W209 - Data Visualization
Proposal for Final Project
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Evolution of HIV/AIDS Infection Rates and Prevention Efforts
A Comprehensive National and State-Wide Analysis

Since the first case of AIDS was reported in 1981, the fight against HIV/AIDS[1] has changed and evolved over the last 36 years. Combatting this disease began as a grassroots effort, starting in San Francisco and New York[2], mostly because new infections were localized in urban areas. It was a discordant disease, affecting mostly gay men, drug abusers, and recipients of blood transfusions. Today, a cure is still elusive, despite advances in treatment to prevent new infections[3].

While grassroots efforts are effective in certain aspects, a national approach also needs to be leveraged. With this top-level approach, cities or states can communicate their best practices and learn from each other, as well as leverage funds to be most effective. Currently, there are two main sources of information at the national level - the Center for Disease Control (CDC) and the National Institute of Health (NIH).

Our Approach and Audience

Most urban areas have their own version of an HIV/AIDS foundation, or at least an LGBT center, drug abuse counselling, or similar that has information regarding HIV prevention. Unfortunately, there is not much coordination between agencies across state lines or nationally. Our approach is just that – How the HIV/AIDS infection has evolved in the country over time (the state wise variation)?

This information is helpful to those at the national level - the Federal government, the CDC, and various other agencies that study HIV. It is also useful for the local agencies without many resources - the small towns and rural areas - looking to more established organizations that can provide advice and assistance. What HIV prevention methods are most effective in areas around the country based on the contribution of each individual source to the infection rates?

Additionally, this information is beneficial to insurance companies. It is much less expensive to prevent disease as it is to treat it, however many insurance companies limit HIV-negative individuals from fully utilizing pharmaceutical prophylactics.

Our Proposed Project

The datasets we are looking tentatively at: the Center for Disease Control (CDC), the National Institute of Health (NIH), University of California San Francisco (UCSF) and AIDSVu. The CDC, NIH, and AIDSVu have information that drills down to the state level, which can be aggregated to produce national numbers. This information includes demographics (age at infection, race, gender, sexual orientation), method of infection (sexual, drug use, blood transfusion), location, and dates.

1 http://www.factlv.org/timeline.htm
2 https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5521a4.htm
3 https://www.preventionaccess.org/consensus

We are also looking into the level of funding that local or state agencies receive. This information is useful to see how well money is spent against fighting HIV, although this can become more of a grey area. For example, HIV infections are commonly diagnosed alongside other diseases and causes, which makes dissecting funds across several health issues quite difficult.