

# Social Determinants of Health and Informatics Intervention

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LINDSAY SOO

# Social Determinants of Health

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**“The conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.” – WHO 2017**

- Socioeconomic Conditions
- Social Support
- Education
- Social Norms/Attitudes
- Access to Transportation
- Physical Environment
- Housing and Infrastructure
- Language/Literacy

# Diabetes

1/3 of Americans have diabetes

Racial and Ethnic Minorities have a higher prevalence

Hispanic Americans are 1.5 times more likely to die, African Americans 2.3 times more likely

# IDEATel Project

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## **The Columbia University Informatics for Diabetes Education and Telemedicine**

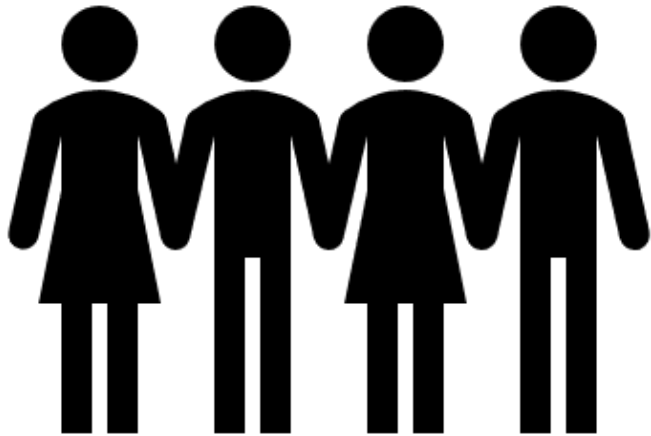
Measured the efficacy, acceptability and feasibility of telemedicine intervention for Diabetes

Video conferencing, educational websites, and remote monitoring of glucose and Blood pressure

Medically Underserved areas of New York

# IDEATel Project

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## Participants

- 1,665 Medicare Patients enrolled
- > 55 years old
- Ethnic and racially diverse patients
- Majority had household income < \$30,000

# Results

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Significant decrease in HgbA1c 1 year post intervention

Minimal change in LDL and Blood pressure levels

High satisfaction from intervention group

# Evaluation

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Effective Intervention, high user satisfaction

Expensive to implement

Takes time to teach patients how to use technology

# Asthma

Asthma Affects 25 Million in US

Environmental pollutants are a risk factor

Children and Non-Hispanic Blacks have highest prevalence



# Air Louisville

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## “Improve Asthma, Together”

- Louisville is one of the worst cities in the country for air quality
- Implementation of sensors on rescue inhalers






# Results

- Millions of data points collected
  - Location
  - Temperature, humidity
  - Air pollutants
  - Tree cover
- Healthcare costs quantified
  - \$14.8 million in 2015 – 2016
- Smart phone app developed to inform risk


# Results

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Participants doubled symptom  
free days

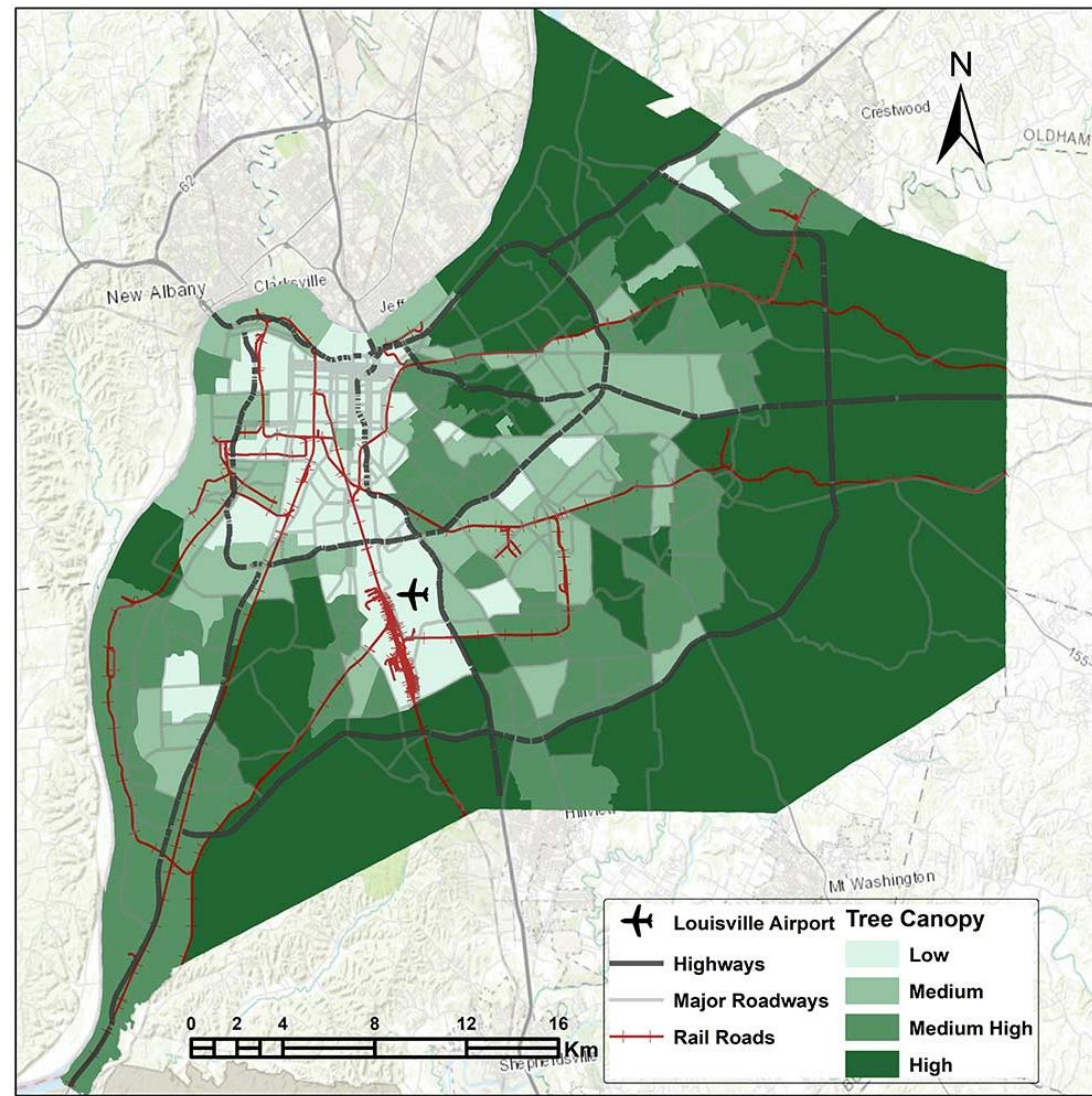
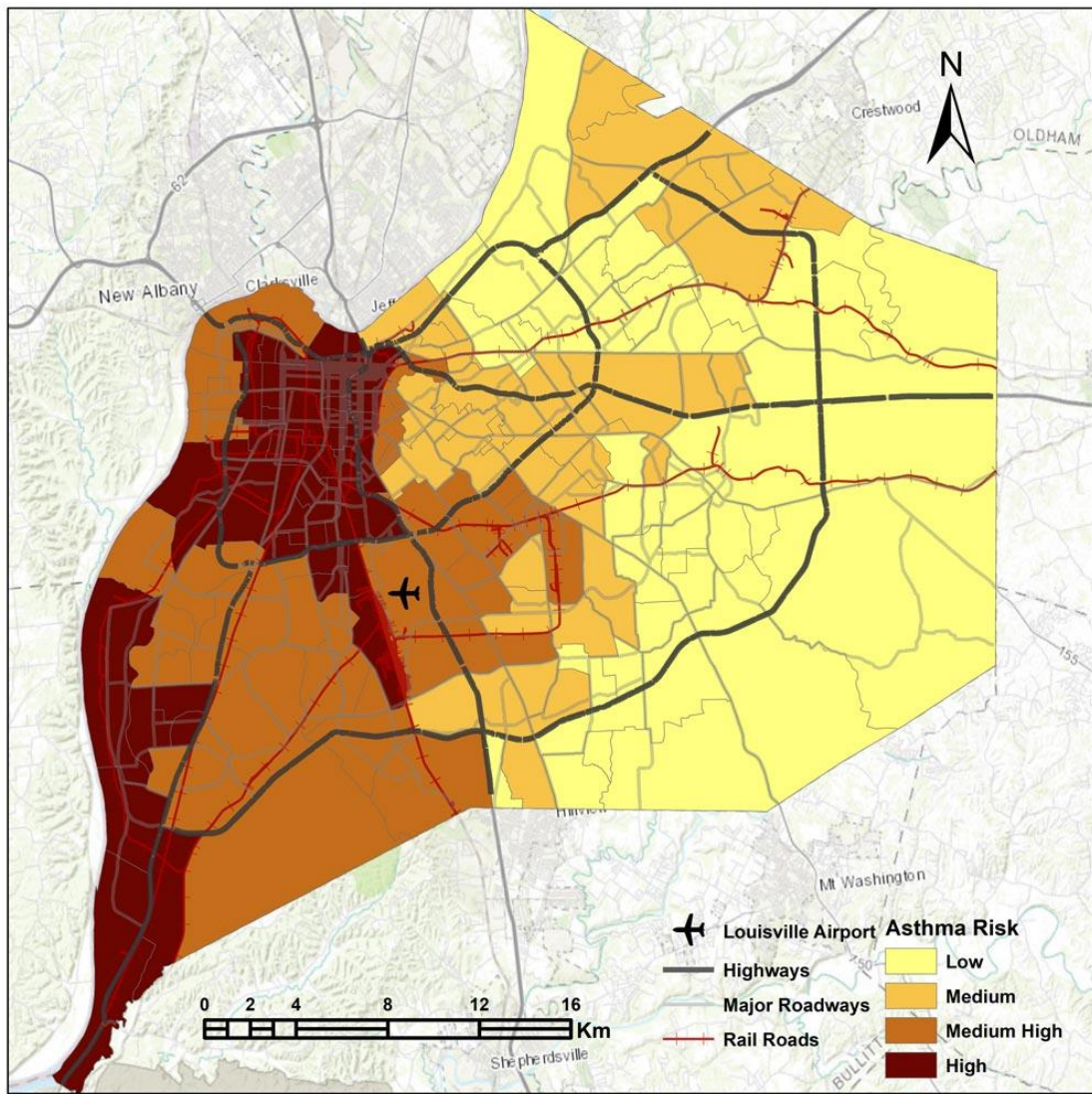


Over 80% reduced uses of  
rescue inhaler



19% increase in symptom free  
nights





# Next Steps

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1

Tree planting  
campaign

2

Change truck  
routes

3

Push for change in  
city zoning policies

# Evaluation

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System Implementation

Action Taken

Methods of Recruitment

Areas for Improvement

# References

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# Questions?

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