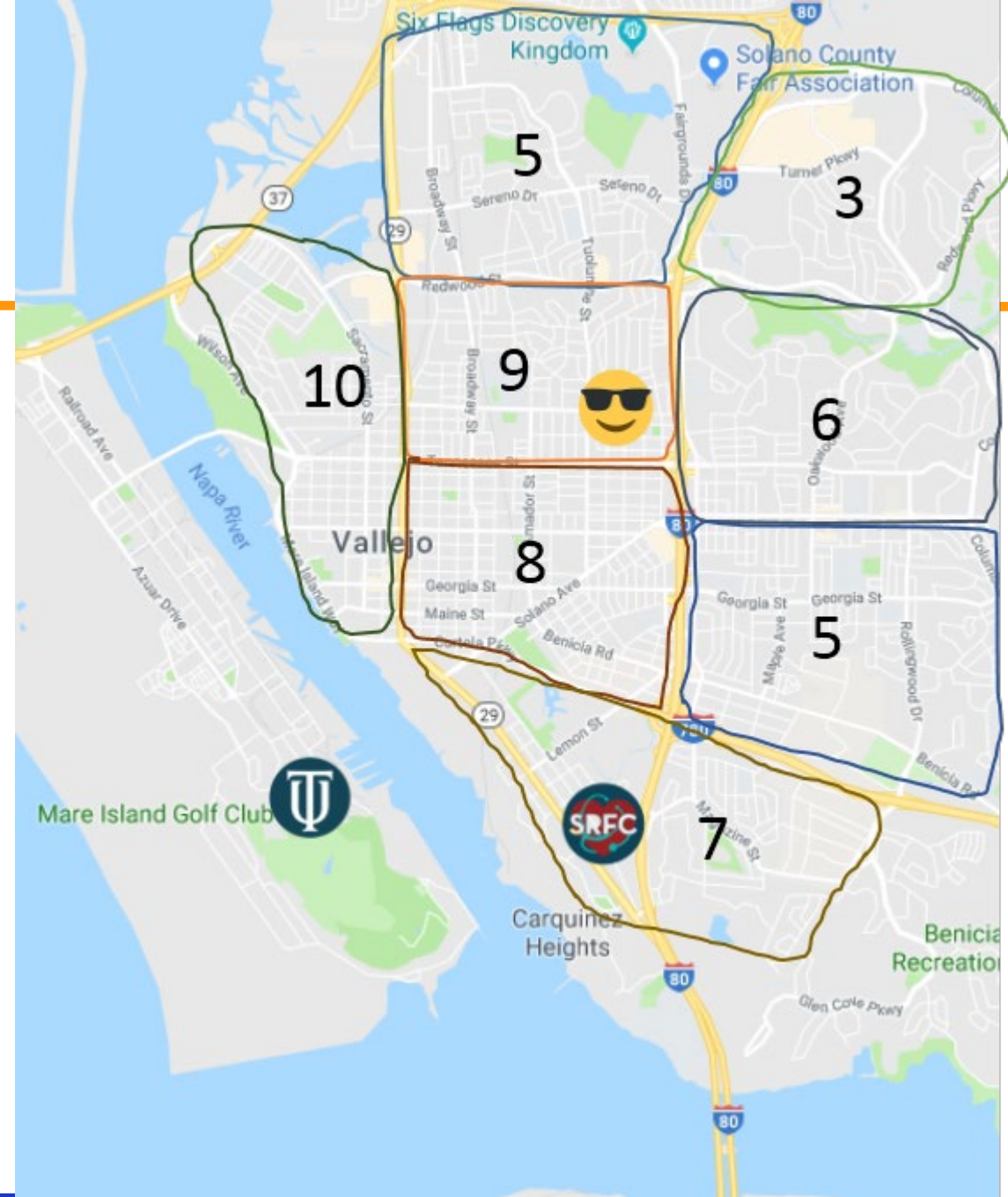
Degree of Vulnerability in Macroscale

- Analyze individual patient data in scope of the neighborhood
- Detection of aberrantly high vulnerabilities compared to neighbors



Neighborhood vs. City

- Stratification of food vulnerability scores across Vallejo
- Overlay the collective metrics of structural vulnerabilities on a geographic map to identify which neighborhoods are struggling with a specific structural vulnerability.



Benefits of HOPE Data Analytics

- Understand the patient in scope of structural landscape
- Improved treatment efficiency
- Overall cost savings
- Precision targeting for community interventions



Reducing Inflammation with Osteopathic Treatment (RIOT)

Melissa G. Pearce, D.O., C-NMM/OMM, PI

RIOT Study

Reducing Inflammation with Osteopathic Manipulation

Patient Recruitment



Primary inclusion criteria:

- 1) Adult patient with diabetes, obesity, and/or metabolic syndrome
- 2) Willing to participate in four study visits with several blood draws over about six weeks
- 3) Willing to forego NSAIDs, pain medication, physical medicine modalities during the course of the study

Primary exclusion criteria:

- 1) Any significant pain complaint (daily pain, intermittent pain rated over 3/10 as equates with “interferes with activities)
- 2) Underlying disease with significant inflammatory component – Crohns’, RA, lupus, etc.

Contact:

Lisa Johnson, RN

707-638-5207

Research Nurse

OR

Melissa G. Pearce, D.O.

707-638-5969

Principle Investigator



RIOT Study

Primary goals:

- Patient enrollment – 40 completed subjects
- Mid-point lab analysis of primary endpoint of TNF-alpha
- Correlate the use of OMT with reduction in inflammation
- Secondary endpoints to assess effects on cardiac and endocrine disease
- Support the use of OMT beyond typical musculoskeletal applications
- Opportunities for student involvement in research

RIOT Study

Progress so far:

- 43 patients screened
- 12 patients randomized
- 12 patients completed
- 1 patient pending randomization
- Added venues for increase patient recruitment

Sincerest thanks to the AOA for grant support of this project



References

- Metzl, J. & Hansen, H." Structural competency: theorizing a new medical engagement with stigma and inequality." *Social Science & Medicine*, vol. 103, 2014 pp. 126-133.
- Bourgois, Philippe, et al. "Structural Vulnerability: Operationalizing the Concept to Address Health Disparities in Clinical Care." *Academic Medicine*, vol. 92, no. 3, 2017, pp. 299–307.



With great appreciation for the opportunity!

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