UCLA

Aliso Canyon Disaster
Health Research Study

Community Meeting #7

May 7, 2026

Agenda

- Welcome
- Impact of the Blowout on Health: Primary and Specialty Care Utilization – Outpatient Visits
- Study Updates
- Closing

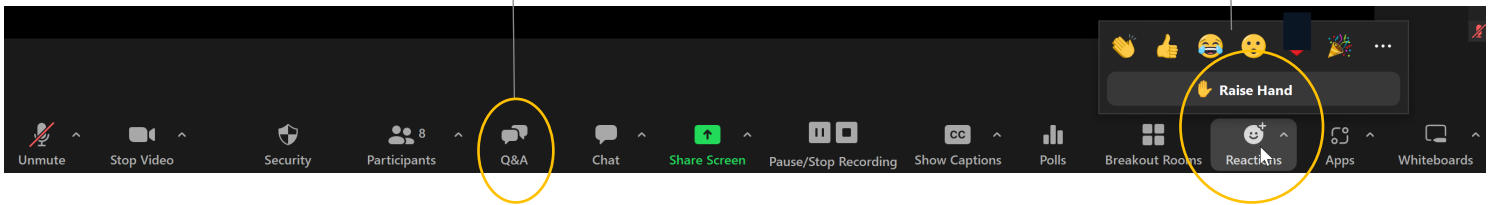
Zoom Meeting Discussion Tools

Q & A

- *Ask questions*
- *Leave comments*
- *Upvote*

Raise Hand

Request to give a verbal question or comment



Meeting Guidelines

- **Treat all meeting participants, comments, and questions with respect**
- **All ideas and points of view have value. Challenge ideas, not the person voicing the ideas**
- **Use common conversational courtesy. Inappropriate language will not be permitted**
- **Stay focused on today's agenda**
- **Honor time**

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Health Research Study

Impact of the Blowout on Health: Primary and Specialty Care Visits

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May 7, 2026

Disclaimer

The Methods, Analysis and Results have not yet been peer-reviewed and are not final. They are subject to change.

Why Study Outpatient Visits?

- The evaluation of the impacts of the Aliso Canyon Disaster includes **direct** AND **indirect** measures of adverse health outcomes.

- **Direct** measures include: low birth weight, depression, other

- **Indirect** measures include:
  - Visits to the emergency department for urgent reasons (completed)
  - Visits to primary and specialty care providers for evaluation and management of health conditions (this analysis)
  - Visits for other services and treatments (future analysis)

Study Questions

Did residents in the affected community seek more outpatient care than residents in the comparison community?

What were the reasons (conditions) for:

- Visits to primary care providers?
- Visits to specialty care providers?

Approach

Identification of Affected & Comparison Communities

Black – Affected Zip Codes

Blue – Comparison Zip Codes

Data Source

UCLA Health

- All individuals who visited UCLA Health and resided in the affected and comparison communities at any point between October 2014 and February 2017
- Geographic indicator is limited to 5-digit zip code of residence
- We reached out to Kaiser and other large insurance companies for data without success to date

Reasons for Visits

The reason for visit was determined using diagnosis codes

- Providers select one or more diagnosis code per visit
- Codes are for specific conditions and are organized by body system and symptoms

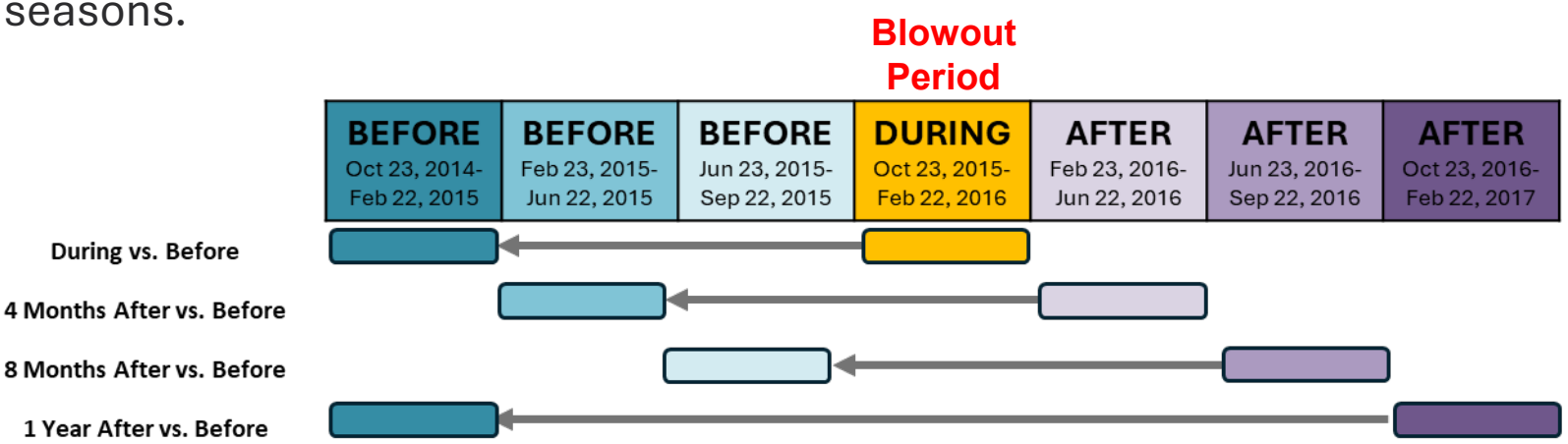
We examined broad categories, e.g., disease of the respiratory, digestive, or nervous system, and symptoms and abnormal findings

- Used primary diagnosis only

Analysis Conducted

We measured change in rates of visits before, during, and after the blowout for both communities and compared the differences.

Observation periods account for variability in patterns of visits in different seasons.



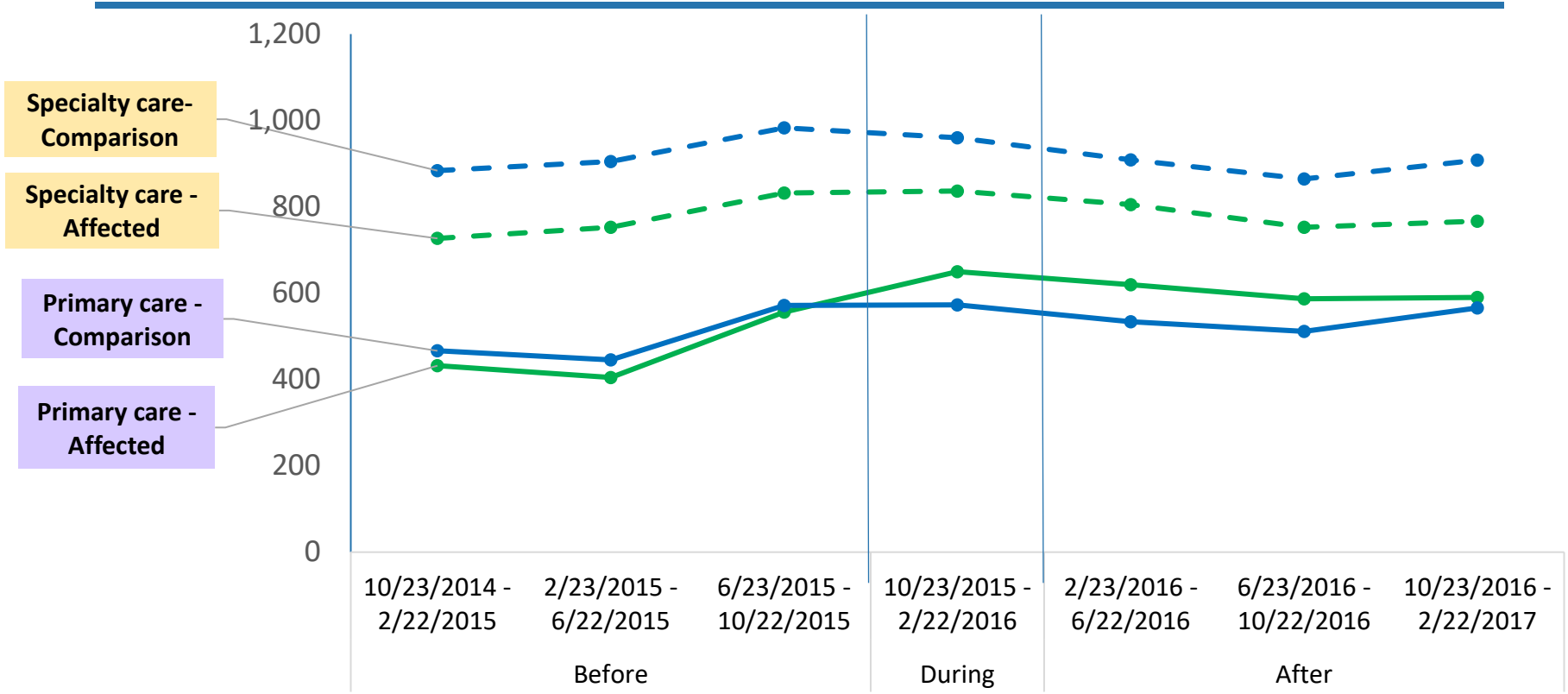
Resident Characteristics Included in Analyses

Analyses account for other factors that may explain differences in rates of visits between communities.

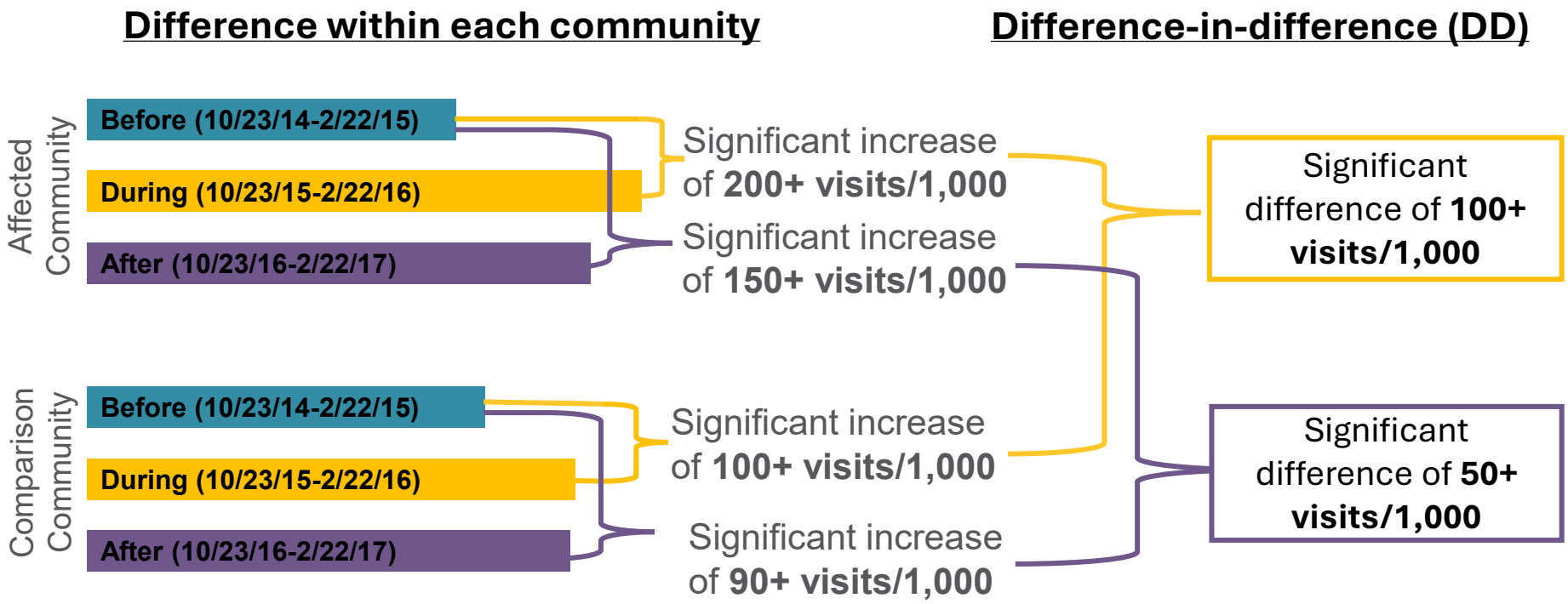
- **Demographics**
  - Age
  - Gender
  - Race/ethnicity
  - Insurance coverage group prior to the blowout
- **Health status**
  - Selected common chronic conditions

Findings

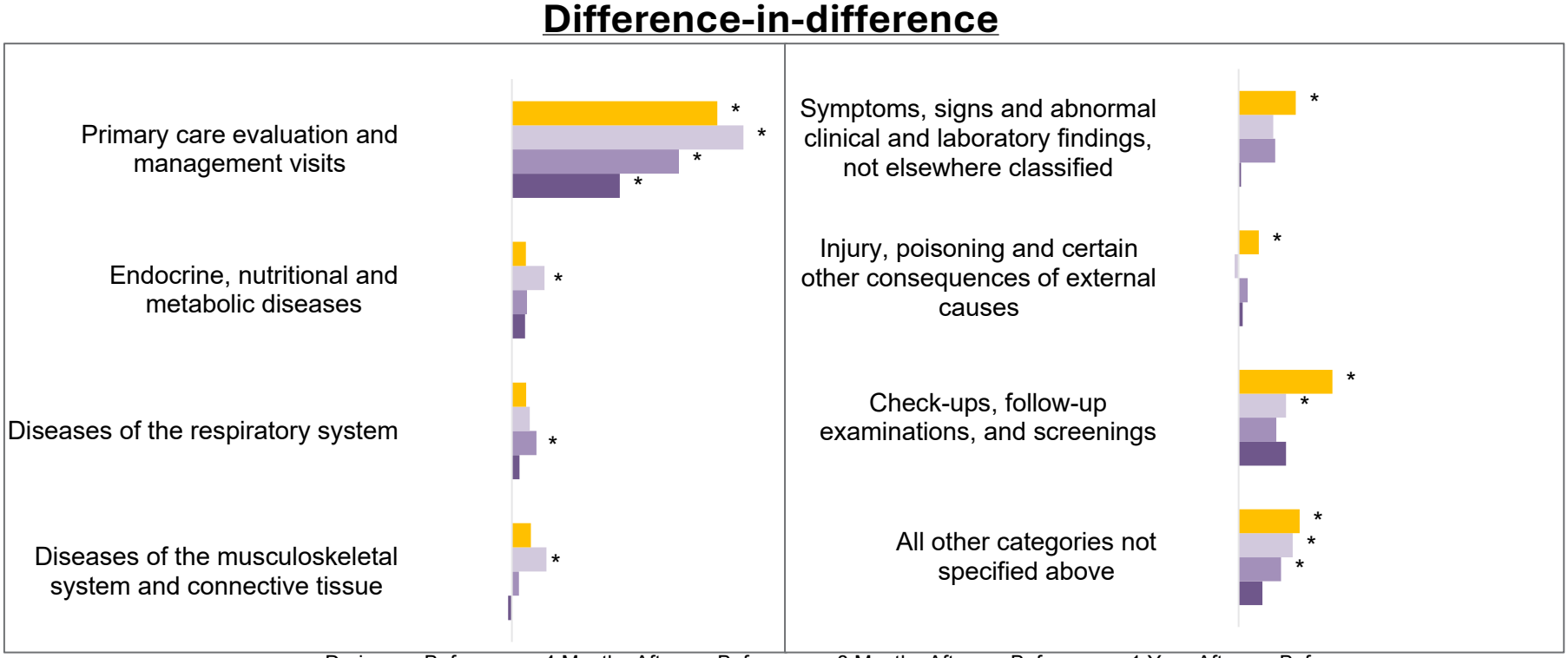
Trends in Outpatient Visit/1,000



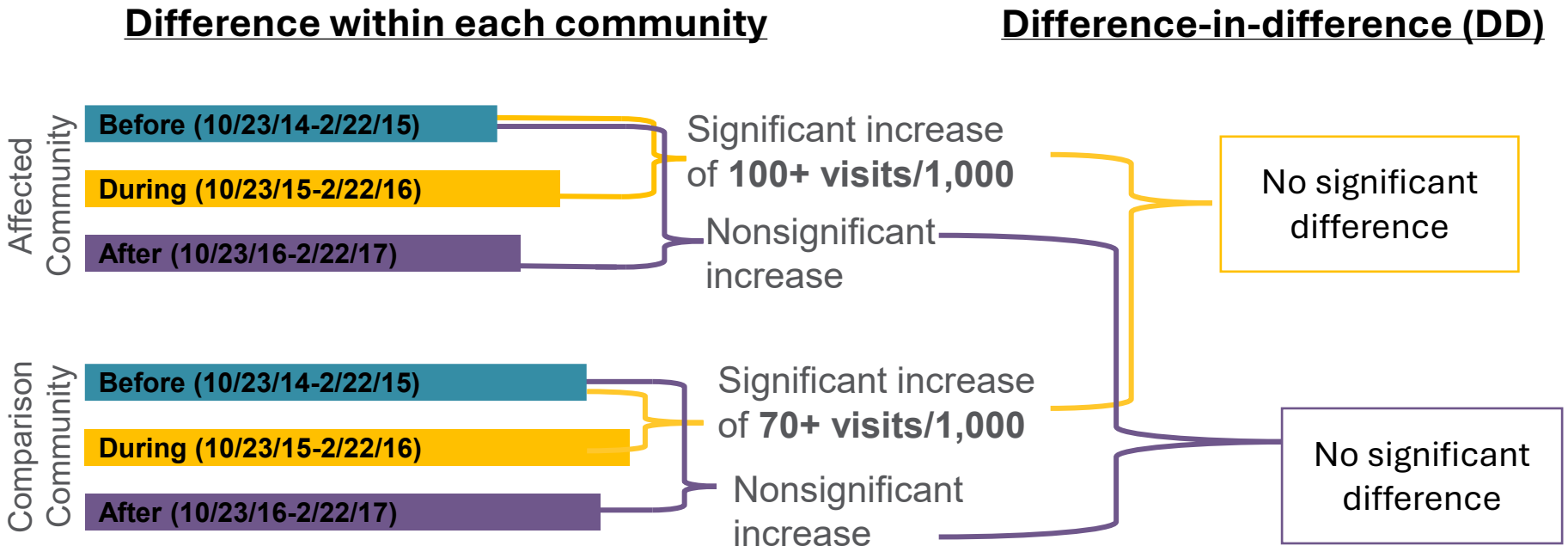
Overall Primary Care Visits Increased from Before to During the Blowout in the Affected Community



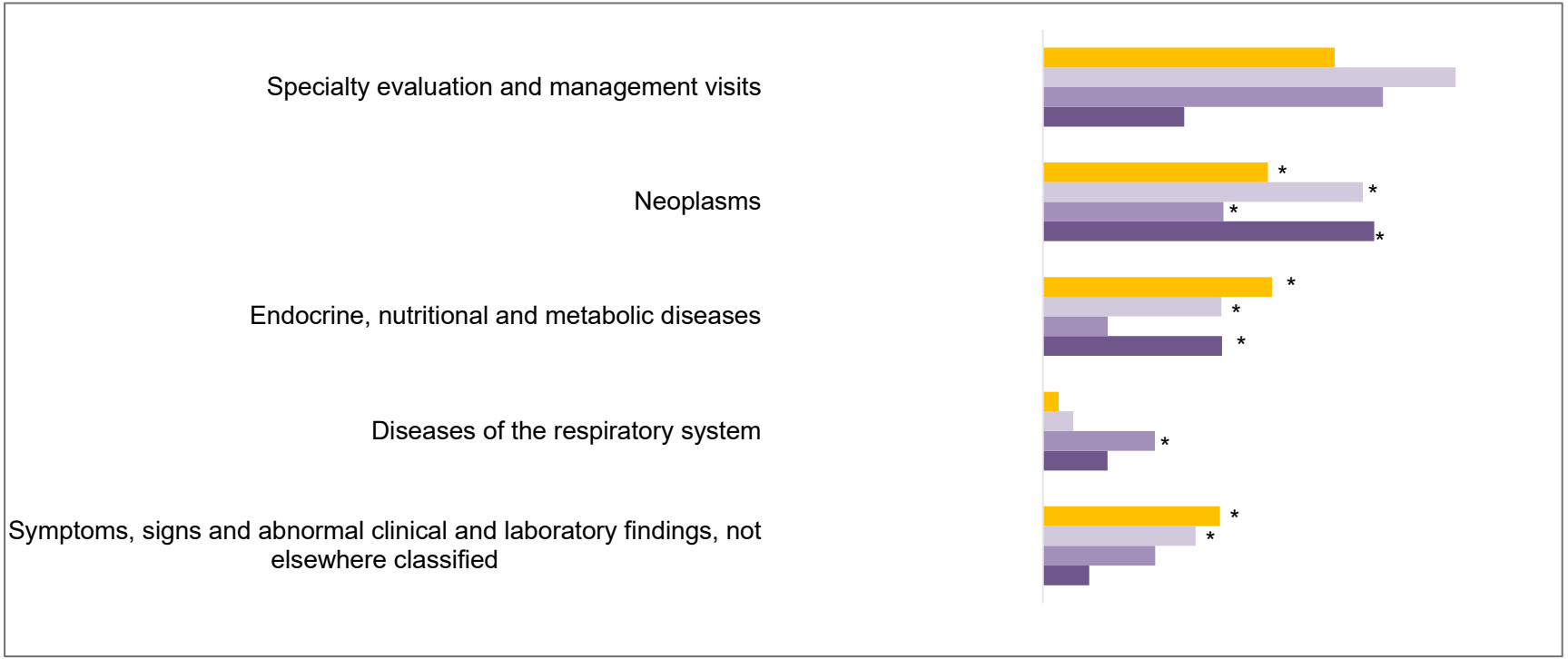
Changes in Primary Care Visits/1,000 by Broad Diagnosis Categories (DD)



Overall Specialty Care Visits Not Impacted by the Blowout in the Affected Community



Changes in Specialty Care Visits/1,000 by Primary Diagnosis Categories (DD)



Summary

More primary care visits during and soon after:

- Check ups and general examinations
- Symptoms and abnormal findings not yet diagnosed
- Injury and poisoning

More primary care visits after for existing or new:

- Endocrine and metabolic conditions
- Musculoskeletal system and connective tissue
- Respiratory system

More specialty care visits during and after for existing or new:

- Neoplasms; symptoms and abnormal findings not yet diagnosed

More specialty care visits after for existing or new:

- Respiratory system

Preliminary Conclusions

More primary and specialty care visits following the blowout in the affected community imply:

- The affected community residents likely experienced adverse health effects up to a year or longer following the end of the blowout requiring health services that were at times advanced or more intensive.

- Adverse health effects were likely due to:
  - Exacerbation of pre-existing conditions
  - Difficult to classify or diagnose symptoms
  - General concerns for health given the blowout

Limitations

- Data were from one health system and may not represent the experiences of individuals using other health systems.
- Cannot measure health status directly.
- Some individuals may have received care from other providers, while being UCLA patients.
- Wait times for appointments may have limited access to care and the findings may have underestimated the need for visits.

Potential Future Studies with Health Care Utilization Data

Changes in use of comprehensive health care services for neoplasms

Impact of the blowout on ambulatory surgery visits

Q & A

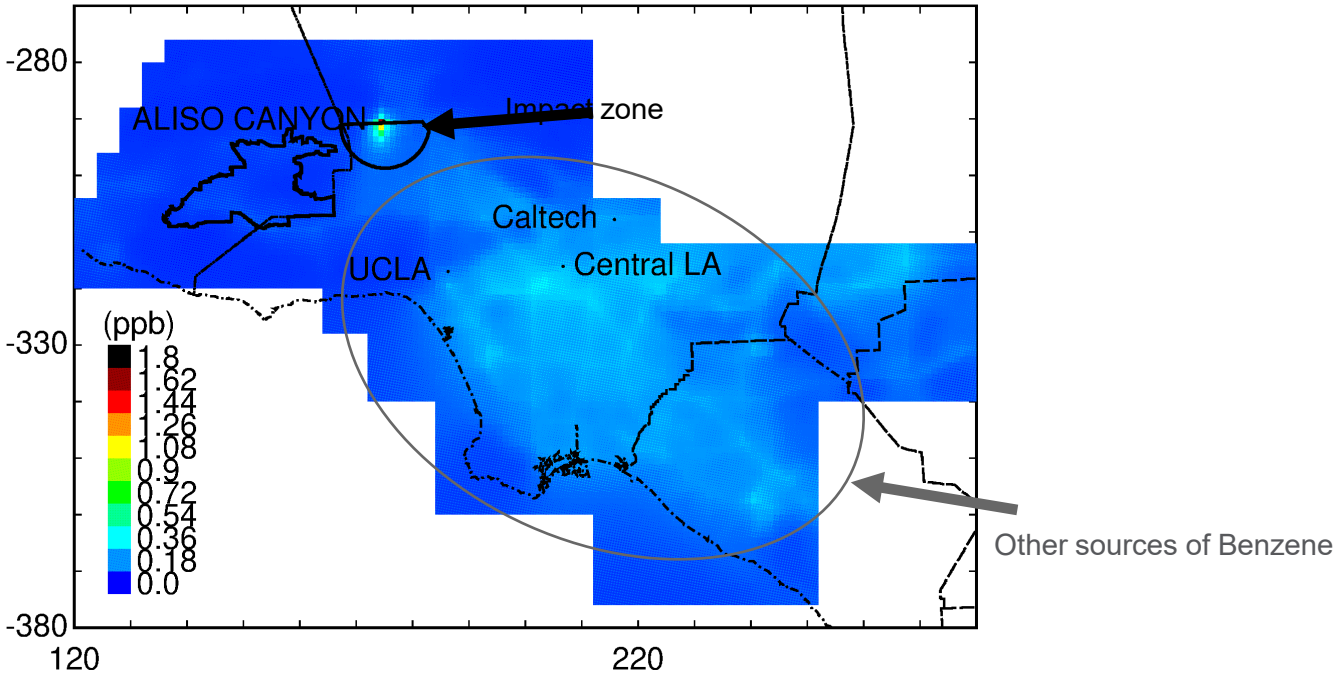
Study Updates - Overview

- Scientific Oversight Committee (SOC) recommendation to continue Study
- Exposure Analyses concluding
- Health Analyses – Data
- Study Publications - Submissions Update
- Gas monitoring data report back

Exposure Analyses concluding

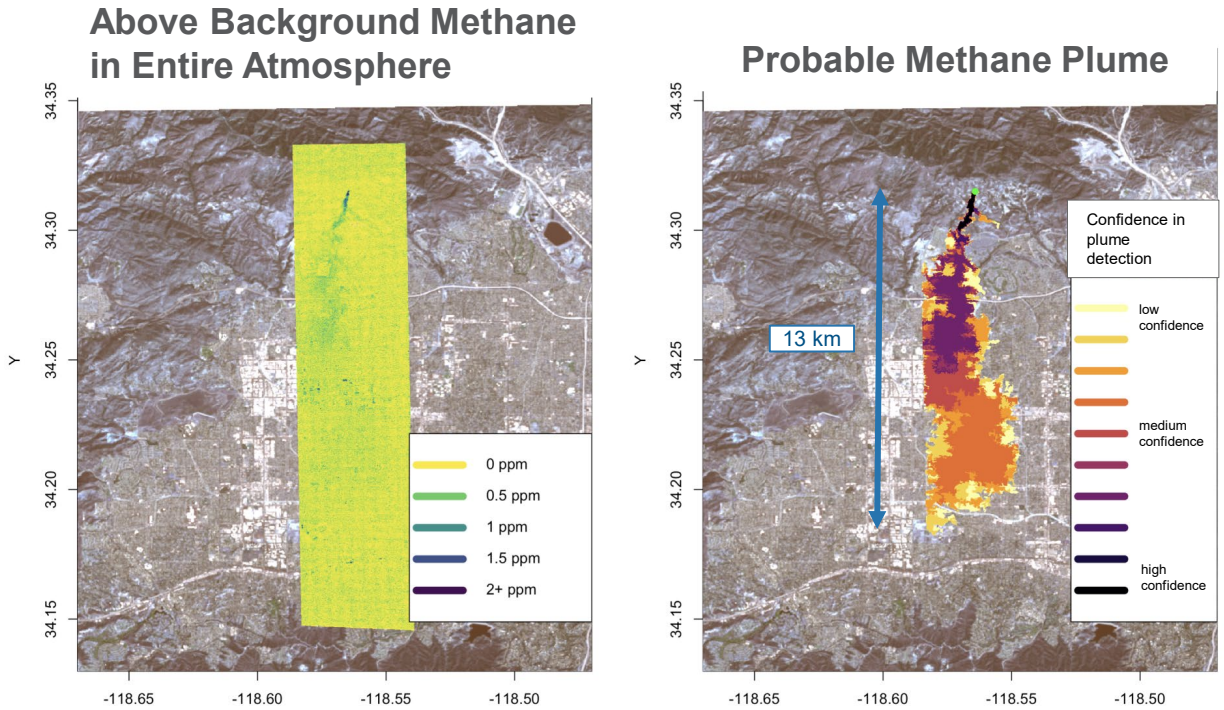
- Further refinement of Chemical Transport Model (CTM) model (Community Mtg 4)
- Comparison with other measurements by SCAQMD
- Validity studies with remote sensing

Chemical Transport Model (CTM) validations



Chemical Transport Model presented at https://alisostudy.ucla.edu/events/meeting-5/

Remote Sensing for CTM validations



Remote Sensing (Satellite imagery) presented at https://alisostudy.ucla.edu/events/meeting-4/

Health Analyses - Data

- Cancer Registry data
- Resident Health Survey and Clinical Assessment recruitment
- State Lab blood spots for metabolomics analysis
- Symptom and Odor Reporting

Resident Health Survey & Clinical Assessments

Survey Invitation Letters

UCLA Aliso Canyon Disaster Health Research Study

TAKE THE
ALISO CANYON DISASTER
RESIDENT HEALTH SURVEY

UCLA Aliso Canyon Disaster Health Research Study

Survey Processing Center
PO BOX 5703 Hopkins, MN 55343

PRESORTED
FIRST-CLASS MAIL
U.S. POSTAGE
PAID
TWIN CITIES, MN
PERMIT NO. 90100

TAKE OUR HEALTH SURVEY - **GET $35!**

Opt. Endorsement Line Calculated Text
Nameline
Title
Delivery Address
City St ZIP+4Province Postal Code

VeDrSequenc

Dear Name or Current Resident,

The UCLA Aliso Canyon Disaster Health Research Study team invites you to participate in a **confidential** Health Survey of individuals who lived in the area during the 2015–2016 Aliso Canyon blowout disaster. This Survey is a crucial component of the overall assessment of the health effects of the disaster.

Your participation in this is very important. You will contribute to a greater understanding of the health effects associated with exposure to pollutants from the blowout and ongoing facility operations. By completing the Survey, you may have an additional opportunity to participate in clinical assessments.

Only one adult from your household who lived in the area during the 2015–2016 blowout disaster can participate in the Survey.

WANT TO PARTICIPATE?

1. **Go to the Link: https://alisostudy.ucla.edu/example-link-to-survey or scan the QR code**
2. **Answer a few questions to confirm you're eligible.**
3. **Enter this Subject ID code to begin: _____**
   This ID is unique to your household. Please do not share.

Para responder a esta encuesta de salud en español, visite:
https://alisostudy.ucla.edu/ejemplo-link-esp

Recruitment Strategy

Target

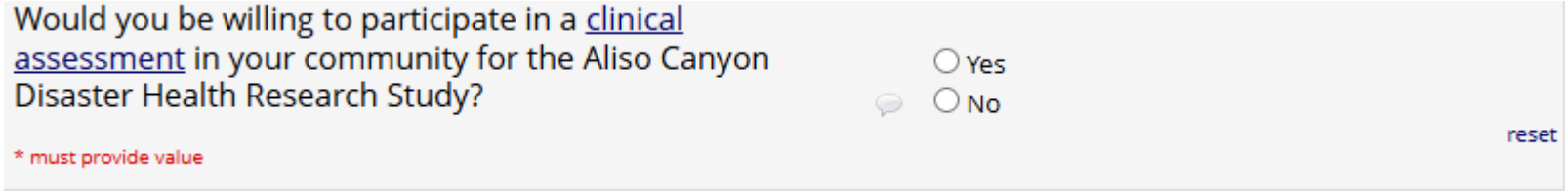
- 2,000 participants for the health survey (1,400 from affected area, 600 from comparison area).
  - Of the 2,000, 600 participants (400 from affected area, 200 from comparison area) will also take Clinical Assessment.

Recruitment Process

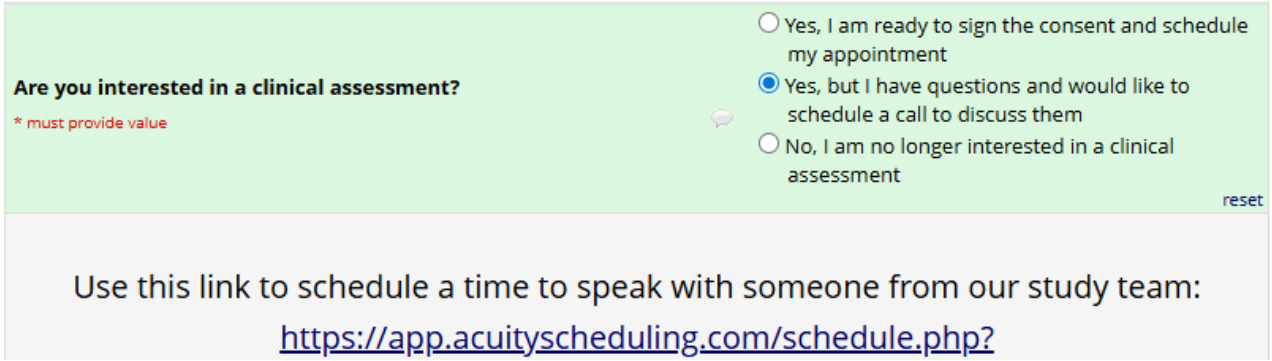
- Initial invitation letters are mailed to selected potential participants, in waves.
- The invitation letter includes direct web survey access, QR code, support phone line, and other contact options.
- Two reminder letters will be mailed to follow up, two weeks apart.

How to opt in to a Clinical Assessment

Last question in the Resident Health Survey:



Call-back option on Clinical Assessment Consent form:



Recruitment Updates

- **Recruitment letters are sent in waves**
  - 38,800 letters and postcards were sent out Nov 2025 – March 2026
  - 19,900 letters were mailed out last week

- **Many people have already responded, and more responses are being received as we move forward**
  - >860 participants have already finished the survey

- **Good consent rate for the clinical assessment**
  - >33.6% from the survey participants were eligible and signed consent for the clinical assessment

- **With multiple waves of mailing prepared, we will be able to recruit 2,000 participants for the survey with 600 survey responders also agreeing to conduct the clinical assessment**

Clinical Biomarkers & Metabolomics

143 of 600 Clinical Assessments' blood draws completed to-date

STATE BIOBANK NEONATAL BLOOD SPOTS

- 2600 total state biobank blood spots:
  - 1550 from infants born to mothers living in disaster affected communities and 1050 from matched unaffected (unexposed) communities
  - 1/3 before, during, and after
- Randomly select 1000 from affected communities
- Randomly select 550 blood spots from babies born with an adverse birth outcome in the affected communities 2010-2019
- Randomly select 500 blood spots from all babies born in the unaffected comparison communities 2010-2019 as an additional control population
- 550 blood spots of adverse birth outcome babies from the unaffected comparison communities 2010-2019

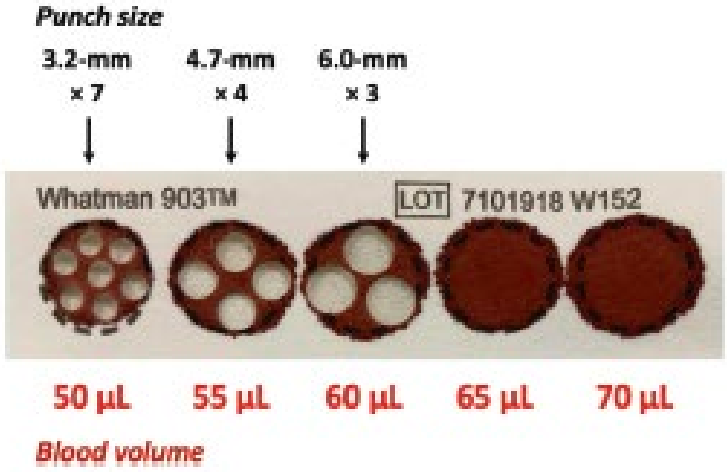
Blood spots for Metabolomics

Accessing blood samples from babies born before, during, and after the event

Performing targeted and untargeted metabolomics to assess unusual patterns of metabolism to identify possible pre-cursors to disease or abnormal development

Also allows for assessment of specific contaminants emitted during leak in blood (e.g., benzene)

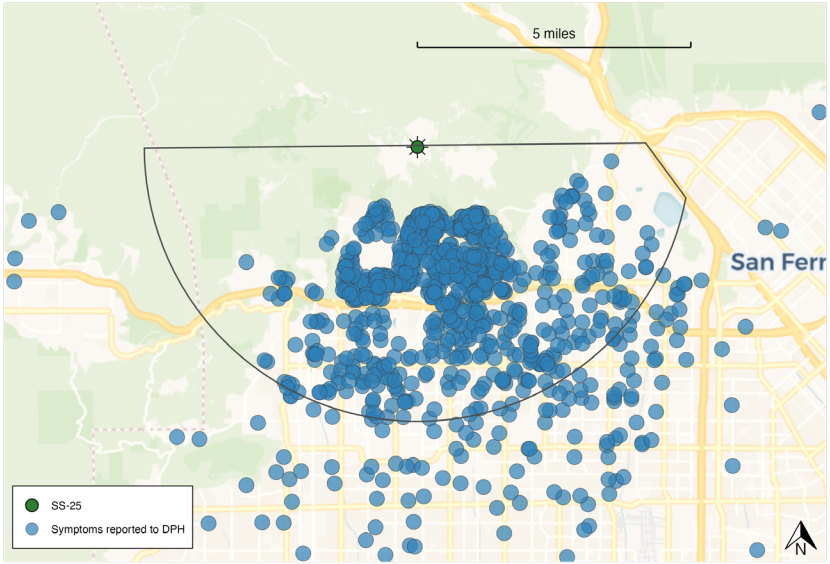
Guthrie Card Example



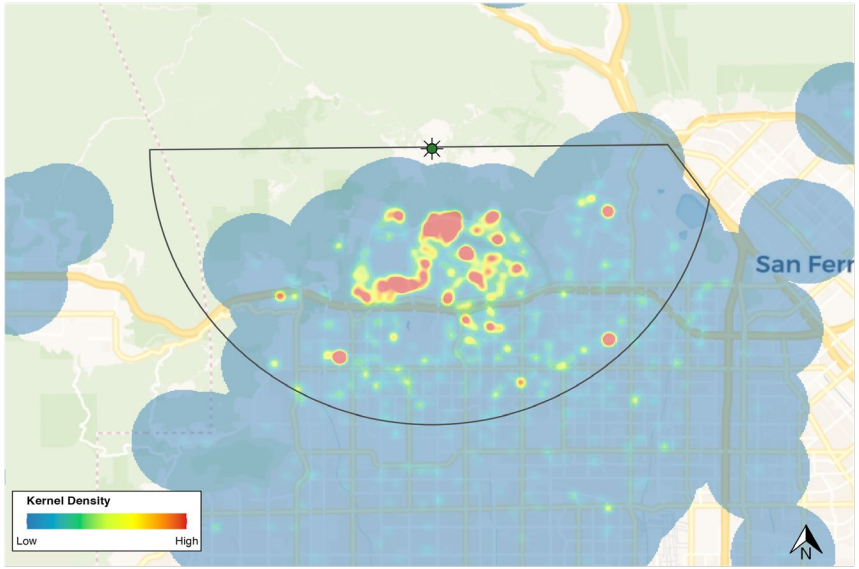
Jacobson et al. 2022

Symptom & Odor Reporting Analysis

Symptoms reported to DPH 2015 - 2020

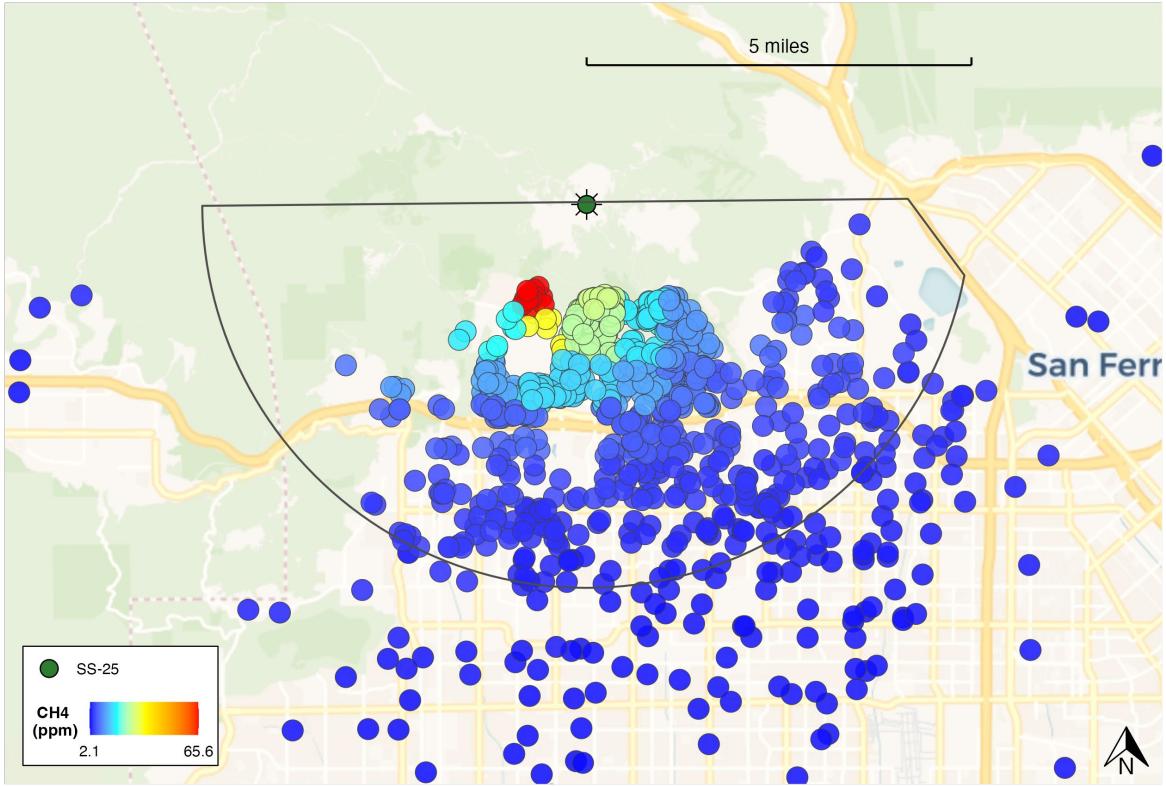


Density of symptom reports to DPH



Symptom & Odor Reporting Analysis

Methane (CH4) in ppm on Nov.1, 2015 at symptom report location



Study Publications

- Study Publications Submissions Update
  - Exposure risk assessment methodology (Community Mtg 4)
  - Changes in emergency department visits as an indicator of health impacts, in revise/resubmit (Community Mtg 5)
  - Outpatient visits, to be submitted (Community Mtg 7)
  - Birth outcomes spatial difference-in-difference (Community Mtg 3)
  - Gas line monitoring, indoor/outdoor air monitoring, and CONTAM modeling (Community Mtg 6)
- Gas monitoring data report back

Evaluation

https://tinyurl.com/3657z9xs

Q & A

Thank You