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**HSC 435**

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**Vaporizing Vaping**

***Problem:***

Vaping and e-cigarette use has been increasing at substantial rates in high school students nationwide. It has now become more common in high school students than in adults with 11.7% of high school students using e-cigarettes compared to only 2.8% of adults using e-cigarettes (California Healthline, 2020). High school students should not be vaping or using e-cigarettes due to the high amounts of nicotine content. One single JUUL pod, a popular brand of e-cigarettes, “contains as much nicotine as a pack of 20 regular cigarettes” (CDC, 2020). Nicotine is highly addictive and can affect the development of adolescents' brains, considering it is not fully developed until around the age of 25. In addition, adolescent use of nicotine can harm the parts of the brain that control attention, learning, mood, and impulse control (CDC, 2020).

Currently in Los Angeles (Zhu et al, 2019) County, 30% of high school students use e-cigarette products and 10% of them are regular users. E-cigarettes are the most commonly used tobacco product among high school students in L.A. County. According to L.A. County of Public Health, “from 2015–16 to 2017–18, the overall tobacco use among high school students in Los Angeles increased from 10.6% to 11.6%” and there was an “increase in the use of e-cigarettes, from 6.4% to 10.0%” (2019). Although this increase was not significant, the increase in e-cigarette use was statistically significant.

Vaping is a menace to the health of high schoolers. If this public health problem is not solved, the life expectancy of high school students who use e-cigarettes will decrease. The Center for Disease Control and Prevention (CDC) states that “if cigarette smoking continues at the current rate among youth in this country, 5.6 million of today’s Americans, younger than 18, will die prematurely from a smoking-related illness. That’s about 1 of every 13 Americans aged 17 years or younger who are alive today” (2020). Although there is not yet much research on the long-term health effects of e-cigarettes, there has been a plethora of research about the short-term and long-term health effects of nicotine and the many other harmful chemicals in e-cigarettes.

***Relevance to Program:***

In L.A. County, vaping is becoming more prevalent in high school students. In Long Beach Polytechnic High School, Michael Gray, a health counselor at this school, “surveyed about 300 students and found that 12% of those students smoke e-cigarettes or cigars” (Sanchez, 2019). This survey was just a small sample of students considering Long Beach Polytechnic High School is home to 4,026 students. The number of students who use e-cigarettes is expected to be much higher.

It is of vital importance to reduce the number of students who are vaping in Poly High. With this program, we will examine both county and national-level health data in order to implement a plan that will decrease the current known amount of students vaping in Long Beach Poly High School from 12% to 8% by May 2022. This plan will include primary, secondary, and tertiary prevention tactics in order to target as many students as possible. This intervention will repeat once every year until the current freshmen become seniors.

***Planning Team:***

*Organizational Roles:*

* **Organization:** Vaporize Vaping
* **Members:** Lan-Anh Le, Alyssa Baird, Yessenia Torres, Kasandara Alvarez
* **Program Development and Management:** Alyssa Baird
  + Provides framework for the program + population
* **Health Communication and Social Marketing:** Lan-Anh Le
  + Marketing to youth
  + Contacting external organizations
* **Data Collection and Analysis:** Kasandara Alvarez
  + Finds specific populations to work with
  + Tobacco Statistics
* **Evaluation/Interventions:** Yesenia Torres
  + Provides research on proper vaping interventions and evaluates previous programs done by others to improve the current said program
* These program members will work together to form decisions about how to combat vaping in highschoolers in the best manner by consulting one another. Executive final decisions will be made by the person in the Program Development and Management position.
* *External Organizations:*
  + **Long Beach Polytechnic High School**
    - https://lbpoly.schoolloop.com/carecenter
    - C.A.R.E. Center: Counselor -> Michael Gray
    - Jackie Lazatin: Medical Instructor
    - Principal: William J. Salas
  + **Long Beach Unified School District**
    - <https://www.lbschools.net/Asset/Files/Superintendent/Superintendent-Org-Chart.pdf>
    - Dr. Erin Simon: Student Support Services Director
  + **CDC**
    - Truth Initiative
  + **ASH: Action on Smoking and Health**
  + **Long Beach Department of Health and Human Services**
    - Long Beach Tobacco Education and Prevention Program
  + **American Cancer Society**
  + **Los Angeles County Department of Public Health**
  + **California Department of Public Health**
  + **American Lung Association**
  + **Lung Cancer Foundation of America**

***Groups Affected:***

E-cigarettes and vaping are often marketed as both an aid to ease off nicotine addiction as well as something to use for recreation; however, it has been shown that e-cigarettes have led high school youth to form negative health behavior habits and endanger their physical health as well as endanger those around them.

Introduced to the U.S. markets in 2006, vaping has already shown to have short-term impacts on communities within the country (CASAA, 2021). Though regulation has been attempted to pass to restrict or limit vaping completely, efforts were mostly combated and vaping rates among middle and high school students exponentially rose in 2013 within the U.S. due to marketing within the media as well as social media promotion (CDC, 2016). This is also the same time as when vape festivals began to occur and vape culture started to form into the mainstream, with the first Vapefest taking place in Virginia in 2010 (CASAA, 2021). Vaping exploded in middle and high schools from 2011 to 2015, with vape use among students going from 1.5% to 16% (CDC, 2016). By 2016, 4 out of 5 high school students have been exposed to vaping advertisements and media, which has been shown to contribute to a public health crisis (Kuo, 2019). It has been on the decline by 2020, but rates have been higher than previous national percentages at 19.6%.

Long Beach Polytechnic high school students are a primary example of the vaping epidemic’s effects. It has been shown that the youth, particularly middle schoolers and high schoolers, are most likely to use vape products such as e-cigarettes (CDC, 2020). In Los Angeles county alone, 11.7% of the youth are vape pen users and agreed that they would use more nicotine products in the future as well (Vogel et al., 2020). 83% of those that smoked in Los Angeles county reported using a flavored product, and 61% of users bought it directly from a vape shop (Kuo, 2019).  More specific to the Long Beach Polytechnic population, 12% of a sample of 300 students stated that they are current vape users.

Long term effects of vaping are still unknown, but public health officials have found that immediate short-term effects of vaping and its influence on future health behavioral actions on the youth to be quite dangerous and formative to new nicotine addictions. There have been multiple perspectives on these health issues. Many vaping companies have formed lawsuits against the FDA and have argued that vaping is actually beneficial to ease off nicotine addiction, especially those that have been seeking an alternative to cigarette smoking. There are several studies backing this claim, but the majority including governmental health organizations such as the CDC have found that the effects of vape is inverse, especially because of how the smoking population is mostly youth based (CDC, 2016). It has been found that 99% of vape products contain nicotine and that flavoring products within said e-cigarettes and vape pens have been found to be carcinogenic such as menthol (CDC, 2020). Nicotine is a highly addictive chemical, and as a result, most vape pen users in high school have used vape to explore different options of smoking including cigarette smoking. Many do not quit vaping and the many options flavoring provides encourages them. Most adolescents who smoke after using nontraditional flavors were more likely to vape 6 months later (Leventhal et al., 2019). High school students who traditionally use vape had a positive trend in increased usage and even linked tobacco usage 6 months into the future (Vogel et al., 2020).

Many public health officials worry that these statistics will show a trend in the future that leads to a developed nicotine addiction as well as future lung disease, including cancer. Recent outbreaks in severe pulmonary disease as well as the lung disease EVALI outbreak associated with vitamin E acetate in 2019 raise more awareness surrounding vaping (CDC, 2021). Public health officials and clinicians within the healthcare setting have pushed for more regulation regarding ingredients within vape pens and the sale of vape, even offering to raise the age of vape sales to 21 years.

***Distinct Subgroups:***

* High school grade levels (9, 10, 11, 12)
* Administration/faculty
* Parents
* Retailers/sellers
* Highly rated smoking states for teens
* Gender: higher prevalence in males

***Problem Statement For Specific Subgroup:***

**Grade Levels:** According to previous censuses of the Los Angeles area, 78% of 9th grade students stated having never used an e-cigarette. However, the rate drops by over 5% by the 11th grade year. It was also found in a 2018 study by CNN that 9th grade students who reported e-cigarette usage were 4 times more likely to partake in more advanced forms of drugs by the 11th grade year (Moulite, 2018).

**Administration and Parents**: In today’s era, children can get their hands on vape products through online shopping. With the ability to easily bypass age verifications, there is a 94% success rate of underaged users getting vapes delivered to their front door with few parents having any clue. To further the problem, disposable vapes are becoming more predominantly sold on school campuses, making it harder for parents and faculty to eradicate.

**Retailers:** Vaping products are a 2.5 billion dollar business. No matter how many laws and regulations are enforced by the states, retailers will continue to sell to make their profit. Vape shops won a concession that allows them to temporarily sell tank-based valored products which allows consumers to mix their own flavors in their tobacco products (Alltucker, 2020). The loophole in the new regulations is mandated for pre-filled products only. Therefore youth communities can still get their hands on flavored products from single use vapes such as Puff Bar and Posh.

***Subproblem Description:***

The population that is affected is high school students in the grades 9th-12th, parents, administration/faculty, retailers/sellers, gender: males, and states with high rates of teen smoking. The high school students are affected since their health is being affected. They become addicted to nicotine and inhaling smoke in their lungs which causes additional issues. The parents are affected since they are responsible for their children, especially if they are minors. Administration is affected since they have to constantly regulate the schools on vaping, and make sure their students are aware of the side effects since it is a new trend for that age group. The retailers/sellers will also be affected since there are campaigns to stop using these products, their sales are most likely going down.

The ultimate goal is to decrease the rates of teens using these vaping devices, specifically teens from Long Beach Polytechnic High. Some health conditions can be caused from smoking using vaping devices can be very severe. The Centers for Disease Control and Prevention (CDC) states, “Most e-cigarettes contain nicotine. Nicotine is highly addictive and can harm adolescent brain development, which continues into the early to mid-20s” (CDC, 2020). The younger the individual begins to use e-cigarettes, the more likely they are to continue to use them in their adult life which could cause severe brain damage and a higher chance to be interested in other drugs.

***Possible Factors and Variables to Project Direction:***

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| Factors/Variables | Internal:  -Long Beach Poly High School staff/students  -Parents/Guardians of children | External:  -Any economic (funding) issues that may play a role  -Local E-cigarette businesses  -Ex-cigarette users who find e-cigarettes to be helpful |
| Positive | Strengths:  -Easily accessible facts to prove points  -Internet offers many resources  -Schools are now talking about the negative effects on e-cigarettes | Opportunities:  -To greatly impact these high school students with the given information  -reduce/eliminate the usage of e-cigarettes in high school  -reduce the use of drugs/addiction |
| Negative | Weaknesses:  -financial resources require more work  - these teens are constantly being told what to do, so capturing their attention may be difficult | Threats:  -E-cigarette companies may come back to back up their case  -Schools may not be open to our organization |

***Direct and Indirect Causes of Vaping:***

There are many causes that contribute to high schoolers vaping. The causes can easily be split into two categories, direct causes, and indirect causes. Direct causes are behavioral, biological, or psychological factors that cause the health behavior. For vaping, these causes are curiosity, addiction, entertainment, susceptibility to peer pressure, and relaxation or stress reduction.

Indirect causes are social, environmental, or political factors that play a role in the direct cause. In regards to high schoolers vaping, examples of indirect cause would be their social circle and environment, the vaping industry targeting high schoolers for their products by creating fruity and minty vape flavors, misinformation about e-cigs, and lack of policies for purchasing e-cigs/vape products.

***Subproblem Prioritization:***

The subproblems significant enough for intervention are curiosity, addiction, and the vaping industry targeting high schoolers for their products. According to the CDC, the most common reason why high schoolers used e-cigarettes was that “[they were] curious about them (55.3%)” (2019). Furthermore, many users of e-cigarettes get addicted very quickly due to the high doses of nicotine, an extremely addictive chemical. High schoolers are more at risk of becoming addicted to e-cigs because “[their] brains are more vulnerable to nicotine than older populations” (Cooper et al., 2016). Lastly, the vaping industry targets high schoolers by producing a wide variety of fruity and minty flavors that intrigue teenagers in trying them. According to Patrick et al., there are “over 450 e-cigarette brands and 7700 flavors exist today, marketed to youth” by producing flavors  “such as mint, candy, fruit or chocolate” (2016).

***Subproblem Goals:***

**Underaged High School Students:** To improve the overall quality of life by decreasing the usage of vaping products among the Polytechnic highschool students in Long Beach, CA.

**Parents/Family Members:**To increase the awareness of the harmful effects of vaping products by providing the needed knowledge to the parents of all Polytechnic high school students in Long Beach, CA.

**Administration/Faculty**To enhance protocol of vaping usage on campus by creating new standards that must be followed by administration and faculty members at Polytechnic high school in Long Beach, CA.

**Retailers:**To decrease the advertisement and selling of all vaping products to minors by removing signs from windows and encouraging better protocols on profiling vaping customers surrounding Polytechnic high school.

***Discussion of Relevant Theories and Best Practices:***

**Curiosity:** As stated in the article, “E-cigarette curiosity among U.S. middle and high school students: Findings from the 2014 national YOUTH TOBACCO SURVEY,” curiosity is one of the main reasons adolescents engage in e-cigarette usage. A large contributing factor to the curiosity in the adolescents was advertisement of the products, brands, and flavors (2016). The use of legislative strategies can provide communities with a forced need for change. Enforcing new policies and laws throughout communities can prevent the onset of tobacco usage among adolescents. Eradicating enticing flavored products can help in reducing the usage of e-cigarettes among minors. Enforcing policies throughout retail operations and creating repercussions for the selling illegally can aid in the eradication of the epidemic. Restrictions on age, flavours, and advertisement are all linked to reducing the susceptibility of nicotine usage by encouraging participation of both legislation and the FDA. This has been demonstrated in more recents years with the ban on flavoured vaping cartridges.

**Addiction:** The research also suggests that students increase in usage was linked to their perception of its addictive capabilities. Adolescents characterized the products to be less harmful, less addictive, and overall safer than cigarettes. Health communication and education strategies are great for influencing individuals and enhancing the quality of health. Primary prevention tactics can work best in the adolescent communities to ensure the reduction of harm. Educational strategies can provide the targeted population with a broader understanding of the risk factors associated with vaping. Increasing awareness and knowledge can influence better behaviors and attitudes towards eradicating e-cigarette usage among adolescents.  The strategy can also easily be implemented in school based settings and throughout communities. Providing faculty with the knowledge to implement throughout the school systems can become a primary prevention tactic that would allow students the opportunity to change behaviors or get help. However, the strategy for behavior changes is up to the individual to make the cue for action. Educational strategies could also be targeted at the parents and guardians in settings such as parent nights, emails, and phone calls. Targeting educational strategies for parents and guardians can aid in limiting the usage outside of school campuses and provide better knowledge of signs and symptoms to look out for. Some interventions set in place that work to educate students on the effects of e-cigarette usage include: CATCH my breath and Get smart about tobacco. These interventions both target adolescent communities and aim to educate them on all factors associated with nicotine usage.

**Vaping Industry:** Similarly, such tactics could be beneficial in eradicating the vaping industry. The use of legislative strategies can provide communities with a forced need for change. Enforcing new policies and laws throughout communities can prevent the onset of tobacco usage among adolescents. Eradicating enticing flavored products can help in reducing the usage of e-cigarettes among minors. Enforcing policies throughout retail operations and creating repercussions for the selling illegally can aid in the eradication of the epidemic.

**2.5 SWOT Analysis**

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| *An intervention that may affect the problem is*  Stronger Enforcement of Tobacco Policy |
| ***Internal*** factors that influence your agency's ability to implement the intervention |
| **Strengths**   * Force youth to comply with laws * Incentive to stay sober to avoid punishment |
| **Weaknesses**   * Enforcement can be costly * May encourage less safe methods of using vape pens |
| ***External*** factors that influence your agency's ability to implement the intervention. |
| **Opportunities**   * Large public support and backing of funding by government |
| **Threats**   * Tobacco industry pushback * Black market of vaping products |
| What ethical considerations must be considered for this strategy?  Ethical considerations that must be considered for this strategy include proper enforcement that doesn’t target subgroups of youth unethically and reduction of racial/ethnic bias. Additionally, enforcement must be done with fair treatment that is not in any way abusive or shows an abuse of power. |
| What aspects of your agency need to be strengthened to carry out this activity?   To carry out this activity, communication with other organizations must be increased. Funding also must be increased and resources to find or educate trained individuals to properly enforce said policies must be increased as well. A strong rulebook that compromises with tobacco companies but holds strong against vaping policies must be considered. Corporations must take a bigger hit with cut sales than small businesses. |
| Summarize the needs of your intervention:  This intervention requires proper enforcement training, stronger and more specific policy, as well as increased funding and public support. |

**SWOT and Ethics Intervention Worksheet**

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| *An intervention that may affect the problem is …*  Increased health education / policy surrounding vaping (evidence of bad links, demonstrations of unknown risks/untreatable symptoms) |
| ***Internal*** factors that influence your agency's ability to implement the intervention |
| **Strengths**   * Evidence has shown that education among youths is effective * Strong research backing education, teachers can easily implement in their curriculum |
| **Weaknesses**   * Requires more funding to school * Youth may not be interested in listening in the first place * Information and statistics must be constantly updated |
| ***External*** factors that influence your agency's ability to implement the intervention. |
| **Opportunities**   * Government, schools are largely in favor of education * Parents in favor of education |
| **Threats**   * Conflicts from tobacco industry, misleading information given out to contrast concepts given in classes * Not the only message students hear about tobacco |
| What ethical considerations must be considered for this strategy?  Tobacco agencies pushing against health education will be likely. The false and misleading arguments that the youth will be receiving must be considered. Teachers need to educate in a strong manner. |
| What aspects of your agency need to be strengthened to carry out this activity?  Funding to educational programs that have been researched to do well must be increased. Increased communication with schools, health agencies, and the government must be carried out. Resources that have been encouraged by lesson plans must be sure to be accessible to students. Content must be relevant. |
| Summarize the needs of your intervention:   This intervention needs proper funding, ensured evidence backed content, and public support. |

**SWOT and Ethics Intervention Worksheet**

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| *An intervention that may affect the problem is …*  Increased age restriction to tobacco |
| ***Internal*** factors that influence your agency's ability to implement the intervention |
| **Strengths**   * Lowered accessibility by an age restriction would allow for vaping usage to decrease among the youth demographic * Still allows for smaller stores to sell for profit * Legal punishment for breaking age discourages youth vaping |
| **Weaknesses**   * Still obtainable online, difficult to enforce online * Hard to enforce at times, especially online |
| ***External*** factors that influence your agency's ability to implement the intervention. |
| **Opportunities**   * Support from government, parents |
| **Threats**   * Youth refusing to comply * Tobacco industry pushback |
| What ethical considerations must be considered for this strategy?  Ethical considerations to be considered for this strategy include the age chosen - 21 and above is reasonable, matches with other substances and age restrictions, and is close to the moment the brain fully develops, so if one chooses to vape, there are less pressures, responsibility falls on the adult, and the brain is more reasonable to choose to vape or not to vape. Issues do fall between freedom of choice and voluntary participation as well as internet regulation issues |
| What aspects of your agency need to be strengthened to carry out this activity?  More influence in the political and public sphere surrounding tobacco narrative, funding to push against tobacco company’s suggested legislation |
| Summarize the needs of your intervention:  Increased funding to combat tobacco agencies, increased political influence |

***2.6 Subproblem Interventions:***

**Underaged High School Students at Long Beach Polytechnic High School**

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| Interventions | Inputs | Outputs | Outcomes |
| 1. Increasing prices of vape products | * CDC * FDA Regulations * U.S. Federal Government * Community Votes | * Raise excise taxes * Implementing minimum price laws * Banning discounted vaping products | * Less incentive to purchase expensive products, especially for those at a young age * Reduced vape product sales * Reduced access * CONS: Pushback from vaping industry |
| 1. Implement Smoke-Free policies on campus | * Poly High School District Staff * Parent and Community influence | * Enforcement of smoke free policies * Teachers discouraging use * Signs explicitly stating no vaping on campus | * Difficulties vaping on campus discourage vape use (more effort to vape than not to vape) * Cleaner air on campus, better health for students * Focus on learning, not substance use |
| 1. Increased Anti-Vape Advertisements, Billboards | * AD Council * FDA Funding * CDC Funding | * Placement in highly visible areas, locations near schools and where students frequent * Billboards on freeways * Media PSAs on TV, radio stations, website ads, etc. | * Negatives highlighted from ads are reinforced in the mind * Thoughts form about the negatives of vaping * Statistics show form of evidence to students/youth that vaping is unhealthy |
| 1. Raising the minimum age of smoking | * U.S. Government, Congress * FDA Administration * CDC | * Enforcement of age increase * ID checks by cashiers * Put behind cash register counters like other adult product | * Youth has reduced access to vape pens * Difficulties purchasing discourage sales * More informed decisions at older age * Pushback from tobacco industry possible |
| 1. Reducing liquor stores and vape shops permitted near schools | * City Zoning Guidelines * FDA Administration * CDC * LB Poly School Districts | * No vape promotions near schools * No shops near schools | * Reduced access to vape pens * Difficulties purchasing discourage sales * Takes more resources to reach specific stores |

**Parents and Family Members of Long Beach Polytechnic High School**

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| Interventions | Inputs | Outputs | Outcomes |
| Interpersonal education promotion | * Traditional media materials * Social media materials | * Anti-vaping newsletters , infographics, and pamphlets mailed home * Parents practice being a good example, no vaping in front of children because of secondhand smoke * Parents discuss with children how to say no, etc. because peers are highest form of pressure * Monitoring of social media consumption * Workshops in schools informing parents about vaping | * Bonding time close with family * Child isn’t afraid to come to parent if trouble arises * Strong influence from parents may discourage use |

**Administration/Faculty Members of Long Beach Poly High School**

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| Interventions | Inputs | Outputs | Outcomes |
| 1. Individual Counseling/Cognitive Behavioral Therapy Access | * LB Poly High School * Healthcare services in the Long Beach Area | * Access to vaping counseling, medicinal care from the faculty * Informing students of access to resources | * Students that already vape are ready to seek help * Administration actively putting in efforts to assist students in need |
| 1. Administration Enforcement of Vaping Rules | * LB Poly High School * LB District Administration | * Hall monitoring of vaping * Teachers/faculty watch for those that vape * Counseling/punishments from school for vaping | * Students are wary of smoking on campus * Administration demonstrate that vaping has serious consequences * Discourage students to vape on campus |
| 1. Creating a period of class time to educate about vaping and its consequences, much like a workshop | * LB Poly High School * LB District Administration * CDC | * Informing students about vape and what it looks like * Informing students of health consequences * Discouraging negative coping mechanisms * Giving access to information about positive coping mechanisms | Students are educated about vaping and its addictive qualities  Students are able to make more active decisions to not vape based on provided reputable information  Staff is equipped to handle vaping in students |

**Retailers near Long Beach Polytechnic High School**

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| Interventions | Inputs | Outputs | Outcomes |
| 1. Reducing liquor store/vape shops permitted near schools | * City Zoning guidelines * FDA Administration * CDC * LB Poly School Districts | * No vape product promotions near school * No shops near schools | * Reduced Access to vape pens * Difficulties purchasing discourage sales * Takes more resources to reach specific stores |
| 1. Warnings on vape products sold | * CDC * FDA Administration | * Labels placed on packaging of vape * Vape stores have warning signs circulating dangers of vaping | * Discouragement from vaping * Reduced vape sales |
| 1. Retail staff education about vaping | * CDC * FDA administration * Long Beach labor organizations | * Staff in vape retailers are trained to discuss vaping consequences * Staff educated on warning students about vape when product is purchased | * Discourages vaping purchases from inconvenience * Purchaser reminded of vaping consequences |

***Resources/New Partners:***

The resources we have available are the statistics and factual evidence defending that vaping negatively affects teen’s health. Some resources we still need are partners who are willing to fund our program and who to reach out to.Some skills that are available are the ability to be open and relatable to the targeted population, knowledge from first hand experiences, and growing up in the targeted area.Some skills that are needed from partners are funding, campaigning, and organization within the program to keep it running. We have identified local school administration and the mayor of Long Beach to keep in contact with community leaders to ensure they are aware of our program. If our partner has a history of working with organizations like us it will help ours become stronger. They will know of any unexpected flaws since they have been through this before.

P**ersons or organizations that support our agency's initiatives:**

* Some organizations or programs that can support our agency are:
  + CARES Act
  + Downtown Long Beach Alliance
  + Long Beach Community Action Partnership 211LA
  + LA County Public Health
  + Mayor of Long Beach School Administrations
* Some partners that will help our organization are:
  + Teachers
  + Principals
  + Students
  + the mayor of the targeted population
  + city organizations
  + community centers.

Seeking partners that will help your program is harder than you think. You need to look for partners that complement your program. Since the targeted audience is teenagers from the ages fourteen to eighteen it makes sense to include school administrations and community centers that these teenagers use. City organizations are most likely to provide more funding assistance. The school administrators may provide insight on why and how these students become addicted to vaping products and nicotine at such a young age. Being professional ,consistent ,and promising will keep the program strong.

***Interactions for Staff and Partners:***

Some strategies to approach and discuss your program include:

* Emailing several partners to introduce the issue and set up meetings
* Be persistent and follow up each email after a couple days if there is still no reply
* Consider as many partnerships so that you have a better chance in getting responses

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| **Checklist for Establishing Community Partnerships** |
| A. Organize  \_x\_\_Identify partners that can enhance your ability to address the problem  \_x\_\_Invite partner participation and send pertinent fact sheets or persuasive material  \_x\_\_Confirm participation through follow-up telephone calls |
| B. Coordinate  \_\_\_Send information packet to participating partners  \_x\_\_Ask partners to include health promotion information through their media or advertising efforts |
| C. Promote  \_x\_\_Give recognition to those who help you  \_\_\_Distribute a press release regarding partner involvement  \_x\_\_Make follow-up calls to press to confirm information |
| D. Follow-up  \_x\_\_Send thank you letters to partners  \_\_Ask new partners to establish long-term health promotion efforts  \_\_\_Clip articles appearing in the newspaper  \_x\_\_Keep contacts informed of progress |

Adapted from: CDC. *Seven Days of Immunization: National Infant Immunization Week*, 1995.

Following up with partners is professional and helps keep the relationship long lasting. It

ensures that the campaign they put their time and money in is paying off. Some ideas we chose to

use for our program to build a strong relationship are marked in the boxes above. The one I

believe is most important is the follow up. It is the most forgotten one since many programs

believe that the partners they have established do not care for updates, but they do. Keeping

contacts informed of progress of your program shows respect and keeps them interested.

***Intervention Dominance:***

Communication is needed as a dominant intervention in order to intervene directly at the causes of vaping among Poly High School students. These causes (curiosity, addiction, and lack of strict policies in the vaping industry) are contributing factors of students engaging in vaping. Targeting the students and faculty of Poly High through a dominant communication intervention may help in changing attitudes or beliefs about vaping. As a result of this, students may be less likely to start vaping and the faculty will be more informed about vaping. Lastly, Vaping retailers will also be targeted through a dominant communication intervention so that they can enforce vaping policies and stop selling to minors.

***Audience Segments:***

Polytechnic High School has a student population of 4,142 students. In order to have a successful intervention, we will segment the teenage population by grade level, then by smokers and non-smokers resulting in 8 intervention groups. By segmenting a large population into multiple smaller populations, our interventions would be more intimate and personalized. This would hopefully target concerns that arise within each specific group making our overall intervention more effective.

As for the Faculty and Staff of Poly High, this population is smaller therefore, no segmenting is needed. The retailers of vaping products also do not need to be segmented into smaller audiences since our intervention will be targeting vape shops that are within a mile away from Poly High.

***Intended Audience Description:***

The primary audience of the program are the adolescent students of Polytechnic high school. It has been said that in the year 2019, over 5 million youth and adolescents currently partake in vaping usage. This makes the classes of 2021 at polytechnic high school a vulnerable population in need of guidance and support. Their lack of knowledge on the effects and inevitable peer pressure makes them vulnerable and susceptible to the concerning health problems associated with the addictive behavior.

         The second primary audience are the retailers of vaping products. Any retailer within one mile of the school is a targeted population for intervening. Lawmakers have justifiably enforced new regulations regarding the selling of vaping products among adolescent communities, however, loopholes have been discovered that need addressing; thus making them a primary target.

         The third primary target within the program is the faculty and staff of polytechnic high school. Their ability to enforce regulations and encourage the irradiation of vaping products on campus is necessary. Teachers are aimed to act as role models for the students, therefore enforcing knowledge and perception to the students of polytechnic high school on the risks associated with vaping. Faculty and staff are also a primary audience to ensure that educational tactics are implemented in the students' learning criteria. By enforcing nicotine lessons within the criteria, students are easily forced to gain more knowledge of the adverse effects of vaping usage.

***Communications Goals for Vaporizing Vaping:***

The communication goals for the selected audience segment were to:

1. Promote faculty and staff of polytechnic high school awareness and knowledge of signs and symptoms of vaping usage among students.
2. Increase the number of retailers who are aware of the laws and regulations regarding tobacco sales to adolescents.
3. Reduce the misconceptions of vaping products among the students at Polytechnic high school
4. Improve the perceptions of the adolescents at Polytechnic high school on the effects and severity of vaping products.

***Communication Theories and Models:***

The communication theories relevant to interventions targeting the primary student audience would be the Extended Parallel Processing Model, the Theory of Reasoned Action, and the Elaboration-Likelihood Model.

The communication theories relevant to interventions targeting the secondary retailer audience would be the Diffusion of Innovation and Consumer Information Processing Theories.

The communication theories relevant to interventions targeting the tertiary faculty audience would be the Elaboration Likelihood Model and the Theory of Reasoned Action.

***Formative Research:***

Audience research was captured for retailers, students, and faculty members. In the past for students, many campaign methods to combat vaping drew from previous campaigns against cigarette smoking. Education about the risks of vaping were seen as effective, alongside campaigns fighting against tobacco corporations by demonstrating the manipulation tactics of said companies. Programs that educated the students, implemented by teachers, were shown to be effective as well. To combat against retailers, bans on advertising, increased packaging labels, and point of sale laws have been proven to be effective. Key stakeholders have also had a strong impact on reducing vape usage.

***Audience Profile for Vaporize Vaping:***

**Target Audience:** Adolescent Students of Long Beach Polytechnic High

Gender: All students of Long Beach Poly High

Age: 14- 18 years old

Education level: In high school

Geographic proximity: Long Beach, California

**Target Audience:** Retailers of Long Beach Polytechnic High

Gender: All genders

Age: 14+ teenagers have access to vape products and are often the ones to provide for the kids.

Education level: High school +

Geographic proximity: Long Beach, California and nearby cities

**Target Audience:** Staff Members of Long Beach Polytechnic High

Gender: All genders

Age: 18+

Educational level: College

Geographic proximity: Long Beach, California and nearby cities

**Class profile of Long Beach Polytechnic High School:**

* At the age where you seek approval from others
* Want to be seen as “cool”
* Look up to celebrities
* Do not take lung health into consideration
* Believe that since vape products are not cigarettes or marijuana it is somehow “healthier”
* Social Media is a big deal and

**Settings of where E-cigarette ads may be available to this age demographic:**

* Social Media
* Movie Theater commercials
* Stores like malls etc
* Television
* Sport Stadiums
* Waiting areas (doctors offices, airports etc)
* Billboards on freeways, busy streets, etc

**Retailers:**

* Retailers were able to sell to those 18+ until the law changed to 21+
* Retailers would lose a lot of money (sells) if teenagers (14-18) quit smoking e-cigarettes
* There are local smoke shops that may sell to those who are younger than 21 years of age
* There are even some sellers that still attend high school and sell to their peers
* It is very easy now to get a hold of e-cigarette products

**Settings for Staff members of Long Beach Polytechnic High School:**

* School administration meetings
* Billboards
* Parent/ Teacher conferences
* School Newspapers
* Social Media
* Television

**Interpersonal:**

* School faculty will have one-on-one meetings with teens that suffer from e-cigarette addiction
* Rather than punishing the students for getting caught with the vapes, the school administration should “punish” them by having them go to informational meetings about the negative effects of e-cigarette use

**Small Group:**

* School administration enforces all students to have conversations about peer pressure and e-cigarette use at their age in their Health classes

**Organizational:**

* The school administration posts flyers around campus
* ASB members communicate with every year freshman- senior about e-cigarettes
* Senior class pledge to avoid e-cigarette use all year and in return they get a senior event

**Community:**

* School administration makes a deal with the Long Beach City Council to put up informational posters around Long Beach, CA
* The city regulates local smoke shop to make sure they buyers are of age and make sure there is a list of negative effects of smoking listed with the products

**Mass Media:**

* There are now commercials on television companies like MTV against e-cigarette smoking
* The commercials occur frequently
* Social Media campaigns against e-cigarette use are trending
* The negative effects of e-cigarette use has taken its toll on many adolescents that many others are now realizing it is not safe to use them

***Communication Objectives:***

By the end of their senior year, the students of Long Beach Polytechnic High school who

are against the use of e-cigarettes will increase by 30%.By the second year of the program, the

 school administration will inspire other local high schools to begin the same program to increase

 the knowledge on the negative effects of e-cigarettes by 45% in the city of Long Beach, CA

***Creative Briefs:***

The intended audiences of the campaign include the students, faculty, and staff of Polytechnic High School, the parents of the students, and the surrounding retailers of the school that sell vaping products.

The students of polytechnic high are of the most importance since they are the population that is directly affected by the negative effects of vaping.. Our objective for this population is that by the end of the school year, 30% of students in each grade level will be well-informed about the dangers of vaping therefore, decreasing their susceptibility to e-cigarettes. In addition, we hope to decrease the amount of students vaping from 12% to 8% in each grade level. Some obstacles that will be faced throughout the campaign include their belief in resiliency, their susceptibility to peer pressure, their easy access to product, and the enticing flavors that lure them in. Our key promise to the audience is with the elimination of smoking products, a healthier life is guaranteed. To reduce the use of vaping products and eliminate the obstacles that challenge this behavior, the campaign focuses on not only educating the students of polytechnic high, but also the faculty, parents, and surrounding retailers. Although behavior change must occur at the individual level, when the community enforces stricter guidelines making access more difficult it can aid in alleviating the behavior.

Decreasing vaping among youth is crucial as there has been an exponential growth of students vaping within the past few years. In L.A county, 30% of high school students used vape products in 2019–a 6.4% percent increase from 2018 (L.A. County of Public Health, 2019). Vape products contain high doses of nicotine, a highly addictive chemical, that has harmful short-term and long-term effects on an individuals health. Since the brains of adolescents are still developing they are extremely vulnerable to the damaging effects of nicotine. According to the CDC, (2020), “using nicotine in adolescence can harm the parts of the brain that control attention, learning, mood, and impulse control”. In “if cigarette smoking continues at the current rate among youth in this country, 5.6 million of today’s Americans younger than 18 will die early from a smoking-related illness” (CDC, 2020).

The tone that will be set to reach the targeted audience will need to remain serious because the supporting evidence is serious. With that, the tone must also be appealing to keep their attention along with supporting to encourage behavior change and all the steps that come with it. Through the use of social media, posters, flyers, and brochures, the campaign can create a repeated reminder on the knowledge they are gathering throughout the campaign. The theory is that through the use of media outlets, we can create an environment that is both appealing and informative for the students. High school students mostly consist of the early majority and today media is the format that entices people to learn.

The second intended audience for this campaign includes faculty, staff, and parents of Polytechnic Highschool. Our objective for this audience states that by the end of 2025, 50% of the participants will be masters at the complexities of e-cigarettes usage among minors. Some barriers that reside among this group are the inability to watch the students 24 hours a day 7 days a week, full surveillance of school parking lots, inability to detect usage in bathrooms, off campus lunches, and the fact that most vape products are becoming smaller making it impossible to detect. The campaign's promise is that if staff/administration/faculty and parents are better educated on the warning signs and symptoms of nicotine use in adolescents, they can help the victims better. Supporting evidence shows that faculty and staff have a hard time keeping students focused especially those who have troubles with vaping and consistently leave the classroom. For both faculty and parents, it's imperative that the tone remains supportive, understanding, and informative. It is never beneficial for the tone to become negative because the students will lose trust and refrain from confiding in those they need.

Examples of media usage for this intended audience includes powerpoint presentations, emails, and phone calls. This will allow every participant easy access to the needed education, as well as virtual communication for those who have impeding obligations. This leaves little room for lack of participation among this group. Some non virtual considerations for the targeted audience include seminars, meetings, and on-campus training for both faculty and parents. In particular, yearly training tactics will be held on back to school nights for those who attend and faculty will participate in meetings monthly to ensure that everyone remains up to date on the progress of the campus.

The last intended audience includes the local retailers. This group will be the hardest to reach and face the most obstacles due to their lack of interest and connection to the population at risk. Most retailers will be more concerned about selling products on their shelves rather than putting the consumers' health first. Much like other problems in our society, including fast food, alcohol, and any other bad habits, the retailer's sole purpose is to make more money. However, with these obstacles comes a solution. Retailers who do not have communal support tend to do much more poorly than those who are favored by their town. It is our promise if regulations are followed, then there will be no punishment and the retailer is rewarded with a better reputation, resulting in better sales overall.

The needed tone for this audience must remain factual, serious, and professional. The audience is all about business so the tone must match that description. Some creative considerations include having the support of well known, government supported organizations, as well as continuous informative flyers, brochures, and letters being sent to the intended audience to ensure they are receiving the severity of the issue at hand. If organizations such as the Centers For Disease Control and Prevention along with reputable laywers are presenting information to the retailers surrounding highschool; the likelihood of participation is projected to be much higher.

***Evaluation, Time, Resource Requirements:***

The city of Long Beach Public Health Department has a heavy impact on the implementation of the program for reducing vaping among students in PolyTechnic high school. Their interests revolve heavily around the knowledge and advocacy of reducing the use of vaping products and the effects both short and long-term. The Long Beach Public Health Department will provide great support in policy making both on and off campuses. The Long Beach Tobacco Prevention program will assist in providing resources to the students within the community. They offer great assistance in creating smoke-free environments and are in compliance with local and state officials.

A multitude of stakeholders including, the American Chemical Society, American Heart Association, The California Department of Health Care Services, and the American Lung Association, have all been contacted in efforts to obtain research and approval for the continuation of the program. An appropriate timeline was discussed and distributed among all stakeholders involved that was both realistic and attainable.

***Timetable, budget, and development plan:***

|  |  |  |
| --- | --- | --- |
| Event | Start Date - End Date | Budget |
| Hiring Personnel and Their Salary | April 12, 2021 - November 15, 2021 | $150,000 |
| Develop and Plan Intervention | April 27, 2021 - July 7, 2021 | $15,000 |
| Prepare materials for intervention | July 8, 2021- July 22, 2021 | $25,000 |
| Print PSAs/Brochures/Fact Sheets/Surveys | July 23, 2021 - July 26, 2021 | $7,000 |
| Distribute PSAs/Brochures/Fact Sheets to School Health Officials and Retailers | July 27, 2021 - August  6, 2021 | n/a |
| Hold Intervention for Long Beach Poly High Students | August 25, 2021 - August 30, 2021 | $5,000 |
| Distribute Pre-Intervention Survey, Brochures & Fact Sheets to students | August 25, 2021 - August 30, 2021 | n/a |
| Distribute Post-Intervention Follow up Survey | October 4, 2021 - October 8, 2021 | n/a |
| Analyze Results and Report Information to Los Angeles County of Public Health | October 11, 2021 - November 8, 2021 | $10,000 |
| Full Evaluation Complete, results will be finished | June 5, 2025 | $5,000 |

\*Timetable will repeat every school year until 2024.

***Summary of creative concepts test:***

Concepts were developed based on what motivates and appeals to students. High School students are motivated by their self-efficacy, family, and friends. Social Media, celebrity endorsements, and freebies appeal to high school students. The following concepts were then developed:

1. Not vaping will better your health and the health of the people around you.
2. Celebrities that advocate for students to stop vaping.
3. Having “Stop Vaping” campaign ads on social media
4. Provide Students with gift cards once they reach milestones during their non-vaping journey.

***Messages and Pretest Results:***

Nicotine use among adolescents has been linked to addiction, underdevelopment of the growing brain, and increased risk of future drug use. Due to the brain not fully developing until after age 25, it has become clear that nicotine usage among the adolescent age groups is linked to changing brain cell activity, and negatively impacting their attention span, memory, and learning abilities (California Tobacco Control Program, 2020). E-cigarette usage among this group has dramatically spiked since 2011 with over 3 million high school students partaking in the risky behavior as of 2020 (CDC, 2020). With new policies in place against adolescent tobacco usage, loopholes continue to exist, and flavored products continue to be sold. The campaign is targeted at educating and reducing the usage of e-cigarettes from the students at PolyTechnic high school, as well as educating the community on safety precautions to ensure less harm to the developing target population.

***Settings:***

The settings most appropriate for the campaign are schools, recreational centers, community organizations, and homes. The two most conducive to the communication of the campaigns messages are the school and homes of the students of polytechnic high school. Pretesting methods will include class lectures, posters, parent emails, fact sheets, and social media pages. The individual, group, and community channels will be used to convey the messages and effectively convey the end target of reducing e-cigarette usage among the adolescents of polytechnic high school.

At the individual channel, students and faculty will be targeted at gaining knowledge and understanding of the effects nicotine has on the developing brains of its users. At the group level, families will be targeted with facts sheets, emails, and parent conferences ensuring the warning signs and symptoms are evaluated properly. Lastly, at the community level, the campaign will target the retailers on better policies and procedures to reduce the sales of nicotine products to minors.

***Channel-Specific Communication Activities:***

To approach the student population of Long Beach Poly High School, focus will be placed on the interventions on internal and external levels. Media effects to influence policy and public agenda setting should thus be used. In this way, the goal to reduce vaping in Poly High School students would be achieved, using local and nationwide data to properly assess effective changes. Materials developed to reach the student, faculty, retailers, and media include:

* Brochures for retailers
* Guides and pamphlets for teachers to educate about the downsides of smoking and how it is disadvantageous in the long term
* Webpage for staff to manage addiction properly, with resources to counseling and phone numbers available
* Fact sheets and posters pasted around school campus
* Billboards and advertisements on public properties to
* Flyers and brochures with fact sheets about vaping mailed to parents
* Newsletters to parents about vaping
* Website for students to access resources to help with addiction
* PSAs on public media about the dangers of vaping
* Online advertisements warning against vaping featuring testimonials
* Fact sheets for parents
* Posters about the dangers of vaping placed near retailers

Poly High school students and parents were targeted through the use of PSAs, webpages, educational instruction, fact sheets, and posters. Retailers were targeted for awareness of policy through mail-in brochures and pamphlets. Faculty members were educated through pamphlets and websites/webinars.

***Materials:***

Multiple types of materials were developed. Examples include brochures, pamphlets, webpages, PSAs, billboards, and newsletters.

PSAs, billboards, and advertisements similar to the truth initiative campaign to discuss the consequences of vaping was proposed.

Direct mail brochures and pamphlets were given to parents and retailers about purchasing vape pens, dangers of online markets, and age-at-sale policy with descriptions of consequences and fines.

Posters with infographics concerning vaping and its harm were created.

Newsletters to parents about how to educate children about vaping and approaching vaping were created.

Talking points were created to help faculty create lessons on what to teach to students.

Websites with information about additional resources for help about vaping for students, faculty, and parents were created.

A selection of 500 Long Beach Poly High School students were interviewed for feedback for PSAs, posters, and websites to be created. After showing said materials, feedback was requested and mostly positive. The communication materials proved to interest the students and seemed to have effective messaging.

Parents of students, faculty, and retailers were surveyed about the newsletters, infographics, websites, PSAs, and advertisements. Feedback was positive and the audience was accepting. Materials were found to be useful.

***Staff and Partner Responsibilities:***

The tasks below were completed:

* Posters, commercials, infographics, PSAs, campaign materials, pamphlets, newsletters, websites,other campaign materials
* The community sit-ins were created
* Newsletters were sent to the parents and guardians of the teens

After said campaign materials were completed, the activities were created:

* Update all of the campaign partners on the progress of the activities
* Contact the city council to organize a community informational meeting
* Communicate with the staff of the campaign of any rules and regulations
* Prepare an example of all of the activities

***Materials for Production and Dissemination:***

The following materials were used to complete the tasks:

* Posters, commercials, infographics, PSAs, campaign materials, pamphlets, newsletters, websites,other campaign materials
* The community sit-ins were created
* Newsletters were sent to the parents and guardians of the teens

***Communication Plan Summary:***

Nicotine use among adolescents has been linked to addiction, underdevelopment of the growing brain, and increased risk of future drug use. According to previous censuses of the Los Angeles area, 78% of 9th grade students stated having never used an e-cigarette. However, the rate drops by over 5% by the 11th grade year. Children can get their hands on vape products through online shopping. With the ability to easily bypass age verifications, there is a 94% success rate of underaged users getting vapes delivered to their front door with few parents having any clue. To further the problem, disposable vapes are becoming more predominantly sold on school campuses, making it harder for parents and faculty to eradicate. Vaping products are a 2.5 billion dollar business. No matter how many laws and regulations are enforced by the states, retailers will continue to sell to make their profit.

There are many causes that contribute to high schoolers vaping. Some direct causes of vaping are curiosity, addiction, entertainment, susceptibility to peer pressure, and relaxation or stress reduction. Some indirect causes are their social circle and environment, the vaping industry targeting high schoolers for their products by creating fruity and minty vape flavors, misinformation about e-cigs, and lack of policies for purchasing e-cigs/vape products.

In an attempt to decrease the number of students at Poly High School who vape, an intervention was planned that addressed risk factors and misinformation about e-cigarette use. The audiences of this intervention would be Polytechnic High School Students (9th -12th grade), faculty and staff of Poly High, and retailers of vaping products. This intervention will approximately last for four years.

By the end of their senior year, the students of Long Beach Polytechnic High school who are against the use of e-cigarettes will increase by 30% and there will be a 4% decrease of students who currently vape in each grade level (from 12% to 8%). By the second year of beginning the program, the school administration will inspire other local high schools to begin the same program so that the knowledge of the negative effects of e-cigarettes increases by 45% in the city of Long Beach, CA. Three evaluations will be conducted. One in 2022, 2023, and 2024. The results of the end objectives will be reported in 2025.

A timetable was used to keep track of tasks, deadlines, and staff recruitment. Concepts were then developed based on what motivates and appeals to students. The communication plan was shared with appropriate stakeholders and an interpersonal approach was chosen due to this approach being the most effective.

***Stakeholder Confirmations:***

Those that were informed and involved of the ongoing communication plan included stakeholders, partners, and other organizations. This included the CDC, the Los Angeles County of Public Health, the staff and faculty at Long Beach Polytechnic High School, students, parents in Long Beach, sponsors of this project, and retailers selling vape residing near Long Beach High School. There were several meetings conducted, where program materials, staff spearheading the project, and measures to track the results of the interventions were discussed. Funding for materials and preparation was also discussed amongst stakeholders. Those attending the meetings were given an outline to complete tasks needed for the program to occur.

***Stakeholders:***

The stakeholders who would be interested in the results of this evaluation were the Los Angeles County of Public Health, the staff and administration at Long Beach Polytechnic High School, the students and their parents, staff coordinating this project, sponsors of this project, and the Vape Stores by Long Beach Poly High.

***Communication Plan Description:***

The purpose and mission of this intervention is to reduce vaping in Poly High School Students (Long Beach, CA). We will examine both county and nation level health data in order to implement a plan that will decrease the current known amount of students vaping in Long Beach Poly High School from 12% to 8% by May 2022. We also hope to decrease the amount of unknown students who vape each year (2022-2024) by 5% and increase the number of students who are against vaping by 30%. This intervention will focus on primary, secondary, and tertiary prevention in order to target the most students possible.

By the end of their senior year, the students of Long Beach Polytechnic High school who are against the use of e-cigarettes will increase by 30%. By implementing this program, the school administration will inspire other local high schools to begin the same program so that the knowledge of the negative effects of e-cigarettes increases by 45% in the city of Long Beach, CA. In addition, by the year 2025, retailers will have stricter regulations monitoring in-person and online sale of tobacco products and have increased awareness of enforcement. To achieve these objectives, the following intervention was planned.

An interpersonal approach was chosen due to this approach being the most effective in changing attitudes and beliefs, building awareness, and correcting misinformation about the dangers of vaping. Having direct communication with our main targeted demographic, Long Beach Poly High Students, will help keep our audience more engaged and will allow the audience to ask questions that may arise during the intervention. Our tone for this intervention will be informative and assertive yet encouraging. Brochures and fact sheets will be provided during this intervention. In addition, social media accounts will be created so that teens can keep up to date with accurate information about the dangers of vaping and e-cigarette use.

Our other two targeted demographics are the vaping retailers and the faculty of Long Beach Poly High. With the retailers, we will convey our intervention in a professional, factual, and serious tone. We will provide booklets, flyers, and brochures that contain information about the dangers of teens vaping and precautionary guidelines to follow. As for the faculty, we will carry out an informative and encouraging tone. We will provide them with information on how they can help reduce the amount of students vaping at their school and with the best way to approach this problem.

***Information Needed From Evaluation Phase:***

A secondary meeting was held with stakeholders to discuss and clarify the information they needed for the implementation, effectiveness, and timeframe. After conducting focus groups within the meeting, it was communicated that an ongoing evaluation to assess that goals were being met. This included a beginning of year, mid-year, and end of year assessment for potential modifications of the program design. The following questions that were proposed by the stakeholders were further ranked and prioritized to most important.

1. Did the participants change their behaviors regarding vape usage?
2. Did the retailers participate in the better protocol tactics?
3. Was the intervention cost-effective?
4. Did the students, faculty, parents, and retailers retain the information proposed in the material?
5. Was the implementation process smooth running, as planned?

The meeting concluded with a timeline of when they would prefer the information. It was agreed upon to have a beginning, mid-year, and end-of-year evaluation, each followed by a meeting for discussion on adjustments to the program to better fit the needs of the population. This will provide stakeholders with the ability to provide feedback, identify any concerning problems, and help better the program.

***Intervention Standards:***

The intervention standards used were based on the goals decided upon earlier in the vaporize vaping campaign. The teams and partners decided that by using these goals, an adequate evaluation of the campaign could be conducted when incorporated at all three stages of the campaigns process. The interventions standards included:

* By graduation, the student class will decrease e-cigarette usage by 25%
* By the year 2025, 50% of the parents and family members of Polytechnic high school will increase their knowledge and awareness on vaping effects.
* By the year 2025, more than half of the administration will be masters at advocating against vaping on campus.
* By 2025, retailers will reduce their underage sales of vape products by 25% through the use of the new protocols provided by the program.
* The intervention was implemented according to plan and was cost effective.

***Data Gathering Methods and Sources:***

|  |  |
| --- | --- |
| Evaluation | Evaluation Sources and Methods |
| Cost/Benefit | * Budget * Impact & Outcome evaluation results |
| Exposure | * Track the number of website hits * Track the number of times links on website were used * Track online websites by number of times clicked on and/or viewed |
| Delivery/Implementation | * Call retailers to make sure materials are being used and are straightforward * Call parents to ensure that materials received are straightforward and are being used * Survey website users randomly for feedback regarding ease of use and how informative the website is * Calls and meetings with high school faculty were conducted for feedback * Inventory all materials mailed out each week * Call faculty to ensure materials were put out at the high school |
| Outcome | * Random mail survey of retailers asking about level of understanding and implementation of material * Random mail survey asking parents and students of Long Beach Poly currently enrolled about attractiveness of vaping * Random survey to students asking about level of awareness of danger and asking likelihood of beginning to vape * Random survey of faculty and asking about effectiveness |

***5.6 Evaluation Design:***

The evaluation design selected for this intervention was a quasi-experimental design, during which a pre and post-test intervention was conducted. This evaluation design was selected to assess changes in the condition of the groups after several different intervention methods.

Intervention: Group 1 (Students) T1O--(X1-X2-X3-X4)--T2O

Comparison: Group 2 (Students) T1O------------T2O

Intervention: Group 1 (Retailers) T1O--(X1-X2-X3)--T2O

Comparison: Group 2 (Retailers) T1O------------T2O

Intervention: Group 1 (Faculty) T1O--(X1-X2-X3)--T2O

Comparison: Group 2 (Faculty) T1O------------T2O

Intervention: Group 1 (Parents) T1O--(X1-X2-X3-X4-X5)--T2O

Comparison: Group 2 (Parents) T1O------------T2O

Intervention Components for the student groups:

X1: PSAs (print, radio, online, television)

X2: Posters

X3: Websites  
 X4: Print Advertisements

Intervention Components for the retailer groups:

X1: Direct mail brochures

X2: Pamphlets

X3: PSAs (print, radio, online, television)

Intervention Components for the faculty groups:

X1: Talking points

X2: Websites

X3: PSAs (print, radio, online, television)

Intervention Components for parent groups:

X1: Direct mail brochures

X2: Pamphlets

X3: PSAs (print, radio, online, television)

X4: Newsletters  
 X5: Websites

This quasi-experimental approach involved:

* Conducting baseline observations without intervention components for all groups with intervention components
* Exposing all Group 1s to intervention components. This group consisted of students of Long Beach Poly, external retailers, faculty of Long Beach Poly, and parents of students.
* Excluding Group 2 by removing exposure, which comprised students, retailers, faculty, and parents similar to Group 1. The groups consisted of a group that was similar in age, gender, and other demographics.
* Comparing the findings of T1 and T2 by using the same instruments of observation.
* Determining whether the communication intervention methods were effective in forming negative opinions of vaping for students of Long Beach Polytechnic and whether it increased community awareness of age-appropriate laws regarding vaping and the consequences of vaping in minors. Group 1, the exposed group, should have been influenced by these ideas over group 2, the unexposed group.

***Data Analysis and Reporting Plan Description:***

Data Analysis:

* Data from the survey results were entered into a survey to calculate results
* SPSS was used to compute the quasi-experimental design
* The results concluded a percentage from each question of those who are and are not familiar with the negative side effects of vaping
* Percentages of those who have been exposed to vaping are included
* Personal opinions of if the program was effective or not was collected

Reporting Plan: (Target audience: school administration, students, parents, retailers)

* Reports from students and school administration were collected from the smaller sample (classrooms)
* Reports from students and school administration was collected from the high school as a whole were collected
* Reports of parents and retailers were collected

***Internal and External Communication Plan:***

An internal plan can be to send mail, emails, calls, and texts to all students and their

 parents or guardians informing them about the program and how vaping is common around this

 age. Individual meetings can be scheduled with those who have either been caught with vape

products or those who seek help. Internal communication will include all those who are with the

program which may include: partners, parents/guardians, school administration, and students.

 Some external communications may include commercials, advertisements, posters, social media

trends, television, radio, and meetings in facilities outside of school. External communication

may include retailers, guest speakers, city council members, and more.

***Evaluation Timetable and Budget:***

This program is a four year program which involves the Long Beach Polytechnic

 students, staff, parents/guardians, and local retailers as of 2021. The program began in January

2021. The program will last until 2025. Every year $600,000 will be given to the program. This

year the program has spent $200,000 thus far.

***Evaluation Implementation Summary:***

The staff and program partners were given the evaluation implementation plan which

 included all of the activities and expenses that will be used. It will answer any and all of their

 questions since we would like them to trust us. There will be updates of the program every two

 weeks to ensure their support. The plan included  the budget, all spending, a timetable, and

 statistical evidence.

***Communication and Evaluation Plan Integration:***

Communication and evaluation activities will be carried out in a coordinated fashion. To ensure that everything runs smoothly, staff meetings would be held once every 2 weeks during this intervention in order to make adjustments, solve problems, monitor progress, and elicit feedback.

***Launch Plans:***

Both communication and evaluation plans will be launched in August of 2021. Intervention is planned to last until November of 2024 once the freshmen class are seniors. We will conduct an Evaluation once each year, 2022, 2023, 2024, and have results by 2025.

***Management Issues/Tactics:***

Throughout the school year communication components included video and audio announcements to students through the school websites, phone, and loud speakers on campus. Posters, flyers, and brochures were administered throughout the campus. This included hallways, cafeteria, gymnasium, and the nurses office for on campus dispersion. The communication components were also distributed to retailers, parents (both virtually and in packet form), as well as local community locations including the community center, local shops, vaping stores, and clinics.

The training program was implemented during the school year and was managed by the program coordinator during all stages of the campaign. They monitored the activities along with any threats that could have occurred and relayed any messages to interested stakeholders. All communication channels were informed of any new information that would have benefitted them. This included both positive and negative events throughout the course of each stage.

***Feedback and Lessons Learned:***

As the program intervention continued, staff and coordinators made note of changes that occurred to improve the program and its communications. This included meeting notes, suggestions from stakeholders, and procedures. The program demonstrated great success in its intervention strategy. Data demonstrated that improvements occurred at the student, parent, faculty, and retailer levels. The evaluation was based on data collected from each of the three scheduled periods (beginning, mid-year, and end-of-year).

In regard to the communications aspect of the campaign, it was demonstrated that a large majority of the student body had come in contact with the posters and flyers dispersed around campus. Knowledge scores increased for students, faculty, and parent levels with a large increase at the parental level. All objectives were met except for those of the retailer. Although change occurred at the retailer level, it was not as high as planned for. The campaigns fear tactics along with communal support did not create enough change at the retailer level.   
 Due to the fact that a majority of the campaign was held at the campus site, the campaign managed to stay cost effective at every level. Staff time was of the highest cost followed by supplies for dispersion of posters, flyers, and brochures with educating material.   
 The timing of the program differed in the sense that it was over the course of four years instead of one year to ensure that every class grade was met at every level of prevention. Some classes, including freshman and sophmores, are more impacted by the obstacles associated with vaping usage.

***Modification List:***

The program intervention coordinator and her staff modified communication procedures with the planning and evaluation teams as well as with stakeholders because of feedback about the program.

100% attendance was difficult to achieve because of differing schedules and some materials were never received due to logistical mailing issues. These stakeholders, as a result, felt left out of the communication loop since only a few of them got complete pieces of materials and information. Program intervention coordinators immediately recognized this problem and offered the option of Zoom calls to replace materials, contacted those that have not contacted back about the program, and updated the mailing list continuously to ensure that materials were sent properly.

Outside of a lack of receiving materials, some other program materials were modified.

* Brochures were rewritten to be made easier to understand.
* PSAs created by the team were reassessed to ensure direct messaging and billboards and other PSAs were scheduled ahead of time.
* More posters were printed and graphics were updated over time due to positive feedback and to retain interest.

***Dissemination Plans for Lessons Learned and Evaluation Findings:***

After the campaign was completed, sponsors, stakeholders, collaborative organizations such as school faculty, and project managers met to discuss future improvements that can be made and program findings. After the final meeting, a general summary report of the program regarding its performance, effectiveness, and feedback received led to two final meetings. A community meeting was made to discuss to parents and the community the effectiveness of the campaign and to raise awareness of the issue one final time. Another meeting was made amongst stakeholders and the CDC to discuss the summary report as well. A complete physical report was sent to the CDC. The main goal of the report was to provide a final summary on findings.

* The audience must identify with the PSA in order to fully connect with its message.
* It is recommended to survey the audience to find the most effective communication material.
* Schedules on Excel sheets regarding the distribution of the program must be continuously updated, as well as updates on feedback of the program from the audience, stakeholders, and others.

For the smoking campaign, several reports and presentations were completed for different audiences:

Completed report for the CDC

* Executive summary for faculty at Long Beach Polytechnic High School
* Article in community newsletters summarizing the campaign
* Presentation at schools were done for community members and the student’s parents to discuss the end results of the program

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