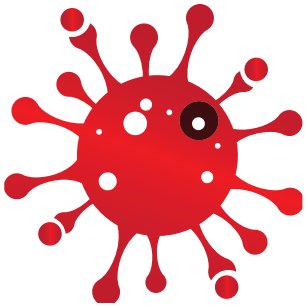

COVID-19 AND SELF-MONITORING

FOR POST-SECONDARY EDUCATIONAL INSTITUTIONS

UPSTATE
MEDICAL UNIVERSITY
COLLEGE OF MEDICINE
Public Health

Provided by:
Upstate Medical University
Department of Public Health and Preventive Medicine

Additional resources are available at:
Upstate.edu/publichealth/covid19

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Disclaimer

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Public Health

Introduction

Public health is "the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals." — CEA Winslow

Advances in public health (population health) have helped prevent disease (disease prevention) and have helped people achieve their highest level of optimal health (health promotion). Public health seeks to provide groups of people with the right to be healthy and live in conditions that support that health. Public health aims to provide maximum benefit for the largest number of people. (WHO) Public health is grounded in evidence-based methods – methods that have been tested over time and have shown to be effective through scientific inquiry. The core science domains in Public health include epidemiology, surveillances, prevention effectiveness, informatics, and laboratory.

Public health focuses on 10 essential public health services to accomplish its goals: 1. Monitor Health 2. Diagnose and Investigate 3. Inform, Educate, Empower 4. Mobilize Community Partnership 5. Develop Policies 6. Enforce Laws 7. Link to/Provide Care 8. Assure a Competent Workforce 9. Evaluate 10. Research.
To accomplish an intended gold, public health practitioners leverage partners/stake holders within the community. Partners/Stakeholders may include clinical care delivery systems, employers and business, media, academia, government agencies and other public health infrastructure, and the community.

Health is defined as "state of complete physical, mental, social wellbeing rater then the mere absences of disease" (WHO) Health is determined by complex interactions and determinates of health. Determinates of health include: genes and biology, health behaviors, social or societal characterizes, and health services or medical care. These complex interactions need multiple different interventions to make a change.

Overview of Tools in Public Health

There are a few key tools in public health that should be consider when addressing a public health issue.

a. The Logic Model

The Logic Model is a graphic depiction (road map) that presents the shared relationships among the resources, activities, outputs, outcomes, and impact for your program. It depicts the relationship between your program's activities and its intended effects. For more information on logic models please go to https://www.cdc.gov/eval/logicmodels/index.htm. Please find a blank logic model in Appendix A: Blank Logic Model.

b. Theories, Models, and Frameworks

Effective public health programs can help people maintain and improve their overall health, reduce risk of disease, and manage existing illness. To improve the well-being of individuals, families, organizations and communities, behavior change is needed at many levels. Such levels may include individual, intra-personal, and community, which includes institutional factors as well as existing policies.

Not all health programs are successful in achieving the desired behavior change. Those most likely lead to desired outcomes are based on an understanding of targeted health behaviors, and the environment in which they occur. Public Health is based on evidence-based models and theories that have been strategically developed and proven to be effective over time through evaluation.

For a comprehensive overview of evidence-based theories and models, please refer to *Theory at a Glance: A Guide for Health Promotion Practice.*[1]

COVID-19

Coronavirus (COVID-19) is an illness caused by a virus that is spread from person to person. The virus is a new virus that is spreading throughout the world. The symptoms of the COVID-19 range from no symptoms to severe illness. Symptoms include but are not limited to: fever or chills, cough, shortness of breath or difficulty breathing. People become infected by coming into contact with a person who has COVID-19. The person becomes infected through respiratory droplets when an infected person coughs or sneezes or touches a surface that has the virus on it and then touches their mouth, nose, or eyes. There is currently no vaccine to protect against COVID-19 and there is currently not cure. The best way to protect yourself is to avoid being exposes to the virus. Social distancing, handwashing, wearing a face mask, and disinfecting frequently touched surfaces can help protect yourself from yourself and others from COVID-19. People who are sick should stay at home, avoid public transportation, and separate themselves. Anyone one is at risk, however, older adults and people with certain chronic illnesses are more at risk for severe illness.

Self-Monitoring

Program Overview

The self-monitoring campaign has been designed and adapted for the college/university communities and is specifically targeting the behavior of self-monitoring. The program contains a virtual binder which contains a step by step guide on implementing the program and resources (digital messaging). Decisions on how to implement the program should be based on institutional resources, the populations current behaviors and understanding of the need for the behavior, and the threat of infection.

An educational campaign on the use of self-monitoring pairs COVID is a germ that an individual doesn't want with the concept that an individual person can stop the spread of COVID by self-monitoring. You need both of these concepts with the knowledge and the behavior to have a successful campaign.

The program is presented as an entire package; however, organizations can take components of the program as they see fit. We recommend the messages stay together as a series. The behavioral intervention can be utilized as a menu of options. We recommend that several behavioral interventions strategies be leveraged over the course of the intervention.

The program was designed using the CDC, WHO, and other federal information readily available to the general public. In addition, a literature search as conducted and research and program plan and evaluation strategies were used to create this document. Please see the reference list for additional details. To our knowledge, there is not a COVID-19 evidence-based self-monitoring campaign available. This program uses evidence-based materials or materials considered to be standard campaigns for self-monitoring usage. The program used their foundation and alters them to meet the COVID -19 pandemic needs and the culture found in colleges/university settings.

[1] https://cancercontrol.cancer.gov/brp/research/theories_project/theory.pdf

Logic Model

The program was developed using a logic model. The logic model connects the activities with an outcome. It provides a "birds eye" view of the program. The logic model outlines the resources, activities, outputs, outcomes, rationale, and assumptions of the program. Please refer to the document in Appendix B: Preventing COVID-19 Overview and Appendix C: Self-Monitoring Logic Model

Health Belief Model

The program used the Health Belief Model (HBM) as the theoretical model. The HBM can be used to guide the development of health promotion and disease prevention programs. It is used to explain and predict individual changes in health behaviors. Key elements of the Model focus on individual beliefs about health conditions, which may predict individual health-related behaviors. The model defines the key factors that influence health behaviors through six constructs. Please see Table 1: Health Belief Model below.

Table 1: Health Belief Model

Constructs of the Health Belief Model	**Definition of Construct**	**Example of Messages Targeting Construct**
Perceived Susceptibility	An individual's beliefs about the likelihood of getting a disease or condition	Symptoms can be life threatening. Seek emergency care if you experience bluish lips or face, severe chest pain, confusion, difficulty breathing, dizziness
Perceived Severity	An individual's beliefs about the seriousness of contracting a disease or condition, including consequences	1 in 5 infected people develop difficulty breathing or shortness of breath. You could have COVID. Talk to your doctor.
Perceived Benefits	An individual's beliefs about the effectiveness of a given action to reduce risk of a specific condition	You could have no symptoms. You can spread COVID without knowing it. You may never develop symptoms. Continue social distancing.
Perceived Barriers	An individual's beliefs about obstacles to performing a behavior	Use a thermometer. Don't use the back of your hand.
Cue to Action	Internal or external factors that activate or motivate a person to take action	Always know your health. Stay alert and be aware of any symptoms. Talk to your doctor if you have any concerns.
Self-Efficacy	An individual's beliefs that one can perform the recommended behavior (confidence)	Log it for 14 days- COVID or not. Record the date and your symptoms. Record your temperature morning and evening. Share this with your doctor.

Manage Risk Perception

The program targeting risk perception (an individual's perceived susceptibility to a threat). Feeling like you are at a low risk for contracting COVID at this point will lead to a decrease in self-monitoring. The program used messages like, "Symptoms can be life threatening. Seek emergency care if you experience bluish lips, severe chest pain, confusion, difficulty breathing, dizziness". [2] It's important to educate students that COVID is here and it's circulating and everyone is at risk. [3] We also highlighted students who can have COVID and feel fine, but not everyone who contracts COVID will have the same reaction. Students can bring it home and their friends and family members can get sick and possibly die, even if they themselves felt fine.[4]

Health Communication and Social Marketing

Health Communication is the study and use of communication strategies to inform and influence decisions and actions to improve health. Social marketing: Health Communication approach used to develop activities aimed at changing or maintaining people's behavior for the benefit of individuals and society as a whole. Fliers with educational information, highlights working as a community. If students do not want to self-monitor, articulate and effectively communicate that while they might feel fine, they could easily spread COVID-19 to friends and especially, vulnerable family members. [5] For example-"You could have COVID with no symptoms." Fliers must be catchy and fun, and relevant to the audience.

[2] https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html
[3] https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200306-sitrep-46-covid19.pdf?sfvrsn=96b04adf_4#:~:text=For%20COVID%2D19%2C,infections%2C%20requiring% 20ventilation
[4] https://wwwnc.cdc.gov/eid/article/7/2/70-0234_article
[5] https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200306-sitrep-46-covid19.pdf?sfvrsn=96b04adf_4#:~:text=For%20COVID%2D19%2C,infections%2C%20requiring% 20ventilation

Program Components

Program Goal

The program goal is: To improve self-monitoring among college students returning back to campus

Rationale

The program rational is center around the research self-monitoring can reduce the spread of COVID-19. [6]

Resources

Resources are needed for the intervention. Resources may include:

- Campus resources: A-frames, parking lots, technology, posters, personnel, media outlets, bulletin board, bathroom stalls/mirrors/walls, printers, financial, etc.
- Public Health Team
- Company Leadership

Program Activities

There are three different program activities: Educational Campaign, Behavioral intervention, and policy implementation. Please see below for the activity details.

[6] https://www.cdc.gov/coronavirus/2019-ncov/php/public-health-recommendations.html

Educational Campaign

The educational campaign covers awareness, and knowledge. Awareness and knowledge need to be obtained to achieve a behavior. In addition, the messages are designed to target the different components of the health belief model and for an extended period of time (8-12 weeks minimum for effectiveness). The educational campaign needs to be paired with a behavioral intervention to be effective. Hence, a campaign that targets behavior has been detailed below. The educational campaign contains 13 different messages over 13-week period of time. Please see Table 2: Educational Messages. The messages are provided in this document and a digital version of the materials are paired with this document. The messages should be aggressively displayed throughout the facility and aggressively targeting in locations where students are a captive audience.

Educational Messages

Table 2: Educational Messages

Display each week	*Message*	*Additional Resources*
Week 1	***Stop COVID! Self-Monitor!*** *How Close Have You Been?* • *Have you been close to someone who has COVID or is being tested for COVID?* • *Have you been close to someone who was exposed or is in self-quarantine?* • *If yes, self-monitor: you may be need to quarantine*	• https://www.cdc.gov/coronavirus/2019-ncov/downloads/COVID-19-Quarantine-vs-Isolation.pdf • https://medical.mit.edu/Howto
Week 2	***Stop COVID! Self-Monitor!*** *When Do Symptoms Appear?* • *Symptoms typically appear on day 5 or 6 after exposure. However, onset may occur up to 14 days later* • *Track your symptoms for 14 days*	• https://www.cdc.gov/coronavirus/2019-ncov/downloads/COVID-19-Quarantine-vs-Isolation.pdf • https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200402-sitrep-73-Covid-19.pdf
Week 3	***Stop COVID! Self-Monitor!*** *Know The Symptoms* • *You Could Experience…* - *Cough* - *Fever* - *Chills* - *Muscle Pain* - *Shortness of breath or difficulty breathing* - *Sore throat* - *New loss of taste or smell, etc.*	• https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html • https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html

Week 4	***Stop COVID! Self-Monitor!*** *Log it for 14 Days- COVID or Not!* • *Record the date and your symptoms* • *Record your temperature morning and evening* • *Share it with your doctor*	• https://www.beebehealthcare.org/sites/default/files/2020-03/COVID-19%20Beebe%20Self%20Monitoring%20Instructions.pdf • *https://www.cdc.gov/coronavirus/2019-ncov/travelers/pdf/COVID19-Temperature-Log-ENG-P.pdf*
Week 5	***Stop COVID! Self-Monitor!*** *Usually, Symptoms Are Mild to Moderate* • *Most people manage their illness at home with self-monitoring and isolation* • *Your doctor can instruct you on proper care*	• https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html • https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-coronaviruses
Week 6	***Stop COVID! Self-Monitor!*** *You Could Have No Symptoms* • *You can spread COVID without knowing it* • *You may never develop symptoms* • *Continue social distancing*	• https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html
Week 7	***Stop COVID! Self-Monitor!*** *Use a Thermometer- Don't Use the Back of Your Hand* • *A temperature of 100.4 or higher is considered a fever* • *Eating, drinking, or exercising- wait 30 minutes to take your temperature* • *You could have COVID- talk to your doctor*	• https://www.cdc.gov/quarantine/maritime/definitions-signs-symptoms-conditions-ill-travelers.html • https://www.cdc.gov/coronavirus/2019-ncov/downloads/COVID-19_CAREKit_ENG.pdf?fbclid=IwAR2UYlYJXN-hAd16AwMaoLY3rUs_K9xlrbnLn126_YqB9hbWHFWpKSkoolc
Week 8	***Stop COVID! Self-Monitor!*** *Taste and Smell* • *You are 10 times more likely to have COVID if you have lose your ability to taste and smell* • *You could have COVID- talk to your doctor*	• https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html • *https://news.harvard.edu/gazette/story/2020/06/app-reveals-loss-of-taste-smell-coronavirus-indicators/* • *https://www.healthline.com/health-news/covid-19-losing-sense-of-smell*
Week 9	***Stop COVID! Self-Monitor!*** *Just a Cough?* • *This could be your only COVID symptom* • *You could have COVID- talk to your doctor*	• https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/coronavirus-symptoms-frequently-asked-questions

Week 10	***Stop COVID! Self-Monitor!*** *Does it Feel like Your Breathing Through a Straw?* • *1 in 5 infected people develop difficulty breathing or shortness of breath* • *You could have COVID- talk to your doctor*	• https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-coronaviruses • https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html
Week 11	***Stop COVID! Self-Monitor!*** *Symptoms Can Be Life Threatening* • *Seek emergency care if you experience…* - *Bluish lips or face* - *Severe chest pain* - *Confusion* - *Difficulty breathing* - *Dizziness*	• https://www.cdc.gov/coronavirus/2019-ncov/testing/index.html
Week 12	***Stop COVID! Self-Monitor!*** *Symptoms Mean Stay Home* • *Immediately self-isolate if you have symptoms* • *Monitor your symptoms and talk to your doctor*	• https://www.publichealthontario.ca/-/media/documents/ncov/factsheet-covid-19-how-to-self-isolate.pdf?la=en • https://www.cdc.gov/coronavirus/2019-ncov/downloads/COVID-19-Quarantine-vs-Isolation.pdf
Week 13	***Stop COVID! Self-Monitor!*** *Always Know Your Health* • *Stay alert and be aware of any symptoms* • *Talk to your doctor if you have concerns*	• https://www.beebehealthcare.org/sites/default/files/2020-03/COVID-19%20Beebe%20Self%20Monitoring%20Instructions.pdf • https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/steps-when-sick.html

Supplemental Educational Campaigns

Supplementing the educational campaigns are presented below and have been tested and shown to be effective to improve the knowledge around self-monitoring. Slight modifications to focus on self-monitoring have been suggested in the intervention section to both apply it to our program and retain the same level of effectiveness. The programs include: Social Pressure, Peer to Peer, Psychological Teaching Model, CDC: Symptoms of Coronavirus Disease 2019, CDC: Do it for Yourself and Your Friends, CDC: Social Media Tools, Guidelines & Best Practices. Details and references are detailed in Table 3: Supplemental Educational Campaigns below.

Table 3: Supplemental Educational Campaigns

Campaign	Summary	Intervention	Knowledge Obtained	Reference
Social Pressure	Perception that employees are being watched can help lead to behavior change (social pressure)	Sticker of eyes placed near hand washing message above sink in public restroom *Suggested Modification*: Sticker of thermometers in bathrooms paired with self-monitoring messaging	83.3% who saw the eyes sticker washed their hands compared to the control condition who saw the message and 3 stars instead of eyes (71.9%; odds ratio: 1.95, p = .01)	https://onlinelibrary.wiley.com/doi/abs/10.1111/jasp.12501
Peer to Peer	Use of peers, leaders, and management to demonstrate/encourage behavior	Important that activities span all levels of the industry, all shifts, etc. Middle management can bridge senior management and hourly employees The more managerial involvement there is, the greater the likelihood of achieving a sense of ownership which can lead to a lasting and sustained commitment. *Suggested Modification:* Important that activities span all levels of the university from students to administration. Middle management can bridge senior management and hourly employees	Leads to increase of adherence to behavior among other employees (can be applied to students as well)	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5770633/

Psychological Teaching Model	Utilize a laboratory session to associate condom usage as a positive concept	Using a form of classic conditioning by pairing images of condoms with either positive or neutral images. The campaign hoped to elicit positive feelings about condom usage. *Suggested Modification*: The same form of conditioning can be applied to images of thermometers and logbooks/calendars!	Increase in awareness and behavior usage of condoms. Can easily be applied to masks in a similar fashion by substituting the condom image with a mask image.	https://pubmed.ncbi.nlm.nih.gov/25581703/
CDC: Symptoms of Coronavirus Disease 2019	Poster listing symptoms of COVID-19. Reminder that symptoms can range from mild to severe.	Messaging focusing on range of symptoms and what they may look like	Increase in awareness for symptoms to monitor	https://www.cdc.gov/coronavirus/2019-ncov/communication/print-resources.html?Sort=Date%3A%3Adesc&Search=symptoms%20of%20coronavirus%20disease%202019
CDC: Do it for Yourself and Your Friends	Poster targeting youths 15-21 reminding them to monitor health	Focused on monitoring health to protect not only yourself but also your friends	Increase in awareness and perceived benefit of taking care of yourself if you have symptoms	https://www.cdc.gov/coronavirus/2019-ncov/downloads/Young-Mitigation-recommendations-resources-toolkit-COL.pdf
CDC: Social Media Tools, Guidelines & Best Practices	Social media toolkit aimed at targeting audiences using strategic and effective materials/ resources	Messaging focused on key areas, including: put space between yourself and others, measuring 6 feet distance *Suggested Modification*: Use messages that focus on monitoring symptoms	This will lead to increase in awareness, but will not lead to long-term behavior change among all individuals	https://www.cdc.gov/coronavirus/2019-ncov/communication/social-media-toolkit.html

Behavioral Interventions

Behavioral interventions require knowledge and skills. The knowledge is transferred into a behavior using a behavioral intervention. Behavioral interventions follow an educational program. There are many different evidence-based behavioral interventions. The self-monitoring program has identified evidence-based interventions that have proven to be effective. Some of the interventions mentioned below have been adapted to fit the face covering program. Below is an outline of the 10 number of behavioral interventions: Behavioral Contracting Intervention, Peer Educator Learning Intervention, Thermometer and Symptom Log Intervention, Social Factors Intervention, Decision Prompts Intervention, Gamification Intervention, Individual Adapted Health Behavioral Change Intervention, and Smartphone Self-Monitoring Intervention.

Behavioral Contracting Intervention

1. Background: Behavioral contracting is an intervention technique where individuals agree to a behavior change that is has a defined reward for adherence
    a. Types of rewards may include guaranteed financial payments, lottery chances for monetary prizes, self-imposed payroll withholdings, etc.
2. Steps for Lottery
    a. Decide how much to invest
        i. Incentive could be to receive extra meal credits, gift card for the bookstore, coverage for an apparel order, etc.
    b. Decide how to measure self-monitoring & holding student accountable
        i. Post a weekly reminder on the student portal for students to self-monitor. Students have to complete a 2 week self-monitoring log to show they were compliant with self-monitoring.
    c. Recruit Students
        i. Distribute emails/display flyers prior to intervention providing the self-monitoring incentive and how to participate in the lottery
        ii. Include the all of the Educational Messages for Self-Monitoring on a sheet for students
        iii. Make self-monitoring logs (or the link to one) easily accessible to students
        iv. Delegate who will oversee the lottery, collect money, hang flyers/send emails
    d. Continue the lottery over a period of time (first and second half of the semester)
        i. Have the school system keep track of which students are keeping up with their self-monitoring for the full 2 weeks
    e. Decide how to choose winners and the mechanism to return incentives to students
        i. Example: Every tally equates to "one ticket" towards the drawing (3 "check in" boxes =3 tickets)
        ii. Example: Draw and choose the top 10 winners to divide the prize between
    f. Marketing campaign
        i. Remind students if they are self-monitoring they are protecting their friends
3. Messaging: There are three main messages that are associated with this intervention.
    a. Introductory Message
        i. Want to make some extra cash just by staying healthy? Look out for information next week on how to enter into a self-monitoring lottery!
    b. Explanatory Message
        i. Example: To enter, sign into your student portal and submit the log you have been tracking symptom in for the past 2 weeks. For every log submitted, your name will be added to the drawing (**1 log in = 1 ticket**).
    c. Concluding Message
        i. Thanks for participating in the self-monitoring lottery! Don't forget, if you are self-monitoring you are doing your part to prevent the spread of COVID, you already helped fight the spread!
4. Literature Review
    a. Work based-incentives and competitions to reduce tobacco use to individual workers/teams to motivate them to participate in programs. Rewards can vary based on participation, behavior change or both.
    b. Rewards can be provided for participation, for success in achieving a specified behavior change, or for both (join program and try to quit, fewer cigarettes smoked, quitting altogether, all of the above)[7][8]

[7] https://www.thecommunityguide.org/findings/tobacco-use-and-secondhand-smoke-exposure-incentives-and-competitions-increase-smoking-cessation-workers-combined-additional-interventions
[8] https://www.thecommunityguide.org/sites/default/files/assets/Tobacco-Incentives-Competitions-Increase-Smoking-Cessation-Among-Workers-Alone.pdf

5. Additional Resources
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    - Allen, Sherri MSN, RN, PCCN; Cronin, Sherill Nones PhD, RN-BC Improving Staff Compliance With Isolation Precautions Through Use of an Educational Intervention and Behavioral Contract, Dimensions of Critical Care Nursing: September/October 2012 - Volume 31
    - https://www.thecommunityguide.org/sites/default/files/publications/worksite-ajpm-recs-ahrf-tobacco.pdf

Peer Educator Learning Intervention

1. Background: Peer Educator Learning Intervention is an intervention technique that selects and trains individuals who are part of the community to promote and conduct a behavioral intervention.
    a. Individuals can be students, faculty, or staff. The idea is to select individuals from the same community.
2. Step for the Peer Educator Learning Intervention
    a. Design a Four-Module course
        i. Module 1: Overview of COVID-19
            1. What is COVID-19, Mode of transmission, and Incidence
            2. Are you at-risk? and What are the symptoms of COVID-19?
        ii. Module 2: Risk behaviors (explore cues to action, social influences, and the environment)
            1. Poor Social Distancing, Lack of Face Coverings, and Attending Large Group Events
            2. Comorbidities and Bad Practices that aid in COVID-19 Development
        iii. Module 3: Skill building/decision making (cues to action, self-efficacy, beliefs are addressed)
            1. How to use (log book to track symptoms, take temperature, etc.)
                a. https://www.dhhs.nh.gov/dphs/cdcs/documents/self-quarantine-covid.pdf
            2. When to quarantine vs. self- isolate and how to with roommates
                a. https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/quarantine.html
            3. Self-efficacy and assertiveness
                a. Encouraging friends and classmates to do it
        iv. Module 4: Taking charge/Putting it all together (focuses on cognitive competencies, social influences, and the environment)
            1. Scenarios and Role Playing (How would you handle it?)
    b. Select students to be peer educators from different classes (freshman, sophomore, junior, and senior)
        i. Selected students are required to complete a self-monitoring course designed by the university that teaches students about COVID-19, types of symptoms, and how to handle them.
        ii. Additionally, students complete a two-hour educational course about the Four-Module course.
    c. Prepare an all-inclusive PowerPoint that includes the four modules for peer educators
    d. Contact professors and have them dedicate two 1-hour slots for peer educators to teach this course
    e. Conduct Pre/Post Surveys on COVID-19 Knowledge and Self-Efficacy
        i. All students who complete both be given a gift (gift cards, school spirt apparel, etc...)
3. Messaging: There are three main messages that are associated with this intervention.
    a. Introductory Message
        i. Do you think you've been exposed to COVID-19? Come to the STOP COVID-19! Group today!
    b. Explanatory Message
        i. Have you recently been around someone who is sick? Are you worried they could have COVID? Participate in our training course and to learn about the symptoms, self-monitoring, and how to protect yourself!
    c. Concluding Message
        i. Thanks for participating in the self-monitoring course! We appreciate your help in this fight. We have an awesome reward for you! Just login into your student account and click "claim your gift card."

4. Literature Review
    a. Peer Education has been utilized time and time again. One systematic/meta-analysis determined that peer to peer education was moderately effective at behavior outcomes. [9]
    b. This intervention was based on a successful evidence-based intervention that reduced the risk of HIV/AIDS in African American College Students.[10]

5. Additional Resources
    a. http://www.specialconnections.ku.edu/?q=behavior_plans/classroom_and_group_support/teacher_tools/peer_assisted_interventions

[9] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3927325/
[10] https://www.deepdyve.com/lp/sage/reducing-the-risk-of-hiv-aids-in-african-american-college-students-B8W0TPBKmS?

Thermometer and Symptom Log Intervention

1. Background: Health communication campaigns that combine the use of mass media with the distribution of free or reduced-price health-related products can lead to the intended behavior change. Combined with the free product, messages the increase awareness of the appropriate use of the product through mass media can reduce barriers to hand washing such as cost, access, and convenience.
    a. Use of mass media included television and radio and nearly always included small media such as brochures and posters, and social media.
    b. Health-related products can include items such as sunscreen, helmets, and in the case of hand hygiene, hand sanitizer.
    c. Alone, health communication campaigns are proven to increase knowledge and awareness, and altering beliefs, perceptions, and attitudes of targeted audiences. However, when used as a single strategy, such campaigns do not generally result in sizeable changes in health behavior. Adding in the product distribution leads to behavior change.
2. Steps
    a. Decide what health-related product you will distribute.
        i. Thermometers is appropriate
        ii. Printouts of the self-monitoring log book
            1. https://www.cdc.gov/coronavirus/2019-ncov/downloads/php/14-Day-Temperature-and-Symptom-Log-for-Contact-Tracing.pdf
    b. Decide how you will distribute the product to students.
    c. Design a media campaign.
        i. Messages must be related to the product you are distributing; should target proper use of thermometer, why you should monitor, etc.
        ii. Consider all media outlets your university has access to that students may access. Social media, TV, posters, websites, etc.
        iii. Classrooms are also a place where self-monitoring messaging can be shared
    d. Determine the length of your media campaign.
        i. Successful interventions ranged from one week to 36 months
    e. Obtain and distribute your product to students
        i. Thermometers can be distributed with small piece of paper with symptoms “fast facts”
    f. Run your media messages throughout the intervention
        i. Run one message a few days-one week at a time
3. Messaging: There are three main messages that are associated with this intervention.
    a. Introductory Message
        i. In a few days, we will be handing out thermometers. Stay tuned for information on how to pick up yours along with a symptom monitoring log!
    b. Explanatory Message
        i. Did you get your **free** thermometer yet? Stop by the student union to pick yours up today as a reminder to keep an eye on your health.
    c. Concluding Message
        i. If you come into contact with someone who could potentially have COVID-19 be sure to use your thermometer and log book to track your symptoms.

4. Literature Review
    a. Focused on interventions which facilitate adoption and/or maintenance of health-promoting behaviors (i.e., increased physical activity through pedometer distribution combined with walking campaigns), facilitate and/or help to sustain cessation of harmful behaviors (i.e., smoking cessation through free or reduced cost over-the-counter nicotine replacement therapy, and protect against behavior-related disease or injury (i.e., sun-protection products).
    b. Mass media channel provides multiple opportunities for exposure. Intervention used campaign messages in addition to distributing a health-related product
    c. Media combined with the distribution of product lead to an increase in in the proportion of people engaging in a healthful behavior related to use of the product distributed.[11]
5. Additional Resources
    - https://www.thecommunityguide.org/sites/default/files/assets/Health-Communication-Mass-Media.pdf
    - Robinson MN, Tansil KA, Elder RW, Soler RE, Labre MP, Mercer SL, Eroglu D, Baur C, Lyon-Daniel K, Fridinger F, Sokler LA, Green LW, Miller T, Dearing JW, Evans WD, Snyder LB, Viswanath KK, Beistle DM, Chervin DD, Bernhardt JM, Rimer BK, and the Community Preventive Services Task Force. Mass media health communication campaigns combined with health-related product distribution: a Community Guide systematic review. Am J Prev Med 2014;47(3):360-71.
    - Jacob V, Chattopadhyay SK, Elder RW, Robinson MN, Tansil KA, Soler RE, Labre MP, Mercer SL, and the Community Preventive Services Task Force. Economics of mass media health campaigns with health-related product distribution: a Community Guide systematic review. Am J Prev Med 2014;47(3): 348-59.
    - Community Preventive Services Task Force. Combination of mass media health campaigns and health-related product distribution is recommended to improve healthy behaviors. Am J Prev Med 2014; 47(3):372-4.

[11] https://www.thecommunityguide.org/findings/health-communication-and-social-marketing-campaigns-include-mass-media-and-health-related

Social Factors Intervention

1. Background: Using social factors (things that influence an individual's personality, attitude, and lifestyle) to change behavior
    a. Activities include behavioral counseling, skill-building activities, rewards/reinforcement, and inclusion of colleagues or family members to build support systems, and changes to physical or organizational structures that make healthy choices easier and target the entire student body
    b. Visual cues can be paired with other changes to the physical environment to target social factors
2. Steps
    a. Determine which social factor you want to target
        i. For example, target the student feelings towards their friends and families. It is the student's responsibility to self-monitor to keep their friends and family safe.
    b. Distribute materials (stickers, informational cards or sheets, etc.)
        i. Use these materials as a platform to message "Stop COVID! Monitor your Symptoms. Protect your Friends"
        ii. Distribute this in your student health center as a reminder for when they leave to keep a watch on their symptoms to protect others
    c. Design messaging materials in house or with a graphic design team
    d. Reorder materials from step B as needed
3. Messaging
    a. Introductory Message
        i. There will be some new faces around the university soon! Keep a lookout around our bathrooms, sinks, and textbooks.
    b. Explanatory Message
        i. Additions have been added to remind you that it is not only your responsibility to keep yourself healthy, but it is also your job to keep your family and colleagues safe. Cover your face!
    c. Concluding Message
        i. Your family and friends will all be affected by whether you decide to cover you face. Continue to do it for them.
4. Literature Review
    a. Worksite nutrition and physical activity programs designed to improve health behaviors. Examples include information and education, activities that target thoughts, and making healthier foods more available [12][13]

[12] https://www.thecommunityguide.org/findings/obesity-worksite-programs

[13] https://www.thecommunityguide.org/sites/default/files/publications/obesity-ajpm-evrev-worksite-nutrition-pa.pdf

5. Additional Resources
    - Robbins SB, Oh IS, Le H, Button C. Intervention effects on college performance and retention as mediated by motivational, emotional, and social control factors: integrated meta-analytic path analyses. *J Appl Psychol*. 2009;94(5):1163-1184.
    - https://www.thecommunityguide.org/stories/investing-worksite-wellness-employees
    - https://www.thecommunityguide.org/sites/default/files/assets/OnePager-WorkPrograms.pdf
    - CDC. Public Health Strategies for Preventing and Controlling Overweight and Obesity in School and Work Settings. A report on recommendations for the Task Force on Community Preventive Services. 2005;54 (RR10);1-12.
    - Archer, W.R., Batan, M.C., Buchanan, L.R., Soler, R.E., Ramsey, D.C., Kichhofer, A. & Reyes, M. (2011). Promising Practices for the Prevention and Control of Obesity in the Worksite. American Journal of Health Promotion, 25(3),e12-e26.
    - Task Force on Community Services. A recommendation to improve employees weight status through worksite health promotion programs targeting nutrition, physical activity, or both. American Journal of Preventive Medicine. 2009;37(4):358-9
    - https://www.thecommunityguide.org/sites/default/files/publications/obesity-ajpm-evrev-worksite-nutrition-pa.pdf

Decision Prompts Intervention

1. Background: Point-of-decision prompts are motivational signs placed near area where an individual has a choice between two behaviors. These prompts are most effective when they are tailored to specific benefits or populations; for example, signs may inform individuals about a health or weight-loss benefit from taking the stairs and remind individuals already predisposed to becoming more active, for health or other reasons, about an opportunity at hand to do so.
    a. Prompts can be paired with other changes to the physical environment, such as placing footprint stickers on the ground leading from the elevator to the stairwell or painting the stairwell to make it more welcoming.
2. Steps
    a. Determine the point of decision you would like to target.
        i. For self-monitoring, this decision point comes as based on whether they have been possibly exposed to COVID-19, whether that is from someone who has tested positive for COVID, who is being tested, and anyone else who might have been exposed who may or may not be experiencing symptoms
    b. Decide what your messaging will be.
        i. The decision is to self-monitor or not to self-monitor so messaging needs to focus on the benefits/consequences of this decision
        ii. Tell students to self-monitor for a full 14-days after a possible exposure
        iii. Example could be "*Have you been close to someone who has COVID or is being tested for COVID? Have you been close to someone who was exposed or is in self-quarantine? If yes, self-monitor: you may be need to quarantine*."
        iv. Place messages in areas where people congregate as reminders they could have come into contact with someone with COVID. This would include classrooms, dining halls, residence halls, etc.
    c. Determine whether additional changes are needed in the area where the decision is to be made
        i. Provide locations for thermometer distribution units where students may be found in large groups
    d. Create your messages either in-house or with a graphic design team. Order additional supplies as determined by Step C.
    e. Post your messages and make additional changes such as adding stickers in your point of decision areas.
3. Messaging: There are three main messages that are associated with this intervention.
    a. Introductory Message
        i. You'll soon notice changes around campus. Be on the lookout for new paint, updated areas, and other additions!
    b. Explanatory Message
        i. Our buildings have been updated to help encourage self-monitoring. Please remember self-monitor if you have a possible exposure to COVID.
    c. Concluding Message
        i. You may notice the units to pick up thermometers have been removed. Don't let that stop you! Continue self-monitor if you have a possible exposure to COVID.

4. Literature Review
    a. Signs on or near stairwells, elevators, and escalators to encourage individuals to use stairs (to lead to increase in physical activity)
    b. Motivational signs, inform & remind, used alone or with enhancements led to increased use of stairs and attitude towards using them
    c. In 10 of the 11 included studies more people used the stairs when point-of-decision prompts were posted; Stair use increased by a median 2.4 percentage points, a relative increase of 50% [14][15][16][17]
5. Additional Resources
    - Soler RE, Leeks KD, Ramsey Buchanan L, et al. Point-of-decision prompts to increase stair use: a systematic review update. Am J Prev Med 2010;38(2S):292-300.
    - Task Force on Community Preventive Services. Recommendation for use of point-of-decision prompts to increase stair use in communities. Am J Prev Med 2010;38(2S):290-291.
    - Kahn EB, Ramsey LT, Brownson R, et al. The effectiveness of interventions to increase physical activity: a systematic review. Am J Prev Med 2002;22(4S):73-107.
    - Task Force on Community Preventive Services. Recommendations to increase physical activity in communities. Am J Prev Med 2002;22 (4S):67-72.
    - CDC. Increasing physical activity. A report on recommendations of the Task Force on Community Preventive Services.
    - Task Force on Community Preventive Services. Physical activity. In: Zaza S, Briss PA, Harris KW, eds. The Guide to Community Preventive Services: What Works to Promote Health? Atlanta (GA): Oxford University Press; 2005:80-113 (Out of Print).

[14] https://www.thecommunityguide.org/findings/physical-activity-point-decision-prompts-encourage-use-stairs
[15] https://www.thecommunityguide.org/stories/evidence-based-recommendations-get-minnesotans-groove
[16] https://www.thecommunityguide.org/stories/maryland-businesses-support-worksite-wellness-effort-combat-chronic-disease
[17] https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/point-of-decision-prompts-for-physical-activity#:~:text=Point%2Dof%2Ddecision%20prompts%20are,malls%2C%20banks%2C%20and%20libraries

Gamification Intervention

1. Background: Gamification uses game principles and elements in situations that do not traditionally lend themselves to being a game to motivate, engage and influence individuals.
2. Steps
    a. Determine which "game" works best for your students.
        i. Symptom Trivia
            1. Can have "question of the day/week". Ask COVID symptom related questions and questions on how to self-monitor/when to self-monitor. Students submit answers online via the school portal, each correct answer is worth 5 points. At end of the week/month, 5 students from each class with the most points win a prize, which can be a gift card.
                a. https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/quarantine.html
        ii. Raffle
            1. Students track number of times they self-monitor during the semester. For every X times (3?) they fill out a self-monitoring log, they receive an entry into a raffle. The prizes can be things such as money, college apparel, gift card, etc.
3. Messaging: There are three main messages that are associated with this intervention.
    a. Introductory Message
        a. Staying healthy can be fun! We're announcing a new competition coming to our school next week. Stay tuned for more information!
    b. Explanatory Message
        a. Who says self-monitoring for can't be fun? Each day this week a trivia question will be posted in the student portal. Write your answer down online and submit it! 5 students who get the most correct answers this week will win a prize!
    c. Concluding Message
        a. Thank you for participating in self-monitoring trivia. We hope you had fun and maybe learned something, too!
4. Literature Review
    a. In one organization that implemented gamification as an intervention to tackle hand hygiene, adherence to hand washing more than doubled.[18]
    b. Hand hygiene gamification interventions have largely been centered around technology, using mobile phone applications and web browsers. Other health behavior interventions have focused less on technology.[19]
    c. Board games have been used as a means to behavior change, as well
5. Additional Resources
    - Patrick Buckley & Elaine Doyle (2016) Gamification and student motivation, Interactive Learning Environments, 24:6, 1162-1175
    - https://link.springer.com/article/10.1186/s12911-017-0410-
    - https://www.researchgate.net/profile/Harri_OinasKukkonen/publication/295397862_Understanding_Persuasion_Contexts_in_Health_Gamification_A_Systematic_Analysis_of_Gamified_Health_Behavior_Change_Support_Systems_Literature/links/5b69978992851ca650512a03/Understanding-Persuasion-Contexts-in-Health-Gamification-A-Systematic-Analysis-of-Gamified-Health-Behavior-Change-Support-Systems-Literature.pdf

[18] https://link.springer.com/content/pdf/10.1007%2F978-3-319-07626-3_70.pdf
[19] https://www.liebertpub.com/doi/pdfplus/10.1089/g4h.2018.0017

Individual Adapted Health Behavior Change Intervention

1. Background: Individually adapted health behavioral change programs teach people behavioral skills to help them incorporate a desired activity into their daily routines. Programs are specific to each individual and are tailored to their unique interests, preferences, and readiness for change. Targeted behaviors may be planned (e.g., covering you face before going out in public) or unplanned (e.g., grabbing a non-reusable mask when your mask is no longer clean).
    a. Behavioral skills include goal-setting, self-monitoring, building social support for the new behavior, and reinforcing the behavior via self-reward or positive self-talk
    b. Multi-faceted model which incorporates several behavioral change campaigns
    c. Many of these interventions use constructs from established health behavior change models such as the Social Cognitive Theory, the Health Belief Model, or the Transtheoretical Model of Change
    d. May be slightly less realistic than other behavioral interventions, since you need to individualize self-monitoring for all students. This would mean determining why students does not self-monitor, what their perceived barriers are to doing so, targeting change to each specific individual
2. Steps
    a. Determine which specific planned or unplanned behaviors you would like to target – in this scenario focus on self-monitoring by logging symptoms.
    b. Based on the behaviors that will be targeted in the intervention, develop the following components:
        i. Goal-setting
            1. Each individual student will need to develop a goal. After a possible exposure, students need to pledge they will self-monitor their symptoms and social distance for 14 days.
            2. If students are certain they have been in contact with someone who has tested positive for COVID-19 or is being tested they need to pledge to self-monitor and self-quarantine for 14 days.
            3. Reminders to continue with goals may be written down and hung in a common area as a reminder to individuals.
            4. Students may “pledge” their goal by writing it on a piece of paper or signing their name next a board that has the “pledge” that will be hung in dorm room or other common area.
        ii. Self-Monitor
            1. Students need a way to track their behavior in order to determine whether they met their goal. Residence halls can pass out self-monitor logs and thermometers for students.
            2. Encourage students to use the CDC self-checker to use as another tool to help guide their decision to seek care
                a. https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html
        iii. Social support for the behavior
            1. Social support can be in the form of encouragement between colleagues or friends. Providing encouragement (i.e. virtual messages) to those during self-monitoring/quarantine, for example, could be social support.
        iv. Reinforcing the behavior via self-reward or positive self-talk.
            1. Remind students that self-monitoring is to protect their loved ones and friends as well as themselves. They should feel proud that they are making changes to their behavior for others instead of feeling like it is a burden.

c. Set a time-frame for the intervention. How long will the intervention run for? Example studies ran for 1-2 years, but self-monitoring is a more immediate change as opposed to increasing physical activity/weight loss. 6 months-1 year?
d. Encourage students throughout the duration of the intervention. Students need to keep up on tracking their behavior.
e. Determine if and how students will be rewarded for participation. Is self-motivation enough, or does there need to be a different motivator?
    i. Everyone receives a raffle ticket for each month of the intervention they completed. At the end of the intervention, a drawing is held for X number of prizes.

3. Messaging: There are three main messages that are associated with this intervention.
    a. Introductory Message
        i. Goals are important. Next week, everyone will pledge their self-monitoring goal when they start classes. We'll hang the banner in the dorm rooms, gym, or student areas.
    b. Explanatory Message
        i. Be sure to track the number of times you self-monitor in your log books provided to you. Need a log? Your residential advisor will be happy to give you one.
    c. Concluding Message
        i. Thank you for participating! We're so proud of everyone who achieved their goals.
4. Literature Review
    a. Used with physical activity to teach individuals behavioral skills to help incorporate physical activity into their daily routines. Programs are tailored to an individual's interests, preferences, and readiness for change.
    b. Interventions included substantial communication activities through mass media, social support such as self-help groups, risk factor screening, counseling, and education about physical activity in a variety of settings, and environmental or policy changes such as the creation of walking trails.
    c. Planned behaviors included a daily scheduled walk, and unplanned behaviors included using the stairs when the opportunity arises.
    d. All programs incorporated the following set of skills: (1) setting goals for physical activity and self-monitoring of progress toward goals, (2) building social support for new behavioral patterns, (3) behavioral reinforcement through self-reward and positive self-talk, (4) structured problem-solving geared to maintaining the behavior change, and (5) prevention of relapse into sedentary behaviors.[20]
5. Additional Resources
    - Kahn EB, Ramsey LT, Brownson R, et al. The effectiveness of interventions to increase physical activity: a systematic review. Am J Prev Med 2002;22(4S):73-107.
    - Task Force on Community Preventive Services. Recommendations to increase physical activity in communities. Am J Prev Med 2002;22 (4S):67-72.
    - CDC. Increasing physical activity. A report on recommendations of the Task Force on Community Preventive Services. MMWR 2001;50 (RR-18):1-16.

[20] https://www.thecommunityguide.org/findings/physical-activity-individually-adapted-health-behavior-change-programs

Smartphone Self-Monitoring Intervention

1. Background: This intervention utilizes mobile application software to promote self-management. The participants would respond to brief surveys which ultimately increased self-awareness, cues to action (reminders), and reinforcement for monitoring.
2. Steps
    a. Choose a phone application to encourage students to download to monitor their symptoms
        i. COVID Tracking (Examples)
            1. https://apps.apple.com/us/app/covid-symptom-tracker/id1503529611?ls=1
            2. https://play.google.com/store/apps/details?id=com.joinzoe.covid_zoe
        ii. COVID Symptoms (Apple Example)
            1. https://apps.apple.com/us/app/covid-symptom/id1510692333
        iii. COVID-19 Application Screening Tool based on CDC Guidance
            1. https://www.apple.com/newsroom/2020/03/apple-releases-new-covid-19-app-and-website-based-on-CDC-guidance/
    b. Market these applications to students via email and notices
    c. Decide whether to pair with self-monitoring images
3. Messaging: There are three main messages that are associated with this intervention.
    a. Introductory Message
        i. I hope everyone had an amazing summer and welcome back to school! To help keep you and the campus safe, please download a self-monitoring application at your App store!
    b. Explanatory Message
        i. Keep self-monitoring! If you may have been exposed to COVID, keep track of your symptoms for 14-days.
    c. Concluding Message
        i. Even if COVID is not around as much don't stop self-monitoring if you think there's a chance you've been exposed!
4. Literature Review
    a. Mobile application use for self-monitoring has been successful in increasing awareness and changing behavior for those living with HIV.[21]
    b. Mobile dietary self-monitoring app tracks and assesses dietary intake. Study has shown that the app has helped people monitor their diet and improve dietary intake.[22]
5. Additional Resources
    a. https://pubmed.ncbi.nlm.nih.gov/28797307/
    b. https://pubmed.ncbi.nlm.nih.gov/28270379/
    c. https://www.tandfonline.com/doi/abs/10.1080/10400435.2018.1493710
    d. https://www.frontiersin.org/articles/10.3389/fnut.2019.00149/full

[21] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4485442/
[22] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6768016/

Policy Implementation

Policy Campaign

1. University health promotion: comprehensive set of strategies which include programs, policies, benefits, environmental supports, and links to the surrounding community designed to meet the health and safety needs of all students.
    a. Four-step process:
        i. University Health Assessment
            1. Helps determine needs of specific student population
        ii. Program Planning
            1. Select interventions and components which can be implemented efficiently and are suited to the university
        iii. Program Implementation
            1. Put the program into place at the university
        iv. Program Evaluation
            1. Determine the impact of the program (can be positive, negative, or neutral)
    b. Examples of campus health program components and strategies include:
        i. Health education classes
        ii. Increase access to local fitness facilities
        iii. University policies that promote healthy behaviors (ex: tobacco-free property)
        iv. A healthy school environment created through actions such as making healthy foods available and accessible through vending machines or cafeterias
        v. A school environment free of recognized health and safety threats with a means to identify and address new problems as they arise
    - https://www.cdc.gov/workplacehealthpromotion/model/index.html

2. University established regulations- implementation led to decrease in negative outcomes. However, regulation alone is likely not enough.
    a. Example: Combined educational campaign and policy change: Compliance with hand-washing improved (from 47.7% to 85.4%) after hand washing policy was introduced. This, coupled with an educational campaign, can directly improve hand washing.
        i. Multidisciplinary task force was created to develop an evidence-based hand washing policy
    - https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006251.pub3/full
    - https://www.nature.com/articles/7210661

Program Metrics

Program evaluation is defined as the application of the scientific methods to "assess the design, implementation, improvement or outcomes of a program." [23,24] The final component of any evidence-based program is an evaluation of its measures and interventions to determine whether it was successful or not. This serves multiple different roles simultaneously. First, the organization or institution conducting the program can determine whether their intervention is improving outcomes in their target population. Second, positive findings from an evaluation allow for the demonstration of program effectiveness for funders or sponsors. Third, negative findings demonstrate the need for program improvement or reorganization. Finally, an evaluation further justifies the continually funding of a program.[24,25]

It is important to note that evaluation is linked in the logic model. Evaluation is an in-depth analysis of the outcomes originally developed in the logic model. It allows for the tangency of knowledge, attitudes, behaviors, and other outcomes. The short-/medium-/long- outcomes become quantified and depending on what is assessed, qualified. Evaluation serves to act as a bridge between the projected and the reality. For an overview/example of how to measure program components, refer to Appendix D: Evaluation Framework.

The Joint Commission previously published a comprehensive document outlining ways to measure hand hygiene adherence. The following metrics are derived from this report and supplemental materials from the World Health Organizations and the Centers for Disease Control. This plan has been adapted and utilized for self-monitoring. The examples provided in the Appendix been modified to fit our program. The original documents can be viewed at the links below.

- https://www.who.int/gpsc/5may/monitoring_feedback/en/
- https://www.jointcommission.org/-/media/deprecated-unorganized/imported-assets/tjc/system-folders/topics-library/hh_monographpdf.pdf?db=web&hash=7F1A70731D44DC2D183B1038CE34EC46

1. Measuring the amount and size of thermometers the University currently has available for use and the frequency of which they use them
    a. One way to track the amount and frequency of product use is to fully stock each thermometer dispensary and then determine how many thermometers were utilized by counting the remaining thermometers.
    b. Alternative is use electronic counting devices and electronic monitoring systems to measure the frequency with which these products are used
    c. Does not reveal whether students are using their thermometers when it is indicated or whether they are performing it correctly
    d. Does not yield any contextual information about when or why self-monitoring guidelines are not adhered to, and it often does not tell you who is (or isn't) practicing self-monitoring
    e. This measurement method prone to inaccuracy, including product waste or spillage
    f. An example of a way to track the measurement of face coverings usage is by utilizing the form in Appendix E: Consumption Survey
2. Surveys
    a. Can reveal what individuals know and think about self-monitoring as well as why they adhere (or do not adhere) to guidelines
    b. Can reveal whether students' perceptions of their own self-monitoring behavior match the perceptions of others/family members
    c. Surveys for self-reporting of self-monitoring can be unreliable; individuals tend to overestimate their adherence to guidelines when questioned and may inaccurately recall their past self-monitoring

[23] https://mainweb-v.musc.edu/vawprevention/research/programeval.shtml
[24] https://www.cdc.gov/eval/framework/index.htm

    d. An example of a comprehensive pre and post intervention survey for students which contains questions regarding self-reported behavior can be found in Appendix F: Pre-Perception Survey for Students and Appendix G: Post- Perception Survey for Students; a shorter pre and post survey that will help measure a change in student knowledge can be found in Appendix H: Pre and Post Intervention Surveys
3. Symptom and Temperature Log
    a. Tracks symptoms and temperature for 14-days
    b. A form which can be used to track symptoms compliance and instructions for use can be found in Appendix I: Symptom and Temperature Log

Limitations

There are several limitations for these programs.

- The programs were designed around scientific knowledge of disease transmission for COVID-19. Because COVID-19 is a new disease, the research and knowledge base are forever changing. The educational campaigns and behavioral interventions may become outdated.
- Evidence-based messaging and behavioral interventions are limited or non-existent. Thus, the team utilized evidence -based educational messaging and evidence-based behavioral intervention from a wide array of disease; the materials were minimally altered to fit the COVID-19 pandemic. Once materials are altered they are no longer evidence-based, however, their mirrored after evidence-based materials provide credibility to the materials.
- The materials were designed over a 1-month period. Literature reviews were robust but did not include the entirety of every published research article.
- The programs are not geared to culture, race or ethnicity. Tailored messaging and behavioral intervention are more effective if tailored to the community based on culture, race, and ethnicity.
- Programs should provide the educational campaign first, and follow education with behavioral interventions. More than one behavioral intervention should be used to improve uptake of the behavior.
- There are multiple competing factors that may influence individual and societal behaviors. These could be addressed when implementing these programs.

Conclusion

The self-monitoring campaign contains several main components for implementation and evaluation. The program contains and education campaign, behavioral intervention, and a policy component. The Intervention also include metrics to measuring the behavioral intervention. Self-monitoring has been shown to decrease the spread of COVID-19 and decrease the likelihood of infection.

Appendix A: Blank Logic Model

Program Name:					
Problem Statement:					
Program Goal:					
Resources	**Activities**	**Outputs**	**Short-Term Outcomes**	**Intermediate Outcomes**	**Long Term Outcomes**
Rationale:			**Assumptions:**		

Appendix B: Preventing COVID-19 Overview

Program Name: Preventing COVID-19

Problem Statement: During the COVID-19 pandemic, university students across New York State are not adhering to new health safety guidelines due to their low health risk perception.

Program Goal: To decrease the spread of COVID-19 among university students.

Resources	Activities	Outputs	Short-Term Outcomes	Intermediate Outcomes	Long Term Outcomes
• Upstate Public Health Team • Administrative Approval • Financial Support for Multiple Program Campaigns • School Institutional Resources -Announcements -Message Boards -Media Outlets -Face Coverings	• Conduct campaigns on handwashing • Conduct campaigns on PPE use** • Conduct campaigns on social distancing • Conduct campaigns on symptom monitoring • Conduct campaigns on policy development	• # campaigns conducted on handwashing • # campaigns conducted on PPE use • # campaigns conducted on social distancing • # campaigns conducted on symptom monitoring • # campaigns conducted on policy development	• Increase in education • Increase in health behaviors • Increase in policy development	• Increase in handwashing • Increase in PPE usage • Increase in social distancing • Increase in symptom monitoring	• Decrease in COVID-19 Transmission among college students • Decrease in community COVID-19 transmission

Rationale:

1. **The spread of COVID-19 can be slowed by handwashing , use of PPE, social distancing, symptom monitoring, and policy development.**

Assumptions:

1. **There is a direct correlation between preventative behaviors and slowing the spread of COVID-19**
2. **New York State colleges have the resources to support these guidelines**

Appendix C: Self-Monitoring Logic Model

Program Name: Stop the Spread!

Problem Statement: In 2020, college students throughout New York State are not social distancing which due to their low health risk perception

Program Goal: To decrease COVID transmission through self-monitoring among college students returning back to campus.

Resources	Activities	Outputs	Short-Term Outcomes	Intermediate Outcomes	Long Term Outcomes
• Upstate Public Health Team • Administrative Approval • Financial Support for Multiple Program Campaigns • School Institutional Resources -Announcements -Message Boards -Media Outlets	• Implement a college student educational campaign on self-monitoring • Conduct behavioral campaign on self-monitoring • Conduct policy campaign on self-monitoring	• # of Public Service Announcements • # behavioral campaigns conducted • # of policy campaigns conducted • # of policies created	• Increase in awareness of self-monitoring • Increase in knowledge of self-monitoring • Increase in positive attitudes about self-monitoring • Increase in skills for self-monitoring	• Increase in self-monitoring	• Decrease in COVID-19 Transmission among college students • Decrease in community COVID-19 cases • Decrease in hospitalization usage rates

Rationale:

1. **Self-monitoring has been shown to reduce transmission of COVID-19.**

Assumptions:

1. **There is a direct correlation between self-monitoring and slowing spread of COVID-19**
2. **New York State colleges have the capacity to implement this campaign.**

Appendix D: Evaluation Framework

Outcomes (LM)	Objectives	Outcome Questions	Indicators	Data Collection Methods	Sources
Short Term Increase in skills for self-monitoring	By the end of the program, 80% of students will have the proper skills for self-monitoring.	Did student successfully demonstrate self-monitoring?	Participant skills	Self-report	Student
Intermediate Term Increase in self-monitoring	After the program, all students will self-monitor.	Did students self-monitor more?	Rate self-monitoring	Survey Self-report	Student
Long Term Decrease COVID-19 transmission among college students	After the program, COVID-19 transmission will be zero among college students.	Were there no cases of COVID-19 transmission among students?	Rate of COVID-19 transmission	Survey Infection rate	Self-report Laboratory reporting

Appendix E: Consumption Survey

This document has been modified from the original Soap/Handrub Consumption Survey (revised August 2009), created by the World Health Organization. The original form can be found here: https://www.who.int/gpsc/5may/tools/evaluation_feedback/en/

Thermometer Consumption Survey

Measuring the Consumption of Products in Association with the Implementation of WHO Multimodal Self-Monitoring Improvement Strategy

Purpose

This tool provides a simple template to measure the consumption of products (e.g,thermometers) associated with implementing a self-monitoring improvement strategy.

Measuring the consumption of these products is an indirect method of self-monitoring performance. This indicator can help to assess the uptake of the intervention as a whole and provides an overall indication of its success. It also provides the opportunity to control stock levels over the short- and medium-term and to help estimate likely increases in requirements, particularly relating to thermometers.

Method

In general, the data collection method and the area in which data are collected (selected area or the entire university) should not be changed so as to obtain comparable data at different moments in time. A simple way to collect data is through the central purchasing unit, if this exists, by regularly reviewing the order forms (monthly) for the selected product (e.g. non-reusable masks).

Measurement of consumption should be repeated at the end of each month; if this is not feasible, it should be undertaken at time intervals that are better suited to the purchase/distribution cycle in the university. The grid for information collection included in this document offers the possibility to record data by month up to a period of 6 months. A new form should be filled in for every 6-month period. If monthly data are not available, cumulative data corresponding to longer periods (e.g. 3 or 6 months) should be entered. This measurement will contribute to the development of a plan for long-term procurement sustainability of products and monitoring of usage.

Calculations of consumption made on the basis of purchased or distributed products may be biased by the amount of product still in stock (i.e. not all products may have been used). Please ensure that the amount in stock is subtracted to calculate the real product consumption. It is important to indicate whether the amount reported corresponds to the purchased or to the used product.

If you use different products (e.g. different thermometers), please fill in one form for each product.

Units of products may differ in volume and weight. Please indicate the number of units used (e.g. number of thermometers).

Feedback

The attached protocol forms are for measurement of consumption over a 6-month period.

The forms should be filled in monthly, preferably at the end of each month.

At the end of the 6-month period, product consumption can be tabulated for the whole university or the respective departments/areas.

An increasing consumption trend indicates the success of the self-monitoring intervention.

Static or declining trends post-implementation need to be examined closely. They may be linked to lack of product availability, distribution delays or interruptions, or other reasons.

General Questions

Is there a central purchasing unit for the entire university? Yes No

(A central purchasing unit is one which makes all purchases on behalf of all units/departments of the university.)

How often are orders for thermometers placed?

Monthly 3-monthly 6-monthly irregular other

Please describe the process of purchase and distribution of product in your university, including the time intervals between purchase and actual distribution, staff responsible for each task in the process, etc.

Protocol to Measure the Consumption of Products for the Self-Monitoring Intervention (Thermometers)[25]

University name:

Name of implementation co-ordinator/lead:

6-month measurement period
(Please include specific dates for start month and end month, e.g. 30 June – 31 December)

Does the amount measured relate to ☐ whole university ☐ a department ☐ other

Please indicate which department (if applicable): _____

Please indicate other (if applicable): _____

If the measured amount relates to a department/other, please describe those included:

[25] https://www.who.int/gpsc/5may/tools/evaluation_feedback/en/

Thermometers
(measured in numbers)

Product: ▭ Reusable ▭ Non-reusable ▭ Other (please specify) ____

Information recorded is related to ▭ purchased/distributed product ▭ used product

Name/composition of product/s:

	Amount purchased/used	
	Reusable (Number)	**Non-Reusable (Number)**
Month 1 Date (month):		
Total university or selected areas (delete as applicable)		
Month 2 Date (month):		
Total university or selected areas (delete as applicable)		
Month 3 Date (month):		
Total university or selected areas (delete as applicable)		
Month 4 Date (month):		
Total university or selected areas (delete as applicable)		
Month 5 Date (month):		
Total university or selected areas (delete as applicable)		
Month 6 Date (month):		
Total university or selected areas (delete as applicable)		

Appendix F: Pre-Perception Survey for Students

This document has been modified from the original Perception Survey for Health-Care Workers (revised August 2009), created by the World Health Organization. The original form can be found here: https://www.who.int/gpsc/5may/tools/evaluation_feedback/en/

Perception Survey for Students

It should take you about 10 minutes to complete this questionnaire.

Each question has **one answer only**.

Please read the questions carefully and then respond spontaneously. Your answers are anonymous and will be kept confidential.

1. **Gender:** ▭ Female ▭ Male

2. **Age:** _____ **years**

3. **Did you receive formal training in self-monitoring in the last three months?** ▭ **Yes** ▭ **No**

4. **Do you self-monitor after a possible exposure?** ▭ **Yes** ▭ **No**

5. **What is the effectiveness of self-monitoring in preventing COVID?**

   ▭ Very low ▭ Low ▭ High ▭ Very high

6. **Among all safety issues, how important is self-monitor at your university?**

   ▭ Low priority ▭ Moderate priority ▭ High priority ▭ Very high priority

7. **On average, in what percentage of situations requiring self-monitoring do students in your university actually perform self-monitoring, either by using a thermometer or logging symptoms (between 0 and 100%)?**

   _____% ▭ I don't know

8. **In your opinion, how effective would the following actions be to improve self-monitoring permanently in your university?**
   Please tick one "☐" on the scale according to your opinion.

   a. Leaders and senior managers at your university support and openly promote self-monitoring.

      Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

   b. The university makes thermometers available.

      Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

   c. Self-monitoring posters are displayed as reminders.

      Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

   d. Each student receives education on self-monitoring.

Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

e. Clear and simple instructions for self-monitoring are made visible for every student.

Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

f. You always cover your self-monitor as recommended (being a good example for your friends).

Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

9. What importance does the head of your university attach to the fact that you self-monitor?

No importance ▭---▭---▭---▭---▭---▭---▭ Very high importance

10. How important is it to your friends or colleagues that you practice self-monitoring?

Not important ▭---▭---▭---▭---▭---▭---▭ Very important

11. On average, in what percentage of situations requiring self-monitoring, do you actually perform self-monitoring, either by using a thermometer or logging symptoms (between 0 and 100%)?

_____ %

Thank you very much for your time!

Follow-Up Perception Survey for University Students[26]

It should take you no more than 15 minutes to complete this questionnaire.

Each question has **one answer only**.

Please read the questions carefully and then respond spontaneously. Your answers are anonymous and will be kept confidential.

This questionnaire is in two parts: **part 1** includes the same questions that you may have answered during a previous evaluation period; **part 2** includes some additional questions to find out your opinion of the strategies and tools being currently used to promote face coverings at your institution.

Part 1

1. **Gender:** ▭ Female ▭ Male

2. **Age:** _____ years

3. **Did you receive formal training in self-monitoring in the last three months?** ▭ Yes ▭ No

4. **Do you self-monitor after a possible exposure?** ▭ Yes ▭ No

5. **What is the effectiveness of self-monitoring in preventing COVID?**

   ▭ Very low ▭ Low ▭ High ▭ Very high

6. **Among all safety issues, how important is self-monitoring at your university?**

   ▭ Low priority ▭ Moderate priority ▭ High priority ▭ Very high priority

7. **On average, in what percentage of situations requiring self-monitoring do students in your university actually perform self-monitoring, either by using a thermometer or logging symptoms (between 0 and 100%)?**

   _____% ▭ I don't know

8. **In your opinion, how effective would the following actions be to improve self-monitoring permanently in your university?**
   Please tick one "☐" on the scale according to your opinion.

   g. Leaders and senior managers at your university support and openly promote self-monitoring.

   Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

   h. The university makes thermometers available.

   Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

   i. Self-monitoring posters are displayed as reminders.

   Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

[26] https://www.who.int/gpsc/5may/tools/evaluation_feedback/en/

j. Each student receives education on self-monitoring.

Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

k. Clear and simple instructions for self-monitoring are made visible for every student.

Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

l. You always self-monitor as recommended (being a good example for your colleagues).

Not effective ▭---▭---▭---▭---▭---▭---▭ Very effective

9. What importance does the head of your university attach to the fact that you self-monitor?

No importance ▭---▭---▭---▭---▭---▭---▭ Very high importance

10. How important is it to your friends or colleagues that you practice proper self-monitoring?

Not important ▭---▭---▭---▭---▭---▭---▭ Very important

11. On average, in what percentage of situations requiring self-monitoring, do you actually self-monitor, either by using a thermometer or logging symptoms (between 0 and 100%)?

_____ %

Part 2

1. Has the use of thermometers provided by the university made self-monitoring to do during your day?

Not at all ▭---▭---▭---▭---▭---▭---▭ Very important

2. Were the activities that you participated in important to improve your self-monitoring skills?

Not at all ▭---▭---▭---▭---▭---▭---▭ Very important

3. Do you consider that the leadership at your facility is supporting self-monitoring improvement?

Not at all ▭---▭---▭---▭---▭---▭---▭ Very much

4. Has the increased focus on self-monitoring at your university helped you personally to improve your self-monitoring practices?

Not at all ▭---▭---▭---▭---▭---▭---▭ Very much

5. Has your awareness of your role in preventing the spread of COVID by improving your self-monitoring practices increased during the current self-monitoring promotional campaign?

Not at all ▭---▭---▭---▭---▭---▭---▭ Very much

Thank you very much for your time!

Appendix H: Pre and Post Intervention Surveys

Pre and Post intervention surveys which should be distributed to students pre-intervention and post-intervention to measure change in knowledge. Questions may need to be tailored to specific interventions, but the Pre and Post surveys should have the same questions. Example questions are included below.

Pre-Survey

Please select either "true" or "false" for each of the following questions.

Symptoms typically appear on day 5 or 6 after exposure	**True**	**False**
A temperature is considered to be 100.4 or higher	**True**	**False**
You should log symptoms for 7 days	**True**	**False**

Post Survey

Please select either "true" or "false" for each of the following questions.

Symptoms typically appear on day 5 or 6 after exposure	**True**	**False**
A temperature is considered to be 100.4 or higher	**True**	**False**
You should log symptoms for 7 days	**True**	**False**

Appendix I: Symptom and Temperature Log

Write your symptoms and temperature in the space below every day for 14 days.

DAY	DATE	SYMPTOMS	TEMP
DAY 0		Day 0 is the day you were last exposed to COVID-19.	
DAY 1			
DAY 2			
DAY 3			
DAY 4			
DAY 5			
DAY 6			
DAY 7			
DAY 8			
DAY 9			
DAY 10			
DAY 11			
DAY 12			
DAY 13			
DAY 14			

If you get sick: • Stay home. Avoid contact with others. • You might have COVID-19; most people are able to recover at home without medical care. • If you have trouble breathing or are worried about your symptoms, call or text a health care provider. Tell them about your recent exposure and your symptoms • Call ahead before you go to a doctor's office or emergency room.

CS317203A
May 22, 2020 11 AM

www.cdc.gov/coronavirus

Tool is from The Centers for Disease Control "Daily Temperature/Symptom Log". The original can be found: https://www.cdc.gov/coronavirus/2019-ncov/downloads/php/14-Day-Temperature-and-Symptom-Log-for-Contact-Tracing.pdf