Lifestyle Changes More Effective at Preventing Chronic Disease
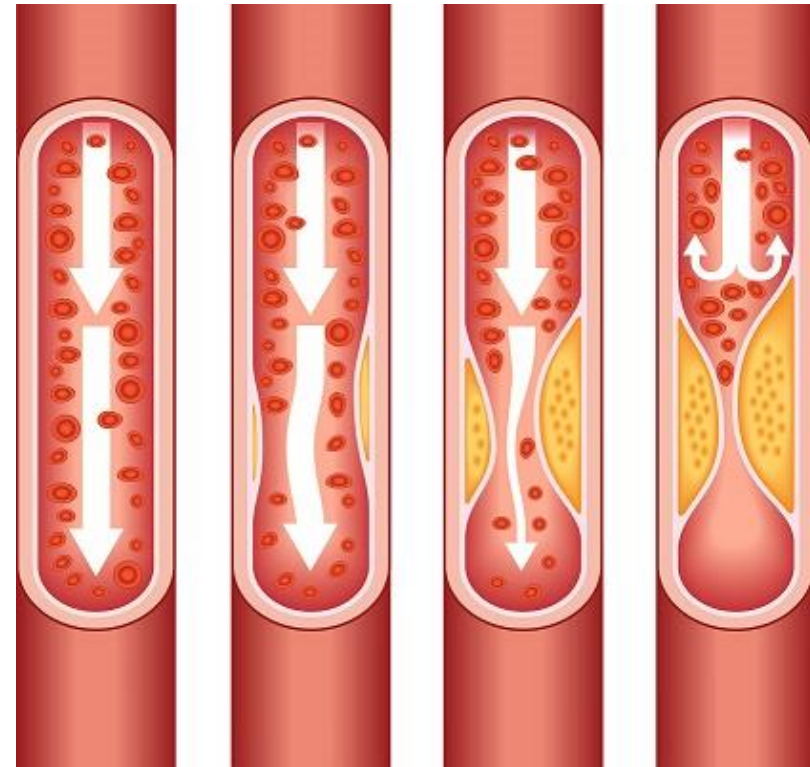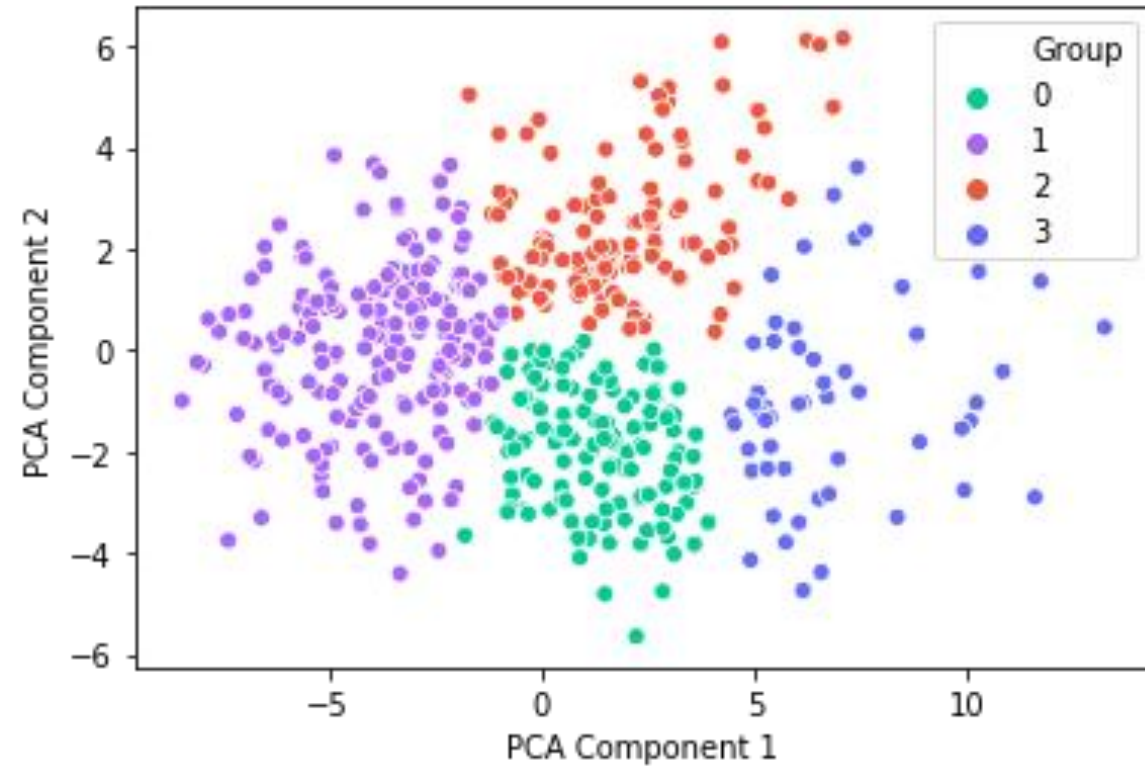
Rachel Khoo

Thinkful Capstone 3

October 2020

Many chronic disease can be prevented

- Heart disease is the highest killer in the US

- Cholesterol screenings

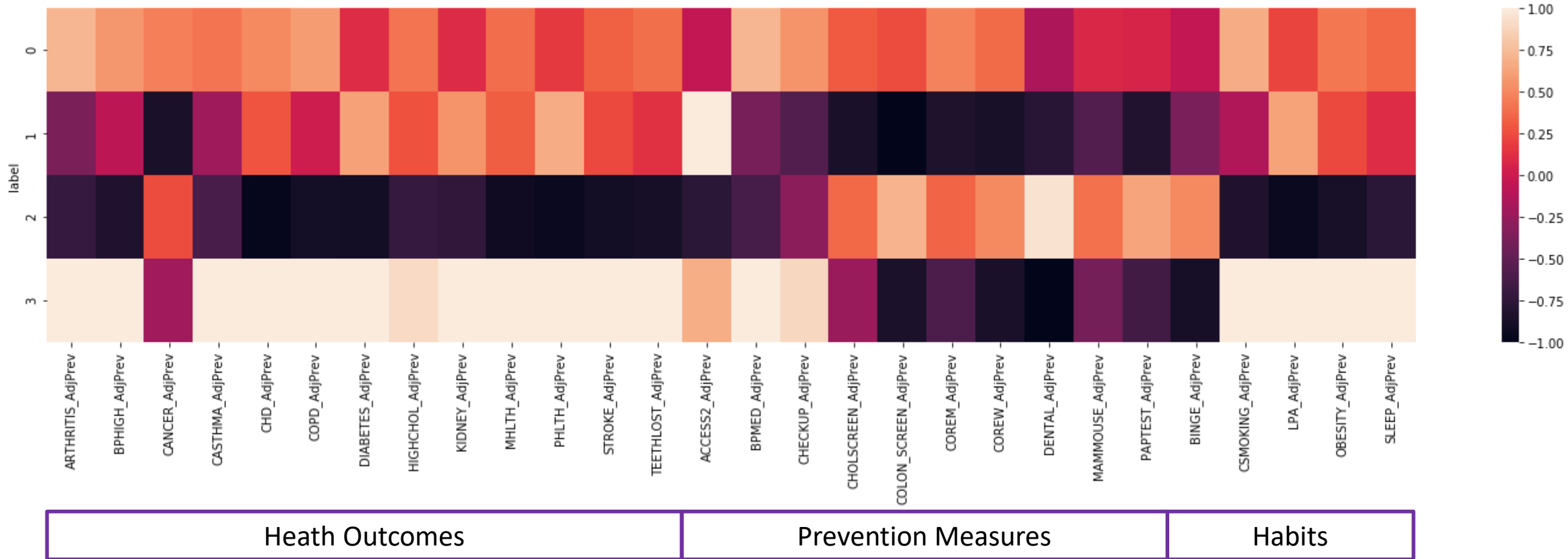- Blood pressure medications

- Physical Activity

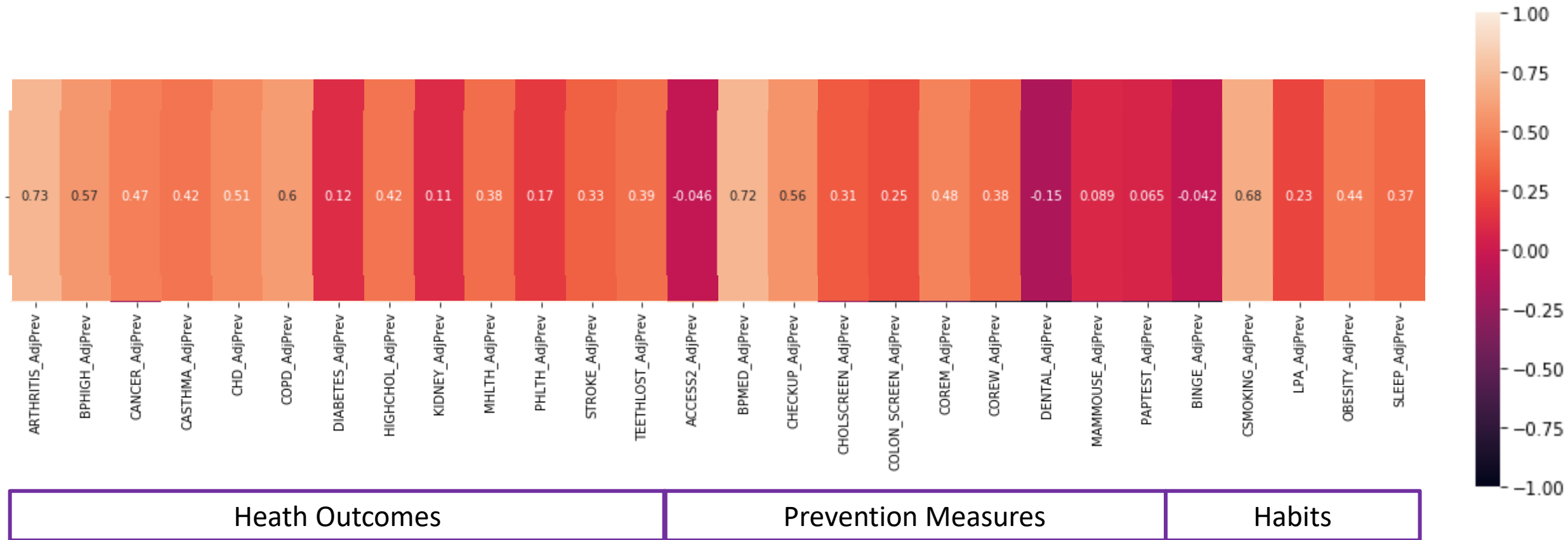# Who needs to be targeted for prevention?

- Kmeans clusters health data into four groups

    - Health Outcomes

    - Prevention Measures
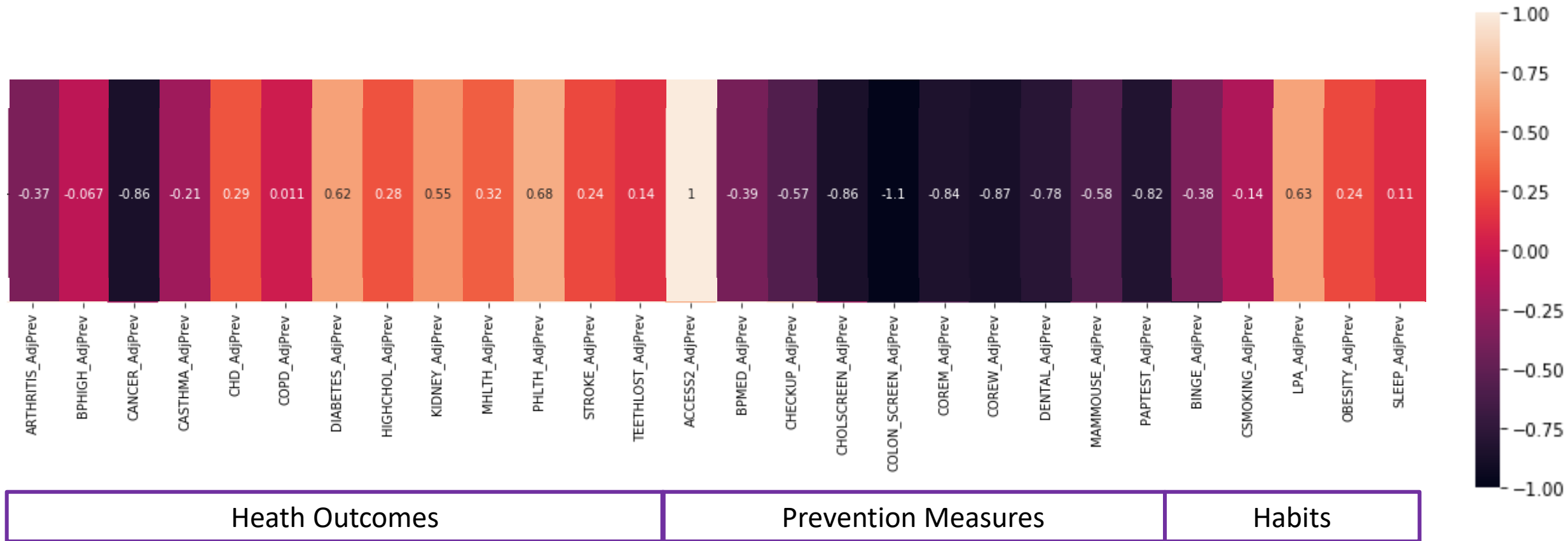
    - Behavioral Risk Factors
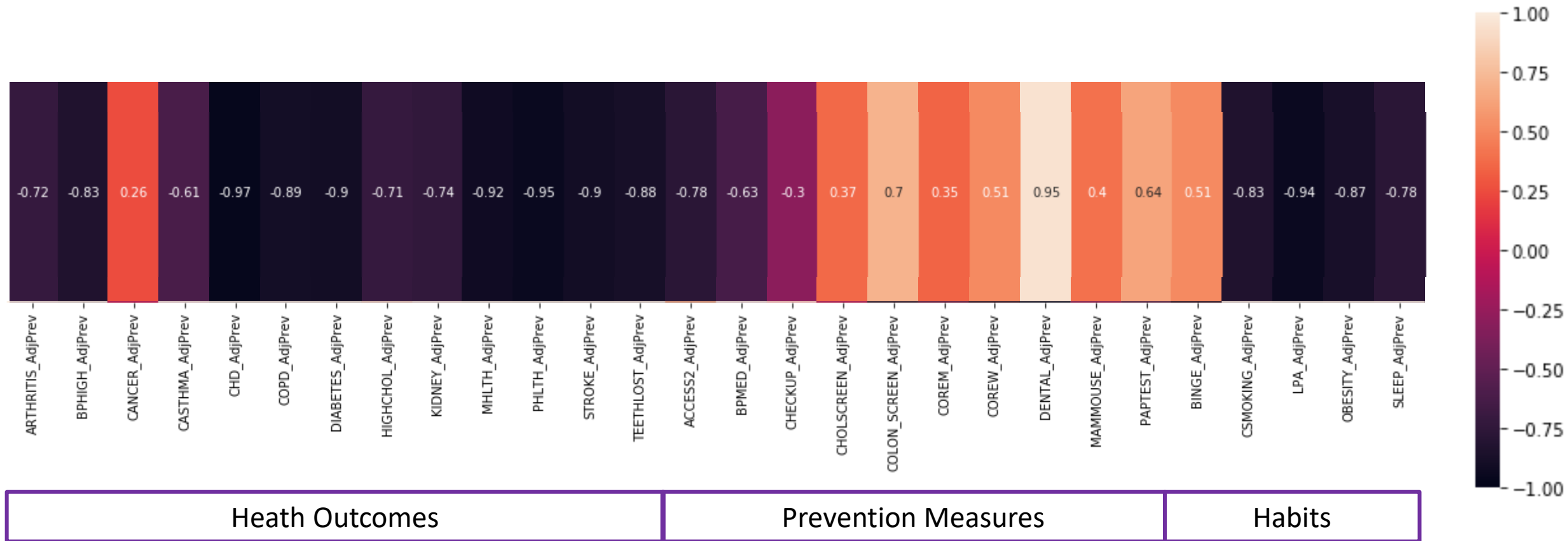
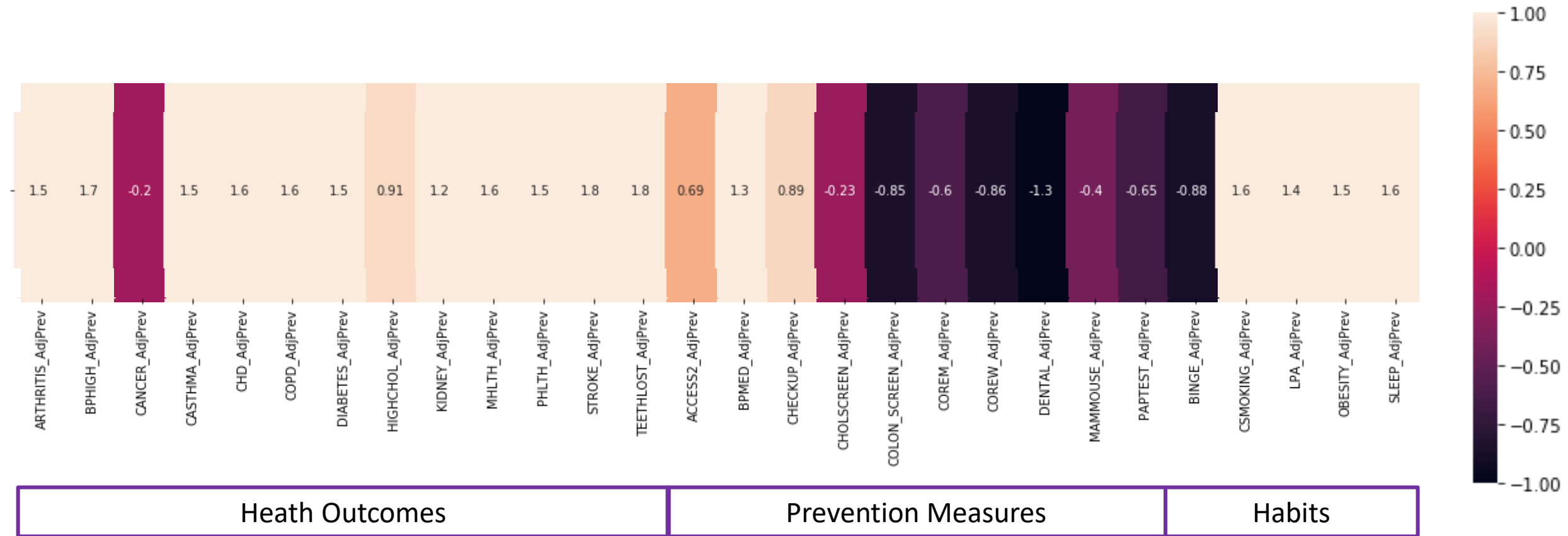# Who needs to be targeted for prevention?

Group 0 – Bad habits cancel out prevention

Group 1 – No prevention and bad habits

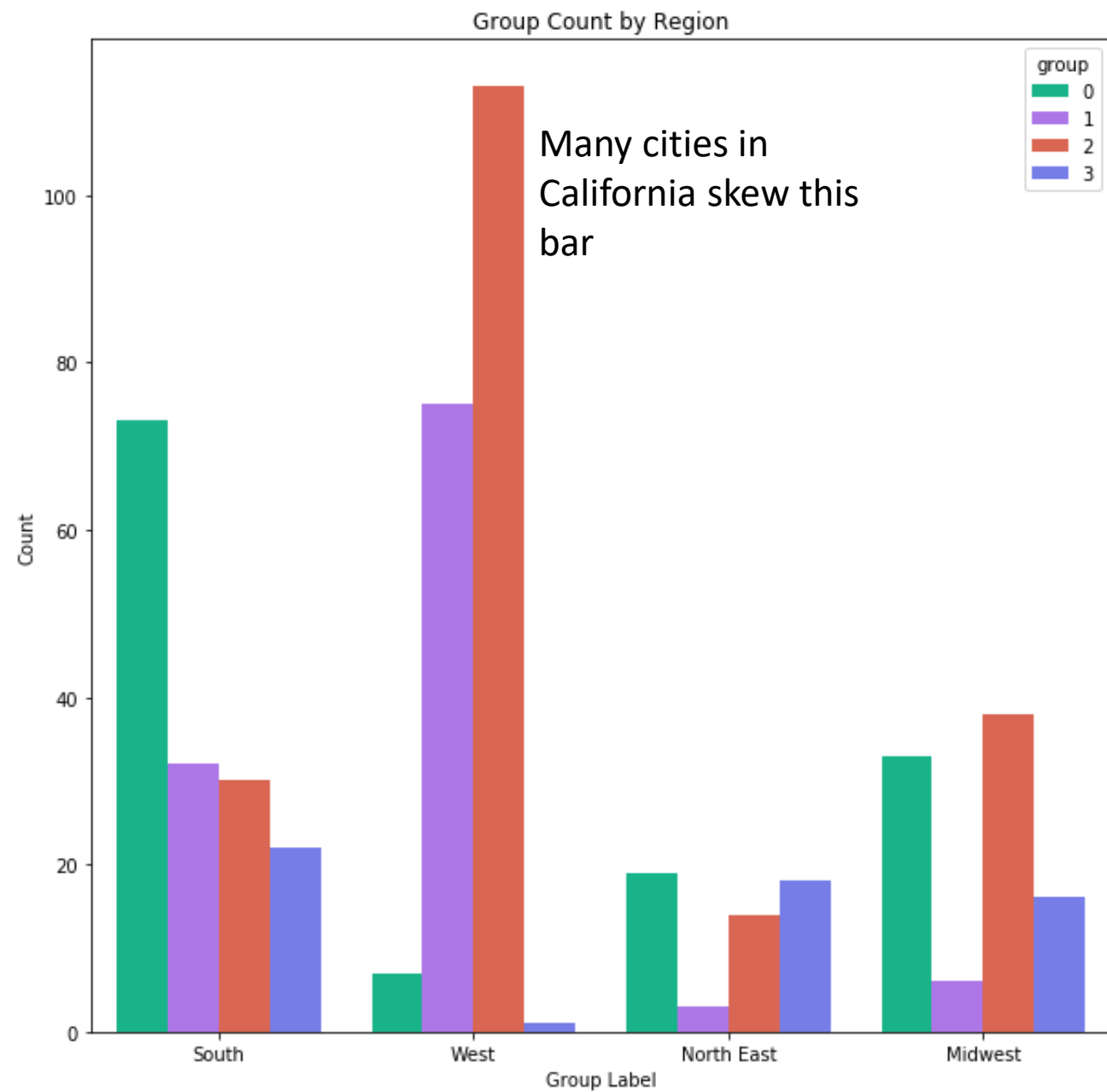# Group 2 – Prevention without bad habits

Group 3 – Bad habits dominate

Group Count by Region

Geographic Distribution of Groups

Geographic Distribution of Groups

Group
- 3
- 2
- 0
- 1

Prevention overshadowed by habits

Mainly eastern states

Geographic Distribution of Groups

Group
- 3
- 2
- 0
- 1

No prevention and bad habits

Generally southwest
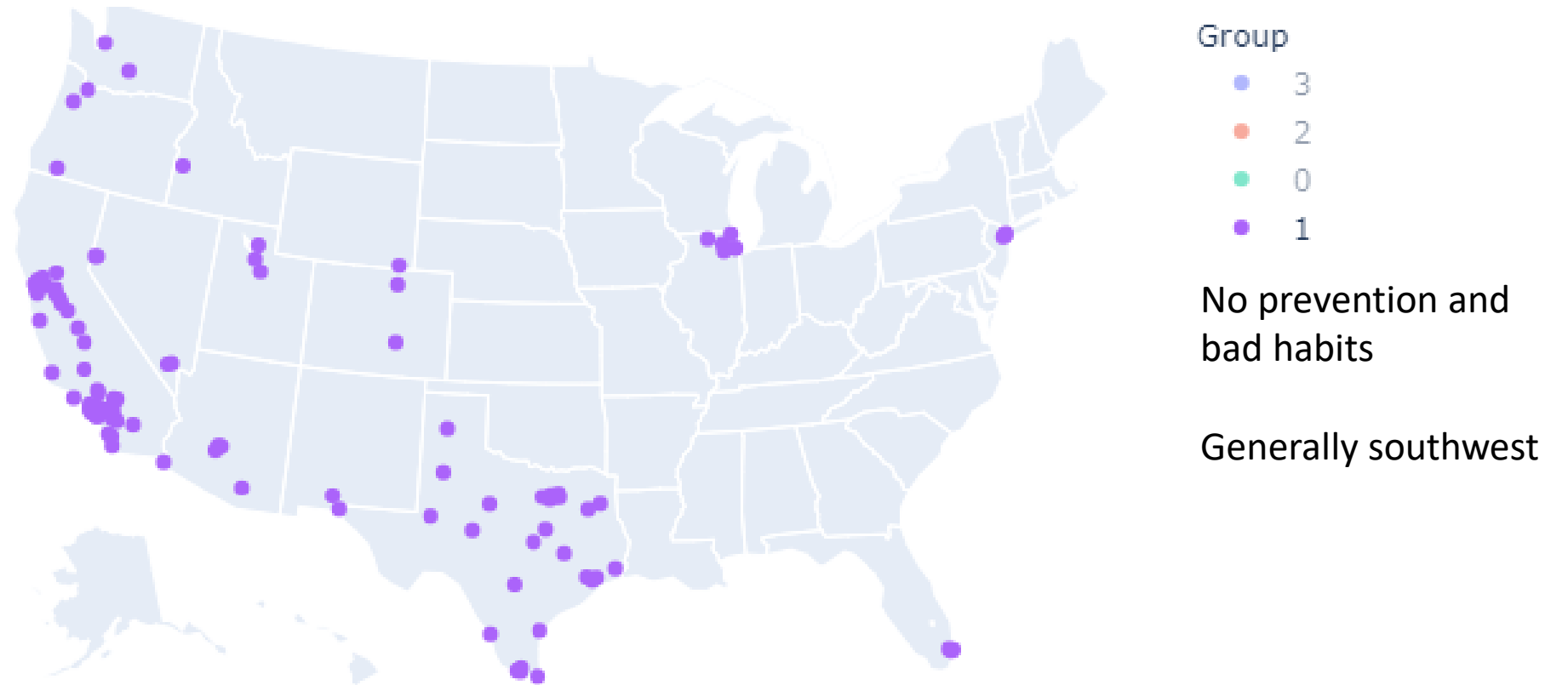
Geographic Distribution of Groups

Group
- 3
- 2
- 0
- 1

Prevention without bad habits

Mostly in large cities
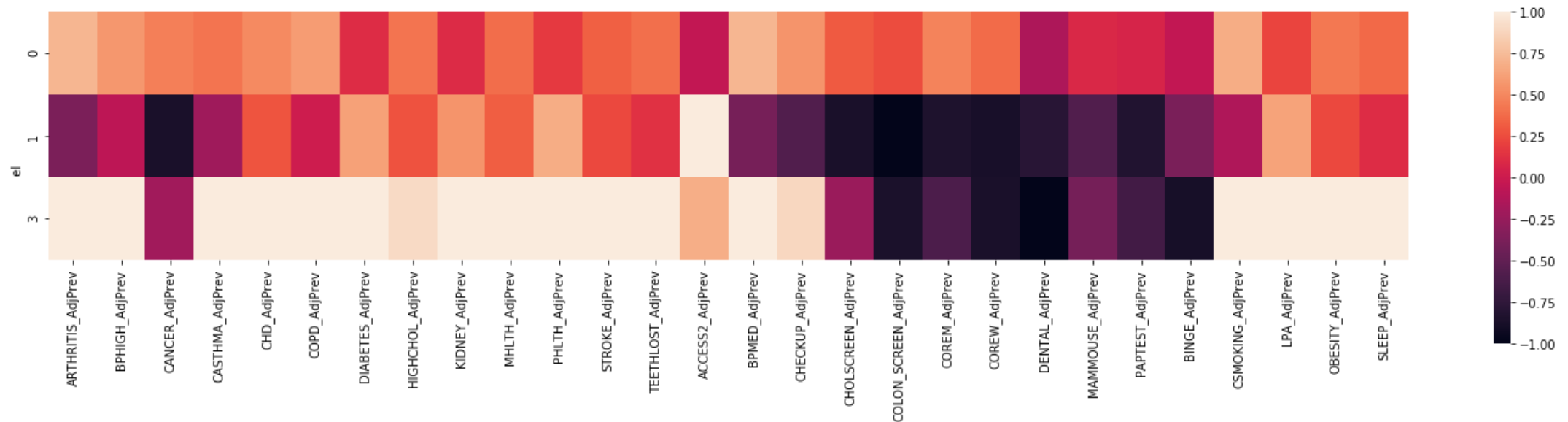
Geographic Distribution of Groups

Group
- 3
- 2
- 0
- 1

Bad habits dominate

Mainly east and south

Prevention isn't the most effective strategy

- Lack of access to healthcare

- Poor lifestyle choices

How do we lower rates of heart disease?

- Focus on lifestyle changes

- Medications and screenings

- Incorporate into insurance

	Yes	No
1. Cancer (if yes, location and type of cancer below) Location and type of cancer _____ Circle one: Stage 1 / Stage 2 / Stage 3 / higher Date of remission (if applicable): / /	☐	☐
2. Cardiac or Heart Disease / Disorder if yes, check all that apply: ___ heart attack, ___ bypass surgery or angioplasty on single vessel, or ___ bypass surgery or angioplasty on multiple vessels; ___ other (list here):_____ such as: abnormal heart rhythms, aneurysm, aortic dissection, heart failure (congestive or otherwise), heart valve disorder, or peripheral arterial disease	☐	☐
3. Diabetes (if yes, list type 1 or 2) Type: _____ List 3 most recent HbA1c / fasting blood sugar levels: 1) 2) 3)	☐	☐
4. High Cholesterol (if yes, list 3 most recent readings) 1) 2) 3)	☐	☐
5. High Blood Pressure (if yes, 3 most recent readings) 1) 2) 3)	☐	☐

	Yes	No
6. AIDS or HIV+	☐	☐
7. Arthritis (i.e. rheumatoid, osteo, psoriatic, gout)	☐	☐
8. Back Disorder (i.e. degenerative disk disease, herniated disk, spinal fusion, spondylitis, strain)	☐	☐
9. Benign Growth (i.e. tumor, cyst)	☐	☐
10. Bowel (i.e. irritable bowel IBS, Crohn's ileitis)	☐	☐
11. Circulatory System Disease	☐	☐
12. Immune / Autoimmune Disease	☐	☐
13. Kidney Disorder (i.e. nephritis, renal failure)	☐	☐
14. Liver Disease (i.e. cirrhosis, hepatitis A, B, C, E)	☐	☐
15a. Mental Illness (i.e. mild or major depression, anxiety, bipolar disorder, or schizophrenia)	☐	☐
15b. Are you currently receiving counseling?	☐	☐
16. Muscular Disorder	☐	☐
17. Respiratory (i.e. asthma, allergies, pneumonia, COPD, emphysema, bronchitis)	☐	☐
18. Stomach (i.e. ulcer, acid reflux, GERD)	☐	☐
19. Substance dependency (i.e. alcohol, drug)	☐	☐
20. Transplants (if yes, list organ(s) below)	☐	☐

Further research could refine these groups

- Gender information

- Age ranges

- More cities surveyed

Geographic Distribution of Groups