Project RIPPLE (Residency Initiatives Preparing Providers for LGBT-patient Encounters): A Program and Evaluation Plan

By

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Abstract

The American lesbian, gay, bisexual, and transgender (LGBT) population does not experience the same level of health as the average American population. Examples of health disparities this population faces include increased risk of suicide in LGBT youth, underutilization of cancer screening in the lesbian patient population, increased rates of alcohol and tobacco abuse in lesbians and bisexual women, increased rates of obesity in lesbians, and increased prevalence of HIV and STIs in transgender individuals (DHHS, 2011). Therefore, the Department of Health and Human Services (DHHS) has updated their Healthy People 2020 objectives to include lesbian, gay, bisexual, and transgender health. The DHHS acknowledges that one of the social considerations contributing to the health disparities faced by LGBT patients is a “shortage of health care providers who are knowledgeable and culturally competent in LGBT health” (Ibid.).

Although studies are beginning to examine how best to include LGBT patient competency training in the undergraduate medical education, there has not yet been as much work examining how best to include LGBT patient competency training in the graduate medical education. For this reason, this paper will enumerate the design and evaluation of a program addressing the training of family medicine residents in working competently and sensitively with LGBT-identified patients. The goal of establishing this training plan is twofold – first of all, that the family medicine residents at this program site will benefit from improved competency and sensitivity with respect to LGBT-specific health issues, and secondly, that this training approach could be reproducible in other family medicine residency programs.
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Introduction

Public health issue to be addressed

The American lesbian, gay, bisexual, and transgender (LGBT) population does not experience the same health status as the average American population. According to the Fenway Health Project, “LGBT (lesbian, gay, bisexual and transgender) Americans … experience health disparities because of continuing discrimination and ignorance related to sexual orientation or gender identity” (Makadon, 2008).

Many governmental health organizations, including the Department of Health and Human Services (DHHS) and the Center for Disease Control (CDC), have noted several health disparities occurring in the American LGBT population. Some examples of these disparities include increased risk of suicide in LGBT youth, underutilization of cancer screening in the lesbian patient population, increased rates of alcohol and tobacco abuse in lesbians and bisexual women, increased rates of obesity in lesbians, and increased prevalence of HIV and STIs in transgender individuals (DHHS, 2011).

Data from multiple studies emphasize the presence of these health disparities in the American LGBT population. In a secondary analysis of data from the National Longitudinal Study on Adolescent Health, the adjusted odds ratio (with heterosexual youth as the referent group, and adjusted for potential confounders such as race/ethnicity, gender, and urban vs. rural environment) was 2.94 (95% CI: 2.06-4.19) for suicidal ideation in LGBT youth and 2.96 (95% CI: 1.41-6.21) for suicide attempts in LGBT youth, indicating increased suicide risk in LGBT youth (Silenzio et al., 2007).

Matthews et al. found that while the numbers of lesbians and heterosexual women who ever received a Papanicolaou test for cervical cancer screening were approximately equal, the
percentage of lesbians in their study population reporting an annual Pap test for cervical cancer screening was statistically-significantly much smaller compared to reported annual tests among their heterosexual counterparts (Matthews et al., 2004). These findings provide an example of underutilization of cancer screening in the lesbian population.

Related to increased rates of alcohol abuse in lesbians and bisexual women, one caveat is researchers’ assertion that two factors, (1) difficulty obtaining large enough populations to sample and (2) previous snowball sampling methods that obtained the majority of respondents from lesbian-friendly bars, make it harder to estimate accurate rates of alcohol abuse in populations of lesbians and bisexual women (Song, Sevelius, Guzman, and Colfax, 2008). Even with these less-precise parameters, however, most studies found a significantly higher mean rate of alcohol abuse in lesbian respondents (Ibid.).

Boehmer, Bowen, and Bauer, studying lesbians and risk of obesity, found that even after adjustment for possible confounding factors, lesbians (with heterosexual women as the referent) had increased risks of overweight and obesity, with the odds ratio for obesity risk in lesbians being 2.47 (95% CI: 1.19-5.09) and the odds ratio for overweight risk in lesbians being 2.69 (95% CI: 1.40-5.18) (Boehmer, Bowen, and Bauer, 2007).

Several studies cited by Kaufman (2008) highlight the increased prevalence of HIV in transgender individuals, finding that populations of male-to-female (MTF) transgender-identified individuals living in urban areas had as high as an 80% rate of previous or current employment in the prostitution industry and correspondingly elevated rates of HIV prevalence. Examples of these elevated HIV prevalence rates include 21-30% in New York City and 26-47% in San Francisco.
Subproblem of the bigger issue

One area where there is great potential for both reducing differential access to and increasing receipt of quality health care by LGBT individuals is with physicians themselves. The Fenway researchers assert that there are multiple ways that physicians currently underserve LGBT patients, either through simply being “unaware of specific health issues impacting LGBT people,” or by never receiving the training necessary for “making their practices welcoming and inclusive of LGBT patients” (Makadon, 2008). Unfortunately, LGBT competency and sensitivity training for physicians is not currently included in the standard medical education process.

The Department of Health and Human Services (DHHS) has updated their Healthy People 2020 objectives to include lesbian, gay, bisexual, and transgender health. The DHHS acknowledges that one of the social considerations contributing to the health disparities faced by LGBT patients is a “shortage of health care providers who are knowledgeable and culturally competent in LGBT health” (Department of Health and Human Services, 2009). Part of the rationale behind the addition of LGBT health to Healthy People 2020, therefore, is that by learning competencies and gaining sensitivity in working with LGBT patients, physicians can greatly improve health outcomes for these individuals and subsequently reduce or eliminate health disparities they face.

One of the challenges accompanying the expansion of provider competency is the determination of when to include such training in the provider’s medical education. At this point in time, the scope of educational initiatives aimed at improving provider competency with LGBT patient-specific issues has been limited mostly to undergraduate medical education (N. Sanchez, Rabatin, and J. Sanchez, 2006). Although studies are beginning to examine how best to include
LGBT patient competency training in the undergraduate medical education, there has not yet been as much work examining how best to include LGBT patient competency training in the graduate medical education.

Given that the literature reviewed included three undergraduate medical programs (Kelley, Dibble, Robertson, and Chou, 2008; Tang, Hernandez, and Adams, 2004; Dixon-Woods et al., 2002), one residency program (McGarry, Clarke, Cyr, and Landau, 2002), and one provider continuing education program (Vanderleest and Galper, 2009), it is inspiring to observe that this programming trend is beginning to spread into all levels of the medical education. From the small body of literature that does exist, though, one conclusion that can be drawn is that curricular interventions aimed at improving providers’ competency with and sensitivity to LGBT-specific health issues are associated with some short-term improvements in these areas (Kelley, Dibble, Robertson, and Chou, 2008; McGarry, Clarke, Cyr, and Landau, 2002; Dixon-Woods et al., 2002). Another conclusion that can be drawn is that there is not yet a standardized approach to this area of programming, and that all of the existing programs were developed somewhat organically (i.e., without any input from a standardized set of objectives or modules.)

**Purpose of this paper**

The focus of this paper will be the design and evaluation of a program addressing the training of family medicine residents to work competently and sensitively with LGBT-identified patients. Project RIPPLE will establish educational objectives that will connect to a year-long set of curricular intervention modules. The goal of establishing this training plan is twofold – first of all, that the family medicine residents at this program site will benefit from improved
competency and sensitivity with respect to LGBT-specific health issues, and secondly, that this training approach could be reproducible in other family medicine residency programs.

In this sense, evaluation of this program will also serve two purposes. The first purpose of creating an evaluation strategy will be to examine whether the program is achieving the goals and objectives for which it was established; i.e., if its interventions are producing the desired impact at the program site. The second purpose of the evaluation strategy will be to demonstrate whether this program produces enough behavioral change to be worthwhile of more widespread implementation.
Systematic review

Strategy

I conducted this mini-systematic review to find programs of interest that were similar to Project RIPPLE with respect to overall goals, learning objectives, and teaching methods. Another goal of this literature review was to find aspects of these existing programs that might inspire helpful additions to the methodology of Project RIPPLE.

These are the main themes of Project RIPPLE’s curriculum:

1. Teaches family practice residents basic LGBT terminology
2. Gives family practice residents practice and personal experience interacting with LGBT-identified patients
3. Elaborates LGBT-patient-specific issues
4. Focuses on eliminating LGBT-related health disparities
5. Incorporates mentoring from senior residents
6. Multi-part intervention: introductory training modules with follow-up discussions and practice patient encounters

After finding programs of interest, I will review and analyze both their goals and objectives, their program activities, and their evaluation methods and findings. I will then determine pertinent ways that lessons learned from this review can influence the development of Project RIPPLE.
Methods

Research question

For this literature search, I used the research question of: What programs of interest are similar to Project RIPPLE with respect to overall goals, learning objectives, and teaching methods? I included programs that had the following characteristics: (1) the target recipients were individuals at some point in their medical education, and (2) the program’s intervention included teaching about issues specific to the access to and receipt of healthcare in the lesbian, gay, bisexual, and/or transgender patient population.

Search strategy

After meeting with Mellanye Lackey, a UNC Health Sciences Librarian who was extremely helpful in assisting with the formulation of a search strategy, I searched Medline (PubMED), EMBase, and CINAHL to find articles describing programs of interest. I used the following two search phrases: (1) “education, medical” AND (homosexuality OR “diversity training”) and (2) “education, medical” AND (homosexuality OR gay OR lesbian OR lesbian OR bisexual OR transgender). I also searched to see whether or not articles of interest were cited in any later articles. I then read the abstracts, introductions, and methods sections of articles of interest to determine whether they met the guidelines for inclusion in this review. The inclusion guidelines were:

The goals and objectives of the program of interest are similar to the main themes of Project RIPPLE. In order to include enough studies to review, it is not necessary for the
target audience of the reviewed programs to be medical residents, but the program should occur as part of some aspect of the recipients’ medical educations.

The program of interest should include an educational curriculum developed to increase provider competency with working with minority-identified individuals.

The language of the article is English.

Programs of interest

UCSF’s LGBT health curriculum

The first program of interest is an LGBT health curriculum that the University of California-San Francisco (UCSF) designed for its medical students. This program shares the most common ground with Project RIPPLE. Faculty and students at this medical school developed this program in response to feedback from the school’s medical students that they did not learn enough about LGBT health in their standard curriculum (Kelley, Dibble, Robertson, and Chou 249). This program’s goal was three-part: (1) “to increase awareness of students’ existing assumptions about LGBT people,” (2) “to highlight disparities of health care to which LGBT patients are vulnerable,” and (3) “to underscore the important role that physicians can play in dispelling these disparities to optimize LGBT health care” (Ibid.). The goal of this program is very similar to the goal of Project RIPPLE.

To achieve these goals, the program curriculum contained three parts. First, before the program started, instructors provided the participating students with an informational syllabus
that covered the instructional goals, which included terminology, LGBT-specific patient issues, “the health hazards of homophobia,” and a transgender-specific section with special definitions and patient issues (249). The second part of the curriculum was a panel for the whole group of students, with 3 LGBT-identified community members speaking and answering questions from the group. The third part of the curriculum was small-group sessions led by LGBT-identified physicians and residents affiliated with the school, and they led the small groups through 3 cases written to teach the participants about issues specific to LGBT patients (Ibid.).

The authors evaluated their program by surveying student participants before and after the students experienced the curriculum. They used a 16-item survey (with Likert-scale based response options) whose content they had already validated by pilot-testing it in a sexual health elective the year before (Ibid.). This survey was created using two background sources: (1) the Index of Attitudes toward Homosexuals and (2) Blumenfeld’s research on problems caused by homophobia (249). The authors also included 3 questions where students could assess the program by quantifying their beliefs regarding how much each aspect of the program helped their education.

In administering this survey, the authors’ evaluation goal was to ascertain to what degree their intervention changed “the knowledge and attitudes of medical students toward LGBT persons” (252). When the authors calculated the mean of the Likert-scale responses for each survey question, there was a statistically significant increase in knowledge and positive attitudes (from the pre-intervention response to the post-intervention response) in 4 out of the 16 questions (251). Responses to the questions regarding student evaluation were highly positive, with agree or strongly-agree responses given by 91%, 92%, and 96% of the responding students in terms of how helpful the syllabus, the patient panel, and the small group sessions (respectively) were in
teaching them a greater awareness of LGBT issues (250). Although the results of the student-evaluation-of-curriculum question were encouraging, this positive impact is tempered somewhat by the mean responses to the pre- and post-intervention questions, which showed post-intervention knowledge/attitude mean improvements in only ¼ of the question items. One factor that may have contributed to this discrepancy is that student participation in the survey was voluntary, so only 52% of the students who received the intervention completed both surveys. Shown in Table 1 of the article, the only way in which the group of respondents differed significantly from the overall group who received the intervention was that there was a smaller percentage of males in the group of survey-responders than there was in the overall intervention group (250). Except for this difference, the survey-responder group seems similar enough to the overall intervention group to eliminate most selection bias.

Another factor that may have contributed to this discrepancy is that not all of the participants completed all aspects of the intervention. According to the students who responded to the survey, 80% read the informational syllabus, 85% went to the patient panel, and 100% went to the small groups (250). This information has further limitations because: (1) these values are self-reported and may include differential over-reporting of attendance, and (2) there is no way to know the attendance rates of the students who chose not to respond to the survey. Even with these concerns, the huge level of enthusiasm reported by survey respondents as to how all aspects of this program helped them learn more about LGBT patient issues is highly promising.

This program design is highly similar to Project RIPPLE’s initial intervention. It features a relatively brief, targeted intervention that introduces future clinicians to three crucial components of understanding and working with LGBT-identified patients: terminology and
background knowledge, a firsthand interaction with the stories of LGBT patients, and a chance to work through cases (featuring LGBT-specific health issues) in small groups.

In terms of differences from Project RIPPLE, the UCSF program was limited to the one intervention, and did not include any follow-up experiences, interventions, or evaluations. The authors acknowledged that they only measured outcomes right after the intervention, and “did not assess long-term incorporation of these concepts and attitudes into students’ thinking and practice” (252). In order to guarantee that Project RIPPLE’s curriculum generates lasting improvement in residents’ knowledge and attitudes regarding LGBT-specific health issues, it will feature several brief follow-up encounters in addition to the initial intervention. In these follow-up encounters, more senior residents will have the opportunity to both practice interviewing standardized patients with LGBT-related cases and discuss their experiences with junior residents.

**Brown University’s Lesbian and Gay Health Care Curriculum**

The second program of interest is a seminar created for internal medicine residents at Brown University. This program is similar to Project RIPPLE because it also targets medical residents as the recipients of the intervention. This program was a one-time intervention, where the faculty split the residents into small groups and rotated them through the seminar while they were on an ambulatory clinic rotation month (McGarry, Clarke, Cyr, and Landau 245). The goal of this program was “educating physicians about the unique psychosocial and medical issues of lesbians and gay men,” for 2 reasons: to “reduce the barriers patients face when interacting with the health care system: and to “place physicians in a better position to care for their lesbian and gay patients” (245). To achieve these goals, the authors wanted to know if the 3-hour seminar
they created would “impact … the self-reported level of preparedness and comfort in dealing with lesbian and gay patients among general internal medicine residents” (Ibid.). The seminar contained three parts: first, a video called “Tools for Caring about Lesbian Health” (which covered lesbian-specific obstacles to receiving good medical care) and discussion of the video; then, a lecture covering three topic areas: an overview of past shortcomings in the treatment of lesbian and gay patients, an overview of lesbian- and gay-specific health needs, and “gender-neutral suggestions for taking an optimal social and sexual history;” third, the opportunity to review and discuss a case written about a teenager’s coming-out process (246).

To evaluate the outcomes of their program, the authors surveyed participants before and after the intervention. Although survey response was voluntary, 100% of the participating residents chose to respond to the post-intervention survey (the authors did not specify the percentage that chose to respond to the pre-intervention survey.) The authors found that 95% of the residents responded that “they felt more prepared to care for their lesbian and gay patients after the seminar” (246). There was a statistically significant improvement (from 2.35 before the intervention to 1.88 after the intervention, p < 0.0001, with a lower score correlated with greater degree of preparedness) in the mean value (by a Likert scale response) assigned by respondents to quantify their degree of preparedness to work with lesbian and gay patients (246). Additionally, out of the small number of residents who indicated some level of discomfort working with lesbian or gay patients before the intervention, the overwhelming majority of these individuals “reported an improvement in comfort level post-seminar” (246).

One strength of this program is the repetition of the curriculum each time a group of residents had a relatively less time-consuming ambulatory care month scheduled. Thus, the program staff found a creative way to insert the intervention into every resident’s schedule
without risking the loss of participants who might get called away for other duties such as admitting new patients, responding to floor emergencies, or being required to go home so as not to violate duty hour restrictions.

One of the limitations of this evaluation method is self-report, and there might be a differential reporting bias in the direction of responses considered to be socially appropriate for that particular environment.

The main difference between Project RIPPLE and Brown University’s seminar for its internal medicine residents is that the Brown University intervention does not include content related to transgender patients. Given that its participants responded well to the curriculum regarding gay and lesbian patients, however, I would predict that a module related to transgender patient issues could be added to this curriculum. Brown’s program is also only a one-time intervention, which is different from the longitudinal follow-up cases and group discussions featured in Project RIPPLE.

**Arizona University College of Medicine’s training module for providers working with transgender patients**

The third program of interest is a “4-hour comprehensive training module” that faculty members at the University of Arizona College of Medicine developed to familiarize community providers with transgender-specific patient issues (Vanderleest and Galper 414). This program is similar to Project RIPPLE because it uses a training module as an intervention to: (1) increase clinician familiarity with transgender patient-specific issues and terminology and (2) help clinicians become more competent and familiar with the established recommendations, competencies, and guidelines for providing good-quality primary care to transgender patients.
The goal of this program was “to further increase the pool of providers willing to and capable of providing more advanced clinical care to transgender populations” (Ibid.).

For this program, the investigators surveyed providers in their community to find individuals concerned with learning better ways to provide care for transgender community members. They did not elaborate on the content of this survey, but it helped the creators select which providers to invite to the training. One incentive for participation in the training was that it was linked to continuing education credits for the participants (414). The authors identified the learning objectives of the program as: a thorough overview of basic definitions and transgender-related language; transgender-specific health care issues and health care access issues; recommendations for how to care for transgender patients in a primary care setting; and attention to “the importance of clinical advocacy” (Ibid). However, they did not describe the methods used to convey these objectives during the seminar. Although it is difficult to know (without a description of their methods) to what degree this program’s training methods overlap with the methods proposed for Project RIPPLE, the learning objectives of both are very similar.

One impressive aspect of the Arizona program’s teaching methodology, however, was that 2 out of the 3 facilitators for the training were transgender-identified individuals. As demonstrated in previous studies, the added personal connection of firsthand learning from an individual identified with the group of interest is a very powerful tool for raising awareness of the dire need for such training (Kelley, Dibble, Robertson, and Chou, 2008).

To evaluate the efficacy of their intervention, the authors provided the participants with “self-assessments … with queries about participant level of confidence of knowledge in six areas” (414). They reported that “all participants increased their levels of confidence in working with transgender patients” (Ibid.). However, the authors did not elaborate as to what type of
questions they used to assess the participants, what specific areas of knowledge were covered in the questions, how these questions related to the eight original learning objectives, and whether or not the participants were surveyed both before and after the intervention. Therefore, we are also unsure of the initial knowledge base of the participants, which would be an important benchmark for determining the impact of the intervention. On a related note, the authors also did not provide statistical analysis as to whether or not there were significant changes in any of the response means or percentages. Without this information, it is difficult to quantify the effects of this intervention on participant knowledge and attitudes regarding care of transgender patients.

One strength of this program was that the majority of its facilitators were transgender-identified individuals. Although the authors did not evaluate the effect of having transgender individuals facilitate the program, other related studies would suggest that this decision would have a strong positive effect on participant perception of the training objectives as relevant and important information (Kelley, Dibble, Chou, and Robertson, 2008). Another strength of this program was its establishment of provider advocates, defined as “clinicians interested in assuring quality care delivered in a nonjudgmental fashion to transgender men and women,” as a framework for connecting interested providers to the relevance and salience of this training curriculum (414). Project RIPPLE will employ the provider advocate concept slightly differently, using senior residents who have completed the training curriculum as mentors for junior residents currently working through the curriculum, but the rationale, i.e. having peers who value the training help convince other clinicians of the relevance of the training, is similar to the Arizona program.

Without a description of the teaching methodology and assessment strategy, it is difficult to know exactly how this program differs from Project RIPPLE, but one large-scale difference is
that the Arizona program only covers issues associated with transgender patients, while Project RIPPLE covers lesbian, gay, bisexual, and transgender patient issues. Additionally, the Arizona program is a one-time intervention, while Project RIPPLE follows the initial training module with subsequent discussion groups and standardized-patient practice sessions.

**Leicester-Warwick Medical School’s Human Sexuality course**

The fourth program of interest is a United Kingdom program, Leicester-Warwick Medical School’s Human Sexuality course for its first- and second-year medical students. This program presented an overview of human sexuality as related to primary care practice, including lesbian, gay, and bisexual-specific patient issues. Similarly to Project RIPPLE, the LWMS program was a multiple-part intervention, occurring in 3 faculty-led didactic sessions (each session had several components), as well as outside assignments in the interim. The goal of this program was “to encourage students to develop appropriate knowledge, skills, attitudes, and values towards human sexuality” (Dixon-Woods et al. 437).

To achieve this goal, the teaching objectives included helping students learn about sexuality in four broad categories: (1) “patients’ needs in relation to human sexuality,” (2) “the duties of a doctor in relation to human sexuality,” (3) students’ “attitudes and values in relation to human sexuality,” and (4) students’ personal comfort with talking to patients about sexuality (433). These objectives are similar to Project RIPPLE’s learning objectives of: (1) exploring personal attitudes and knowledge regarding sexuality and gender orientation, (2) learning AAFP recommendations for how family practitioners should provide quality health care to LGBT patients, and (3) learning effective patient interview skills for interactions with LGBT-identified patients.
The authors had two goals in their evaluation of this program: (1) evaluating the effectiveness of both the structure of the modules and the teaching methods in accomplishing the course objectives, and (2) “to assess the extent to which students’ attitudes, knowledge, and values in relation to human sexuality changed as a result of the course” (435). In order to meet both of these evaluation goals, they evaluated the impact of the program in two different ways. Their first evaluation strategy was “non-participant observation,” where they had a psychologist observe the majority of the sessions and note “how the students coped with the challenges of the course, focusing on reactions, responses, and group interactions” (Ibid.). This evaluation method deserves note because out of all of the programs reviewed, this program is the only one that evaluated the effectiveness of the teaching method and classroom process.

The second evaluation strategy was a questionnaire that all of the participating students completed before and after their participation in the training modules. The questionnaire used a Likert-scale response system to assess students’ degree of agreement with how the course helped with “their achievement of the objectives, including those related to knowledge, values and attitudes” (435). The questions were validated through pilot testing with an earlier group of students (Ibid.). The authors then used a Wilcoxon statistical test to compare the before-and-after paired responses, of which they received a 75% response rate (436).

As an assignment related to the course, instructors divided the students into small groups and assigned each group to produce an informational brochure to serve as a “guide to human sexuality for medical students” (435). This assignment, an impressive form of program evaluation, was a methodological strength of this program because it allowed the instructors to evaluate “the extent to which students have absorbed the messages of the course and are able to articulate them clearly” (Ibid.). The creation of a project synthesizing messages learned in the
training program is another aspect unique to this program, and may be a helpful addition to Project RIPPLE.

In the first evaluation method (observation), the psychologist observer recorded overall observations that “some students experienced more difficulties than others,” and that “while the course was compulsory for all students, it was not too difficult for reluctant or unmotivated students to ‘opt out’ of group discussion or exercises if group sizes were not kept small” (436). One of the specific difficulties the psychologist observed was that in session 2, where students discussed lesbian and gay patient issues, some of the participants had difficulty talking about controversial issues such as the conflict between homosexuality and religious teachings (Ibid.).

In the second evaluation method, the authors found that there were statistically-significant improvements in participants’ perceptions of their attitudes and knowledge in 10 components, including 93% post-intervention agreement (p < 0.001) that participants “were aware of the issues which gay and bisexual patients were likely to confront” and 94% post-intervention agreement (p < 0.001) that “education about human sexuality is an important part of medical education” (438). Other statements that showed statistically-significant improvements after the intervention included improvements in comfort regarding both talking to patients about “sexual issues” and working with gay-identified patients (Ibid.). In comparison, statements that did not show statistically-significant improvement after the intervention included a statement regarding whether participants believed the intervention changed their “attitudes about human sexuality” (Ibid.). This distinction is important because it underscores the convention that while interventions can improve participant knowledge, it is much more difficult to change underlying attitudes, values, and beliefs. In terms of assessing long-term behavior change, it will be
interesting to examine whether the changes in knowledge will be enough to impact sustained behavior change when working with lesbian and gay patients.

Similarly, Project RIPPLE will also evaluate the impact of the intervention by assessing participants’ pre- and post-intervention knowledge and attitudes. Adding an observational evaluation component may be useful in determining to what degree the program’s teaching process is effective in conveying the program’s objectives.

One difference between the LWMS program and Project RIPPLE is that because the LWMS program focused on sexuality, the investigators did not include gender identity (i.e., transgender patients) in the curriculum. Also, the LWMS program worked with medical students, which means that the intervention occurred much earlier in these students’ medical educations than would Project RIPPLE. In terms of differing impacts of interventions occurring earlier in the medical education, long-term data are needed to ascertain whether or not earlier interventions produce either lasting differences in knowledge levels and/or more sustained behavior change.

**University of Michigan’s Peer-Teaching Model for Diversity Training**

The fifth program of interest is a peer-taught diversity training module designed for medical students at the University of Michigan Medical School. This program “recruited 4th year students to facilitate diversity-focused case-based discussions for 2nd year students,” and its goal was “to advance students’ existing knowledge, attitudes, and skills related to sociocultural medicine through leading diversity-focused case-based discussions” (Tang, Hernandez, and Adams 61). Although this program differs from Project RIPPLE because this program focused on sociocultural diversity in general (as opposed to a specific sociocultural minority group, e.g.
LGBT-identified patients,) it seemed worth including because the peer-teaching methodology is very similar to the higher-level resident mentoring system featured in Project RIPPLE.

As stated above, the goal of this program was “to advance students’ existing knowledge, attitudes, and skills related to sociocultural medicine” (61). In order to achieve this goal, the medical school faculty recruited 12 4th-year students to serve as trainers for their peers in the 2nd-year class. The faculty then facilitated a training session for the peer trainers, with several learning objectives, including: (1) “awareness of one’s own social and cultural background and its influence on health behaviors, practices, and health care utilization,” (2) “health and health care disparities between social and cultural groups in the United States,” and (3) “development of small group facilitation skills” (61). One notable aspect of this intervention is that it was the only program in this group that taught the trainers a standardized set of facilitation methods.

The authors evaluated the program outcomes by surveying the peer teachers instead of the end recipients of the intervention, the 2nd-year medical students. Although this method of evaluation does not directly assess the impact of the intervention on the end recipients, it does provide insight into the degree to which the peer facilitators believed that their training prepared them for teaching the curriculum to the 2nd-year students. To evaluate their program, the authors developed a questionnaire that the peer teachers completed before and after their educational seminar. They used a Likert-scale response system to assess three types of outcomes in terms of the peer facilitators’ perceptions of the impact of the program. The three areas that the evaluation measure assessed were peer facilitators’ perceptions of “learning outcomes of the program, overall teaching experience, and attitudes toward sociocultural issues in medicine” (61). The faculty found that after implementation of this model, the peer facilitators showed statistically significant increases in both “understanding of the relation among sociocultural
background, health, and medicine” and “proficiency around teaching sociocultural medicine curriculum to medical students junior in their training” (62). One caveat of these results, however, is the extremely small sample size (n=12). Related to this caveat, one limitation of this program is that, given that some of the evaluation questions assessed the effects of the intervention on knowledge and attitudes of the end recipients, surveying the peer facilitators instead of the end recipients of the intervention was not the most effective way to assess the overall effectiveness of the intervention. Surveying the end recipients would have created a much larger sample size, and perhaps the results from the peer facilitator survey could have been used as a pilot-test for validation of the survey.

Analysis

These five programs of interest serve as a good framework for comparison of educational interventions with the goal of teaching providers more about how to provide better-quality care for populations with minority sexual orientation and/or gender identity. The target audiences of these programs were slightly different, with one aimed at internal medicine residents, three aimed at medical students, and one aimed at community providers receiving continuing education. The teaching methods used by these programs had a large degree of overlap, however, with case-based sessions and didactic lectures featured in all five programs and facilitation or presentations by minority-identified individuals featured in three out of the five programs.

Project RIPPLE could be aided by addition of select strategies from among the programs reviewed to its curriculum. One such strategy, as seen in the UCSF, Brown, and Arizona programs, is that inclusion of presentations by LGBT-identified individuals is a powerful
addition to the teaching curriculum. Another strategy, as seen in the Leicester-Warwick program, is that having participants create a final project based on what they have learned from the intervention is a great way to both assess recipients’ degree of learning and produce a useful resource for future students interested in the curriculum.

Another difference among these programs is that the total time of the intervention greatly varied. The UCSF, Brown, and Arizona programs were one-time interventions, while the Leicester-Warwick and Michigan programs occurred over the course of a year of medical school. Meta-comparison of short-term and long-term effect variations based on total time of the intervention would be a useful tool to analyze whether or not one short intervention is as equally effective as a series of follow-up interventions. Even though this data does not yet exist, Project RIPPLE will feature a series of follow-up interventions, with the hope that repeated practice of knowledge and skills will assist with long-term proficiency in this area.

In terms of evaluation strategies, all of the programs surveyed participants to determine if the intervention inspired changes in knowledge and attitudes. Although all of the reviewed programs made survey completion voluntary, Project RIPPLE will likely require completion of pre-and post-intervention surveys by all participants so that we can more accurately analyze the impact of the intervention on the entire population of recipients.

Two out of the five programs (Leicester-Warwick and University of Michigan) also included evaluation measures about the teaching methods themselves; I would predict that the inclusion of this evaluation strategy would be helpful for eliminating differences in teaching methods as a possible factor that could confound the impact of the intervention. Also, the inclusion of process evaluation by an outside observer (as seen in the Leicester-Warwick program) provides a more objective analysis of the methods that could counter the possibility of
over- or under-reporting that could occur in the participant self-assessment evaluation strategies used by all of the other programs.

One problem faced by all of the programs analyzed is that none of them included follow-up assessments to determine the long-term impact of the interventions on knowledge, attitudes, and behaviors of providers with respect to working with LGBT-identified patients. Although these studies are all relatively recent, future assessment of such trends will be necessary to determine if these types of interventions are a worthwhile way to improve providers’ competency and sensitivity in working with LGBT-identified patients.

Table 1: Summary of studies reviewed

<table>
<thead>
<tr>
<th>Authors, Journal, Year Published</th>
<th>Program description</th>
<th>Target population</th>
<th>Evaluation strategy</th>
<th>Outcomes/ Findings</th>
<th>Methodological strengths and limitations</th>
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<tbody>
<tr>
<td>Kelley, L., Chou, C. L., Dibble, S. L., &amp; Robertson, P. A. <em>Teaching and Learning in Medicine</em> 2008</td>
<td>Three-part intervention: 1. Self-study module covering terminology, existing stereotypes, and LGBT-specific health issues 2. Panel discussion with LGBT-identified community members 3. Small-group case discussions led by LGBT-identified physicians</td>
<td>Medical students at the University of California-San Francisco n = 75</td>
<td>Pre-and post-intervention questionnaires ➔ 16-item survey (Likert-based response options) ➔ Survey content validated with previous pilot-testing during a sexual health elective</td>
<td>1. Statistically-significant increase in knowledge and positive attitudes (from the before-intervention response to the after-intervention response) shown in 4 out of the 16 questions 2. Responses to the questions regarding students’ perceptions of program utility were highly positive</td>
<td>Strengths: Multi-component intervention; participant enthusiasm Limitations: Evaluation based on self-reporting (given extremely liberal environment, not all participants completed all aspects of program)</td>
</tr>
<tr>
<td>McGarry, K. A., Clarke, J. G., Cyr, M. G., &amp; Landau, C. <em>Teaching and Learning in Medicine</em> 2002</td>
<td>One-time intervention of a 3-hour seminar addressing lesbian- and gay-specific health issues Seminar components: 1. Video (and subsequent discussion) about lesbian health 2. Lecture covering lesbian- and gay-specific health issues and gender-neutral sexual history-taking 3. Small group case discussion</td>
<td>Internal medicine residents at Brown University n = 37</td>
<td>Pre- and post-intervention questionnaires ➔ survey with Likert-based response options</td>
<td>1. Statistically-significant improvement in the mean value (by a Likert-scale-type response) assigned by respondents to quantify their degree of preparedness to work with lesbian and gay patients 2. A small number of residents reported pre-intervention discomfort with working with lesbian and gay patients; this discomfort was reduced post-intervention</td>
<td>Strengths: Creative scheduling allowed the program to reach all residents; 100% post-intervention survey response Limitations: Evaluation based on self-reporting (given extremely liberal environment, not all participants completed all aspects of program)</td>
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<tr>
<td>Vanderleest, J.G., &amp; Galper, C.Q.</td>
<td>One-time intervention of a 4-hour seminar addressing transgender-specific health issues (facilitated by transgender-identified community stakeholders)</td>
<td>Surveyed providers in Arizona community to find individuals interested in learning better ways to provide care for transgender community members n = 10</td>
<td>“Self-assessments … with queries about participant level of confidence of knowledge in six areas”</td>
<td>“All participants increased their levels of confidence in working with transgender patients” (Did not describe their statistical analysis, if any)</td>
<td>\textbf{Strengths:} Transgender-identified facilitators; creation of provider advocate program \textbf{Limitations:} No elaboration of teaching methods, exact evaluation strategy, or statistical analysis</td>
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<tr>
<td>Dixon-Woods, M., Regan, J., Robertson, N., Young, B., Cordle, C., &amp; Tobin, M.</td>
<td>Human Sexuality course: an overview of human sexuality as related to primary care practice, including lesbian, gay, and bisexual-specific patient issues</td>
<td>First- and second-year medical students at Leicester-Warwick Medical School (England) n = 173</td>
<td>\begin{enumerate} \item “Non-participant observation” to evaluate teaching methods \item Pre- and post-intervention questionnaires (Likert-scale response system) \item Used Wilcoxon test to compare before-and-after paired responses \end{enumerate}</td>
<td>Statistically-significant improvements in participants’ perceptions of: \begin{enumerate} \item Awareness of LGBT-specific health issues \item Comfort working with LGBT patients \end{enumerate}</td>
<td>\textbf{Strengths:} Evaluated teaching methods; included a project to apply new knowledge \textbf{Limitations:} No exposure to LGBT-identified individuals incorporated in intervention</td>
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Tang, T. S., Hernandez, E. J., & Adams, B.S. 
*Teaching and Learning in Medicine* 
2004

<table>
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<tr>
<th>Peer-led diversity training module</th>
<th>Second- and fourth-year medical students at the University of Michigan Medical School</th>
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<tr>
<td>Multiple-part, longitudinal intervention:</td>
<td>n = 12</td>
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<tr>
<td>1. Trained 4th-year students to be peer facilitators:</td>
<td>Surveyed peer leaders with pre- and post-intervention questionnaires</td>
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<tr>
<td>➔ Training on “health and health care disparities between social and cultural groups in the United States”</td>
<td>➔ survey with Likert-based response options</td>
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<tr>
<td>➔ Training on facilitation methods for leading small groups</td>
<td></td>
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<tr>
<td>2. Peer leaders then facilitated small-group discussions (for 2nd-year medical students) on sociocultural-related health disparities</td>
<td></td>
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- Statistically-significant increase in peer leaders’ understanding of sociocultural-health connection

**Strengths:**
- Incorporated peer leadership; taught standardized facilitation method

**Limitations:**
- Surveyed peer trainers instead of end-recipients; subsequent small sample size
Program plan

Program overview

Part of the rationale behind the addition of LGBT health to Healthy People 2020 is that by learning competency for working with LGBT patients, physicians can greatly improve health outcomes for these patients (and subsequently reduce or eliminate health disparities faced by these patients.) Since family practitioners are where a large amount of the American population receives primary care, Project RIPPLE will serve to create a training program for Asheville family medicine residents that compacts the Healthy People 2020 LGBT patient care goals into a multi-part curriculum.

After reviewing the literature related to LGBT health-related curricular interventions in medical education, one shortcoming acknowledged by multiple authors was that the isolated interventions studied might have less of long-term impact on behavioral change. Therefore, Project RIPPLE will address this concern by providing a longitudinal intervention over at least the entire intern year. Project RIPPLE will consist of a four-part curricular intervention: (1) an online training module addressing LGBT terminology and LGBT-specific health issues and disparities, (2) a panel discussion featuring local LGBT-identified community members, (3) a series of small-group case discussions facilitated by faculty members and senior resident mentors, and (4) practice encounters with standardized patients trained in LGBT-specific roles.

Program context

Given that the recipient audience of this program includes more than one subset of recipients (i.e., both the family practice residents who receive the LGBT sensitivity training and
the LGBT patient population subsequently seen by these residents,) it is important to choose a location where there is both a family medicine residency and a substantial LGBT patient population. For this reason, Project RIPPLE will occur in Asheville, NC, where there is both a family medicine residency (through Mountain AHEC) and a large LGBT population.

The risk factor on which Project RIPPLE will focus is the association between LGBT (lesbian, gay, bisexual, transgender) identification and lack of quality health services. According to the Fenway Guide to Lesbian, Gay, Bisexual, and Transgender Health, “LGBT patients frequently encounter problems with access to quality health services, experience disparities in screening for chronic conditions, and report a lack of counseling pertinent to actual lifestyle behaviors” (Makadon, Mayer, Potter, and Goldhammer, 2007.). Therefore, this program will attempt to address this risk factor by creating trainings for family medicine residents that will allow these physicians to improve the quality of care provided to LGBT-identified patients.

Program theories

Issel suggests that there are three components to an effect theory: the causal theory, the intervention theory, and the impact theory.

Issel defines the causal theory as “an explanation of the process that currently underlies the health problem” (Issel, 2009). In terms of the processes causing lesbian, gay, bisexual, and transgender patients to receive a lower quality of health care, one posited causal factor is physicians’ actual (and feared) negative responses to homosexuality. A 1996 review article by Harrison found that “many lesbians and gay men fear disapproval, compromised treatment, and/or physical harm if they disclose their sexual identities [to physicians]” (Harrison, 1996). In the studies reviewed, “between 31-89% of health care professionals had negative reactions to the
revelation that their patients were gay or lesbian,” and these reactions included tendencies to “misdiagnose conditions, provide inadequate treatment, offer irrelevant health teaching … ask insensitive and biased questions, and make sexist remarks” (Ibid.). As a result of these negative reactions, Harrison suggests that these physicians’ LGBT-identified patients received a lower quality of care.

Therefore, it is very important that Project RIPPLE addresses the negative reactions that incoming family medicine residents may have toward their LGBT-identified patients. After reviewing relevant literature, I observed that three programs of interest (UCSF, Brown University, and the University of Arizona) found that the inclusion of presentations by LGBT-identified individuals was an effective strategy to reduce these negative reactions. Therefore, Project RIPPLE’s curriculum will include a panel presentation by LGBT-identified community members. Several of the studies reviewed found that small-group case discussions were effective ways to address negative bias; this educational component will also be included in Project RIPPLE’s curriculum.

Issel defines the intervention theory as explaining “how interventions affect the causal factors or possibly the moderating or mediating factors” (Issel, 2009). Therefore, the intervention theory for this program needs to connect the improvement of physician education regarding LGBT patient competency and sensitivity with improved physician-patient interactions for LGBT patients. According to Harrison’s review article, lesbian and gay patients who feel safe coming out to their physicians believe that they receive better care, and feel overall more content with their patient-physician relationship (Harrison, 1996). Therefore, physician education to create an environment where patients felt safe to disclose an LGBT identity could affect the causal factor of negative physician response leading to a lower quality of care for
LGBT patients. Additionally, in reviewing contemporary literature, Harrison found that “the patient-physician relationship … can be vitally important in a patient’s physiological and psychological responses to therapy, compliance with medical advice, and overall satisfaction with care received” (Harrison, 1996). In this sense, training physicians in how to create non-judgmental relationships with their LGBT-identified patients could counteract the effects of previous physician attitudes on the quality of health care received by LGBT patients.

Harrison’s theory suggests that there are specific interventions in physician training that could help strengthen physician-patient relationships with LGBT patients and allay patients’ fears surrounding coming out to their physician. These learned behaviors include “maintaining a non-homophobic attitude toward [LGBT] patients, distinguishing sexual behavior from sexual identity, communicating with gender-neutral terms, and maintaining awareness of how [physicians’] own attitudes affect clinical judgment” (Harrison, 1996). Training surrounding these specific intervention objectives will be featured in both the online module section and the small-group case discussion section of Project RIPPLE’s curriculum, and will be reinforced through the practice encounters with standardized patients.

Issel defines impact theory as “statements about how the outcomes lead to impacts” (Issel, 2009). Unfortunately, almost no research exists as to the impacts (on LGBT patient health outcomes) created by training physicians in LGBT patient competency and sensitivity. According to Harrison, “while attitudinal change is a necessary first step, changes in opinions do not necessarily reflect changes in behavior, and the effect of these interventions on clinical behavior can only be surmised” (Harrison, 1996). Hopefully, as LGBT-patient-sensitivity training for providers becomes more popular, systematic research as to the impacts of these interventions on LGBT patient health outcomes can be conducted.
Goals and objectives

The overall goal of Project RIPPLE is to create and implement a LGBT training curriculum for Asheville, NC family medicine residents.

Project RIPPLE also has several curricular learning objectives. Its curricular learning objectives are to:

1. Teach family practice residents basic LGBT terminology
2. Give family practice residents practice and personal experience interacting with LGBT-identified patients
3. Elaborate upon LGBT-patient-specific issues
4. Focus on addressing and eliminating LGBT-related health disparities
5. Incorporate mentoring from senior residents
6. Offer a multi-part intervention: introductory training modules with follow-up discussions and practice patient encounters

Project RIPPLE has several short-term program objectives (defined as achievable within the first 1-3 years of program implementation.)

- First of all, by year 1 of implementation, program staff will have recruited a pilot group of four teaching faculty (to serve as trainers for the incoming intern class) and four second-year residents (to mentor the incoming intern class throughout the training process).
• Secondly, by year 1 of implementation, 50% of teaching faculty and 75% of second-year residents will have satisfactorily completed both the training modules and facilitator training from the program staff.

• The third short-term objective is that by year 2 of implementation, 95% of the first intern class to receive the training will have completed the training curriculum’s introductory modules (both the online basic terminology module and the in-person patient panel.)

• The fourth short-term objective is that by year 3 of implementation, 95% of the first intern class to receive the training will have completed 2 follow-up patient encounters.

• The fifth short-term objective is that by year 3 of implementation, 95% of the residents that started this training as first-year interns will be able to meet the Healthy People 2020 objective of competently and sensitively including acknowledgment of sexual orientation as a positive component of a patient’s healthcare experience (Healthy People 2020, 2009).

Project RIPPLE also has several long-term program objectives (defined as achievable within 3-5 years of program implementation.)

• The first long-term objective is that by year 4 of implementation, 25% of the residency program faculty (assisted by second- and third-year residents) will be able to run the program without external assistance from program staff.

• Secondly, by year 4 of implementation, program staff and residency program faculty will work together to create two short refresher training modules.

• The third long-term objective is that by year 5 of implementation, 95% of the Asheville family medicine residents will achieve a satisfactory score in a standardized patient
evaluation of the AAFP LGBT-patient-specific competencies for family practice residents.

**Implementation**

**Implementation strategies**

In order to meet these objectives, several activities will occur. These activities will create curricular interventions that address each of Project RIPPLE’s learning objectives.

Objective 1: To teach family medicine residents basic LGBT terminology

First, the program staff will work to develop an online introductory teaching module that will both teach the family medicine interns about basic LGBT terminology and provide examples of LGBT-specific health issues. Examples of such modules can be seen in the Fenway Project resource guide, the UNC Safe Zone curriculum, and the UNC School of Medicine’s capstone course cases. (Details about the UNC Safe Zone curriculum and the UNC School of Medicine’s capstone course cases are provided in Appendices 1 and 2.) This module will also introduce the Healthy People 2020 objectives for how providers can reduce LGBT-related health disparities.

Objective 2: To give family medicine residents practice and personal experience interacting with LGBT-identified patients; Objective 3: To put a personal face on and elaborate LGBT patient-specific issues

Next, the program staff will work with key contacts and stakeholders in Asheville’s local LGBT community to find lesbian-, gay-, bisexual-, and transgender-identified community members who would be willing to address the residents in a panel discussion. This panel...
discussion would last approximately one hour and allow the community members to share both positive and negative experiences that they have had in their interactions with health care providers. After the panel, there would be time for the residents to ask questions. Ideally, this panel would be sustainable in that it could occur yearly for each incoming intern class, but an alternative strategy would be to videotape the panel (if the participants were comfortable with this idea) and then show the video to future intern classes. One important caveat with this component of the intervention would be to make sure that the community members are comfortable sharing their stories with the residents and that the residents respect the confidentiality of the panelists.

Objective 4: To focus on reducing and eliminating LGBT-related health disparities

For the third part of the initial curricular intervention, the program staff will develop cases for the interns to review and discuss in a small-group format. The material in these cases will address LGBT-specific health issues, and examples of such cases can be viewed in the appendix of this program plan. After each group has a chance to review and discuss the cases, the facilitators will then use lessons learned from the cases to transition the discussion into how best to reduce LGBT health disparities such as increased rates of suicide in LGBT youth, increased risk of obesity in lesbians, underutilization of cancer screening in lesbians, and increased risk of HIV in transgender individuals.

Objective 5: To incorporate mentoring from senior residents

In order to make the intervention a more meaningful experience for the intern class, interested senior residents will be able to volunteer as mentors for the intern class. These senior
residents will help facilitate the small-group case discussions, and will then serve as a source of continuity and assistance for helping reinforce the learning objectives during future clinical encounters with the interns. In exchange for agreeing to participate as a mentor, senior residents who successfully complete the mentoring program will receive a certificate of appreciation, a recommendation letter from the teaching faculty involved with the program (which will benefit these residents in the post-graduation hiring process), and an opportunity to participate in future curriculum development.

**Implementation resources**

In order to achieve these learning objectives and successfully train Asheville’s family medicine residents, Project RIPPLE will need both human and financial resources. For the human resources, the project will hire a program director with the qualifications of both a master’s degree in public health and experience in program and curriculum development. In the initial years of implementation, the program director will be assisted by 1-2 program interns who are MD/MPH students working on their practicum. With this arrangement, the grant funding will cover the program director’s salary, and the intern staff will get less of a salary but will receive school credit for their contributions. Additionally, having program interns that have medical experience will allow consideration of the clinical perspective during curriculum development and initial implementation.

In terms of budgetary needs, the two budget areas are program staff salaries and program implementation costs. For salaries, Project RIPPLE will pay the program director a salary of $30,000 per year and will compensate the program intern(s) with a summer stipend of $2000. Grant proposals will be written to cover these salaries. In terms of implementation costs, the
main costs will be in the areas of online module development and programming, reproducing curricular materials, and compensating standardized patients. For online module development and programming, the program staff would first attempt to contract with members of the local LGBT community with experience in or connections to computer programming. If these individuals had the resources to donate their services, offer their services at a reduced price, or sponsor the provision of these services, then this specific implementation cost would be much more affordable. If Project RIPPLE was unable to obtain these services in this fashion, then the program staff would apply for grant funding (e.g., a technology innovations grant) to cover the online programming.

For reproduction of curricular materials, the yearly budget will include $500 for reproduction of materials ($175 for the creation of 50 manuals, costs obtained from Kinko’s Copies, $75 for supplies such as poster board and markers, and $250 for printing of other materials such as handouts and summary sheets.) For standardized patients, Project RIPPLE will hire two of the standardized patients already employed by the Asheville family medicine residency program to take on the additional role of learning some LGBT-related scenarios. The project will compensate these individuals $12 per hour for 5 hours of training and 25 hours of resident-patient practice and assessment interactions (approximately 3 hours per resident per year), for a total of $720 per year. Ideally, the program would benefit from employing more standardized patients, and this expansion could be a future goal if the program’s financial resources increased.
Implementation timeline

The timeline for implementation of Project RIPPLE begins with year one, when a program director and two summer program interns will be hired in the early spring. Once these individuals are hired, they will start out by facilitating a meeting between key stakeholders in the local LGBT community and teaching faculty in the Asheville family medicine residency program. Some of the key stakeholder groups in the local LGBT community include the Asheville Gay and Lesbian Business Association, the Phoenix Transgender Support Group, the Association of Lesbian Professionals, the local chapter of Parents and Friends of Lesbians and Gays (PFLAG), Western North Carolina Community Health Services (a group of community physicians who care for many of Asheville’s HIV-positive gay men,) and a group called People of Faith for Just Relationships, which is an interfaith organization with the goal of promoting equal relationship recognition for couples of all sexual orientations and gender identities. The goal of this meeting will be to determine a benchmark for how health issues important to the local LGBT community could be incorporated into the residency training curriculum. The program staff will then take this information and merge it with the LGBT-related competencies recommended by both the American Academy of Family Physicians and the Department of Health and Human Services to create the online training module and the cases for the case discussions. Additionally, this meeting will serve as the initial contact to recruit community members interested in speaking on the patient panel. Over the next few months, the program staff will create the online training module and the cases for discussion and then test them in a focus group composed of both family medicine residents and community members. Once focus group testing is complete, the program staff will complete the revised iteration of the online module and the small group cases by February of the first year.
To recruit both faculty members interested in facilitating the program and residents interested in mentoring younger residents, the program staff will hold an information session as soon as the curriculum is developed. Interested faculty members and residents will participate in a training session where the program staff will teach the residents and faculty three components: first, the basic terminology and health issues covered in the online training module; second, the AAFP and DHHS objectives that the program hopes to reinforce; third, facilitation and mentoring techniques. The program staff will complete the recruitment and training of these individuals by December of the first year. Once the program staff completes focus-group testing of the online curriculum and the small group cases, they will introduce the revised curriculum and case materials to the participating faculty members and resident mentors by March of the first year. The faculty members and resident mentors will have March and April of the first year to practice becoming familiar with the material covered in the revised online module and small group cases.

At the end of the first year (in April and May,) the program staff will write four scenarios for standardized patients to use to play LGBT-specific roles. If LGBT community stakeholders are interested in assisting with the creation of these scenarios, then the program staff will welcome their valuable contributions. The program staff will spend 5 hours training two standardized patients (already employed by the residency program) to take on these additional roles. The program staff will also use time in May to prepare and reproduce curriculum materials such as participant manuals and case discussion handouts.

The beginning of the second year starts with the arrival of the first intern class to participate in the program. Since intern orientation is in early June, this block of non-clinical time is the ideal time for residents in the new intern class to complete the online training
modules, view the LGBT patient panel, and begin small-group discussions with their older resident mentors. In the first few iterations, program staff will assist with this facilitation, but one of the program objectives is to transition to complete facilitation by faculty by year 4. As the second year progresses, groups of interns will rotate through case-discussion groups during their ambulatory months. In December of the second year, the interns will have their first practice encounter with the standardized patients. Program staff and the senior resident mentors will review the feedback from these encounters and use any areas that are lacking to inform the scenarios for the second standardized-patient encounter, in March of the second year. At the end of the second year, the intern class will participate in an assessment with the standardized patients. After this assessment, program staff will recruit interested interns to join the group of resident mentors for the incoming intern class.
Evaluation Plan

Evaluation background

The CDC provides several reasons why programs should be evaluated. Out of the reasons for evaluation provided in the CDC reading’s table, however, certain ones stand out as especially helpful to ensuring that the objectives of Project RIPPLE are met. The primary reasons that Project RIPPLE should be evaluated include “to monitor progress toward the program’s goals,” “to determine whether program components are producing the desired progress on outcomes,” “to justify the need for further funding and support,” and “to find opportunities for continuous quality improvement” (5).

Given that I am a university student designing this program (as opposed to a part of the program staff), my role as an evaluator for Project RIPPLE would be that of an external evaluator. According to the Kellogg handbook, one benefit of an external evaluation would be the ability to use university information resources (such as computers and references) to aid in the evaluation process (58). A corresponding disadvantage, however, would be that my not being on program staff (and thus not being in contact with the day-to-day happenings of the program) would lead to a distancing that would detract from the evaluation process (Ibid.). For this reason, I would recommend an internal evaluator with an external consultant. This option seems to be the best compromise because by having the program director serve as the internal evaluator, this strategy could insure that the main evaluator would be a person who is well-known by the community and stakeholders and is in constant contact with the activities of the project. In order to guarantee that the evaluation process also included attention to procedural evaluation skills (i.e., skills less familiar to the internal evaluator,) an external consultant could
also be hired. The only drawback of this approach would be that funding to pay the external consultant would need to be added to the budget.

The CDC provides several examples of key skills and characteristics needed by a good evaluator. Out of these, the key skills and characteristics an evaluator would need to evaluate Project RIPPLE would include skills and characteristics specific to both the internal evaluator and the external consultant. For the internal evaluator, the most important skills and characteristics would be the abilities “to work with a wide variety of stakeholders,” “[to incorporate] evaluation into all program activities,” “[to understand] both the potential benefits and risks of evaluation,” “[to give staff the full findings,” “[to have] strong organization and coordination skills,” and “[to exhibit] cultural competence” (CDC 8). Specific examples of these skills and characteristics that would be necessary for an internal evaluator of Project RIPPLE include the ability to interact and foster dialogue with stakeholders in both the medical and LGBT communities, the ability to tie each component of the curricular intervention to a corresponding evaluation inquiry, and the ability to interact with the local LGBT community in a respectful, positive, and competent manner.

For the external consultant, the most important skills and characteristics would be “experience in the type of evaluation needed,” “[comfort] with qualitative and quantitative data sources and analysis,” “innovative approaches to evaluation while considering the realities affecting a program,” and “[education of] program personnel about designing and conducting the evaluation” (Ibid.). Although the external consultant’s skills would probably be more general professional skills and less specific to Project RIPPLE, one way that this person could tailor their evaluation skills to suit this environment would be through innovative approaches to evaluation, i.e. creation of a framework to monitor participants’ perceptions of progression in terms of the
AAFP competencies, or collaboration with teaching faculty to establish a comparison matrix for pre- and post-intervention standardized-patient scores.

According to the CDC, there are three categories of stakeholders to consider when evaluating a program. The first category is “those involved in program operations: management, program staff, partners, funding agencies, and coalition members” (CDC 11). In Project RIPPLE, these individuals would be the program director, the program interns, the teaching faculty and upper-level residents in the Asheville family medicine residency, and members of the local LGBT community serving as panelists and assistants in program development. The questions about which these stakeholders would be most concerned might pertain to the efficacy of program processes to produce desired outcomes and the efficiency with which program funds were being used. Ways to involve these stakeholders would be to have the program staff help create a framework for data collection/analysis and to have the coalition members create a list of priorities addressing the reasons why Project RIPPLE is significant to each member group.

The second category is “those served or affected by the program: patients or clients, advocacy groups, community members, and elected officials” (CDC 11). The questions about which these stakeholders would be most concerned might pertain to both the degree of which the program’s activities are consistent with its goals and the efficacy of program processes to produce desired outcomes. In Project RIPPLE, these individuals would be the LGBT-identified patients attending the Asheville family medicine residency clinic and the local LGBT community in general, including local LGBT advocacy groups. Ways to involve these stakeholders would be to have advocacy groups and community members help create a checklist of desirable
outcomes (e.g., patient satisfaction with the physician interview) that could be assessed in the evaluation.

The third category is “those who are intended users of the evaluation findings: persons in a position to make decisions about the program, such as partners, funding agencies, coalition members, and the general public or taxpayers” (CDC 11). Similarly to the first category of stakeholders, the questions about which these stakeholders would be most concerned might pertain to the efficacy of program processes to produce desired outcomes and the efficiency with which program funds were being used. Ways to involve these stakeholders might include both the creation of a financial analysis scheme to make sure funds were being spent most efficiently and the comparison of outcomes data to the initial goals and objectives of the program.

One potential challenge the evaluation might encounter pertains to the involvement of stakeholders: both the fact that the priorities of each stakeholder may differ from each other and the fact that the priorities of the stakeholders may differ from the priorities of the evaluators. Additionally, another potential challenge could be finding enough time in the program director’s busy schedule for them to also serve as an internal evaluator without this duty detracting from their other commitments in running the program. Another challenge might be the difficulty of creating a structure to reliably evaluate overall progress in terms of increased sensitivity to and competency regarding LGBT patients. Given that each resident’s responses to the curricular interventions may progress at a different rate, and that each resident may learn something totally different as a result of the interventions, it will be challenging to develop a strategy to measure the impact of the curricular interventions on the group-level knowledge base.
Evaluation methods

Study design

The study design is a combination of observational and interventional, meaning that both strategies will be used to evaluate certain aspects of the program. In terms of the interventional strategy, data will be collected (in the form of pre- and post- intervention questionnaires and interviews) to assess whether or not the intervention improved the unbounded outcome of increased provider competency with and sensitivity to LGBT-identified patients. In terms of the observational strategy, there is not a comparison group, so it would be difficult to evaluate how the program affected patient outcomes in an interventional design. For this reason, using a prospective cohort design to follow residents who have completed the program (and collecting interview and patient observational data from this cohort of residents at several time intervals after the intervention) will also contribute to the evaluation of this program.

Study methods

The study methods consist of both quantitative and qualitative strategies. Evaluators will use these forms of data collection to determine the answers to several evaluation questions. Through answering these questions, the evaluators will be able to determine if the program activities are meeting Project RIPPLE’s objectives.

The quantitative strategies, which serve to collect data in a numerically-based format, consist of surveys (pre- and post-intervention questionnaires after each curricular intervention) and comparison of pre- and post-intervention scores from standardized patient evaluations. Evaluators will use the pre- and post-intervention surveys and pre-and post-intervention assessment score comparisons to determine the effects of several of the curricular interventions.
on achievement of several of Project RIPPLE’s objectives. Although the standardized patient assessments will be scored by teaching faculty, the comparison of scores pre- and post-intervention will occur as a collaboration between teaching faculty and program evaluators.

The qualitative strategies, which serve to collect data in a dialogue-based format, consist of individual interviews (or focus groups if individual interviews are too time-consuming) and curriculum review/discussion. Evaluators will use these strategies to determine residents’ and faculty’s perceptions of the efficacy of the interventions in increasing their capacity to work with LGBT-identified patients in a knowledgeable and sensitive fashion. Once the evaluators have heard the residents’ and faculty’s opinions as to how participation in the interventions has impacted their capability to competently work with LGBT-identified patients, then the evaluators can compare this data to the desired outcome for each curricular and program objective. These interviews or focus groups will be moderated by the program staff and participated in by the residents and/or teaching faculty.

**Evaluation tables**

Learning objective: Give family medicine residents practice and personal experience interacting with LGBT-identified patients

<table>
<thead>
<tr>
<th>Evaluation question (reaction)</th>
<th>Participant</th>
<th>Evaluation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Did the family medicine residents enjoy the patient panel discussion?</td>
<td>Family medicine residents</td>
<td>Post-panel questionnaire</td>
</tr>
<tr>
<td>b. Did the family medicine residents feel that the patient panel discussion was a good use of their time? (Kirkpatrick question)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Berkowitz 48
(learning)
c. Did the family medicine residents experience what was intended for them to experience? (Kirkpatrick question)

d. In terms of increased comfort level with interacting with LGBT-identified patients, what is the extent of improvement in this area after the patient panel? (Kirkpatrick question)

(behavior)
e. Did the family medicine residents put their learning into effect when back on the job? (Kirkpatrick question)

f. Are the family medicine residents aware of their change in comfort level interacting with LGBT-identified patients? (Kirkpatrick question)

(g. Was this change sustained? (Kirkpatrick question)

(results)
h. Are the family medicine residents achieving increasing scores on their LGBT-standardized patient practice sessions and assessments?

<table>
<thead>
<tr>
<th>Evaluation question</th>
<th>Participant</th>
<th>Evaluation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning objective: Offer a multi-part intervention: introductory training modules with follow-up discussions and practice patient encounters</td>
<td>Family medicine residents</td>
<td>Observation and comparison of practice session and assessment scores</td>
</tr>
<tr>
<td>Family medicine residents</td>
<td>Individual interviews, one and six months after the patient panel</td>
<td></td>
</tr>
<tr>
<td>(reaction)</td>
<td>Family medicine residents</td>
<td>Resident-specific questionnaires distributed before the initial activities and after the final activities</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>i. Do the family medicine residents feel that the multi-component design of the training was a good use of their time? (Kirkpatrick question)</td>
<td>Teaching faculty preceptors</td>
<td>Faculty-specific questionnaire distributed after the final activities</td>
</tr>
<tr>
<td>j. Do the faculty preceptors feel that the multi-component design of the training increased residents’ potential for applying increased knowledge of and sensitivity to issues related to LGBT patients? (Kirkpatrick question)</td>
<td>Family medicine residents</td>
<td>Questionnaires before and after and interviews after each activity → observation of trends in results</td>
</tr>
<tr>
<td>(learning)</td>
<td>Family medicine residents</td>
<td>Individual interviews, one and six months after the completion of the first year’s activities</td>
</tr>
<tr>
<td>k. Did the family medicine residents experience what was intended for them to experience? (Kirkpatrick question)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. In terms of increased knowledge of and sensitivity to issues related to LGBT patients, is the extent of residents’ improvement in this area greater after multiple program components?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(behavior)</td>
<td>Family medicine residents</td>
<td></td>
</tr>
<tr>
<td>m. Does each activity continue to help family medicine residents put their learning into effect when back on the job?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n. After each activity, are the family medicine residents aware of an added increase in comfort level interacting with LGBT-identified patients? (Kirkpatrick question)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o. Was this change sustained? (Kirkpatrick question)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Are the family medicine residents achieving increasing scores on their LGBT-standardized patient practice sessions and assessments?

<table>
<thead>
<tr>
<th>Evaluation question</th>
<th>Participant</th>
<th>Evaluation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>q. Have all of the family medicine residents who started this training as interns completed the introductory modules? If no, why not?</td>
<td>Family medicine 2nd-year residents</td>
<td>Individual interviews at the beginning of these individuals’ 2nd year (or, alternately, a focus group if individual interviews take too much time)</td>
</tr>
<tr>
<td>r. What were the reasons why certain residents did not participate in the introductory modules?</td>
<td>Family medicine 2nd-year residents</td>
<td>Individual interviews at the beginning of these individuals’ 2nd year (or, alternately, a focus group if individual interviews take too much time)</td>
</tr>
<tr>
<td>s. Were there any perceived barriers to the participation process?</td>
<td>Family medicine 2nd-year residents</td>
<td>Individual interviews at the beginning of these individuals’ 2nd year (or, alternately, a focus group if individual interviews take too much time)</td>
</tr>
<tr>
<td>t. How can the process in which residents are able to participate be improved?</td>
<td>Family medicine 2nd-year residents</td>
<td>Individual interviews at the beginning of these individuals’ 2nd year (or, alternately, a focus group if individual interviews take too much time)</td>
</tr>
<tr>
<td>u. What were some of the successes in recruiting residents to participate in the introductory modules?</td>
<td>Family medicine 2nd-year residents</td>
<td>Individual interviews at the beginning of these individuals’ 2nd year (or, alternately, a focus group if individual interviews take too much time)</td>
</tr>
</tbody>
</table>

Short-term objective: By year 3 of implementation, 95% of the residents that started this training as first-year interns will be able to meet the Healthy People 2020 objective of “appropriately inquiring about and being supportive of a patient’s sexual orientation to enhance the patient-provider interaction and regular use of care” (Healthy People 2020).
<table>
<thead>
<tr>
<th>Evaluation question</th>
<th>Participant</th>
<th>Evaluation method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(reaction)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v. Are these family medicine residents satisfied with the applicability of Project RIPPLE’s training to their interactions with LGBT-identified patients?</td>
<td>Family medicine 3rd-year residents</td>
<td>Individual interviews during 3rd year (alternately, could use a focus group if individual interviews are overly time-consuming)</td>
</tr>
<tr>
<td><strong>(learning)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>w. What is the extent of post-training improvements in residents’ abilities to meet this Healthy People 2020 objective?</td>
<td>Family medicine 3rd-year residents</td>
<td>Questionnaires before intervention and during 3rd year</td>
</tr>
<tr>
<td><strong>(behavior)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>x. Was there noticeable and measurable change in the performance of the 3rd-year residents in terms of meeting this Healthy People 2020 objective?</td>
<td>Family medicine 3rd-year residents</td>
<td>Observation of patient interactions; comparison of standardized-patient interactions over all 3 years</td>
</tr>
<tr>
<td><strong>(results)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>y. Are the family medicine residents achieving increasing scores on their LGBT-standardized patient practice sessions and assessments?</td>
<td>Family medicine 3rd-year residents</td>
<td>Observation and comparison of practice session and assessment scores</td>
</tr>
</tbody>
</table>

Long-term objective: By year 4 of implementation, program staff and residency program faculty will work together to create two short refresher training modules.

<table>
<thead>
<tr>
<th>Evaluation question</th>
<th>Participant</th>
<th>Evaluation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>z. Have the program staff and the faculty created 2 refresher training modules? (If no, then why not?)</td>
<td>Program staff and teaching faculty</td>
<td>Interviews</td>
</tr>
<tr>
<td>Evaluation question</td>
<td>Participant</td>
<td>Evaluation method</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>aa. Are both the program staff and the teaching faculty satisfied with the content and deliverability of these modules?</td>
<td>Program staff and teaching faculty</td>
<td>Interviews (or focus group)</td>
</tr>
<tr>
<td>bb. Were the refresher modules created at an appropriate level for the residents in terms of issue familiarity?</td>
<td>Program staff and teaching faculty</td>
<td>Focus group with faculty</td>
</tr>
<tr>
<td>cc. Were the refresher modules created at an appropriate level for the residents in terms of content?</td>
<td>Program staff and teaching faculty</td>
<td>Curriculum review and comparison of new modules with initial objectives</td>
</tr>
<tr>
<td>dd. Do the refresher modules reinforce the learning objectives of Project RIPPLE?</td>
<td>Program staff and teaching faculty</td>
<td>Curriculum review and comparison of new modules with initial objectives</td>
</tr>
</tbody>
</table>

Long-term objective: By year 5 of implementation, 95% of the Asheville family medicine residents will achieve a satisfactory score in a standardized patient evaluation of the AAFP LGBT-patient-specific competencies for family practice residents.

<table>
<thead>
<tr>
<th>Evaluation question</th>
<th>Participant</th>
<th>Evaluation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>(reaction) ee. Are the family medicine residents satisfied that Project RIPPLE is adequately helping them improve their scores with LGBT-specific standardized patient encounters?</td>
<td>Family medicine residents – all levels</td>
<td>Individual interviews or focus group</td>
</tr>
<tr>
<td>(learning) ff. Have the family medicine residents experienced increased aptitude with standardized-patient interactions after the Project RIPPLE training?</td>
<td>Family medicine residents – all levels</td>
<td>Individual interviews, questionnaires, or focus group</td>
</tr>
</tbody>
</table>
(behavior)
gg. After the completion of the training, are the family medicine residents aware of an increase in proficiency during LGBT-standardized patient interactions? (Kirkpatrick question)

hh. Was this change sustained? (Kirkpatrick question)

(results)
ii. Are the family medicine residents achieving satisfactory scores on their LGBT-standardized patient practice sessions and assessments?

Dissemination

Presentations

Although Project RIPPLE will present its post-intervention findings to community groups and stakeholders, it is also important to note that pertinent findings will also be shared throughout the program process if at all possible. In terms of both during-intervention and post-intervention presentations, the first community group to which we will present will be the LGBT-identified community members who helped with initial program development by developing and serving on the patient panel. We will use feedback from these community members to make sure that Project RIPPLE is adequately representing health issues faced by the local LGBT community. At the end of the first intervention cycle, we will also present our findings to the entire family medicine teaching faculty in Asheville. If the intervention appears to be associated with a positive effect on family medicine residents’ competency and sensitivity.
in working with LGBT-identified patients, then our next goal would be to present an overview of the program’s design and curriculum process at both the NC and national family medicine residency conferences and the Gay and Lesbian Medical Association’s conference.

Publications

The first publication goal will be to create a training curriculum guide that other family medicine residencies can use to implement similar programs for their residents. We will use the evaluation results to inform our final edits of the training curriculum, and we will then compile the final curriculum into a reproducible training guide. Ideally, we would either apply for grant funding or partner with a large-scale LGBT health advocacy organization (e.g., the Fenway Project) to cover the cost of producing the training curriculum guide. Alternately, we could produce this guide in a web-based format to reduce publication costs. Once this guide has been created, then our next publication goal will be to write a manuscript detailing the program design and evaluation process and submit our results to journals such as the Journal of the Society of Teachers of Family Medicine (STFM).

Discussion

In terms of the program plan, there exists a clear need for an increase in the number of curricular interventions targeting family medicine residents’ ability to work competently and sensitively with their LGBT-identified patients. The Asheville family medicine residency program would be an excellent place to pilot such an initiative because it is a small program with both a progressive faculty interested in curriculum reform and a surrounding community with a
large LGBT-identified population. Having a faculty interested in curriculum reform would be important because it is challenging to fit new initiatives into an already-crowded residency curriculum. Therefore, innovative approaches would be needed to make room for the insertion of additional curricula focusing on LGBT patient competency and sensitivity.

Having a surrounding community with a large LGBT-identified population would also be important because of the valuable input that LGBT-identified community stakeholders could contribute to program development and implementation. Some examples of places where LGBT-identified community members could assist throughout the development and implementation of Project RIPPLE are in both the writing of the online introductory module and the presentation of a panel discussion featuring LGBT-identified community members.

In terms of the evaluation plan, the current literature has several unanswered questions that are important to consider when studying the short- and long-term impacts of a program such as Project RIPPLE. First of all, authors of the current studies acknowledge that the studies only address and evaluate short-term behavioral changes associated with their respective curricular interventions. Therefore, associations of these curricular interventions with long-term behavioral changes in medical providers are currently unknown. For this reasons, it will be important to evaluate the ability of Project RIPPLE to influence long-term behavioral change in family medicine residents. Hopefully, including evaluation strategies that occur in the third year of residency will assess longer-term responses to the intervention (which occurs mainly during the first year of residency.)

Another unanswered question is to what degree the current studied interventions are applicable to medical residents. Most of the current studies worked with healthcare providers other than residents; therefore, the utility of offering a curricular intervention addressing LGBT
patient competency at this specific time in the medical education is somewhat unstudied. In tandem with this gap, another issue is that a standard curriculum for teaching healthcare providers about LGBT-specific health issues has been neither created nor evaluated. Another gap in the current evidence, therefore, is that each medical program in the literature piloted and evaluated a completely different curricular intervention. Given that there was no standardized curricular intervention, it is somewhat difficult to assess the external validity of each isolated curricular intervention. Therefore, the creation of the Project RIPPLE curriculum will produce a comprehensive curriculum that can be evaluated in comparison to other similar curricula. In this way, researchers eventually will be able to compare the associations between different curricula and their relative amounts of subsequent behavioral change.

On a related note, some of the curricular interventions studied were isolated interventions, while others were multi-component interventions. Therefore, another place where future research is needed is in the comparison of these different types of curricular interventions to see if they have different degrees of association with behavioral change. Another question that is currently unanswered is the effects of different studies taking different approaches to who would write the curriculum for their respective interventions. While some programs had medical faculty write the curriculum, other programs consulted local experts and advocacy groups. Given that these two strategies might produce curricula that highlighted differing aspects of provider competency with and sensitivity toward LGBT-specific health issues, it might be important to research whether these two approaches to curriculum-writing are associated with different levels of behavioral change.

Overall, however, the environment surrounding curricular reform related to LGBT-specific health issues is moving in a positive direction. Although a review of the literature
revealed only a small number of past initiatives, throughout this research process I met several individuals currently engaged in the development of such programs for multiple stages throughout the medical education process. Additionally, I have witnessed increasing mainstream acceptance of LGBT-identified individuals, which allows for a more receptive forum in which to present LGBT training curricula. I would hope that, in the relatively near future, these two factors combine to facilitate the addition of standardized LGBT health curricular modules into both the American medical school and residency curricular requirements. I would hope that the addition of such curricula into multiple levels of the medical education would greatly reduce the health disparities faced by the American LGBT population. The end goal of such curricular reforms, therefore, would be that the American LGBT population could experience the same level of health as the average American population.

Acknowledgments

I owe a great amount of gratitude to several individuals who were incredibly helpful with this research process. Thanks to Diane Calleson and Pam Dickens, whose helpful feedback helped me gain a better understanding of how to plan and evaluate this program. Thanks to Mellanye Lackey, whose assistance with search strategies was greatly helpful during my literature review. Thanks to Anthony Viera, who provided helpful advice and guidance during the course of my related practicum research. Thanks to the authors of the pioneering articles in this field, who risked their professional reputations by investigating into and publishing about a subject that was thought to be taboo at the time. Thanks to Diane Calleson and Sue Estroff for both their time in reviewing this project and their helpful edits. Thanks to my fellow researchers,
activists, and students in the UNC Safe Zone Program and the UNC School of Medicine’s Queer-Straight Alliance, who provide great inspiration by working hard to educate the UNC community about both LGBT-specific health issues and ways to be an effective ally to the LGBT community. And finally, huge thanks to Ripple herself (Liz Norton, my partner) for providing daily inspiration to both speak up about and work to reduce injustice.
MISSING citations from background!!!!


