Department of Sociomedical Sciences

Master's Student Handbook 2021-2022

Department of Sociomedical Sciences
MS and MPH Students Handbook

Disclaimer

The information contained in this handbook is correct for the academic year 2021–22. The most up-to-date version can be found at www.mailman.columbia.edu/people/current-students/academics/student-handbooks

Although the degree and academic requirements in place normally will not change within any given academic year, Mailman School and departmental policies are reviewed and updated regularly. The Department of Sociomedical Sciences reserves the right to make changes at any time with appropriate notice to the community (e.g., email notification).

The Department of Sociomedical Sciences is dedicated to addressing the social forces that influence health. Our research, teaching, and service are premised on the idea that to understand patterns of illness in society and to create effective programs that improve population health, it is essential to account for the broad contextual factors that structure people's actions, and to weigh the ethical and political factors that shape policy debates.

Sociomedical Sciences draws upon a diverse range of analytic methods and conceptual frameworks from the social and behavioral sciences and humanities, including sociology, anthropology, psychology, health education/health promotion, history, and political science. Using these tools, our faculty and students explore a wide array of public health issues including sexuality, aging, obesity, urban health, HIV/AIDS, homelessness, tobacco and drug use, healthcare access, mass incarceration, occupational and environmental health, immigrant health, and global mental health. Our work emphasizes the critical importance of factors such as socioeconomic status, race, ethnicity, gender, and sexuality in determining health vulnerabilities.

In 1968, the Columbia University School of Public Health became the first institution in the country to offer a graduate degree in Sociomedical Sciences (SMS). Dr. Jack Elinson, the first chair of SMS, coined the term "sociomedical sciences" to incorporate the social sciences of sociology, anthropology, economics, history, political science, and social psychology into a multidisciplinary study of health and medicine.

Within SMS, four degrees can be pursued: The Master of Public Health (MPH), the Master of Science (MS), the Doctor of Public Health (DrPH), and the Doctor of Philosophy (PhD).

MPH Competencies: Department of Sociomedical Sciences

The MPH degree in Sociomedical Sciences (SMS) Sciences prepares students to create programs and policies that address the social determinants of health. Students are provided with the knowledge and skills to apply theories, concepts, and methods from the social and behavioral sciences to improve the health of individuals and communities. MPH graduates from SMS go on to hold leadership positions in government, community-based and non-governmental organizations, health care organizations, universities, think tanks and research consultancies, foundations and philanthropies, and media organizations. These general goals are reflected in specific learning objectives for MPH students developed at the school, department, and certificate levels. Upon satisfactory completion of the MPH program in SMS, graduates will be able to:

- Apply concepts, theories, and methods from the social and behavioral sciences address public health challenges through program and policy development.
- Employ relevant quantitative research methodologies and reliability and validity of measures used in quantitative research to study theory-driven research questions.
- Identify, collect and analyze qualitative data through methods including in-depth

interviews, focus groups, ethnography, and participant observation.
- Communicate research and program findings through action-oriented recommendations that are appropriate for varied audiences and sectors.
- Employ ethical and culturally competent frameworks in research design and conduct with human participants, including knowledge of the major categories of IRB review of human subjects research.

MS Competencies: Department of Sociomedical Sciences

The Master of Science (MS) degree in Sociomedical Sciences prepares students to analyze the social determinants of health using theories, concepts, and methods from the social and behavioral sciences. The MS degree is of particular interest to mid-career professionals with health related interests in fields such as nursing, medicine, health policy, bioethics, journalism, and law; post-doctoral students seeking to enhance their training by gaining additional analytic tools for public health policy making; and students seeking preparation for further study in a doctoral program. Upon satisfactory completion of the MS program in Sociomedical Sciences, graduates will be able to:

- Analyze public health challenges using social and behavioral science concepts, theories, and methods.
- Develop theory-driven research questions grounded in epidemiological concepts and methods to study them.
- Employ ethical considerations and frameworks, including a working knowledge of the major categories of IRB review of human subjects research, to shape research design.
- Describe how ethical considerations shape research design and conduct with human participants and demonstrate working knowledge of the major categories of IRB review of human subjects research.
- Create proficient written, oral and visual communication suitable for a variety of diverse audiences and differentiated for their needs.

General Information and Resources

The Department of Sociomedical Sciences is located on the 5th and 9th floors of 722 West 168th Street. Professor Kathleen Sikkema is the Chair of the Department of Sociomedical Sciences. Professor Marita Murrman is the Deputy Chair of Master's Programs and Professor Robert Fullilove is the Practicum Director, responsible for the practica of all the MPH students. Andrea Constancio is the Associate Director of Academic Programs. She is responsible for all academic affairs related to the MPH, MS, and doctoral programs including admissions, academic progress, practicum, and graduation.

Email & Accessing Information

Columbia UNI & Email
An official Columbia University email address is required for all students. The University has the right to send official communications to the University email address, which is based upon the University Network ID (UNI) assigned to the student.

Mailman Public Health students receive an @cumc.columbia.edu email account when they begin enrollment CUMC. The address is formatted as uni@cumc.columbia.edu, where uni is your own Columbia UNI (ex: abc1234).

The University expects that every student will receive email at his or her Columbia University email address and will read email on a frequent and consistent basis. A student's failure to receive and read University communications in a timely manner does not absolve that student from knowing and complying with the content of such communications.

IMPORTANT: Email Use at CUIMC prohibits automatic forwarding of your messages to an outside provider such as Gmail, iCloud, etc. and can result in permanent loss of incoming messages. Individual messages can be manually forwarded when in compliance with email, data protection or other relevant requirements.

SMS Listerv and E-weekly
The department regularly sends information for master's students such as program announcements, practicum opportunities, and job postings for students. We also have a department weekly newsletter, sent Monday afternoons, with department announcements, shout-outs, and upcoming events and programs for all SMS faculty, staff, and students.

Mailman Public Health Transmission
The Mailman School of Public Health has three news and events weeklies:

- Transmission is the Mailman community weekly newsletter sent to faculty, staff, and students.
- Event Transmission is the Mailman community events calendar.
- Transmission *Action* is the weekly e-mail **for students** produced by the Office of Student Affairs with important announcements.

Columbia Transportation Services

Columbia Transportation provides travel options and information that allows the Columbia community to make safe, efficient, and timely travels to, from, and between Columbia's Morningside, Manhanttanville, and Medical Center campuses.

Campus Shuttle Service
A free campus shuttle bus service is available between the CU Medical Center Campus and the Columbia Morningside Campus. A valid Columbia University identification card is

required. For up to date information about this and other shuttle bus services operated by Columbia University visit https://transportation.columbia.edu/

Campus Safety Escorts
The Department of Public Safety at the Morningside Campus provides a safety escort service

- #### Morningside Campus Escort Service

  The on-demand, point-to-point Public Safety Evening Shuttle by Via has replaced the escort service at the Morningside campus. Please visit the On-Demand Evening Shuttle page for more information.

- #### Medical Center Escort Service

  On the Medical Center Campus, foot escorts are provided by Public Safety personnel at all times. From 6:00PM until 6:00 AM, vehicles may be used for escorts if available. The escort area is West 159th Street to West 168th Street, Riverside Drive to Amsterdam Avenue and from West 168 Street to 181 Street, Broadway to Haven Avenue. A valid Columbia ID Card is required to obtain an escort. Please call 212-305-8100 to request an escort. Allow 10-15 minutes for the escort to arrive.

- #### Manhattanville Campus Escort Service

  Manhattanville Public Safety provides an evening escort service to faculty, staff and students at Manhattanville, from 6:00 p.m. to 4:00 a.m. The service accompanies you from any Manhattanville Campus building to the 1 train subway station at 125th Street and Broadway. The on-demand, point-to-point Public Safety Evening Shuttle by Via is also available in Manhattanville. To request an escort, call the Manhattanville Operations Center non-emergency line at 212-853-3301.

Mailman Bias Response and Support System (BRSS)

The Mailman School of Public Health is committed to creating an inclusive working, learning, and living environment where all are respected. The occurrence of bias related incidents, involving conduct, speech, or expressions reflecting prejudice are an opportunity for learning and growing as a community. All students, faculty, staff, and alumni and anyone observing or experiencing a potential bias-related incident involving our Mailman community members can use BRSS. BRSS is one of many tools provided by Mailman that will support us as we co-create a community dedicated to learning and developing skills needed to bridge differences. More information and to access BRSS: www.mailman.columbia.edu/research/office-diversity-culture-and-inclusion/bias-response-and-support-system.

Columbia Gender-Based Misconduct Policies for Students

Students are encouraged to familiarize themselves with university resources and policies regarding sexual assault, sexual violence, sexual harassment, and gender-based misconduct. Students who believe they have been subjected to gender-based discrimination or

harassment are encouraged to report these incidents. Upon receiving a report, the University will respond promptly, equitably, and thoroughly. For more information or to report an incident of gender-based or sexual misconduct, https://sexualrespect.columbia.edu/ or telephone to (212) 854-1717.

Academic Affairs

Community Standards

Students have a responsibility to familiarize themselves with and abide by all Columbia University and Mailman School community standards; especially as they relate to academic integrity, policies, procedures, and personal and professional conduct.

Violations of community standards – even those that arise from one's lack of awareness or understanding – may lead to disciplinary action up to and including dismissal for the offending student.

Academic Integrity

A violation of academic integrity compromises the intellectual foundation of our institution. To violate that principle is one of the most serious offenses a student can commit at Columbia University. Irrespective of any disciplinary outcome, faculty members reserve the right to assign grades as they deem appropriate. The Office of Student Affairs (OSA) partners with the Office of Student Conduct and Community Standards (SCCS) when investigating matters of alleged academic misconduct. The Community Standards and Conduct Policy details Columbia Public Health's expectations for academic integrity, the process by which the School addresses alleged academic misconduct, and the potential sanctions for students found in violation of the Code of Academic Integrity, which include but is not limited to dismissal from the institution.

Conduct as an employee, a leader, or when completing practicum

We expect the highest level of professionalism when students are in the role of employee (e.g., teaching assistant, research assistant, etc.), student-leader, or in the field during their practicum (see practicum section pg 15). A student must be in good academic standing to hold any of these roles, this includes one's grades as well as upholding good conduct outlined throughout the student handbooks and community standards pages.

Registration Process

Incoming MPH students should note that the school registers students for their first semester core courses. In subsequent semesters, students will use Student Services Online (SSOL) to register for department, certificate, and elective courses.

Students will receive information about these registration periods from the Office of Student Affairs. Students should check SSOL for any holds on their accounts and to view their next registration appointment times.

Each semester, course schedules for the entire university are published online in the Columbia Directory of Courses (www.columbia.edu/cu/bulletin/uwb/). The Mailman School of Public Health publishes a separate course schedule available online at www.mailman.columbia.edu/people/current-students/academics/course-directory.

Many courses require permission. In these cases, a note in the Mailman School online course listing will indicate who should be contacted for permission. Students who register without permission may be dropped from the class even after having registered for it.

- *Late Registration*

Students are expected to register for and enroll in courses *prior* to the first day of class. Registration holds may sometimes delay a student's registration, but the onus is on the student to resolve any/all holds preventing one's registration by no later than the payment due-date of the second billing statement of the semester. After this deadline, students must work directly with Student Academic Records and Standards to determine next steps, which may include a leave of absence until the hold(s) can be resolved.

- *Registration Holds*

Students should periodically check SSOL to ensure their student record is accurate and that no holds are in place. If a hold is present on a student's account, it will likely prevent the student from taking any registration action (e.g., adding or dropping a class, change of grading options, etc.). Only the office that put the hold in place may release the hold, and contact information for the specific office(s) will be listed alongside the hold. Lifting a hold may take more than 24 hours to process, so students should reconcile their holds well in advance of registration appointments.

- *Change of Program Period - Add/Drop*

Changes in your class schedule may be made during the add/drop period, usually the first 8-10 days of the semester. There are no extra charges for adding or dropping courses during this period. However, because it is less than ideal to join a course without having attended the first weeks, it is recommended that students make every effort to register on time and consult with advisors prior to registration.

- *Courses: Required, Selectives and Electives*

Students should review their respective academic plans to ensure they are taking classes necessary to complete their degrees as prescribed. This includes department required courses and certificate requirements. MPH students may find their academic plans in the online Certificate Requirements database. It is important to note some certificate courses are set with very specific prescribed and sequential course plans, while the department requirements may be satisfied in semesters 2 thru 4. Students in the MS degree program may find their requirements listed on page 20.

Selectives refer to department or certificate required courses in which a student selects from two or more courses.

Certificate Elective is a course that is applied toward the student's certificate and that has not already been taken for required credit. Some certificates specify a selection of courses from which the student must choose electives and other certificates are open and flexible and have a wide range of options for electives.

General Elective is any graduate level course taken in or outside of SMS. General electives may be taken at other schools of the university. Within Columbia University most graduate level courses are indicated by course numbers of 4000 or higher. If students are unsure if the course is graduate level they should consult with the Associate Director of Academic Programs.

- *Tutorials*

A tutorial is an individualized course of study in which a student works with a faculty member in a less structured setting than a classroom course. One-to-one student/faculty tutorials may include, for example, participation in major research or other projects, small individual projects, pilot projects, literature review, and field experience. A tutorial may be taken for one, two, or three credits depending on the amount of work it entails. No more than 3 credits of tutorials may be applied toward the degree credits.

Students interested in taking a tutorial should first obtain a faculty member's agreement to serve as the instructor. The student then must complete the Tutorial Form and submit it to the Associate Director of Academic Programs prior to the last registration day of the semester.

- *Cross Registration*

One of the advantages of attending Columbia University is the ability to integrate one's educational experience at the Mailman School with coursework from other schools at the University. In addition to the Columbia Directory of Courses, students may also find courses of interest at Teachers College.

Depending on degree requirements and in consultation with one's advisor and the Associate Director of Academic Programs, Mailman students are encouraged to take appropriate courses from across the University. Columbia MPH students may not cross register during their first semester (the Core). Cross registration must be done during the change of program period at the start of the term using a form available through the Mailman Office of Student Affairs.

There are a few schools that have their own policies and procedures for cross registration. Additional steps and approvals may be required, in addition to the form stated above.

- *Pass/Fail*

This option is designed to permit students to register for credit in courses relevant to but

outside of their area of study. For students in the Columbia MPH, up to nine credits of elective course work may be taken for Pass/Fail with the approval of the instructor and the advisor; for dual degree, accelerated, and MS students, up to six credits. No core courses or required courses may be taken for Pass/Fail (unless this is the only grade option available for the course as set by the instructor).

Course Waivers

Students may request a waiver or exemption from a course requirement if they believe that they have satisfactorily completed a graduate-level course that is of comparable rigor and scope to that of the required SMS course. Students initiate this process by submitting a written request that identifies the course to be waived and describes the prior course. Students should attach to the statement a syllabus for the prior course and transcript indicating the final grade for this course and submit a signed and dated written request along with the supporting material to the Associate Director of Academic Programs.

Transfer of Credits

Up to six transfer credits may be granted to MPH degree candidates for appropriate graduate level courses. Courses must be appropriate to the student's degree program, meet Mailman School academic standards and be approved by the department. The courses must have been completed within the preceding five years at an accredited institution and not have been counted toward another degree or credential. The grading should be ordinal (a letter grade) and the grade earned should be B+ and higher. Online courses taken during the period in which a student is matriculated at the Mailman School are not eligible for transfer. Transfer credits may not be applied toward the Core curriculum.

Leave of Absence / Inactive Status

Leave of absence or medical leave must be approved Andrea Constancio, Associate Director of Academic Programs, and by Lillian Morales (lm31@columbia.edu), Associate Director of Academic Standards and Academic Record in the Office of Student Affairs. A student who takes a leave that extends beyond two years will be required to re-apply for admission through the Office of Admissions. Contact the Office of Admissions at (ph-admit@columbia.edu) for more information about re-admission.

Filing for Graduation

The university awards degrees three times a year: February, May, and October. It is the student's responsibility to file an application for graduation when they anticipate fulfillment of all degree requirements by the graduation date. The filing deadlines are absolute.

Students unable to complete their degree requirements by the conferral date for which they have applied must file another application for the next conferral period. Students who previously filed and did not graduate must meet all requirements before the subsequent

application for graduation will be accepted.

In addition, students must maintain continuous enrollment until they complete the outstanding requirements. The Student Academic Records & Standards team will enroll students every fall and spring semester until which time all outstanding requirements have been completed or the maximum time toward degree completion has expired. The continuous registration incurs a $500 fee per semester, which gives students part-time status for the additional term and access to University resources needed to complete outstanding coursework; it does not constitute eligibility for financial aid or University housing. Additional fees, such as the student activity fee and the CUIMC IT fee, will also be incurred when students are enrolled in the extended residence.

Academic Advising

Students have two advisors: **faculty advisor** and **program advisor**. The role of the faculty advisor is to provide counseling related to research and/or career interests. The role of the program advisor is to guide students in their course of study.

Faculty Advisor: Students are assigned a faculty advisor that is based on a student's application, research topics & interests, program and/or certificate. We try to match student and faculty advisor pairs by interests, but sometimes there may be a need to make a change in a student-advisor match. Students who would like to make such a change, or who otherwise need help in managing their advisement, are encouraged to contact Andrea Constancio.

Program Advisor: Andrea Constancio, Associate Director of Academic Programs, is the program advisor to all students and is responsible for guiding the student's planning and progress through the program. Ms. Constancio is the most appropriate person to consult with about administrative and logistical aspects of the program, such as the rules and facilities of the university, program requirements, registration and course schedules.

Email your advisor during the first two weeks of your first fall semester. Some faculty prefer to conduct academic advising sessions individually, others prefer to conduct advising sessions in a group. Your advisor will let you know which process s/he prefers when you reach out to them. Before the meeting, read this handbook and the information sheet for your certificate. At the meeting, be prepared to discuss the following items:

- The program or certificate you are in and why you selected it.
- What certificate you will choose if you entered the program as "undecided."
- When you plan to graduate.
- How many courses per semester you are planning to take after you have completed the first-semester school-wide core. In general, full-time students are advised to take 4 to 5 courses depending on certificate; part-time students are required to take a minimum of 2 courses per semester.
- Whether you plan to take any summer courses. Summer course offerings are limited

at the Mailman School. Therefore, you should investigate appropriate elective course offerings at other schools within the university.

Begin the meeting by telling your advisor about your background, interests and future career goals. You and your advisor should go over your planned course of study. Although there are many courses that are predetermined by the requirement for the school, SMS, and your certificate, you should discuss these in the context of your career plans and interest.

You may want to focus your discussion with the advisor on issues beyond course requirements to include the following:

- Elective courses: The number of elective courses available to you depends on your certificate. To choose appropriate elective courses, think about your current interests and future career plans, and ask your advisor for their recommendations.
- MPH Practicum: Start to think about the skills you will need for your future career. Some of these skills cannot be developed through course work alone. The practicum should be an opportunity to develop such skills. Ideally, the practicum project should form the basis for the master's thesis.
- Thesis: Discuss the thesis type and thesis topics that make most sense based on your interests and career goals. Many students do not know what topic they may want to work on for a thesis at this point, but talking about it with your advisor can help you choose a topic when you need to (by the end of the first year).
- Employment opportunities: Whether you plan to work part time during your matriculation at SMS or thinking about employment after you graduate, your advisor is a good person to discuss employment opportunities. They may know of projects at the school or beyond that you may be able to become involved with. You may also want to discuss what kind of employment may be most beneficial in terms of your academic and career plans.

Degree Requirements

Required Examinations and Certifications – ALL Degree Programs

All CUMC students, faculty, and staff must complete HIPAA certification and students must also compete the CITI Human Subjects Protection training. Students may access information and training from research.columbia.edu/content/compliance-training.

- ***Health Insurance Portability and Accountability Act (HIPAA)*** SMS students are required to pass the HIPAA certification exam. To take the HIPAA training course and certification, log on to www.rascal.columbia.edu; from the the "Training Center" go to "Course Listings," and select training module "TC0019 (HIPAA: Health Insurance Portability and Accountability Act Training Course)."
- ***Human Subjects Protection (IRB) Training*** All SMS students are required to pass a certification exam on Human Subjects Protection. Study materials and the certification exam are available online at www.rascal.columbia.edu/.

From the "Training Center" under "Course Listings" select "TC0087 - Human Subjects Protection Training." Students should complete this certification during their first or second semester because it is required for both the practicum and the master's thesis.

MPH Degree Requirements

Within the Department of Sociomedical Sciences, the MPH degree is offered in fours formats: the Columbia MPH with certificate (two-year); Dual Degree; Four+1; and the Accelerated (one-year). All programs require coursework, practicum. Columbia MPH, Dual Degree and Four+1 students also complete a thesis. The master's thesis is not required for Accelerated students. The coursework requirements are as follows:

- *Mailman Core (15 credits)*

The Core is built around six studios, which represent the core areas of knowledge in the field of public health. It is through this integrated experience that students achieve the foundational and interdisciplinary knowledge necessary to move forward in the MPH program. The Columbia Core Studios:

• P6020 Foundations of Public Health (Foundations)	1.5
• P6031 Research Methods and Applications (ReMA)	4.5
• P6040 Determinants of Health (Determinants)	3.0
• P6051 Public Health Interventions (Interventions)	1.5
• P6052 Global & Developmental Perspectives (GDP)	1.5
• P6060 Health Systems	3.0

- *Integration of Science and Practice (ISP) I & II (1.5 credits each)*

    In addition to the Core, Mailman students will take the case-based Integration of Science and Practice (ISP) course. The small group ISP sessions bridge the gap between classroom learning and the real-world experience of working as a public health professional.

- *Leadership Development (1.5 credits)*

    All Mailman students also receive intensive leadership training through the Leadership Development course, which focuses on teamwork, leadership, and innovation in public health. Students will learn how to work effectively in both large and small teams while embracing the complexity and diversity of working in complex systems and organizations as a window into true public health practice.

- *SMS Discipline Requirements (15 credits / 12 credits for Accelerated Students)*

    SMS students must take four department courses (three credits each) that provide an overview of the field of Sociomedical Sciences and the application of social sciences to

public health. Two-year certificate Columbia MPH and Dual degree students complete a master's thesis for three credits. See the Thesis section of this handbook for further details.

	Columbia MPH; Dual Degree; Four+1	Accelerated
SELECTIVE-A (3 credits): P6728 Health Promotion Theory, Research & Practice <u>or</u> P8745 Social Determinants of Health	3	3
REQUIRED (3 credits): P8785 Qualitative Research Methods	3	3
REQUIRED (3 credits): P8796 Quantitative Research Design	3	3
REQUIRED (3 credits): SMS Elective – any SMS course not already taken for department or certificate requirements.	3	3
REQUIRED – Certificate & Dual degrees (3 credits): P8707 SMS Thesis Proposal (1) and P8708 SMS Thesis (2)	3	N/A
TOTAL SMS MPH Credits	**15**	**12**
Practicum Hours	**280**	**140**

Columbia MPH Certificate Program (52 credits minimum)

The balance (17.5 credits) of the required credits (52 minimum) for the MPH degree consists of certificate-specific courses and electives. Every student in the two-year Columbia MPH program enrolls in a certificate program that provides training in a focused area of expertise, in addition to the student's departmental discipline, and leads to a Columbia University approved credential.

Accelerated MPH Program (42 credits minimum)

The Accelerated MPH is an intensive, one-year program designed for highly motivated professionals seeking to enhance their career with a degree in public health. The curriculum is similar to the innovative curriculum of the two-year Columbia MPH but completed in three semesters (fall, spring, summer). The profile of a typical Accelerated MPH student is an individual who has earned a doctoral degree, an MD student mid-way through their study, or an individual who as has several years of work experience. <u>Students in the accelerated program do not earn a certificate.</u>

There is a 45 credit limit on tuition across this three semester program (Fall, Spring, Summer). Any courses taken over the 45 credit limit must be paid for on a per credit basis. The summer courses as described in the program plan are included in the flat tuition rate but must not exceed 45 credits.

Dual Degree MPH Programs (42 credits minimum)

The Mailman School offers dual master's degrees with 10 schools across the university through our MPH program. Applicants seeking admission to dual degree studies must apply separately to each of the two collaborating schools and must meet the admissions requirements of each. Once both schools grant admission to their individual degree programs, the student may begin an integrated dual degree program. Dual-degree students can begin their coursework at the Mailman School or the partner school.

Dual-degree students are required to take 42 public health credits. Most of these students will complete the majority of their program in their first year of residence at the Mailman School and complete some requirements in their second year (when students are in residence at partner schools). The requirements in year two potentially include some coursework and the student's capstone/thesis.

Registration and Tuition for Dual Degree Programs

- The MPH Core Curriculum, which all MPH students take during their fall semester, constitutes 18 of the required credits and cannot be waived, substituted, or taken out of sequence. With prior planning and permission, Mailman School department course requirements can, on occasion, be substituted for partner school courses. However, the total number of required public health credits (42) will not reduce.
- All students in the dual-degree programs will spend a consecutive Fall and Spring semester at Mailman earning a minimum of 33 credits through a flat-fee tuition model.
- All students will earn an additional nine credits in either the summer of their first year or in year two as a cross-registrant (or a combination of both). Some of these credits may be added to the Fall and Spring semesters of the first year.
- Certificate programs are not available to dual-degree students.

It is extremely important that dual degree students seek guidance from the program coordinators and academic advisors in both programs and the Director of Student Services in the Mailman School of Public Health. Students must be careful to both register for the correct number of credits in each school and to complete all program requirements for each school. Dual degree students must consult with and get approval from the SMS Associate Director of Academic Programs, Andrea Constancio, before registration.

Master's thesis and practicum experiences usually can be coordinated between the two programs so that they may be used to satisfy requirements for both programs.

Four Plus One (4+1) MPH Programs (42 credits minimum)

Mailman offers dual degree 4+1 programs in which a student earns a Bachelor's degree from their undergraduate college then continues on to the MPH degree at Columbia Public Health. Participating schools at this time include Columbia, Barnard and Vassar colleges. Four+1

students spend the fall semester of their senior year at Mailman and take the multidisciplinary Core Curriculum. Students then return to their college for the spring semester of their senior year.

Once the student graduates from their undergraduate college, they enter the Columbia Public Health program that includes a year of coursework, thesis work and a practicum. The practicum will occur in the summer following the Columbia Public Health MPH year. <u>Students in the Four+1 program do not earn a certificate.</u>

Practicum Requirement

In the Department of Sociomedical Sciences, students in the two-year Columbia MPH, Dual Degree, and Four+1 programs must devote a minimum of 280 hours to the practicum. Students in the one-year accelerated program must complete 140 hours. See the *Practicum* section of this handbook for details.

Practicum

All MPH students in accredited schools of public health in the United States must complete "a planned, supervised and evaluated practice experience (as part of their) public health professional degree program." Within the Department of Sociomedical Sciences (SMS), students in the Columbia MPH (two-year), Dual Degree, and Four+1 programs devote 280 to the practicum, while students in the accelerated MPH (one-year) devote 140 hours.

The practicum should provide the opportunity to apply the concepts and methods of social science and public health learned in the classroom to actual public health problems. During the practicum, a student works under the guidance of a supervisor (Practicum Preceptor) who agrees to orient, supervise, and evaluate the work of the student.

The settings of student practica vary by program and certificate. The acceptable content of a practicum is flexible to meet a diverse range of student interests, educational needs, professional objectives, and career goals. However, in all cases the practicum experience must be consistent with the academic goals and objectives of the Mailman School and the Department of Scociomedical Sciences.

Robert Fullilove, EdD (ref5@columbia.edu) is the Practicum Director. He is available to help guide students through the process of finding and completing a practicum.

General Objectives

The practicum provides an opportunity to apply material learned in class and to develop professionalism. The practicum will allow the student to:

- apply classroom knowledge in a real-world setting;
- experience the nature of work in their specialized area of training;

- carry out a project useful to an organization or group
- develop and refine professional public health skills;
- gain confidence, competence, and satisfaction in completing projects
- develop insight into personal skills and attributes;
- learn additional skills;
- meet regularly with a qualified Practicum Preceptor who can both guide the student's experience in a specific area of interest and serve as a role model and/or mentor;
- attend meetings and seminars to learn about the work of other relevant organizational/project personnel;
- explore opportunities for master's thesis topics based upon the needs of the organization or project and individual interests (Note: It is encouraged, but not mandatory, that the practicum serve as the basis of the thesis);
- obtain job references from public health professionals who can speak to the student's abilities in an applied context; and
- obtain a position with the organization or group when relevant openings are available upon graduation.

Roles and Responsibilities

The agency, program, project or individual that agrees to accept a student for a practicum experience also assumes an educational role. Someone at the agency must be identified as the Practicum Preceptor, who agrees to help arrange the student's experience and define activities that will meet the objectives of both the student and of the agency/project. The roles and responsibilities for students and preceptors are outlined below:

Student

- Ask for background reading or other information prior to meeting with preceptor;
- Discuss the scope of the practicum;
- Clarify with preceptor whether the work will be independent or in collaboration with others;
- Clarify to whom they should report if preceptor is not available;
- Discuss how time should be allocated and hours recorded;
- Comply with time commitments whether or not preceptor is on site;
- Discuss work schedule and progress with the preceptor on a regular basis;
- Document involvement in the project (e.g., project activities, data collection, meeting minutes) in a data/record notebook if applicable;
- Complete any special training required.

Preceptor

- Define the scope of the practicum with student;
- Determine the need for any special training or certifications (HIPAA, IRB.);
- Develop a schedule with the student;

- Schedule regular meetings to chart development and progress;
- Include the student in meetings or seminars related to the practicum area;
- Clarify to whom student should report if preceptor is not available;
- Review and sign the Practicum Summary Report at the end of the practicum.

Prior to the Practicum

Most full-time MPH students will complete their practicum in the summer between years 1 and 2 (e.g. 35 hours/week x 8 = 280 hours). However, other arrangements are acceptable: a practicum may be carried out over a semester during the academic year, or over a full calendar year (e.g. 7 hours/week x 40 weeks = 280 hours), depending on the student's schedule and the needs of the sponsoring organization.

Many factors influence a student's final practicum selection. Although it is helpful to have specific interests already in mind, the practicum also affords a great opportunity to explore areas of potential interest. Some students use this time to learn more about areas they may be considering for a career.

As students are balancing their areas of interest, family commitments, geographic and financial constraints, it may help to consider some of the following:

- How geographically mobile am I? Do I want to do a domestic or an international practicum? Must my practicum be in NYC?
- What do I envision myself doing after graduation?
- Do I want to use my practicum as a possible future job placement and, if so, in what job or agency do I envision myself working after graduation?
- What skills would I like to practice in my practicum? What would I like to learn?
- Do I have career goals that include further academic pursuits, such as obtaining a PhD or other advanced degree?
- Do I want to do a practicum that offers the possibility of a publication or presentation at a scientific session?
- How important are financial consideration, such as whether my practicum must be paid?
- Do I want to do my thesis as an extension of my practicum?

Finding a Practicum Placement

There are many ways to find a practicum placement. Email announcements of available practica are regularly sent to the SMS student listserv. Students may contact a faculty member or an organization with which they would like to work. They may discuss options with the Practicum Director, Robert Fullilove, and students should also discuss the timing and general goals for their practicum with their advisor.

The Office of Careers and Practice (OCP) provides resources and supports to students. OCP has two teams with dedicated staff who work together to serve our students: Field Practice

and Career Services-

Field Practice provides resources and support to students seeking field experiences through the practicum program, volunteer and service-learning opportunities, and internships. More on Field Practice in the next section.

Career Services is committed to supporting in all aspects of career and professional development processes. They actively cultivate School-wide partnerships with a broad range of relevant employers, and establish alumni and student networks, to increase professional opportunities. Students can search **Career Link,** the Careers Services search engine, for paid and unpaid internships.

Office of Field Practice (OFP)

The Office of Field Practice provides an array of resources to support and promote student participation in public health field-practice, including the administration of various School-wide components of the required practicum within the MPH curriculum.

The OFP Team has created multiple tools and assignments to assist in this submission process, including "How To" guides for students, faculty and practicum administrators. All students will have access to the OFP CourseWorks website, beginning spring semester of first year.

Practicum Scope of Work Form

The practicum scope of work (SOW) form is an important tool for planning your practicum and meeting the School's requirements for engaging in a structured and approved practicum process. It is **mandatory** for all students to develop a practicum SOW in collaboration with the practicum organization, and to get the **completed SOW approved <u>before</u> the start of the practicum.** Your practicum stipend will be disbursed only after the approval of your SOW. The Office of Field Practice has developed an online system to make the submission process quick and easy.

Once the practicum agency and project have been identified and agreed upon, it is the student's responsibility to submit the SOW via the online SOW Database. The objectives and activities of the practicum should reflect as many of the core competencies of SMS. These objectives should be initially outlined in the form by the student with input from the practicum preceptor.

4 Steps to Complete the Scope of Work form:
Step 1: Student Completely Answers all Questions in the Form
Step 2: IRB Review
Step 3: Faculty Advisor Approval
Step 4: Final Review by the Associate Director of Academic Programs for Department Approval

As stated above, online SOW approval by either faculty advisor or the Associate Director of Academic Programs is required before students begin their practicum.

Practicum Funding/Stipends

OFP administers a small stipends program. The program provides students who complete their initial requirements on time with a small sum to partially support their expenses during the practicum. The initial requirements are in the Assignments section of the OFP CoursWorks page. The Office of Field Practice begins the processing of stipends starting in mid-April, based on approved SOW and Compliance with Safety and Security as needed. The entire process from time of departmental approval of your SOW (not submission of the SOW) to receipt of funds in your account averages one month.

Students are responsible for covering the full cost of their practicum and personal expenses. Some agencies offer paid practicum opportunities. For Mailman students, a paid practicum is acceptable, but not required.

During the Practicum

Once a student begins the practicum, the preceptor who coordinates and supervises the student's work is responsible for seeing that the specific objectives and activities agreed upon in the practicum agreement are being carried out according to schedule. The preceptor orients the student to the agency and project and meets with the student on a regular basis to monitor the student's progress. During the practicum, the student is responsible for performing according to the practicum agreement and for fulfilling the usual responsibilities of punctuality, accountability, and appropriate deportment and initiative expected of all public health professionals. If there are any problems or concerns the Practicum Director is available to meet with the student and/or the student's preceptor. If for any reason the student or the preceptor is unable to fulfill their responsibilities according to the practicum agreement, plans and activities for the practicum may be changed or modified with the approval of the advisor and the practicum preceptor.

Following the Practicum

After completion of the practicum all Mailman students are required to file for completion and complete a brief evaluation of the practicum experience, both of which are the final step in the SOW online database.

In addition, all SMS must complete the online SMS Practicum Summary Report. When applicable, and with the authorization of the preceptor, students should submit (upload) a sample of any products they helped develop (i.e. survey instrument, evaluation plan, policy brief, curriculum) as a supplement to the Summary Report. Summary Reports are made available to future students as examples of practicum projects.

MS Degree Requirements

The MS degree in Sociomedical Sciences trains students to apply social science theories, concepts, and methods to public health practice and policy making. Students can customize a program that reflects a particular disciplinary focus or can craft a more interdisciplinary course of study.

The course of study consists of 30 credits including a master's thesis and is designed to be completed in either full-time (two to three semesters) or part-time (three or more semesters). No required courses may be taken for Pass/Fail. No more than 3 credits may be taken in tutorials (see pg 8).

The table below lists the required and selected courses for this 2021-22 academic year.

Course	Credits
P6025 Introduction to Public Health (online module)	0
P6400 Epidemiology (F)	3
SMS Master's Thesis: P8707 (1cr/F) and P8708 (2cr/SP)	3
Theory Selective (choose 2 from the following list):	6
• P6728 Health Promotion: Theory, Research, and Practice (SP)	
• P8736 Theories and Perspectives on Sexuality and Health (F)	
• P8745 Social and Economic Determinants of Health (F/SP)	
• P8747 Ethics of Public Health (SP)	
Methods Selective (choose 2 from the following list):	6
• P8705 Evaluation of Health Programs (F/SP)	
• P8771 Community-Based Participatory Research (SP)	
• P8772 Designing Public Health Interventions (SP)	
• P8785 Qualitative Research Methods (F/SP)	
• P8796 Quantitative Research Design (F/SP)	
Public Health Selective (choose 2 from the following list):	6
• P6775 Health Communication (F)	
• P8703 Health Advocacy (F)	
• P8709 Gender, Sexuality, Health, and Human Rights (SP)	
• P8741 Structural Approaches in Global Health (SP)	
• P8750 Race and Health (F)	
• P8757 Global Politics of Aging (SP)	
General Electives: (may include courses outside of Mailman)	6

The Master's Thesis

Introduction

The master's thesis is the capstone requirement of all master's students in the Department of Sociomedical Sciences. The thesis is intended to reflect the training you have received in the department and demonstrate your ability to design, implement, and present professional work relevant to your fields of interest.

Writing the thesis is an essential experience that furthers your career development. Employers want public health professionals who can analyze data and evidence, write articles and reports, and design studies, needs assessments, and/or health promotion interventions. If you plan to continue your academic studies, developing expertise and demonstrating your ability as a writer are two important skills required of doctoral candidates. A well-written paper is a great asset that you can bring with you to a job interview or include in an application for further study. The thesis must be written in English.

Planning your Thesis

Students who complete the degree in two years should begin exploring ideas for a thesis no later than their second semester. If you plan to complete the degree requirements in two years, you must have a thesis sponsor by late summer / early fall of your second year, when you will register for the thesis proposal course (P8707). Many students use their practicum experience as a basis for their thesis, although this is not required.

Selection and Role of the Thesis Sponsor

Toward the end of your first year (for students completing the degree in two years) you should identify a general thesis topic and a member of the SMS faculty as a potential thesis sponsor. The role of your thesis sponsor is to provide guidance and feedback to you throughout the research and writing of the thesis.

You will be contacted in mid-July by the department asking you to further think about the type thesis you would like to write and 3-4 SMS faculty you would like to be your sponsor. A list of eligible SMS faculty members and their research interests and descriptions of the six SMS thesis types will be included in this e-mail. This information is also included in the appendix to this Handbook and described below. At the end of July, you will be asked submit your final rank-ordered list of 3 to 4 SMS faculty and a brief paragraph describing your thesis plan to date. For some students, this will not get finalized until they meet with their thesis sponsor. The department will then match to best of their ability students and faculty. You and your faculty sponsor will be notified of the match toward the end of August.

In rare cases you may wish to consult and otherwise involve other faculty or non-faculty individuals as advisors for your thesis. Students may arrange to have two co-sponsors: 1 SMS

faculty sponsor and 1 outside sponsor. Including other advisors in the thesis process should be done with the permission of the Associate Director Academic Programs in Sociomedical Sciences (Andrea Constancio) or the thesis course instructor (Marita Murrman).

An outsider approved as co-sponsor must agree to the thesis formats and structure noted in this handbook <u>and</u> the deadlines and grading process listed in the Coursework's site.

You should schedule, as soon as possible, ongoing meetings with your thesis sponsor, where you obtain regular feedback during the process of preparing your thesis. Early planning for these meetings is important because you and/or your sponsor may have other commitments that may make scheduling difficult. It is your responsibility, not your thesis sponsor's, to ensure that a sufficient number of sessions are scheduled.

When a student and sponsor have agreed to work together, the student should write a memorandum summarizing the discussion and the student's understanding of the agreement between themselves and the sponsor. Some issues to discuss and address in the memo are:

1. Schedule of student-sponsor meetings
   a) Are there times when sponsor or you are not available to meet due to travel or other obligations?
2. When should written drafts be handed in?
3. How would communication take place? Preference for written comments, in-person discussions, emails exchange, etc.
4. If thesis work is done on sponsor's research data (if another researcher's data, same questions apply to them)
   a) What data will be available to student?
   b) When will data be available to student?
   c) Does sponsor approve that the thesis will be written by student and they would be the sole author on the thesis? How would later publication be handled? Student should first author? Would sponsor be co-author?
5. Sponsor's other expectations from student
6. Student's expectations, special needs, and requests

It is also strongly recommended that you participate in a study group with other SMS students (possibly who are working on the same type thesis) and use the group format to ensure that you are making progress toward finishing your thesis on time.

Library Resources

Students are urged to avail of the many resources provided by CUMC Health Sciences Library that support conducting literature reviews including workshops, online guides, and individual consultations with subject matter specialists who can help define search terms and identify research databases, assessment and review results summary tools, appropriate for your specific review. Using library resources will save time and effort in conducting reviews and contribute to a more professional literature review article. For workshops see

Upcoming Classes and Events https://library.cumc.columbia.edu/events; for online resources check https://library.cumc.columbia.edu/explore-resources#explore-activity; and, for an individual consultation with a health sciences information specialist, complete *User Inquiry Form* https://library.cumc.columbia.edu/user-inquiry-form.

Institutional Review Board (IRB) Approval of the Thesis

Students whose thesis involves some form of human subjects research will need to consult the Columbia University Human Research Protection Office Students as Researchers Policy. All research involving human subjects must be submitted to the Institutional Review Board (IRB) for review. An IRB review may involve an exemption, an expedited review, or a full review. Only the IRB, following a review of the research protocol, may grant an exemption. That is, neither the faculty sponsor with whom you are working nor you can make the determination that your project is exempt. If you believe that your project should be exempt, you must apply to ask the IRB for an exemption.

The following are examples of the types of theses that REQUIRE review by the Columbia IRB:

- Collection of data using human subjects using quantitative or qualitative research methods, including interview of few respondents, focus groups, etc..
- Analysis of previously collected (also called "secondary") data
- Collection or analysis of data from human subjects even if the IRB has already the study (even if it is your sponsor's project).
- Analysis of data from human subjects that was already collected and approved by another institution's IRB, even an institute where you work(ed) or where you are doing (did) your practicum
- The following is an example of a thesis that would NOT require IRB approval: Research activities that involve only the analysis of de-identified data within a publicly available dataset need not be submitted to the IRB for review or for a determination that the project falls into an "exempt" category. For examples of publicly available datasets see links at the CU library website at www.columbia.edu/acis/eds/dset_guides/health.html

The university's guidelines on students as researchers are available on the web site of the CUMC IRB: http://www.cumc.columbia.edu/dept/irb/policies/index.html#irb. Any student considering conducting human subjects research for their thesis should consult these guidelines to determine the appropriate steps to take for IRB review.

Submission of IRB protocols

An IRB protocol must have a Principal Investigator (PI). The Columbia University Medical Center IRB does not permit students to be listed as the PI on an IRB protocol. Theses that are submitted to the IRB need to be submitted with the Columbia University faculty member who is the Sponsor listed as the PI on the IRB protocol. The students should be listed as an

Investigator.

In the protocol, the project should be identified as thesis research that you are conducting under faculty mentorship.

The IRB review process can be complex and lengthy, so any theses that may require IRB approval should be started as soon as possible. If you seek to work on a thesis project that may require an application to the IRB, you should discuss your project with your thesis sponsor before beginning the process and obtain their agreement to serve as the PI on your project.

All personnel listed on the protocol (including students) need to have passed the Human Subjects Protection Training exam and the Health Insurance Portability Accountability Act Training Course (HIPPA) exam.

Submission of IRB protocols and correspondence with the IRB is conducted on-line using the university's research administration system, RASCAL (see www.rascal.columbia.edu/). At the RASCAL website, click on "Human Subjects (IRB)," and "Create a Protocol." Under "Rascal Human Subjects" you can also click on "Helpful IRB Information," for a comprehensive archive of information and frequently asked questions.

The Thesis Course

Two-year Columbia MPH, Dual Degree, Four+1, and MS students are required to register for their thesis as a yearlong, two-part course sequence, P8707 SMS Thesis Proposal (1 credit) and P8708 SMS Master's Thesis (2 credits). The courses lead students through the process of writing the thesis: from developing ideas and writing the thesis proposal (due during P8707) to completing the thesis (due at the end of P8708). These courses do not teach students how to write a master's thesis.

P8707 and P8708 do not have weekly class meetings throughout the semester. Instead, there are a limited number of sessions early in each semester. Most of the work on the thesis is done by the student individually and in collaboration with their thesis sponsor. The purpose of registering for the course is to provide students with guidance and resources via the Courseworks site and periodic meetings.

SMS Thesis Proposal (P8707) Fall Semester

The aim of the work in this semester is to complete a thesis proposal. Towards the end of November, the student should upload a copy of the proposal, approved by the thesis sponsor, to the Courseworks site. Students who have fulfilled this requirement will receive a grade of Pass, submitted by the Associate Director of Academic Programs. If a proposal has not been approved by the end of the semester, the student will receive a grade of Credit Pending (CP) or Incomplete (IN). A grade of CP will be posted <u>only</u> with written permission of the thesis sponsor. Permission must be sent to the Associate Director of Academic Programs before the

last day of classes. If the student has not completed the work, and the CP grade has not been changed to a Pass grade by the beginning of the Spring semester, the CP grade will be converted to Incomplete (IN).

Formatting the Thesis Proposal

During P8707, you will work toward preparing a thesis proposal. Your thesis proposal should consist of the following:

1) Cover page: The title of your thesis, the type of thesis (e.g., Review Article), your name, your certificate or program, your projected date of graduation, and the name and signature (electronic signatures are accepted) of your thesis sponsor. The signature is required to indicate that the Sponsor has approved the final proposal.

2) Description of project (approximately 2-3 pages):
   a. Statement of the problem: A general statement of the issue to be addressed.
   b. Background and significance: Briefly sketch the basis for the proposal, the existing knowledge on the topic, the theoretical framework, and the importance of the project for public health in general and your area of specialization in particular.
   c. Specific aims: State concisely and realistically what the proposed project is intended to accomplish, such as the hypotheses to be tested, the product to be produced, the theory to be reviewed.

3) Project plan and timeline (approximately 2-3 pages):
   a. Provide a brief description of the proposed project, including the target population(s) or sample(s) to be used, theory to be applied, the areas to be covered, program components, proposed methods, and data analysis plan (if you plan on using data).
   b. Include in the project plan a timeline when tasks will be completed.

Examples of thesis proposals will be available on the Courseworks page of P8707.

SMS Master's Thesis (P8708) Spring Semester

In the spring of their second year, students will register for *SMS Master's Thesis (P8708)*, a 2-credit course. Successful completion of P8707 is a pre-requisite for registering for P8708. The aim of the work in this semester is to complete the thesis.

Formatting the Thesis

- The thesis must be written in English
- A title page, including:
   o title
   o student's name and certificate

- o thesis type (e.g., Review Article, Research Proposal, etc.)
- o sponsor's name
- o the following note: "Department of Sociomedical Sciences, Mailman School of Public Health, Columbia University, In partial fulfillment of master's degree requirements, for graduation [graduation month and year]"
- If the thesis reports on research involving human subjects, the page following the title page should include a statement about IRB approval, including protocol number or, if exempt, reasons for exemption.
- Font: Use a standard typeface, such as Garamond, Arial, Helvetica, Palatino Linotype, Georgia, or Times New Roman, and a font size of 11 points or larger (use font size 12 for Times New Roman). All text color must be black.
- Line spacing: 1.5
- All pages must be 8.5 x 11
- Page Margins: 1" all around.
- Figures and Tables: You may use a smaller type size but it must be in a black font color, readily legible, and follow the font typeface requirement. Color can be used in figures, but any text in the figures should be in black type.
- Section Headers: Begin each text section with a section header.

Depositing the Completed Thesis

After the thesis sponsor has approved the final version, the student should:

- i) E-mail their sponsor a final copy of the thesis. The sponsor will read and assign a final grade.
- j) Upload an electronic copy (either PDF or MS-Word format) to the Assignment Section within the P8708 Courseworks site. Name the file using the following format: lastnameMPHthesis.pdf (or .docx).

No signature is required on either of the copies. However, you must have your sponsor's verbal or email approval that the thesis is ready to submit.

Policy on Late Submission

All copies of the thesis must be submitted following the formatting instructions and by the due date. If the approved thesis is not submitted on time, the students will receive a grade of Credit Pending (CP) or Incomplete Notation (IN) and their graduation may be delayed.

Important to note: that students who carry a grade of CP or IN beyond the semester of their expected graduation must maintain continuous enrollment until they resolve the remaining coursework and degree requirements. The Student Academic Records & Standards team will enroll students every fall and spring semester until which time all outstanding requirements have been completed or the maximum time toward degree completion has expired. The continuous registration incurs a $500 fee per semester, which gives students part-time status for the additional term and access to University resources needed to complete

outstanding coursework; it does not constitute eligibility for financial aid or University housing. Additional fees, such as the student activity fee and the CUIMC IT fee, will also be incurred when students are enrolled in the extended residence.

Grading of the Thesis

The sponsor will grade the thesis based on the following criteria:

- How well defined is the topic of discussion/research problem/theoretical issue?
- How well-developed and appropriate are the theoretical/conceptual frameworks?
- How well-developed is the literature review (i.e., are the relevant sources on the topic cited and discussed)?
- How well-supported/convincing are the discussion points, inferences and conclusions?
- How well-organized, well written, and readable is the thesis?
- How innovative and sophisticated is the overall thesis and the presentation of arguments?
- Are there other strengths and weaknesses?

Distinguished Thesis Award

Each year the department gives an award for outstanding SMS Master's Thesis. Thesis sponsors are asked to submit their top theses for consideration. A panel of SMS faculty then reviews the nominations and selects the winner. The award is presented to the student at the Mailman School student awards ceremony in May.

Writing the Thesis

Writing is a skill that everyone can improve. There are many guides that are helpful. For writing research papers see, for example, Booth, W.C., Colomb, G.G., & Williams, J.M. (2008). *The Craft of Research*. Chicago: The University of Chicago Press. An excellent resource of review articles is *The Handbook of Research Synthesis* by H. Cooper & L. Hedges (eds.), (1994). New York: Russell Sage Foundation.

In writing, think about your audience. An effective essay is one that argues a point. Imagine that you are arguing your point to a class or to friends. Write in a formal (social science) style. Use simple language. Avoid jargon. Use terms consistently.

Reference Style

The thesis must use a standard reference and citation style such as the *American Psychological Association's Publication Manual* or the *Chicago Manual of Style*. Consult with your thesis sponsor about which style you should use.

Appendices

Appendices are not required but may be appropriate for your thesis. Material included in an appendix might include questionnaires, scales, interview schedules, maps, and photographs. Appendices should be included after the reference section. There is no limit on the number of appendices or the number of pages in the appendices.

Acceptable Thesis Formats

The thesis may be in one of the following formats:

1) Literature Review (also referred to as a Review Article)
2) Research Proposal
3) Needs Assessment Proposal
4) Program Evaluation Proposal
5) Intervention Proposal
6) Research Report

1. Literature Review

Overview

The overall goal of a review article is to synthesize the recent literature on a problem, issue, or phenomenon of public health relevance, identify the current state of knowledge, and note gaps, unanswered questions, and possible controversies. A review article can focus on a variety of topics in public health, including the theoretical underpinnings and frameworks for investigating a particular issue, methodologies for research, results of intervention studies, summarizing quantitative and/or qualitative research findings on a particular issue, or a review of a policy that impacts the health of a defined population.

There are several types of review articles; the most common include narrative review, systematic review, scoping review, and rapid review.

- *Narrative review* is a summary of published materials which examines existing literature on a topic, not necessarily following a systematic process for how publications are identified, included, appraised, or combined. The author conducts a purposive search to identify relevant literature which can cover a wide range of subject matter at various levels of completeness and comprehensiveness. Results are presented in a narrative format which ideally should synthesize rather than simply summarize results.

- *Systematic review* aims to provide a comprehensive, unbiased, synthesis of relevant empirical evidence to answer a focused research question. An explicit protocol guides comprehensive and replicable searching, and quality appraisal of identified studies. Findings across studies are synthesized and presented in tabular form and narrative

summary. Meta-analysis is a type of systematic review that statistically combines the results of quantitative studies. However, systematic reviews can include quantitative, qualitative and mixed methods studies.

- **Scoping review** is a type of knowledge synthesis designed to map the literature on key concepts, theories, existing empirical evidence, and knowledge gaps pertaining to a research question. A systematic methodology is developed to identify relevant materials from diverse sources that may include in-process research and existing systematic reviews. A scoping review may or may not include critical appraisal of individual sources of evidence. Findings across sources are synthesized and results are presented in tabular format with narrative commentary.

- **Rapid review** implements an explicit and systematic methodology, in which formal systematic review methods are streamlined and processes accelerated to complete the review more quickly. Techniques to shorten the timescale include using less comprehensive searching (e.g. limit language and date of publication, geographic area covered, secondary searching etc.), or performing only simple quality appraisal. The reviewer chooses which components to limit and explicitly reports the likely effect of limitations.

All the above (and others) are appropriate for the thesis but vary with regard to the purpose of the review and components of the review protocol. Standards for conducting the different types of reviews and reporting guidelines have been established – the best known by the [Cochrane Collaboration](). Students undertaking a literature review for their thesis would *not* be expected to achieve a systematic review meeting all standards required by Cochrane. They are, however, expected to apply the general principles and guidelines of established frameworks to produce a literature review that uses a systematic approach in the search for, critique, and analysis of the literature. It is important to remember that a good quality literature review is a 'research' project. The task is to identify a research question or questions, and to answer the question(s) using a pre-defined methodology for searching for, appraising, and analytically summarizing information from the relevant published articles or other documents.

Library Resources

As previously mentioned, there are many resources provided by CUMC Health Sciences Library that support conducting literature reviews including workshops, online guides, and individual consultations with subject matter specialists who can help define search terms and identify research databases, assessment and review results summary tools, appropriate for your specific review. Using library resources will save time and effort in conducting reviews and contribute to a more professional literature review article. For workshops see *Upcoming Classes and Events* https://library.cumc.columbia.edu/events; for many online resources check https://library.cumc.columbia.edu/explore-resources#explore-activity; and, for an individual consultation with a health sciences information specialist, complete *User Inquiry Form* https://library.cumc.columbia.edu/user-inquiry-form.

Steps in completing a literature review

1. ***Identify a topic and formulate your review question.*** Select a topic that is of interest to you, stimulates your curiosity, and contributes to understanding or responding to a public health issue. A broad search of the existing literature is a good way to start. For example, a review article on an aspect of the COVID-19 pandemic might start by searching for "risk factors for COVID-19." Then a narrower focus guided by a thesis or theme, such as "characteristics of living settings that increase the risk of COVID-19" can narrow the search to better serve the writer's objective. It is important to do background research to refine your review question and to check that the review you propose has not already been done.

2. ***Develop your review protocol.*** An essential step is the development of a review protocol that defines the objectives and methods of your review. You will need to specify inclusion/exclusion criteria (which types of studies or other published materials will be eligible for review) and your search strategy (how will you locate materials). A clearly defined search strategy includes search terms and the databases you will search, and strategy for any secondary searching such as checking references of eligible articles, and searching for 'grey literature' produced in print or online outside commercial or academic publishing such as dissertations, conference proceedings, government reports, expert opinion pieces, policy briefings, advocacy manifestos, etc.

3. ***Select publications/documents for review.*** Implement your search strategy and select publications that meet your inclusion criteria for review. Screen titles and abstracts for an initial check and access complete articles to determine inclusion. You often need to adjust your searching based on initial results (e.g. too many publications identified or missed). Document the process of refining your search and identifying studies or other published works relevant for your review.

4. ***Read and extract key data from each publication.*** Organization is critical in the reading phase of conducting a literature review. Set up a template for abstracting key components of each included item: citation, type of publication, setting/population, study design, data sources, factors examined, and findings etc. Relevant information about included articles or other documents will depend on the type of literature relevant to your review - key components of publications for a review of policy statements would differ from a review of qualitative studies of personal experience and cultural contexts of vaccine hesitancy. Take notes from each publication, organized by topics relevant to answering your review question. This will ease organization and writing of the review, assist in citing articles, and ensure a complete bibliography. Consider using a reference management system such as Zotero, EndNote or Mendeley.

5. ***Assess the quality of evidence.*** Assessing the quality of information from the individual studies or other documents included, and whether the evidence taken as a whole across the multiple data sources supports a particular intervention, policy, or other course of action, is an important feature of a literature review in public health. There are many

tools for quality appraisal applicable to a range of evidence types. Other than for some types of systematic review, use of a specific tool is not essential. However, existing tools can assist you in developing an approach to evaluating the relevance, strength, and limitations of the literature for addressing your review question and responding to the health issue or problem that motivates your review.

6. ***Synthesize findings and analyze results.*** The next step is analyzing information from the publications or other documents you have reviewed to provide an overall summary of the information extracted from each as findings relate to your review question. There are methods for synthesis of findings from quantitative studies (meta-analysis) or from qualitative studies (meta-ethnography) on the same topic. However, given the variability in individual studies or other types of included literature, narrative synthesis is most often used to examine patterns and integrate findings across items reviewed. It is advisable to create a table(s) showing relevant characteristics of each study or document and summarizing evidence from each that relates to your review question. For example, a recent review of studies on social determinants of COVID-19 outcomes summarized results of studies in a table showing type of study design and social factors examined and analyzed findings by social determinant category.

7. ***Writing the review.*** As you begin to write, let the words flow freely and unreservedly! The initial draft can be revised, reorganized, and edited to satisfy the writer's purpose. What has been learned from the literature review can guide a clarification of the aims of the review article and contribute to the outline of the master's thesis. Thorough notes and/or an outline can help with identifying appropriate sections and sub-headings for the review, and provide a logical order to presenting the strengths and weaknesses of published studies and findings. Gaps in information can be noted. Information can be presented in the text, in tables, diagrams, or sidebars. Careful editing can come later, after the sections of the review are together.

   Editing is a critically important part of the writing process. It gives the writer the opportunity to check the logic and consistency of an argument, reassess and reorganize the document to better meet the overall aim of the review, and ensure that proof is provided for statements and arguments. Keep in mind that sources should be cited for both ideas and facts. Do not hesitate to be critical when it is warranted and qualify the nature of evidence to provide a clear assessment of the implications of each study or other document reviewed. The review article should reflect the writer's overall objective, keeping in mind that hard and fast conclusions may be elusive. In many areas of public health, science remains a work in progress. A well-crafted review article can stimulate next steps in advancing the evidence base in public health.

Guidelines for the Structure of a Review Article

The structure of a review article will depend in part upon the content of the material that is collected for it. Organization of the review depends on the ways that you want to build your argument. In general, however, your review article should contain the components listed

below. The length of these sections will vary; the overall length of a review article should be 25 to 35 pages with additional pages for appendices often included to show details of your search strategy, quality assessment criteria, additional details for each item reviewed, etc.

Abstract

The abstract of your review is a concise summary of the objective and type of review, your review question, summary of methods, essential findings, and conclusion. It may be structured or unstructured. The abstract is the last thing that you should write and the first thing that you present.

Approximate Length: 250-500 words/.5-1 page

Introduction/ Background

Introduce the central issue, public health problem or topic that motivates your review and your review question. This section should include prior empirical research and other relevant background information depending on your thesis topic such as existing theoretical frameworks, current policy or practice, unaddressed equity issues. The introduction and background section presents information about what is known and not known about the issue, and the importance of learning more, addressing gaps, resolving or mitigating the problem, that led to your review of the literature. End this section with a clear statement of your review question and specific aims.

Approximate Length: 2500 to 5000 words/ 5-10 pages

Methodology

Summarize your review protocol including search strategy and selection criteria used to identify publications included in your review. Include your search terms, data bases searched, other resources searched, inclusion criteria, and criteria used for assessment of the strengths and weaknesses of each of the articles or other documents identified.

Approximate Length: 500 to 2000 words/ 1-4 pages

Results

This section presents results of the literature review as they relate to answering your review question. Create a logical structure for this section by organizing and synthesizing findings from the review. For most reviews a summary of results in tabular form is recommended.

Subheadings are essential in discussion of results. Use the themes or categorizations used for your synthesis of information from the individual articles or other documents. Data from the literature review should be presented accurately and cited correctly. Here is where you will analyze, interpret, critique, and synthesize findings from the articles or other documents in the literature review. An assessment of the quality of information in the published literature can set the agenda for the discussion and concluding remarks.

Approximate Length: 5000 to 10,000 words/ 10-20 pages

Discussion/Conclusion

Briefly summarize the key findings in the review and discuss the strengths and weaknesses of the extant literature in relation to your answering your review question. In the concluding section of the paper, recommendations for further studies can be made that address gaps in information and unanswered questions. If relevant, implications for public health practice or policy can also be addressed.

Approximate Length: 2500 to 5000 words/ 5-10 pages

Literature Cited

Use the reference style consistent with the writing style of the thesis.

2. Research Proposal

Overview

A research proposal is a plan to investigate a problem, issue, or phenomenon of importance (in this case) to public health. Its three most critical components are: (1) A clear description the study's specific goal and the research questions, aims and/or hypotheses that will allow that goal to be achieved; (2) A strong case for the importance/significance of the proposed research based on available data (e.g. official data on prevalence, incidence, morbidity and mortality); and a thoughtful review of the relevant existing literature; and (3) The presentation of a methodologically sound and feasible plan for carrying out the work (e.g., identifying and recruiting the sample, gathering the data), and for the data analysis.

When preparing a research proposal be concise and clear in your writing. Avoid gratuitous language, jargon, going off on tangents, and very long or rambling sentences. If you are submitting your proposal to an agency or organization to seek funding to carry out the study, the reviewers will likely be given multiple proposals to evaluate alongside yours. Do not make them have to struggle to figure out the what, why and how of your proposal. Rather than devote extra time to doing so, they may simply give your proposal a poor score because you were unable to effectively make your case for funding. Also carefully proofread your application before submission. Sloppy work in preparing the proposal may be taken as an indication that you may not be a careful researcher. Doing careful work is always perceived as a good quality in a researcher. Finally, be realistic in what you propose to accomplish. Make sure your goals are achievable within the constraints of time and budget and the challenges that may exist to carrying out the work. Promising deliverables that the reader/reviewer will know are very unlikely to be able to be achieved might be taken as a sign of your inexperience, lack of sophistication, or poor judgement, all of which will hurt your chances of being funded.

The outline presented below for preparing a sound research proposal is a generic one. If you

plan to seek funding to carry out the proposed research, different funders may have their own guidelines regarding what they require a proposal to include, specific page limits, and formatting requirements. Nevertheless, all of the elements in the outline below will likely be required in one form or another in most proposals accepted by funding bodies, as they are essential to a sound and competitive proposal. If you are submitting your research proposal to NIH, you should consult the Courseworks page for resources on writing research proposals. For example, the "Quick Guide for Grant Applications" by the National Institutes of Health offers specific tips on writing the different sections of a research proposal for funding at this government agency.

Section 1: Study Overview

This section should be thought of as a highly condensed version of key components of the full research proposal, which will subsequently be fully developed in later sections of the proposal. The overview should address the following questions: (1) What is the goal of the proposed research and what are the specific aims, research questions, or hypotheses that will be addressed to enable you to achieve that goal? (2) Why is it important (to public health) to undertake this study? That is, what will be learned that can help prevent or ameliorate an existing public health problem and/or be useful to other researchers, practitioners and/or policy makers? (3) What are the research methods you will use to carry out the research and the analysis plan for the data gathered?

Approximate Length: 500 to 750 words / 1-1.5 pages

Section 2: Background and Significance (Literature review)

Situating your proposed research within the body of research that already exists on the topic, problem or phenomenon you will be investigating **(Background)** and making a persuasive case for the importance of the work you are proposing **(Significance)** are critical first steps in preparing a strong proposal. If the reviewers are not persuaded that the problem you are addressing is of real importance/significance, it does not matter how elegant your research design is. Funders will not support a well-designed study of a problem they regard to be of little significance.

To help the reviewer understand the importance of the proposed study, it needs to be put in a larger context and discussed in relation to existing related research. This is accomplished through a thorough review of that literature. This review should be organized to show how the research findings could make an important contribution to the literature and how what will be learned can help inform the work of other researchers, practitioners, or policy makers. This contribution can be made in a variety of ways, including (but not limited to): by filling an important gap in the existing literature that limits our understanding of the problem under investigation; by helping to resolve an important debate in the field that may be impeding efforts to address the problem; by informing the development of interventions, program or new research instruments; by providing a more nuanced or comprehensive understanding of the problem. To demonstrate the importance of the problem to public

health, researchers will often cite available data (if it exists) on the incidence and prevalence of the problem, the associated morbidity and/or mortality, the economic and social costs of the problem, or the costs of the problem in terms of human suffering.

Be sure in the review to cite the seminal or foundational work in the field. The literature review does not have to be exhaustive and cite every relevant article in the literature. It should, however, include the findings from the best (i.e., most methodologically sound) studies available, and represent all of the significant points of view or ongoing debates in the literature about the issues that will be investigated. Further, it should include existing research findings that both do and do not support the premise of your study or the case for its importance -- if both exist. That is, you cannot just cherry pick articles that support your argument for doing the proposed research, while omitting those that weaken or challenge it. However, if it is the case that the existing studies that support your research proposal are more methodologically sound or immediately relevant to the proposed work than those that do not, you can point that out.

Try to keep the review as closely related to the focus of your proposal as possible. For example, if you are studying only one aspect of a complex multifaceted problem, it should focus on that single aspect unless it is necessary to include literature on other aspects of the problem to better highlight the importance of the one aspect under investigation. How well you craft the review will allow reviewers to assess your command of what is currently understood about the problem under investigation and the importance of what your research can contribute to the field and advance the work of other researchers, practitioners and policy makers.

If you are preparing a grant for submission to NIH, you will also be asked to include a separate "Innovation" section. If the proposal is not being submitted to NIH, you might still want to address this issue (if relevant) at the end of the Background and Significance section. That something has never been studied before does not by itself make the work innovative. You have to show that you will be developing new methods or theories or are using existing ones in new ways in order to demonstrate your work is innovative.

Approximate Length: 1000 to 1500 words / 2-2.5 pages

Section 3: Preliminary Work (if relevant)

In this section, if you or any key member of the research team has data of their own that might support the proposed study's significance, the research design choices made, the feasibility of the study, or even some of the assumptions that might underlie your proposal, it should be discussed here. If you have publications from prior research you conducted that were cited in the literature review, they need not repeated here, although you may want to add other information about them here that can support the application as designed. In "Preliminary Work," you can also discuss your previous experience successfully employing the methods or theories you plan to use in the proposed research. For example, some populations are hidden or hard to locate or may be reluctant to participate in research that

involves their admitting participation in an illegal or socially proscribed behavior (e.g., sex work). If in the past any key member of the proposed research team had success locating and enrolling individuals from this (or a similarly hidden) population -- for example, through respondent driven sampling -- you can cite this as evidence to support the feasibility or being able to recruit the proposed sample and your/your team member's experience using this sampling strategy. Or, if you are proposing a longitudinal study and had previously conducted longitudinal research in which you were able to achieve a high retention rate, you can cite that data as evidence that you successfully employed strategies in past work that have enabled you to minimize attrition. Researchers will often undertake small pilot studies specifically to gather data they can report on in the "Preliminary Work" section to support the proposal in some way or to demonstrate some challenging aspect of the plan is feasible.

Approximate Length: 500 words / 1 page

Section 4. Research Design (Methodology)

Below is an outline of the principal points the "Research Design" section should address and the sections in which they should be included. You should try to include a justification for your key research design choices, especially if they are not common ones. Some procedures are the accepted "gold standard" for how to do something and do not require justification. However, often there are competing methods that do have different advantages and disadvantages. In such instances, you should explain your choices.

Approach: Briefly describe the basic approach of the study—e.g., qualitative, quantitative, mixed methods, cross-sectional, longitudinal, ethnography, exploratory, randomized controlled trial/experiment, hypothesis testing, etc. You will typically need to discuss both data collection strategy and study design   to describe your general approach. Explain why you feel this approach is best suited to the proposed study.

Theoretical Framework (if appropriate): Not all studies are theory driven. For example, qualitative research typically relies on an inductive rather than a deductive approach to research. Theories can be used to provide a rationale for a study, to guide the choice of research questions or hypotheses to be tested, to guide the selection of variables to include, or to formulate a data analysis plan. Many researchers would argue that if you are claiming your research is theory driven, the theory should (to some extent) inform or infuse virtually all aspects of the research plan. This section should review how the theory is applied to the research design. The theoretical framework should initially be referenced and described in Background and Significance section of the proposal.

Sample: Describe the kind of sampling strategy you will use (e.g., probability or nonprobability sampling, stratified sampling, quota sampling, systematic sampling, multistage sampling, convenience sampling, etc.). Describe the population from which you are planning to draw your sample (e.g., women who have ever experienced intimate partner violence, individuals who suffered a heart attack in the past 2 years, US citizens who traveled abroad for medical care in the past 5 years). Who in this population will be eligible to

participate in your study (i.e. what are your inclusion criteria) and who will not be eligible to participate (i.e. what are your exclusion criteria)? The inclusion and exclusion criteria should be justified. Describe the sampling procedures that you will use and the proposed size of your sample. Explain how you arrived at the sample size. Funders do not want to pay for extra cases that are not needed to answer the research questions, but also they do not want to find at the end of the study that there were not enough people in the sample to be able to adequately address the study aims. When a quantitative study is being proposed the reviewers will want to see a power analysis to determine the smallest sample size suitable to detect an effect of a given test at the desired level of significance. The power analysis can be included here, but more typically is included in the data analysis section. With qualitative research, it is much harder to justify the sample size. However, there are numerous resources that address this issue and suggest criteria that should be considered in deciding if one needs a larger or smaller sample. These criteria include the heterogeneity/homogeneity of the population under investigation and whether sampling quotas will be imposed, among others). Typically, it is extremely hard in advance of gathering the data to know how large of a sample you will need for a qualitative study, especially if the phenomenon being researched is poorly understood. Nevertheless, because you must submit a budget with the proposal you will have to give an estimate so you can budget for interviewer time required, transcription of interviews, and any incentive (e.g. gift card, cash honorarium) participants will receive.

Recruitment: Explain how you will find and enroll eligible cases for your study. If you have a sampling frame explain its strengths and limitations. For example, how completely does the sampling frame enumerate the population under investigation? If you are studying a population that is very rare, hard to find, or hidden, reviewers will expect you to acknowledge that fact and provide a detailed plan for identifying and recruiting participants. If you will be conducting a longitudinal study, you should indicate what your estimates are for participant attrition/retention and what they are based on (e.g., reports from other studies, a pilot study you conducted and reported on in "Preliminary Studies," etc.). If participants will be given anything (e.g., a gift card or other incentive) for their participation report what that will be.

Data Collection or Sources of Data: If you will be gathering new data, describe the data collection procedures.

- If participants will complete quantitative surveys, include a description of the measures, instruments and other items that will be in the survey. This should include information on the reliability and validity of the measures. Also, describe how the survey will be administered. For example, will participants complete it online, or be sent a printed-paper survey to complete and a return envelope; or will the survey be administered over the phone or in person by a researcher?
- If participants will participate in qualitative interviews, explain if the interviews will be conducted face-to-face, by telephone, via videoconference, or some other way. Describe who will conduct the interviews and the training they will receive. Describe key tops in the interview guide and explain how structured or unstructured the interviews will be. Indicate if they will be recorded and transcribed for later analysis

or if only notes will be taken by the interviewer.

- If participants will be observed to gather data, explain how the observations made will be recoded (through notes, through videotaping, etc.). Explain how you will sample participants or units of time for observation. Will those who will be observed be aware this is happening?
- If rather than collecting new data for the study you plan to use secondary data (i.e., data gathered for another study or purpose that you can have access to address your research questions), explain why you have made the choice to use secondary data. Describe the type and source of that data including brief summary of the original methodology (site, sampling, assessment etc.). Describe its strengths and limitations. If your data will come from archival or official sources (e.g., data gathered by governmental bodies), describe the archives or official data sources you will use and your reasons for choosing them. Discuss their strengths and limitation with regard to the proposed study.

Data Analysis Plan: Specify the data analytic strategies you will use to analyze your data (e.g., logistic regression, structural equation modeling, cluster analysis, thematic analysis, grounded theory, etc.). Often proposed analyses can be organized by study research questions/aims. When a quantitative study is being proposed the reviewers will want to see a power analysis to determine the smallest sample size suitable to detect an effect of a given test at the desired level of significance. That can be included here or earlier in the "Sample" section, but more typically it appears in the Data Analysis Plan section. The justification for the size of a qualitative sample more commonly appears where the sample design is discussed. When a mixed methods approach is used, reviewers typically will want a plan at the data analysis stage for integrating the qualitative and quantitative data.

- If you are doing qualitative research and will be coding the data, explain how the coding scheme will be developed, who will train the coders, and how inter-rater agreement in the application of the codes will be assessed. Explain the data analysis methods you will use (e.g., content analysis, narrative analysis, grounded theory, etc.) to address the research aims or questions).

Approximate Length: 1500 to 2500 words / 3-5 pages

Section 5: Feasibility

In this section, you should make a case for the feasibility of carrying out the proposed study. Before funders give a researcher money to carry out a proposed study, they want to be confident that the plans laid out for completing the research are going to be able to be carried out. You may already have started to provide evidence of the proposed study's feasibility through past work described in the "Preliminary Work" section (above). For example, if you showed that in prior research you were able to locate and recruit a hidden population using the same methods you are currently proposing to use to find members of that same or a similarly hard to find population, that will lend support to the study's feasibility. In this section, you might also discuss your access to special resources (e.g., a research van to go out

into the community, etc.) that will be needed to complete the study. Alternatively, you might also discuss established relationships you have with community-based organizations that can assist you with enrolling eligible members of the communities that they serve. If there are potential challenges in successfully carrying out the research using the procedures you outlined, explain what alternative plans you will be able to employ should the proposed methods prove to be less feasible or effective than you had anticipated. As part of the feasibility section, investigators often include a timetable to show when different components of the research study will be implemented and milestones reached.

Approximate Length: 500 to 750 words / 1-1.5 pages

Section 6: Strengths and Limitations (Optional)

Researchers sometimes choose to point out what they recognize as some of the strengths and limitations of their proposed study. In some cases, the strengths may have already been discussed in one of the earlier sections. If so, it is only necessary to briefly mention them here. Strengths may include things like the special expertise or extensive experience of the research team members. Alternatively, it might be strong relationships with community-based organizations who will be collaborators in the research. Limitations may include things like having to rely on a convenience sample. Others might be certain restrictions on the generalizability of the findings, or that because participants will be asked to report on events that happened years before and their reports may be subject to recall bias. Using secondary data can be an approach that has both strengths and limitations. It saves time and money because you are not collecting new data. However, when you use data collected for another purpose to try to answer your research questions, it may not include all the measures or questions you would like to have to address your research aims.

Approximate Length: 250 to 500 words / .5-1 page

Literature Cited

Use the reference style consistent with the writing style of the thesis.

3. Needs Assessment Proposal

Overview

Writing a needs assessment proposal is similar to writing an evaluation or research proposal. A needs assessment proposal may focus on examining health related needs (and assets) in a particular target population or community, or it may be conducted in preparation for an intervention program that serves a target population or community. Needs assessment proposals are divided roughly into the following three components: the abstract, needs and assets assessment plan, and the references.

Abstract

The abstract of your proposal is a concise summary of the significance, overall purpose, objectives, (and preliminary findings of your needs assessment study). It is the last thing that you should write and the first thing that you should present.

Approximate Length: 500 words / 1 page

Section 1: Background and Significance

Here, the goal is to present: 1) a detailed description of the significance of conducting a rigorous needs assessment in the area that you have selected (e.g., a prospective funder/organization wants to address a health problem in a target population); 2) a description of the target population/community and setting for your needs assessment, including a summary of relevant demographic and general health data; 3) a list of the objectives/aims of your needs assessment; 4) a description of what a "need" is and what a "needs assessment" is; 5) the theoretical perspectives and conceptual models you are using to frame your needs assessment; 6) the plan for assessing assets, capacity, and resources (some of this content may be incorporated under other sections above); and, 7) a summary of gaps in the scientific and gray literature and how the proposed needs assessment will fill these gaps.

This section should include a logic model diagram, particularly if you use the Intervention Mapping or the PRECEDE approach to guide your needs assessment.

Approximate Length: 1500 – 5000 words / 3-10 pages

Section 2: Preliminary Findings

Discuss key findings from the scientific and grey literature and reports from secondary data. Summarize evidence you have found that supports items you have in your final Logic Model (e.g. the health problem or problems, quality of life issues, behavioral factors, personal determinants of behavioral factors, environmental factors, and personal determinants of environmental factors). It is also important to note any gaps in the literature and/or areas that require primary data collection.

Approximate Length: 2500 – 5000 words / 5-10 pages

Section 3: Data Collection & Analysis Design

Based on your preliminary findings, there are likely topic areas that will require additional research. You need to decide upon the most effective design for investigating these remaining questions. State the purpose, objectives, and/or research questions of your needs assessment that remain unanswered after conducting a literature review. Summarize the research design/approach that you propose using to answer the remaining questions,

including: your approach to working with key stakeholders, the quantitative/qualitative/mixed methods you will employ to collect data, potential indicators you will measure and your proposed methods of data analysis. While there are no limitations placed on proposals, you should consider and comment on the feasibility of your proposed design.

Approximate Length: 1000-3500 words / 2-7 pages.

Section 4: Limitations & Ethical Concerns

Limitations – Discuss the methodological and other limitations of your proposal and data collection plan. Include a discussion of threats to internal and external validity, how those will be addressed, and why they may be justified.

Ethical concerns - Discuss the most salient ethical concerns related to your needs assessment proposal — whether or not these relate to human subjects research or the broader ethical implications of your study — and the mechanisms you propose to use to address these concerns. You are not expected to write a Protection of Human Subjects Protocol for an Institutional Review Board.

Approximate Length: 500-2000 words / 1-4 pages

Section 5: Dissemination of Findings and Conclusion

Discuss plans for including key stakeholders in interpretation of the results, disseminating the findings, and ensuring that the needs assessment findings will be used and translated into action. Concisely summarize the findings of your needs assessment, explain the implications and significance of your needs assessment plan, and include recommendations for interventions, as appropriate.

Approximate Length: 500-2000 words / 1-4 pages

Literature Cited

Use the reference style consistent with the writing style of the thesis.

4. Program Evaluation Proposal / Program Evaluation

Overview

Completing a thesis related to program evaluation has two distinct options: (1) writing an evaluation proposal or (2) conducting the evaluation and presenting results as a report. When choosing this thesis option, the first decision point is which approach will be taken.

Writing an evaluation proposal is very similar to writing a research proposal. An evaluation proposal typically focuses designing a plan to assessing the process, outcome, or impact of a program, service, or initiative. Evaluation proposals are generally formatted with the following sections: Abstract, Specific Aims, Background & Significance, Evaluation Design, Feasibility, Conclusion, and References.

Conducting the evaluation is similar to implementing a research proposal and centers on data collection, analysis, and reporting. The format for a completed evaluation is generally formatted with the following sections: Abstract, Specific Aims, Background & Significance (includes summary of evaluation design), Data Collection, Data Analysis, Discussion, Conclusion, and References.

1. Evaluation Proposal

Abstract

The abstract of your evaluation proposal is a concise summary of your evaluation problem, objectives, and evaluation design. It is the last thing that you should write and the first thing that you should present

Approximate Length: 250-500 words / .5-1 page

Specific Aims

In this section describe the overall purpose, specific objective(s), and implications of the proposed evaluation. Aims and objectives should be clear and easy to follow. Approach writing aims with the idea that you are not the person that will conduct the evaluation.

Approximate Length: 500 words / 1 pages

Background & Significance

This section presents your literature review and should include 1) a detailed description of the evaluation problem and the significance of conducting a rigorous evaluation of the problem that you have selected; 2) the key findings in the scientific/evaluation literature regarding ways to evaluate your selected problem; 3) a discussion of how your study will contribute to the already existing knowledge base from prior findings; 4) the theoretical perspective from which your evaluation design emerged; and 5) any conceptual innovations in the approach of your evaluation. Given all the possible information to include it is critical to be concise.

Approximate Length: 2500-3500 words / 5-7 pages

Evaluation Design

The design of the evaluation is the heart of the thesis. After you select a specific intervention/service/program to evaluate, you will select the proposed evaluation design that links to the evaluation levels (process, outcome, impact), with a focus on linking the design to the feasibility (see below). Approach writing the design as if you will not be implementing the evaluation. As such, significant detail is needed to ensure a properly conducted evaluation. The following subsections are generally included in the evaluation design (with some potential deviation if an evaluability assessment is proposed).

Evaluation Approach - Briefly describe the overall design/approach of your evaluation and the supporting rationale.

Program Overview - Describe the program/intervention/service that you plan to evaluate, its components, focus population(s), setting(s), key stakeholders, and expected goals. This section should also include a logic model.

Evaluation Questions and Data Sources – Clearly define the key questions your evaluation proposal aims to answer and describe the data sources that will be utilized. Include the rational for both the questions and the sources.

Data Collection – Describe the strategies and steps necessary to collect the evaluation data. Be sure to include descriptors of quantitative, qualitative, or mixed methods approaches as well as any parameters related to managing and protecting data. Reference the specific tools used to collect the data (include tools in the appendix) and provide examples of recruitment and consent documents as appropriate. If IRB approval would be required, be sure to include it as a step before data collection.

Proposed Analysis – This section provides an overview of the planned analysis based on the data collection procedures.

Ethics & Validity – Describe how ethical principles of research and evaluation are being addressed. Include how the plan addresses threats to internal and external validity.

Use & Dissemination of Findings – Provide an overview of how the organization can use and disseminate the findings after conducting the evaluation. Be sure to address key stakeholders as part of the dissemination plans.

The evaluation design should be written in temporal order and clearly identify when and how the different components of the evaluation are going to be implemented.

Approximate Length: 1500-10000 words / 15-20 pages

Feasibility

In this section discuss the feasibility of conducting the proposed evaluation design. The reality of conducting an evaluation is critical and this section should reflect considerations of the resources necessary to complete the evaluation are available and the value of conducting an evaluation is understood by the organization.

Approximate Length: 500-1000 words / 1-2 pages

Conclusion

This section should provide a concise summary of the topic, program, evaluation purpose, evaluation plan, and anticipated use of findings.

Approximate Length: 500 words / 1 pages

Literature Cited

Use the reference style consistent with the writing style of the thesis. APA 7th edition for reference is recommended.

2. Evaluation Report

Abstract

The abstract of your completed evaluation is a concise summary of your evaluation objectives, evaluation design, data collection, and key findings. It is the last thing that you should write and the first thing that you should present.

Approximate Length: 250-500 words / .5-1 page

Specific Aims

In this section describe the overall purpose, specific objective(s), and implications of the evaluation. Aims and objectives should be clear and easy to follow. Aims should demonstrate an understanding of the value of the evaluation to the sponsoring organization.

Approximate Length: 500 words / 1 pages

Background & Significance

This section presents your literature review and should include 1) a detailed description of the evaluation problem and the significance of conducting a rigorous evaluation of the problem that you have selected; 2) the key findings in the scientific literature reflecting the intervention and similar evaluations; 3) a discussion of how this evaluation will contribute

to the existing knowledge base; 4) the theoretical perspective and evaluation design model that guided the process; 5) any conceptual innovations in the evaluation approach. Given all the possible information to include it is critical to be concise.

Approximate Length: 2500-3500 words / 5-7 pages

Data Collection

Describe the strategies and steps undertaken to collect the evaluation data in temporal order. This section will contain significant detail that would allow a non-involved person to follow the steps taken and the potential to replicate the evaluation. Be sure to include descriptors of quantitative, qualitative, or mixed methods approaches and the rationale that explains the selected approach. Reference the specific tools used to collect the data (include tools in the appendix) and provide examples of recruitment and consent documents as appropriate. Include any parameters related to managing and protecting data. Include discussions of research ethics. If IRB approval would be required, be sure to include it as a step before data collection begins

Approximate Length: 4000-6000 words / 8-12 pages

Data Analysis

This section provides an overview of the analysis conducted based on the data collect procedures. Be sure to name all steps in the analysis, organized by how the analysis is answering the evaluation questions. Include both the planned analysis from an evaluation plan as well as any analysis that was conducted after collecting data. Be sure to note new analysis decisions and the rationale that supported additional analysis beyond the initial plan. Do not discuss the meaning of any findings in this section.

Approximate Length: 2500-4000 words / 5-8 pages

Discussion

Building on the presentation of the findings (data analysis), and proceeding in the order of the evaluation questions, present the interpretation of the data. Be sure to link findings of this evaluation to the literature described in the background and significance. Include limitations and a discussion of threats to the validity of findings (internal and external). As findings are discussed, link with stakeholder dissemination and program opportunities (improvement, validation, etc.).

Approximate Length: 1500-2500 words / 3-5 pages

Conclusion

This section should provide a concise summary of the topic, program, evaluation plan, data

collection, data analysis, and plan for the use of findings.

Approximate Length: 500 / 1 pages

Literature Cited

Use the reference style consistent with the writing style of the thesis. APA 7th edition for reference is recommended.

5. Intervention Proposal

Overview

Anyone who will be responsible for helping individuals or communities change health risk behavior, initiate health-promoting behavior, change environmental factors, and/or manage chronic illnesses must be able to design effective public health programs and develop plans to implement and evaluate these programs. Writing a master's thesis about planning a public health program (hereafter referred to as a public health intervention) to ultimately produce improved health outcomes and quality of life frequently focuses on changing behavioral factors and/or environmental conditions. However, the most immediate impact of an intervention is usually on well-defined determinants of the specific behavior(s) and related environmental conditions. Below are the steps that are commonly used to describe a health problem, then to develop, implement, and evaluate a public health intervention, regardless of the intervention-planning model you use.

There are a number of recognized intervention planning models that you can use to write your thesis including but not limited to the PRECEDE-PROCEED model, Mobilizing for Action through Planning and Partnerships process, Intervention Mapping process, and the CDC Program Planning model. All of these planning models include intervention development steps that are similar and that focus on aspects of other types of SMS master's theses described above (i.e., Review Article, Research Proposal, Needs Assessment Proposal, and Program Evaluation Proposal). The guidance below is excerpted from the CDC Program Planning model*, a model frequently used by public health practitioners to develop public health interventions.

Abstract

The abstract of your proposal is a concise summary of your health problem, objectives, and intervention design. It is the last thing that you should write and the first thing that you should present.

Approximate Length: 250-500 words / .5-1 page

Describing a Health Problem

Describing a health problem involves: assessing population health data, assessing community needs, and analyzing data and needs by identifying (and ranking) risk factors and subgroups.

Section 1: Assessing Population Health Data

To better understand the health problem, you should review population health data to identify mortality rates, incidence, and prevalence. By reviewing surveillance data, survey results, health records, and other data sources, you can also obtain information about the distribution of the health problem in terms of person, place, and time, as well as the risk factors. The 2020 County Health Rankings: State Reports https://www.countyhealthrankings.org/ and the New York City Community Health Profiles: https://a816-health.nyc.gov/hdi/profiles/ may be helpful in completing this step.

Section 2: Assessing Community Needs

In addition to reviewing health data, you may gather more information about the health problem and the health status of the community by meeting with or surveying community members, leaders, and stakeholders, if this is feasible. Through focus groups, surveys, and/or interviews, you can ask them their opinion about the importance of the health problem, who is affected by the health problem, and, why the health problem exists. For additional information on assessing community needs, you can refer to the guidance provided for the Needs Assessment Proposal described above.

Section 3: Analyzing Data and Needs

After you assess the population health data and community needs, part of analyzing data and community needs is identifying and ranking risk factors that may be affecting the health problem. Because an organization that may implement your intervention in the future will probably have limited resources, it is not practical to develop an intervention that addresses all risk factors. You can rank risk factors by determining which one is the most important and most modifiable. Similarly, you may also need to rank subgroups to determine which segment of the population you can most likely affect or influence. To rank subgroups you may use variables such as effect (which subgroup will your intervention have the greatest impact on in terms of measurable results or outcomes, such as lowering prevalence or mortality), influence (which subgroup can your intervention have the most control over in terms of changing behaviors, increasing knowledge, etc.), and, accessibility (which subgroup will be most available to your intervention or easily reached).

Section 4. Writing a Health Problem Statement

After you assess health data and community needs, and identify (and ideally rank) risk factors and subgroups, you need to develop a health problem statement. A good problem

statement answers the what, who, how much, when, and where. For example, what is the health problem, who is being affected, how much of the population is affected, when did the problem occur or when was it identified and where is this problem located. A specific example of a health problem statement is - In 2015, 75% of students in the north region reported having at least one parent who smoked in the home.

Developing a Public Health Intervention

After describing the health problem and writing a health problem statement, the next step is to develop a public health intervention (to the extent possible, given you are only writing a proposal) which involves the following steps:

•Creating an intervention goal
• Developing long-term objectives
• Identifying and ranking contributing factors
• Developing an intervention by:
    o   Selecting a health strategy
    o   Researching existing evidence-based interventions
    o   Comparing interventions
    o   Selecting one to adapt <u>or</u> create
• Developing medium- and short-term objectives
• Developing an implementation plan
• Planning for evaluation

Section 1: Creating an Intervention Goal

Using the health problem statement to plan the intervention involves creating a program goal, which is a generalized statement of the result or achievement to which the program is directed. There are two main steps to writing a good program goal: 1. Specify an expected program effect in reducing the health problem, 2. Identify the subgroup or segment of the population to be affected. An example of a program goal is - Reduce exposure to secondhand tobacco smoke in children.

Section 2: Developing Long-Term Objectives

You should then develop SMART long-term objectives, which describe the incremental steps needed to accomplish the program goal. An example of a long-term objective for the secondhand smoke program goal above is - Goal: Reduce exposure to secondhand tobacco smoke in children. Long-Term Objective: By the end of 2020, reduce by 25% the prevalence of adult smokers in the home.

Section 3: Identifying and Ranking Contributing Factors

To better focus your intervention planning efforts, you need to review and research how

factors in a person's environment might cause them to behave in ways that increase or decrease the chance to develop a certain disease or condition. These factors contribute to the prevalence of the health condition. For example, if the dangers of smoking are unknown, a person may be more likely to smoke. Or, if cigarettes are easily available through vending machines at restaurants and other buildings, a person might be more likely to smoke. Identifying contributing factors requires a thorough review of the research and scientific evidence.

Section 4: Developing an Intervention

All of the above steps lead up to designing or adapting your public health intervention, which should be the longest, most detailed section of your thesis. This involves determining a health strategy, researching existing evidence-based interventions, comparing interventions, and selecting an intervention to adapt or create.

- A health strategy is a general plan of action for affecting a health problem. The three main types of strategies include behavioral/educational, environmental, and policy. The health strategy you identify must relate to the program goal, the long-term objective(s), and the contributing factors that are most important and modifiable. To have a significant impact on the contributing factors of a health problem, you will often need to identify a combination of health strategies at the educational, behavioral, environmental, and/or policy levels.
- After selecting a health strategy or strategies to use, you should research existing evidence-based interventions to gain the support your intervention will need. Evidence-based interventions may also be cost effective to implement and can save time and resources during planning and implementation. By using an evidence-based intervention that successfully achieved its objectives, you will have more confidence that the intervention you develop will also be successful. An excellent resource to use to research evidence-based program and policy interventions is The Community Guide http://www.thecommunityguide.org.
- After you research evidence-based interventions, you will determine how well the intervention matches your program and future organization's: target audience (i.e., subgroup), goals and objectives, culture, cost, setting or future organizational capacity to implement it.
- Because public health interventions do not uniformly apply to all groups, it may be more efficient and cost-effective to adapt an existing intervention to a future organization's specific needs and situation. If you choose to create a new intervention, you should consider what would likely be leadership support, resources, feasibility, and availability of an intervention champion. Or, if there is no current evidence-based intervention that fits the culture, target audience, future organizational capacity, program goals, objectives, and delivery methods, you can create a new intervention. If you decide to create a new intervention, consider future

  o Leadership support
  o Resources (financial, personnel, facilities, partnerships)

- o Feasibility
- o Availability of program champion

Section 5: Developing Medium- and Short-Term Objectives

After you select an existing intervention or decide to create a new one, you will create medium- and short-term objectives. These objectives will be the benchmarks of your intervention and should clearly describe what you expect your intervention to accomplish. Medium-term objectives usually describe a behavior or policy change, typically within 3-5 years. Short-term objectives usually describe knowledge, skills, attitude, or awareness change, typically within 1-3 years. An example of medium- and short-term objectives for the secondhand smoke problem is:

- Program goal: Reduce exposure to secondhand tobacco smoke (SHS) in children.
- Intervention: Marketing campaign about the dangers of secondhand smoke.
- Long-term Objective: By the end of 2020, reduce by 25% the prevalence of adult smokers in the home.
- Medium-term objective: By 2015, the number of smoke-free homes will increase by 15%.
- Short-term objective: By 2013, increase by 25% both the awareness of and exposure to messages about the hazards of SHS.

Section 6: Developing an Implementation Plan

Now that you have developed your proposed intervention focusing on how you will address the health problem, you will develop a *preliminary plan* regarding how your proposed intervention will be implemented by: identifying and addressing potential barriers to implementation, developing a work plan to ensure you achieve the objectives, and developing a communication plan to ensure project members and stakeholders.

Section 7: Planning for Evaluation

While you were designing your proposed intervention, you should also have been planning for evaluation. It is important that planning and evaluating should be done concurrently. During the planning process, you will develop a *preliminary plan* for evaluation by considering the following:

- Do you have the resources to do an evaluation?
- What component of the intervention will you evaluate?
- What do you want to know about your intervention?
- When will you evaluate the intervention?
- What type of data will you need to address the evaluation questions?
- Do you have a system or tools for collecting the data? Where, how, and when will you collect the data?
- Do you have a system or tools for organizing and interpreting the data?

The CDC framework to evaluate programs/interventions may be a helpful framework to use when developing a preliminary plan for your proposed intervention. https://www.cdc.gov/eval/steps/. You can also refer to the Program Evaluation Proposal thesis guidelines above for additional information.

Literature Cited

Use the reference style consistent with the writing style of the thesis.

*Program Planning. Atlanta, GA: Centers for Disease Control and Prevention (CDC), 2013. https://www.cdc.gov/globalhealth/healthprotection/fetp/training_modules/17/Program-Planning_PW_Final_09252013.pdf

6. Research Report

Overview

A research report is a paper describing an original piece of empirical research the investigator (student) has carried out. A student should not consider preparing a research report for their thesis unless they are familiar with the research area, have access to research data (that you have collected yourself or that has been collected by others), and are confident in their ability to analyze the data and write it up in a research report.

The Structure of a Research Report

In addition to an abstract and reference list, research reports are typically divided into four main components: the introduction/literature review, the methods, the results, and the discussion.

Abstract

The abstract should be a concise summary of your research report including: the significance and objective(s) of the work that will be reported on, the methods used to carry out the research, the findings, and the conclusions. It is the last thing that you should write and the first thing that you should present when preparing a research report

Approximate Length: 250-500 words / .5-1 page

Introduction/Literature Review

In this section, begin by introducing the general topic or issue that is the focus of your report (e.g., how HIV-related stigma may adversely affect willingness to be tested for HIV), and why it is important (e.g., if infected, a delay in diagnosis and start of treatment can lead to poorer health outcomes). At this point, do not yet state the specific questions that were the focus of

the research that will be reported on. Here, in a paragraph or two, describe the nature and magnitude of the problem that you will address in your report. This may be accomplished by citing available statistics (e.g., on the prevalence or incidence of some disease, or of some social problem like homelessness) or findings from previously published research.

To help the reviewer understand the importance of the study, it needs to be put in a larger context and discussed in relation to existing related research. This is accomplished through a review of the research that summarizes and synthesizes the key findings of the existing literature relevant to your topic. The review need not be exhaustive and cite every relevant piece of literature. However, it should be comprehensive in terms of representing all the principal points of view or sides of a debate that exist on the topic in the literature. If little prior data on the problem is available, discuss the gap in the current literature your research report will address. Try to keep the review as closely related to the focus of your report as possible, For example, if you are studying only one aspect of a complex multifaceted problem, it should focus on that single aspect unless it is essential to include literature on other aspects of the problem to better highlight the importance of the one aspect under investigation.

You should conclude the Introduction/Literature Review with a statement of the specific research questions or aims you will be addressing or the hypotheses you will be testing (if relevant) in the report. If you have crafted the literature review well it should be apparent at this point to the reader how answering these questions will contribute in important ways to the existing literature (e.g., by filling gaps in our understanding about some problem or phenomenon, helping resolve an ongoing debate related to the topic, by generating new insights or hypotheses). You might want to organize your Introduction/Literature Review into subsections that will allow you to best locate it in the existing literature in the field and show how it can contribute to that literature

Approximate Length: 750-2000 words / 1.5-4 pages

Methods

Introduce this section with a brief description of key features of the approach and design of the research that provided the data for the report -- e.g., whether it is qualitative, quantitative, mixed methods, cross-sectional, longitudinal, an ethnography, exploratory, randomized controlled trial or other experiment, hypothesis testing, etc. You will typically need to discuss both data collection strategy and study design to describe your general approach. If a theoretical framework was used to guide or inform the research (e.g., to derive hypotheses, select key variables) this should have been described in the Introduction. In the Methods section, you can explain and how the essential components of the theory relate to your study design.

Sample: Define the population from which the sample was drawn (e.g., women who have ever experienced intimate partner violence, individuals who suffered a heart attack in the past 2 years, US citizens who traveled abroad for medical care in the past 5 years). Indicate who within that population was eligible to participate in your study (i.e., what are your

inclusion criteria) and who was not (i.e., what are your exclusion criteria).

Recruitment: Explain how you found and enrolled eligible cases for study. If you will be conducting a longitudinal study, you should report the attrition that occurred at each assessment point. If participants were given an incentive (e.g., a gift card or other honorarium) for their participation, report what they were given.

Data Collection or Sources of Data: Explain how the data were gathered/ obtained. If participants were surveyed, how were the surveys completed (e.g., online, administered by a research team member by phone, mailed paper surveys that were completed and returned, etc.)

- If you interviewed participants, describe how the interviews were conducted (e.g., face-to-face, over the phone, via videoconference)? Describe how structured or unstructured they were? Indicate if they were recorded and transcribed for analysis or if just notes were taken by the interviewer.
- If you observed or videotaped participants or sampling units, explain how you sampled observations or how the videotaping was carried out.
- If you used existing records or documents (e.g., diaries or letters people have kept, energy bills, phone records, etc.), explain how you obtained these records, and their strengths and limitations for addressing the research aims, questions or hypotheses.
- If rather than collecting new data for the report you used secondary data (i.e., data gathered for another study or purpose that you were given access to address your research questions), explain why you made the choice to use secondary data. Describe the type and source of the data including brief summary of the original methodology (site, sampling, assessment etc.). Discuss the dataset's strengths (e.g., is a large data set that well represents the population under investigation) and weaknesses with regard to your study (e.g., may not have contained all the variables you would have liked to have, the data are 5 years old, etc.).
- If the data you used in the report came from archival sources or official sources (e.g., data gathered by governmental bodies), describe the archives or official sources you used and your reasons for choosing them. Discuss the strengths and limitation of the data.

Measures: Describe the principal variables that were the focus of the analyses carried out to address the research questions, aims or hypotheses. Explain how these variables were chosen and how they were operationalized and measured. If existing standardized measures or instruments were used, provide information on their reliability and validity. If they were in any way modified in an effort to make them more suitable or relevant to the population or questions under investigation, describe those modifications and the rationale for making them.

Data Analysis Plan: Specify the types of data analytic strategies you used to analyze your quantitative data (e.g., logistic regression, structural equation modeling, cluster analysis, path analysis, etc.) or your qualitative data, (e.g., thematic analysis, constant comparative

method, etc.). Explain why you chose this analytic strategy (e.g., why it is the best fit for addressing the research aims) and how you applied it in your study.

Approximate Length: 750-1500 words / 1.5-3 pages

Results

Describe again the key research question you addressed in this report or the hypotheses you sought to test. Next report the principal findings related to these questions or hypotheses. Do not discuss what you think are the implications and significance of the findings in this section. Those comments should be saved for the Discussion section. Analyzed data is sometimes summarized or depicted in figures, or, tables, or in text form. If results are presented in a table, they do not need to be repeated in the text. You should refer to the table and describe highlights of the results presented there. In text, refer to each figure as "Figure 1," "Figure 2," etc. Number your tables as well (see the reference text for details).

Approximate Length: 1000-2000 words / 2-4 pages

Discussion

The purpose of the discussion is to provide the reader with an integration and interpretation of the results and provide conclusions that address the research aims presented in the introduction. The purpose of the Discussion section is not to repeat the findings reported in the Results section in all their detail. Rather, it is to go beyond the results by interpreting them and discussing their implications and importance. If there were unexpected or serendipitous findings of importance, discuss those too. If your research was theory driven, tie your findings back to the theory (e.g., discuss how they were consistent with or diverged from what the theory would have led you to expect to find). Discuss the implications of your findings for future research. For example, do your findings raise new questions that should be investigated? Near the end of the discussion section, you should discuss the limitations of the study. These might be, for example, things about the study's scope, design, sample or methods that limit the generalizability of the study or that compromise the integrity of the inferences you wish to draw from the data. If there are factors that mitigate these limitations, those should be noted too. Conclude with strengths of the study and implications for future research, intervention, and/or policy.

Approximate Length: 1000-2000 words / 2-4 pages

Literature Cited

Use the reference style consistent with the writing style of the thesis.

Appendix A
Thesis Faculty Sponsors

Aidala, Angela (aaa1), Associate Research Scientist (PhD - Sociology). Research, teaching, and service delivery strategies to work effectively with disadvantaged and often 'harder to reach' populations in urban settings; social-structural and cultural determinants of health; housing/ lack of housing and individual and community health; collaborative, practice-based evidence to advance health equity.

Bayer, Ronald (rb8), Professor of Sociomedical Sciences (PhD - Political Science). Ethical and policy issues in health; AIDS and screening for AIDS.

Boccher-Lattimore, Daria (dmb82), Associate Professor of Sociomedical Sciences (in Psychiatry) at CUMC (DrPH). HIV, workforce development, capacity building, interprofessional education, practice transformation, quality improvement, behavioral health integration, stigma, HIV and Aging, Ending HIV Epidemic programming, needs assessment and program evaluation, implementation science.

Bogart, Jane (jb925), Adjunct Assistant Professor of Sociomedical Sciences (EdD, MA, MCHES). Health Promotion theory; health & well-being in higher education; social determinants and health equity; needs assessment; program evaluation (quantitative, qualitative, & mixed methods); healthcare leadership; mental health stigma; gender and sexual identity.

Caton, Carol (clc3), Professor of Clinical Sociomedical Sciences (in Psychiatry) (PhD, Medical Sociology). Social epidemiology of severe mental illness, mental illness and substance use comorbidity, and homelessness; HIV/STI risk among homeless women; evaluation of treatment and support programs for homeless people. Most recent book, The Open Door: Homelessness and Severe Mental Illness in the Era of Community Treatment" (2017, New York, Oxford University Press).

Chowkwanyun, Merlin (mc2028), Assistant Professor of Sociomedical Sciences (PhD, MPH). History of public health; health social movements; racial inequality; environmental health and toxic substances policy; immigration; GIS; oral history, interviewing; archival research; text-mining, databases, cloud/parallel computing methods.

Cohall, Alwyn (atc1), Professor of Sociomedical Sciences, Population and Family Health and Pediatrics at the Columbia University Medical Center (MD). High-risk youth; sexually transmitted infections; HIV; PEP/PrEP; juvenile justice; access to care; men's health; community-based participatory research.

Colgrove, James (jc988), Professor of Sociomedical Sciences (PhD, MPH). Vaccination; Government responsibility for public health; the relationship between individual rights and communal responsibilities from the 19th century to the present; the role of the law and other forms of coercion in public health; ethical issues in public health.

Ford, Jessie (jf3179), Assistant Professor of Sociomedical Sciences (PhD-Sociology). Areas of interest-sexual and reproductive health; gender inequality; sociological approaches to health; sexual violence, health, and pleasure; qualitative research and mixed methods.

Franks, Julie (jf642), Assistant Professor of Sociomedical Sciences (PhD, History). Areas of interests: HIV and AIDS, especially in sub-Saharan Africa; lesbian, gay, bisexual, and transgender health; behavioral health interventions; sex workers; social networks; the emergent global COVID-19 pandemic; engagement of under-represented populations in health research; qualitative research and mixed methods.

Fullilove, Robert (ref5), Professor of Sociomedical Sciences at the Columbia University Medical Center (Ed.D). Minority health; effects of mass incarceration; HIV/AIDS; addiction.

Giovenco, Daniel (dg2984), Assistant Professor of Sociomedical Sciences (PhD, MPH). Tobacco control policy and disparities in tobacco use; impact of marijuana legalization; population survey data analysis; GIS and community mapping techniques; neighborhood field data collection.

Gooden, Lauren (lkg2129), Assistant Professor of Sociomedical Sciences at the Columbia University Medical Center (PhD-Epidemiology). Main areas of research include HIV and HCV testing, prevention and treatment, and access to care, particularly among people who use substances. Dr. Gooden is the Director of Columbia's Sociomedical Sciences Miami Research Center located in Miami, FL, which is a remote research team based at the University of Miami medical campus.

Hirsch, Jennifer S. (jsh2124), Professor of Sociomedical Sciences (PhD - Anthropology and Population Dynamics). Gender, sexuality and migration; sexual, reproductive and HIV risk practices; the anthropology of love; social scientific research on sexual assault and undergraduate well-being and the intersections between anthropology and public health.

Hooper, Leah (lch2124) Associate, Sociomedical Sciences (MST – Secondary Education). Progressive education; health literacy; critical and feminist pedagogy; trauma-informed teaching and learning; communication of scientific and health messages to lay, professional, and community audiences.

Hopper, Kim (kh17), Professor of Clinical Sociomedical Sciences (PhD - Sociomedical Sciences/ Medical Anthropology). Homelessness; the "de facto" public mental health system; recovery from severe psychiatric disorders; ethnographic methods; qualitative research methods, social theory, ethics and research.

Knox, Justin (jrk2115), Assistant Professor of Clinical Implementation Science (PhD – Epidemiology). Prevention and treatment of HIV domestically and globally; substance use; *staphylococcus* aureus, Covid-19; dissemination and implementation science; social network analysis; sexual minorities, racial minorities; mixed methods.

Kukafka, Rita (rk326), Professor of Biomedical Informatics and Sociomedical Sciences at the Columbia University Medical Center. Patient centered care; shared decision making; decision support; electronic health records; patient decision aids; hereditary cancer syndromes; risk communication; implementation science; participatory design; mixed methods; randomized clinical trials.

Kunzel, Carol (ck60), Professor of Dental Community Health and Sociomedical Sciences at CUMC (PhD – Sociology). Clinician behavior, social-behavioral models of clinical decision-making; diffusion of innovation; patient –clinician communication; health literacy, access to care, health disparities.

Lovero, Kate (kll2153), Assistant Professor of Sociomedical Sciences (PhD – Neuroscience). Prevention and treatment of adolescent mental health problems in low-resource settings; global mental health; adolescent depression, anxiety, trauma, suicide; dissemination and implementation science; community engagement and participatory research; research-policy partnership; cultural adaptation; capacity-building; mixed methods.

McNeil, Michael (mm3117), Adjunct Assistant Professor of Sociomedical Sciences (EdD, MS, CHES). Health promotion; program evaluation (quantitative, qualitative, & mixed methods); health in higher education; health and academic success; professional preparation; technology and health; alcohol & other drugs; opioid overdose prevention/ naloxone; tobacco control; sleep; stress; & time management.

Meunier, Etienne (em3196), Associate Research Scientist (PhD, Sociology). Prevention and treatment of HIV/AIDS and STIs; Sexual minorities; Sociological approaches to health behavior; Qualitative, ethnographic, and survey methodologies; Community-based research and interventions; LGBTQ studies and queer theory; Sexuality studies.

Murrman, Marita K. (mkm27), Professor of Sociomedical Sciences at the Columbia University Medical Center (EdD, MS, CHES). Community needs and assets assessment; behavior change theories; multi-level intervention design; competency-based curriculum development; health promotion and disease prevention; training the governmental public health workforce.

Oppenheimer, Gerald (go10), Professor of Clinical Sociomedical Sciences (PhD - History; M.P.H. Epidemiology). History of HIV/AIDS; history of public health; history of epidemiology, particularly heart disease epidemiology; history of social medicine; history of race and research.

Philbin, Morgan (mp3243), Assistant Professor of Sociomedical Sciences (PhD, MHS). Social policies/structural factors; Gender and sexuality; Biomedical HIV prevention; adolescent health; sexual minority health; health disparities; substance use; qualitative and ethnographic research methods.

Prins, Seth J (sjp2154), Assistant Professor of Epidemiology and Sociomedical Sciences (PhD, MPH). Collateral public health consequences of mass incarceration and criminalization; psychiatric epidemiology; relational social processes; economic exploitation and domination; racial capitalism; critical social theory; quantitative methods; critical causal inference.

Rosner, David (dr289), Professor of Sociomedical Sciences and Professor of History (PhD - History). History of public health; history of urban health; race and mental health; occupational disease; environmental toxins, particularly asbestos, lead and petrochemical pollution; health in New York City; history of hospitals and medical care.

Schiavo, Renata (rs3406), Senior Lecturer of Sociomedical Sciences (PhD, MA, CCL). Global health (U.S.and international settings); health communication for behavioral, social, and organizational change; health equity and social determinants of health; health systems; multi-sectoral partnerships and interventions; cultural competence; risk communication; community engagement and participatory planning methods; program evaluation; capacity building, training, and workforce development; systematic reviews; qualitative research methods; epidemics and emerging diseases; maternal and child health; immunization and vaccine hesitancy; implicit bias.

Shelton, Rachel (rs3108), Associate Professor of Sociomedical Sciences (ScD- Social Epidemiology and Community-based Intervention Research; MPH). Racial/ethnic and socioeconomic-based inequities in cancer screening and preventive health behaviors; health equity; dissemination and implementation science; sustainability of evidence-based interventions in real-world community and clinical settings; community-based participatory research; qualitative and mixed-methods research; Lay Health Advisor and peer-led programs; role of social and contextual factors (medical mistrust, discrimination, social networks) in influencing health behaviors and outcomes for cancer and other chronic diseases.

Siegel, Karolynn (ks420), Professor of Sociomedical Sciences and Social Work (PhD - Sociology). Psychosocial dimensions of genetics and disease; living with chronic or life threatening illness; stress and coping with health related stressors; stigma; HIV/AIDS.

Sikkema, Kathleen (ks3364), Stephen Smith Professor and Chair of Sociomedical Sciences (PhD – Clinical Psychology). Community based HIV prevention and mental health intervention trial research; global mental health; community-level prevention trials; mental health interventions to improve HIV care engagement; intervention trials to address sexual trauma, coping and gender violence; U.S. and South Africa; university-community research collaboration; syndemic nature of HIV and mental disorders.

Sommer, Marni (ms2778), Associate Professor of Sociomedical Sciences (DrPH). Menstruation, puberty, gender and sexuality; global health; adolescent health; qualitative and participatory research methods; menstrual health and hygiene research, practice and policy; Gender, Adolescent Transitions, and Environment (GATE) program; girl's and boy's puberty books.

Annika Sweetland (acs2124), Assistant Professor of Clinical Sociomedical Sciences in Psychiatry (DrPH, MSW). Global mental health; tuberculosis and depression; implementation & dissemination science; training non-specialists to deliver evidence-based mental health interventions in primary care; m-health; science of e-learning; cross-cultural measurement of psychiatric disorders; bridging the gap between research and policy.

Van Wye, Gretchen (gv2218). Adjunct Associate Professor of Sociomedical Sciences (PhD – Chronic disease epidemiology MA – Health Communication). Communication of scientific and health messages to lay, professional, and community audiences; chronic disease intervention design, implementation, and evaluation; social determinants of health; public health practice.

Wingood, Gina (gw2326), Professor of Sociomedical Sciences (ScD, Society & Health); Research focuses on the design, implementation, evaluation and dissemination of HIV interventions for African American women in clinical and non-clinical settings (i.e. church settings). Research portfolio in women's health, social justice, and adapting public health interventions to enhance their contextual and cultural relevance to facilitate their dissemination and adoption.