Isn’t It Ironic? Adapting an Elective on Quarantine and Isolation for Online Delivery Due to a Pandemic

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The emergence of COVID-19 and the pandemic that followed have given us a front-row seat to the debate over individual rights versus public health. There is a fine line between protecting the health of a community and maintaining civil liberties. More than a year before COVID-19 made the jump to humans, a lower-division, non-majors course was developed to explore the application and ramifications of quarantine and isolation. This 10-week class focuses on the biological and epidemiological rationale behind these nonpharmaceutical interventions, important historic examples, and the emotional, societal, and political consequences of such policies. This Quarantine and Isolation elective was included in the 2019–2020 University of Washington Bothell course catalog and was scheduled to be taught in person spring quarter; little did we know that weeks before this class would meet, Washington State would become the apparent epicenter of America’s COVID-19 outbreak. As our campus followed physical distancing protocols and moved to remote emergency learning, it became necessary to shift this course to online delivery, include conversations on how this new public health crisis connected to events of the past, and best support students with their heightened levels of stress and anxiety. The goal of this paper is not only to share curriculum related to quarantine and isolation, but also to describe successful strategies for online instruction and student support during a pandemic and beyond.

INTRODUCTION

The practices of quarantine and isolation have long been used to control the spread of infectious disease, with the modern use of the word “quarantine” emerging in the 14th century as Europe attempted to slow the spread of the Black Death (1). Medical advancements like vaccination have decreased our reliance on these practices, but the emergence of SARS, Ebola, and now COVID-19 has reinforced the relevance of these classic public health measures (2). While these interventions can effectively reduce the spread of disease, there are ethical and moral risks to consider, as fear, stigma, and racism can result in the unfair and inhumane treatment of individuals and communities. To my knowledge, there is only one other published example of quarantine-related coursework, which addresses the importance of Australian quarantine laws in preventing Hendra virus outbreaks among horses, dogs, and people (3). This is a rich topic area for science and health curriculum development. As such, I created a lower-level non-majors course called Quarantine and Isolation for students at the University of Washington, Bothell (UWB) that would focus on quarantine, isolation, and human infection to help students better understand the biological, epidemiological, ethical, social, and political motivations and consequences of such policies. The syllabus described here was formally approved by our Campus’ Council on Academic Standards in 2019 and added to the spring 2020 course schedule.

At the time, we had no idea how relevant and ironic the timing would be as this country’s first confirmed case and COVID-related death occurred within 20 miles of our campus (4, 5). Sitting in the epicenter of the outbreak, the university suspended in-person instruction in early March and the winter quarter concluded online (6). Continued physical distancing mandates in response to increasing cases and deaths made it clear that spring quarter would need to be offered remotely as well. While this was disappointing, teaching a course centered on quarantine and isolation while under a stay-at-home decree created a unique opportunity to make important connections between public health past and present. This teaching experience is summarized here with the goal of sharing curriculum related to quarantine and isolation while providing strategies, tips, and reflections on best practices for remote learning and student support during a global health crisis.

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Intended audience and prerequisite student knowledge

Students at UWB are required to fulfill three areas of knowledge, including the natural world (NW), individuals
and society (I&S), and visual, literary, and performing arts (VLPA). Our department has several options within each area of knowledge including upper-division electives that supplement core curriculum within our various degree programs and lower-division courses that introduce pre-major students to the fields of medicine and public health. The Quarantine and Isolation course described here is a 200-level, five-credit elective that meets the I&S area of knowledge for nonmajors. As such, there are no prerequisites or assumptions of prior knowledge. While not intentionally designed for microbiology or biology majors, the ethics and racism inherent within conversations around quarantine and isolation make these materials relevant for anyone interested in infectious disease and public health.

**Course delivery and learning time**

Our campus advises students taking a five-credit course to plan approximately 4 h per week for lecture plus another 2 to 3 h per credit outside of class for reading, studying, etc. (14 to 19 h per week total). In spring 2020, however, faculty were mindful that many students were working on the frontline in hospitals, shelters, nursing homes, and as emergency responders (7). During the first week, students completed a needs assessment to gather information regarding how the pandemic was impacting their ability to learn, work, and live (Appendix 1). The results helped inform class format and expectations. It was clear that many were dealing with outside pressures, such as risk of infection, caring for sick family members, financial hardship, and/or an overall increase in stress and anxiety. The decision was made to prioritize asynchronous online content that would take between 5 and 10 h every week, in addition to a 60- to 90-minute live Friday Zoom meeting.

**Learning objectives**

As detailed in the syllabus (Appendix 2), students who successfully completed this course were able to:

1. Describe how nonpharmaceutical interventions (NPI) are used in the control of infectious disease, including the role quarantine and isolation play in protecting public health.
2. Differentiate the symptoms, causative agent, and transmission pattern of various infectious diseases and how quarantine and isolation can effectively be employed to control disease spread.
3. Reflect on the experiences of people who have been subjected to quarantine and isolation to assess the emotional consequences, marginalization, and stigma that can result from dealing with an infectious disease and being subjected to these control measures.
4. Criticize and critique the application of quarantine and isolation measures (historical and contemporary) to judge the appropriateness of these responses and whether they were based on real or perceived risk.

**PROCEDURE**

This class was divided into weekly units, or modules, that focused on the ways in which quarantine and isolation have been implemented to control the spread of one or two example diseases (Table 1). Each module followed the same general format, including an asynchronous reading assessment, minilecture comprehension quiz, and online discussion board. Completing these three exercises independently permitted students to complete work at their own pace and allowed for better flexibility to deal with unexpected work, family, and health demands. After going through these materials, the class met synchronously via Zoom to discuss themes and questions, as well as connections to COVID-19. Modules then ended with a weekly reflection. This organization is diagramed in Fig. 1, with each component described in more detail below.

**Reading assessments**

Several books highlighting key moments in global health history were used to prepare this course (8–15). To introduce topics and focus students’ attention, each module began with selected articles, online resources, and/or an assigned chapter from one of these texts (Appendix 3). Using the unit on typhoid fever as an example, the book Murderous Contagion outlines the causative agent, symptoms, transmission, and treatment of this disease while also giving a history of the isolation of Mary Mallon, who was held at North Brother Island for over 20 years after infecting 51 people (13). Student’s understanding of the materials was assessed using an online quiz that included 10 to 20 questions. These assessments were open-notes, open-book, open-Internet, had no time limit, and could be taken as many as three times with the highest score recorded.

**Minilecture comprehension quizzes**

After being introduced to a disease or topic through the reading assessment, students were asked to dive deeper through a compilation of prerecorded minilectures spanning 5 to 10 min each. Rather than presenting hour-long recordings that mimic the in-class experience, breaking materials into shorter, discrete segments has been suggested to increase engagement and success (16). As an earlier version of this course had already been taught online, minilecture recordings were already available. Videos were closed captioned for accessibility, and lecture slides were provided as a study tool. These minilectures were embedded within an online quiz that also included supplemental videos, animations, podcasts, and/or audio freely available through our library or online (Appendix 4). Each audio clip, video, or
| Wk | Infectious disease | Historic outbreaks, places, and/or Events Related to Quarantine and Isolation | Connections to COVID-19 Discussed in Weekly Zoom Meetings |
|----|-------------------|--------------------------------------------------------------------------------|----------------------------------------------------------|
| 1  | Measles           | • Disneyland, CA (2014) <br> • Clark County, WA (2019)                         | • Where did the epidemic in the US start? <br> • When did we get community transmission? <br> • The importance of contact tracing |
| 2  | Smallpox          | • Smallpox Hospital on Roosevelt Island in New York City (1856–1875) <br> • Pacific Northwest Indigenous Peoples (1862) <br> • North Head Quarantine Station in Australia and smallpox epidemics (1881–1882) | • Emergency COVID-19 care centers, including the Army field hospital erected at Century Link Field in Seattle <br> • CDC issues first federally mandated quarantine in 50 yrs since dealing with smallpox (1960) |
| 3  | Plague            | • Pest Houses, London, England (1300) <br> • Poveglia Plague Island in Venice, Italy and the Black Death (1793–1814) <br> • Angel Island Quarantine Station, San Francisco, CA (1891–1946) <br> • Quarantine of Chinatown in San Francisco, CA (1900–1904) <br> • Quarantine and burning of Chinatown in Honolulu, HI (1900) | • Modern day pest houses and where to put them? King County quarantine site in White Center and the impact on communities of color <br> • Mass graves during a pandemic; refrigerated morgue trucks and burials on Hart Island <br> • Xenophobia, stigma, and blame directed against Asians/Asian-Americans |
| 4  | Yellow Fever      | • Philadelphia, PA, and the response of the Free African Society (1793) <br> • New Orleans, LA (1821–1824, 1855–1877, 1897) <br> • White flight from Memphis, TN (1878) <br> • Shotgun quarantines (1897) | • Anti–physical-distancing protests <br> • Who is privileged to stay at home and physical distance vs. who is an essential worker? <br> • Disproportionate impact of COVID-19 on communities of color |
| 5  | Typhoid Fever     | • Riverside Hospital on North Brother Island (1885–1963) <br> • Mary Mallon (1906–1910, 1915–1938) | • “Patient zero” in the United States <br> • Superspreaders <br> • Stigmatization of nurses and blame on nursing home healthcare workers |
| 6  | Tuberculosis      | • Trudeau Sanatorium, Saranac Lake, NY (1884–1954) <br> • Firland Sanatorium, Seattle, WA (1911–1973) <br> • Andrew Speaker & the Federal US Quarantine Statute (2007) | • Voluntary vs. involuntary quarantine and isolation; how Firland changed between the pre-antibiotic and antibiotic eras <br> • How can the mandates be enforced? <br> • Can violators be arrested? |
| 7  | Hansen’s Disease  | • The importance of names: Hansen’s disease vs. “leprosy” | • Colonization and the impact of infectious disease |

**TABLE I**
Course overview

Continued on next page
| Wk | Infectious disease | Historic outbreaks, places, and/or Events Related to Quarantine and Isolation | Connections to COVID-19 Discussed in Weekly Zoom Meetings |
|----|-------------------|--------------------------------------------------------------------------------|----------------------------------------------------------|
| 6  | Cholera           | • Ellis Island (1892–1954) and Immigrant Hospital, New York (1902–1951)        | • Hawaiian COVID-19 travel bans                           |
|    |                   | • Hoffman and Swinburn Islands, New York City (1870–1938)                     | • Protecting an island during a pandemic                  |
|    |                   | • Burning of the Quarantine Hospital on Staten Island by an angry mob (1858)  | • COVID-19 and American Samoa, Hawaii, Puerto Rico, and Cuba |
|    |                   | • Normannia and Camp Low at Sandy Hook, NJ (1892)                             |                                                          |
| 7  | Typhus            | • Massilia (1892)                                                             | • Public anger over stay-at-home mandates                |
|    |                   | • New York Sanitary Police (1859)                                             | • Quarantine of the Diamond Princess Cruise Ship         |
|    |                   | • Carmalita Torres and the 1917 Bath Riots                                    |                                                          |
| 8  | Influenza         | • 1918 Influenza Pandemic (1918–1920)                                         | • Unequal application of physical distancing mandates—citations and arrests disproportionately made in New York communities of color |
|    |                   | • San Francisco anti-mask leagues (1918–1919)                                 |                                                          |
|    |                   | • Philadelphia Liberty Loans Parade, Philadelphia, PA (1918)                  |                                                          |
|    |                   | • Quarantine of American Samoa vs. Western Samoa (1918–1921)                 | • COVID-19 anti-mask protests                           |
|    |                   |                                                                                | • How are 1918 influenza and COVID-19 similar? How are they different? |
|    |                   |                                                                                | • How do pandemics start and how do they end?            |
|    |                   |                                                                                | • How race influences this country’s response to a pandemic (1918 vs. today) |
| 9  | HIV               | • Venereal Disease Rapid Treatment Centers (1940)                             |                                                          |
|    |                   | • Camp Bulkeley, Guantanamo Bay, Cuba (1987–1993)                             |                                                          |
|    |                   | • HIV Sanatoriums in Cuba and Los Frikis (1986–1993)                          |                                                          |
|    | Ebola             | • Monrovia, Liberia (2014)                                                    |                                                          |
|    |                   | • Case of Erik Duncan and the nurses who cared for him, Dallas, TX (2014)     |                                                          |
|    |                   | • Case of Kaci Hickox, Newark, NJ (2014)                                      |                                                          |
| 9  | SARS              | • Metropole Hotel, Hong Kong (2003)                                           |                                                          |
|    |                   | • Ho Ping Hospital, Taipei, Taiwan (2003)                                     |                                                          |
|    |                   | • Toronto, Canada (2003)                                                      |                                                          |

NOTE: In light of the Black Lives Matter Protests, the last two Zoom meetings of the quarter were dedicated to talking about how institutional and structural racism has played a role in how governments respond to a pandemic/outbreak and how marginalized groups are scapegoated, stigmatized, and blamed.
recording was followed by one or two comprehension questions. To ensure flexibility in when and how to engage, these quizzes did not need to be completed in one sitting, had no time limit, were open-resources, and could be taken three times.

Online book club discussion boards

Understanding how and why methods such as quarantine and isolation work to prevent the spread of disease was only one goal of this course; a second, equally important objective was to reflect on the experiences of people subjected to these control measures. This was accomplished by having students read two books that explored the rejection, loneliness, isolation, and sometimes criminalization of patients with tuberculosis or Hansen’s disease. The first text, The Plague and I, is an autobiographical account of children’s author Betty MacDonald and her time at Seattle’s sanatorium in the 1930 (17). The second book, John Tayman’s The Colony, provided a historical account of how and why the Kalaupapa leprosarium was founded on Molokai, Hawaii, and the impact colonization had on the spread of disease, health, politics, and the freedom of native Hawaiians (18).

As they read, students participated in asynchronous online discussion boards using a variation of “Save the Last Word for Me” (19). They began by choosing a passage from the book that addressed a weekly prompt and posting it to the discussion board with no other comment or explanation (Appendix 5). They would then read through their peers’ submissions and provide their own interpretation as to why the quotes were selected. To finish, students would return to their original post, read comments, and provide a final explanation describing their original motivation and how their peers’ feedback had influenced their rationale.

These asynchronous discussion boards have been graded in the past using the rubric provided in Appendix 6; given this quarter’s uncertainty, these discussion boards were evaluated more leniently, with full credit given to comments and explanations that demonstrated students had read the book, comprehended the material, and were engaged in the discussion.

Synchronous Zoom meetings

The initial student needs assessment indicated most wanted live, virtual class meetings. Synchronous Zoom sessions were held for 60 to 90 min each week; attendance was optional and meetings were recorded for those unable to attend. Students were reassured that their grades would not be negatively impacted if they missed a session due to unpredictable work schedules, family obligations, or illness. The first goal of these meetings was to allow students an opportunity to ask questions and get clarification directly from the instructor. Secondly, these meetings provided time to discuss the latest COVID-19 news and how it paralleled the content of the week. For example, in week 2 we connected the need for mass graves during the Black Death to reports that the pandemic was contributing to an increase in burials on Hart Island in New York (20). A complete list of discussion topics comparing the current pandemic with course content can be found in Table 1.

Weekly reflections

The weekly reflection assignments were originally designed to allow a critical appraisal of quarantine and/or isolation by evaluating specific case studies, such as the
mandated quarantine of Kaci Hickox by the State of New Jersey during the 2014 Ebola epidemic (21). For spring 2020, this assignment was modified to be less analytical and instead provide an opportunity for reflection on the week’s materials following a given prompt (Appendix 7). Students were also encouraged to use this space to discuss and vent how the pandemic was directly impacting their education, families, and communities. These assignments were graded as complete or incomplete, and personalized weekly feedback was given to build relationships and establish instructor presence.

Grading policies, flexible due dates, and teaching with grace

In 2020, faculty members everywhere struggled to find balance between delivering content and supporting the mental health and wellbeing of students (while also taking care of themselves). As the quarter began, our campus worried about how students’ minimal experience as online learners, limited technology resources, financial situations, family responsibilities, etc. would impact performance. While some instructors changed their electives to pass/fail grading, this course maintained the standard 4.0 grading scale with the understanding that assignment and grading policies would be lenient. This included flexible due dates, optional attendance, multiple allowed attempts at online quizzes, and grading weekly reflections or discussion board posts as complete/incomplete. It was often reiterated that instructor decisions were motivated by grace and compassion and would be driven by the guiding principles included in the syllabus (Appendix 2).

DISCUSSION

Student performance, feedback, and engagement

Student response to this course was overwhelmingly positive. This class was almost fully enrolled with 47 students (48 maximum) who, despite the course being a 200-level non-major course, predominantly included Health Study majors at the junior or senior level (55.3%). In the final course evaluation, 100% of respondents reported that both course content, as well as their remote learning experience was excellent or very good. Overall, the class average was 87%, which reflects that students actively participated in the course and were consistently engaged with the material. This observation is based not only on performance, but also on student feedback, as most ranked their participation and success higher than comparable courses they have taken in person (Table 2). The minilecture comprehension quizzes were identified as a key learning tool, with over 70% mentioning the recordings in responses to the open-ended question “what contributed the most to your learning.” Organization, communication, and the weekly reflections were similarly identified.

Further evidence of involvement comes from minilecture recording statistics. For example, in our week 2 module, an average of 78% of students who took the comprehension quiz viewed or downloaded the recordings. The level of participation increased to an average of 91% for the weeks that followed (Fig. 2). This trend differs from fall of 2018, when these same videos were used in an earlier iteration of the course; in this instance, engagement declined from 92% to an average of 85% (Fig. 2). These two classes are not identical, and there are significant differences that could have influenced these trends, but it is interesting that

| TABLE 2 |
|---|
| Student feedback on participation and success |
| % of responses (n = 16 students providing feedback) |
| **Relative to other college courses you have taken:** | Much higher (7) | (6) | (5) | avg (4) | (3) | (2) | Much lower (1) |
| Relative to similar courses taught in person, your participation in this course was: | 25% | 25% | 25% | 19% | | | 6% |
| Relative to similar courses taught in person, your success in this course was: | 31% | 19% | 25% | 19% | | | 6% |
| The intellectual challenge presented was: | 12% | 56% | 25% | 6% | | | |
| The amt of effort you put into this course was: | 38% | 19% | 25% | 12% | | | 6% |
| Do you expect your grade in this course to be: | 25% | 50% | | 25% | | | |
changes to quiz format (for example, allowing students three attempts), hyperawareness of student need on the part of the instructor, or increased relevance of living through a pandemic could have independently or collectively played a role.

The mid-quarter and final evaluations revealed that the largest detractors of student learning were lack of technology resources, low Internet bandwidth, and most notably, the missed opportunity for in-class, in-person discussion. These challenges may have contributed to the struggle of a handful of students. Halfway through the quarter, a concerning 25% of the class had grades below 60%. Students were repeatedly contacted by the instructor and advisors were alerted. This concerted approach helped many achieve passing grades, demonstrating the importance of communication and early intervention. Despite best efforts, at the end of the term five students (four of whom were pre-majors) had grades below the 56% threshold and did not receive credit for the course. It is difficult to know how this outcome could have been avoided due to the lack of response and communication.

Evidence of student learning

Student learning was measured using the various assignments and activities described above. The first two learning objectives were primarily appraised using the reading assessments and minilecture comprehension quizzes. The average score for these assignments in weeks 1 to 9 was 97%, with an average high of 100% and low of 69%. As an example, students scored an average of 95% on the influenza quizzes, which are provided in Appendix 8 to demonstrate how students came to understand the ways in which NPIs can be used to control infectious disease (first objective), as well as appreciating the biology, symptoms, and transmission of pathogens (second objective).

Beyond the scientific fundamentals of why and how quarantine/isolation is implemented, this course equally emphasized the lived experience of individuals subjected to these control measures. To meet the third learning objective, students were asked to read two books focused on sanatoriums and leprosariums and reflect on how lives were impacted by a diagnosis of tuberculosis or Hansen’s disease. In the asynchronous discussion boards, students repeatedly expressed shock and dismay at how these individuals were treated. On a deeper level, their posts revealed a rich discussion centered on the themes of fear, stigma, ignorance, trust, and informed consent. Examples of student posts from this quarter’s discussion boards are included in Appendix 5.

The fourth learning objective involved higher-level thinking by requiring students to criticize and critique how quarantine and isolation are implemented. Students can demonstrate competency in this area by evaluating case studies that require them to apply what they have learned about the biology and transmission of a pathogen to judge whether these NPIs were warranted and what may have motivated public health officials in their response. Appendix 9 includes a representative assignment that asks students to consider typhus and analyze the 1892 New York quarantine of Jewish immigrants, as well as a more recent 2018
TABLE 3  
Conclusions from the typhus case study analysis

| New York city, 1892                                      | Los Angeles county, 2018                                      |
|----------------------------------------------------------|---------------------------------------------------------------|
| **Form of Typhus**                                       |                                                                |
| Epidemic typhus, which has a 10% to 60% fatality rate     | Endemic (murine) typhus, which is rarely fatal even without   |
| without treatment.                                        | treatment.                                                   |
| **Transmission**                                         |                                                                |
| Body lice. Epidemic typhus can quickly spread assuming    | Fleas. Endemic typhus spreads from animal reservoirs such as  |
| people are living in crowded, unclean conditions.         | cats, opossums, mice, rats, or other rodents.                 |
| **Treatment**                                            |                                                                |
| No treatment available in 1892.                          | Effective antibiotic treatment available.                     |
| **Where was epidemic centered?**                         |                                                                |
| Jewish immigrants coming from Eastern Europe who were     | Primarily people experiencing homelessness and housing       |
| living in tenements in the 10th ward.                    | insecurity in downtown Los Angeles.                           |
| **Does quarantine or isolation make sense?**             |                                                                |
| For a highly fatal disease without treatment (at the     | This disease does not necessarily move easily between people  |
| time) that moves quickly in crowded conditions like       | and is more closely linked to animal contact. Isolating and   |
| tenement buildings, isolation and quarantine could be     | quarantine would do little to stop the spread of disease     |
| effective, but given the connection to body lice,         | since the animal reservoirs and fleas are responsible for     |
| providing people with a way to bathe and clean clothes   | new cases. Additionally, this is a milder infection           |
| is equally important in stopping the spread of disease.   | that has effective treatment options.                         |

outbreak in Los Angeles County. In light of COVID-19 course modifications, students in spring 2020 were not required to provide detailed analyses; they were instead asked to scrutinize these examples more briefly in short-answer quiz questions, reflection prompts, and Zoom meetings. While the analysis of the typhus case study provided as an example was not as thorough, students’ comments and answers nevertheless demonstrated they were able to make important conclusions that aligned well with answers from students in fall 2018 (Table 3).

**Learning in the context of COVID-19**

Teaching this class during a pandemic provided the profound opportunity to align our planned content with a current event that every student could relate to. Published curriculum has been developed and delivered during previous outbreaks such as SARS in 2003, Ebola in 2014–2015, and Zika in 2015 (22–24), but it is important to highlight that these lessons were designed for students in the United States who were unlikely to have been directly impacted by these diseases. Undoubtedly an individual’s classroom experience will be influenced by their personal encounters with an infectious disease, which is why at the start of the quarter I ask which pathogens students (or their loved ones) have personally encountered (Appendix 1, question 13). Not surprisingly, in spring 2020, COVID-19 and influenza were the most common diseases listed, but it is important to note that many also marked tuberculosis, malaria, HIV, and others. There is a clear need for data on best practices for how instructors can be sensitive to the impact past infections and loss (and not just from COVID-19) may have on learners’ academic and emotional wellbeing in courses that deal with microbiology and public health.

I was concerned that as COVID-19 cases and deaths increased, students could struggle emotionally with a course that focuses on disease and includes so many dark periods in public health. Students repeatedly commented that the most helpful outlet for these feelings were the weekly reflection assignments. While students were given specific prompts, they were reminded that this was a safe space for them to reflect on how the content connected to their personal lives and how the pandemic was impacting them and their families. One individual commented on how therapeutic this activity was and how they looked forward to the instructor feedback as it helped validate their thoughts and feelings. Most often, students used this space to vent their anxiety and disappointment in how their lives and education were upended while also expressing frustration in history seemingly repeating itself. Another theme to emerge was students’ personal encounters with xenophobia and racism, several of them reflecting on how they or their families and friends had been verbally assaulted and threatened, especially at the beginning of the pandemic.

Academically, students often expressed that this course was more relevant, engaging, and applicable given the current pandemic. Framing historic examples of quarantine and isolation in the context of COVID-19 was beneficial to their learning,
with one student commenting that the course was “intellectually stimulating and . . . extremely relevant to the pandemic that we are currently experiencing. It stretched [my] critically thinking about past pandemics and quarantine/isolation measures, and how history can help guide us today.” Many also appreciated the access to factual, science-based information on disease transmission and control. This helped them better understand the rationale (and comply with) Washington’s rules and mandates, in addition to giving them the tools and confidence to educate family and friends and combat misinformation.

Reflection and suggested modifications

At the end of the quarter, Seattle (and cities across the country) erupted in protests as people took to the streets demanding justice for George Floyd and the countless other Black individuals murdered at the hands of police. On campus, it was obvious that Black students were disproportionately experiencing stress and trauma that was exacerbating the mental toll students of color were experiencing in the pandemic. In response, assignments at the end of the quarter were made optional and, while we continued to meet weekly through Zoom, our conversations centered on the common thread of racism, inequality, and anti-immigrant sentiment woven throughout the historical accounts we studied; while the year, location, disease, and targeted group would change, the plot line would remain the same.

This moment in history has many seeing for the first time that government and leadership do not always do what is right when it comes to protecting the public. Public health and microbiology students, as well as our society at large, need to understand how structural racism plays an important role in how we respond to infectious disease. This was evident in 1892, when Eastern European Jews were forcibly removed in canvas bags and isolated in response to cholera (8), and again in 1900, when the residents of Chinatown in Honolulu were quarantined and their homes and businesses burned in an effort to control plague (25). We see it again around 1917, when Mexican immigrants crossing the border were subjected to delousing with gasoline, kerosine, and vinegar (26), and when white Baltimore sanitation workers refused to bury Black victims of the 1918 influenza pandemic (27). While many feel we are in an unprecedented moment, if we look to the past, we will see example after example that prove otherwise.

This class folds in important historical accounts that demonstrate how science, microbiology, public health, and racism are intertwined. Upon reflection, there are ways this course can be adjusted to better facilitate antiracist pedagogy. One opportunity would be to rethink the choice of The Plague and I to help students understand the sanatorium cure of the early 1900. This book is an autobiographical account of one woman’s experience in Seattle, which has provided wonderful context and opportunities for students to visit and tour the former sanatorium (28). It is important to note, however, that this account represents a narrow view of what a tuberculosis diagnosis and sanatorium experience would have looked like, as the author was a white woman related to a doctor who helped in her admittance to Firland (17). Stories coming out of the Piedmont Sanatorium in Virginia (founded to treat Black Americans) or the memoir Madonna Swan: A Lakota Woman’s Story (29) could provide a broader, more inclusive perspective.

Admittedly, much of this syllabus is based on the experiences of white Americans or involves stories of communities of color told through a white lens. To this latter point, our reading and discussion of The Colony is problematic, considering the stories are told by an outsider who has been accused of historic inaccuracies and sensationalism (30). While the author addresses some of these allegations in the foreword of his book (18), it is troubling that the patients he interviewed withdrew their support. This realization came after the quarter began, and was addressed in weekly meetings, which created an opportunity to discuss whose stories get told and by whom. How society has treated people with Hansen’s disease is a particularly shameful period in public health that includes some of the most compelling and brutal illustrations of infection control. Going forward, a memoir would be a more appropriate choice, and suggestions for alternative texts include Squint (31), Out of the Shadow of Leprosy (32), or The Separating Sickness (33).

CONCLUSION

Teaching this elective course on quarantine and isolation during a pandemic was a rewarding experience. While it was troubling to see history repeat itself, the course benefited from our ability to view how quarantine and isolation has been used in the past through the lens of this important current event. Eventually the COVID-19 crisis will end, at which point this coursework can shift to examine how individuals, social media, and politics influenced state-to-state variations in incidence rates and death. This pandemic joins a long list of public health emergencies, and it will be important to consider what lessons this period in history adds to our collective understanding of infectious disease control. Future iterations of this course will need to keep student trauma in mind, understanding different students will come out of this pandemic having experienced varied degrees of stress and grief. Examples of trauma-responsive teaching (34) should be consulted to identify best practices to support students academically and emotionally. This reflective practice will be key not only to helping our students heal but to helping the next generation of public health professionals understand how to minimize disruption and loss in the next pandemic.

SUPPLEMENTAL MATERIALS

Appendix 1: Student needs assessment
Appendix 2: Quarantine & Isolation syllabus
Appendix 3: Articles, chapters, and online resources used for reading assessments
Appendix 4: Supplemental videos incorporated into mini-lecture comprehension quizzes
Appendix 5: “Save the Last Word” discussion prompts
Appendix 6: Suggested grading rubric for “Save the Last Word” discussion boards
Appendix 7: Weekly reflection writing prompts
Appendix 8: Influenza reading assessment and mini-lecture comprehension quiz
Appendix 9: Example quarantine and isolation case study

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