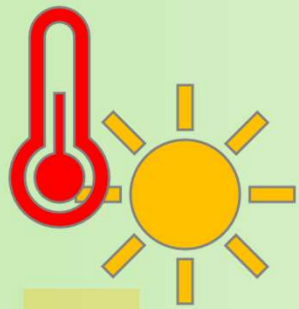


# Heat and Air Quality related Cause-based Elderly Mortalities and Emergency Visits

## METHOD

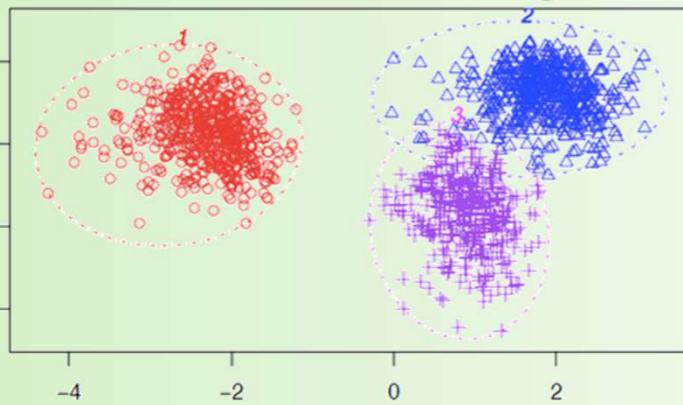
A novel combined multi-dimensional hierarchical and *k*-means clustering approach to assessing the impact of the short-term variations of environmental variables on community health responses.



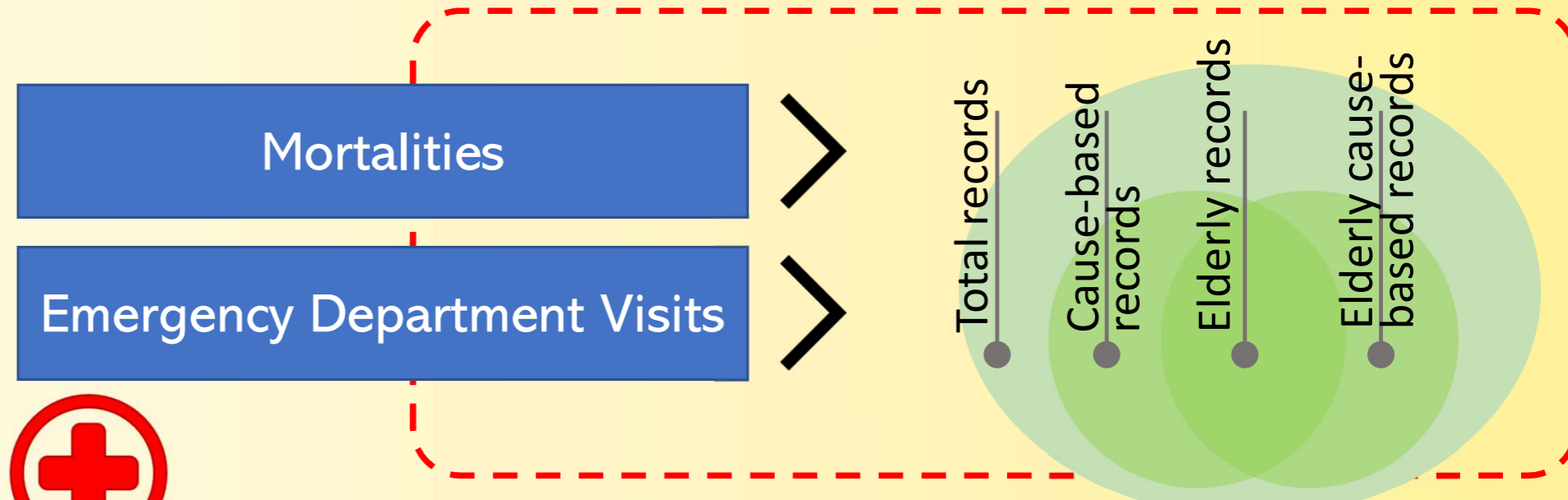
Ambient temperature  
Relative humidity



Ground-level ozone  
Fine particulate matter



Columbia University  
Mailman School of Public Health



Moderate environmental variables

Extreme heat conditions and poor air quality levels

Short-term daily total mortalities and emergency department visits

Short-term daily elderly cause-based mortalities and emergency visits



Respiratory and cardiovascular patients, especially elderly people, are at greater risk of poor environmental conditions, while the elderly sector is more vulnerable to environmental changes