

KANOF INSTITUTE FOR PHYSICIAN LEADERSHIP



MED
TALKS

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VIRTUAL

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Team C=Cure: Implementing Hepatitis C Treatment in the Primary Care Office

Jennifer Abbott, MD

Introduction

The Department of Health and Human services estimates that between 2.7 and 3.9 million people in the US are infected with the hepatitis C virus, and that half of infected people are unaware of their status. Chronic hepatitis C remains the most common bloodborne pathogen and the leading cause of cirrhosis, hepatocellular carcinoma, liver transplantation, and death related to liver disease. Since 2014, hepatitis C treatment has become much safer, easier, and more effective due to the development of direct-acting antiviral medications. Though these improvements have led to a cure in over 90% of cases, uptake of these treatment options has been slow. This is likely due to the high cost of these medications which prevents access by the uninsured, plus the historical convention that hepatitis C treatment requires specialist management. However, nearly all patients can be successfully treated within the primary care setting, including people who inject drugs (PWID) and people living with HIV (PLWH). (Andrews, 2018; Bartholomew, T.S., 2019; Hearn, B. 2014; Wade, A.J., 2020)

At Western North Carolina Community Health Services, a federally qualified health center (FQHC) in Asheville, NC, many clinic patients are living with active hepatitis C, including those coinfecting with HIV. In addition, WNCCHS has a robust program to provide Medication Assisted Treatment with suboxone to PWID, providing opportunities to screen and identify patients who may be at high risk for hepatitis C. However, there has not been a systematic approach to treating these patients with hepatitis C in our clinic. This has caused a significant barrier to care and in fact led some patients to transfer care to other settings to get treatment. Medical caregivers and patients have expressed frustration about the lack of access to this life-saving treatment.

Methods

A team was convened consisting of a Physician, Medical Director, Clinical Pharmacist, Patient Assistance Specialist, and Medical Assistant. We established the following goals related to implementing hepatitis C treatment:

- Identify patients with an active hepatitis C diagnosis in the medical record
- Train providers to provide appropriate workup, treatment, and monitoring
- Identify barriers related to different types of insurance and prior authorization
- Work with pharmaceutical company Medication Assistance RX Programs to obtain medications for uninsured patients
- Create a storage location for medications mailed to the clinic

- Educate patients prior to starting treatment to encourage adherence

The team met on three occasions between 11/2020 and 6/2021. During that time, the team Physician identified a test patient with each type of insurance (Medicaid, Medicare, Private Insurance, HMAP (NC AIDS Drug Assistance Program), and uninsured), and initiated treatment with each patient. The Physician ordered necessary baseline labs for the patients and identified potential drug-drug interactions with existing medications and then chose one or more appropriate treatment options. The Medical Assistant completed prior authorization paperwork for insurance, the Patient Assistance Specialist worked with patients to complete pharmaceutical company applications for Medication Assistance RX Programs (MARPs), and the Clinical Pharmacist counseled patients prior to and during treatment and assisted with ordering timely medication refills.

The team then identified and processed barriers experienced in each patient scenario to troubleshoot challenges. For instance, the Medicare patient had difficulty affording the copay for his medication, so an alternate payment source was identified by the Patient Assistance Specialist to subsidize the copay. The Clinical Pharmacist also worked with the Chief Financial Officer to confirm ordering costs and ensure reimbursement by insurance for medications that were provided through the in-house 340B pharmacy. In another example, with a privately insured patient, the initial choice of medication was not “preferred” by the insurance company, so the Physician identified a different treatment option that was on the preferred list and ensured that there were no drug-drug interactions with that option.

Clinical Pharmacists developed a protocol for patient counseling prior to initiation of treatment. (See Appendix B “Counseling Points.”)

The Team Physician, in collaboration with Clinic Administration, developed a clinical protocol (See Appendix) which was signed by the Board of Directors and created a training presentation with a flowsheet, including a PowerPoint and printed materials for the Medical Staff, including Physicians, Nurse Practitioners and Physician Assistants.

Results

During the trial period from 11/2020-6/2021, seven test patients successfully initiated hepatitis C treatment at WNC Community Health Services. Several different medications were used, and patients received medications from different sources, including the clinic’s pharmacy, mail-order specialty pharmacies, and medications mailed from the pharmaceutical company patient assistance programs (MARPs). Our team was able to obtain the appropriate medication for each of the seven patients, and each of the patients received counseling from a clinical pharmacist prior to starting the medication. Of these seven patients, 5 have completed treatment and 2 are still in their treatment period. The 12-week lab testing to assess for cure has not been completed on all patients due to timing, but initial labs indicate that all patients will achieve cure/sustained virologic response (SVR).

On 6/22/2021, all medical caregivers received a one-hour in-person training session with printed materials on treating hepatitis C. (See Appendix A.) Prior to the training, participants downloaded apps on their phones (Liverpool HepiChart and HepCCalculator). These apps were used during the training for participants to walk through a clinical case and decide on treatment options.



HepCCalculator



HepiChart

The IT department generated a list of patients with active diagnosis of Hepatitis C in their problem lists for each medical caregiver. This list initially proved to be inaccurate as many patients who had previously been treated or had no active viral load were listed as having active hepatitis C in their problem lists. Medical Caregivers were asked to review their lists and clean the data, removing Hepatitis C from the problem lists of those patients who had already been treated or no longer had active virus and charting this in the Past Medical History section of the chart. After initial cleaning of the data, we identified approximately 350 patients with lab-confirmed active hepatitis C.

In the month following the training, seven new patients were initiated on treatment for hepatitis C by their primary medical caregiver. Clinical Pharmacists are actively counseling patients prior to treatment and assisting with ordering of medication and one month follow up. All Patient Assistance Specialists are now assisting with ordering hepatitis C medications through assistance programs. Patients, pharmacists, and medical caregivers are highly satisfied with and excited about this program.

Discussion

At Western North Carolina Community Health Services, patients and physicians had been waiting for more than five years to start in-house treatment of hepatitis C. This led to increasing levels of frustration among patients as well as Medical Caregivers, along with increasing risks of transmission of hepatitis C virus, progression to cirrhosis, and risk of hepatocellular carcinoma.

Implementing hepatitis C treatment required a dedicated team leading a small trial program and support from the Clinic Administration to move forward. With each new patient treated, the team and administrators could see the benefit to patient health, patient and physician satisfaction, and increased revenue for the clinic pharmacy. The program has proved to be a win-win situation for all parties.

Future challenges include ongoing assessment and cleaning the electronic medical record to improve data collection, tracking and monitoring of patients during treatment, long-term surveillance of patients with cirrhosis, provision of hepatitis A and B vaccines (which is now limited due to cost), and ongoing support for patients with active substance use.

The ability to successfully treat patients with hepatitis C will lead to increased screening of our patient population and identification of more patients in need of treatment. To that end,

we can develop more robust clinic processes for systematic screening for hepatitis C infection.

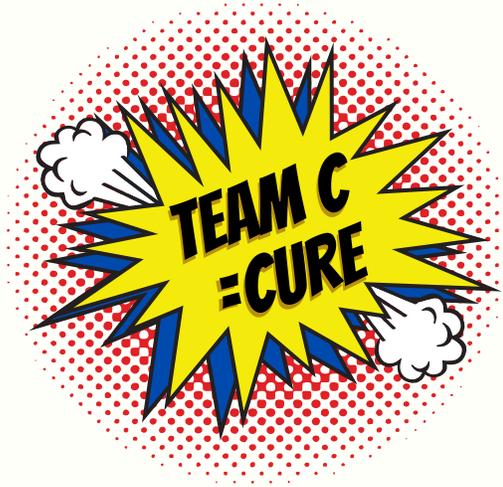
Another significant issue is the constantly changing landscape of insurance and medication coverage, including the recent transition to Medicaid Managed Care. Our clinic faces an ongoing struggle with the prior authorization process and staffing issues have added to this challenge. The clinic needs a more well-delineated workflow for identifying, completing, and tracking prior authorizations.

In conclusion, treating hepatitis C in the primary care setting is feasible and provides an excellent opportunity to improve health outcomes for patients. The program also benefits clinical team members with increased interdepartmental collaboration and job satisfaction for clinic staff when able to provide this life-saving medication for our patients.

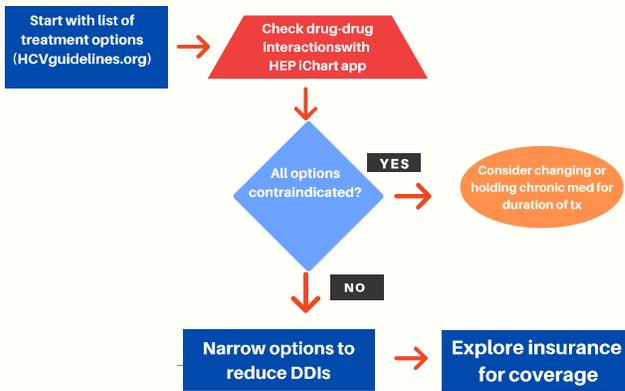
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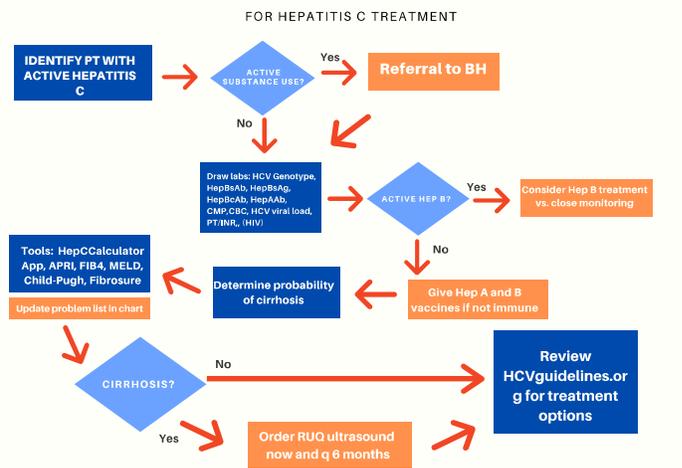
Appendix A



Choosing the best medication



Initial Evaluation



Appendix B

COUNSELING POINTS (Mavyret)

Clinical Pharmacist

- Inquire as to what patient already knows: fill in knowledge gaps
- Ask to open package and show what to do and how to take
- Review potential adverse effects
- Importance of taking all 3 tabs at same time daily with food
- Importance of not missing any doses; what to do if you miss a dose; reiterate please try your best to not miss a dose; reminder systems discussed
- Potential OTC/Rx/supplement interactions, and keep us informed of anything new
- Reinfection and how to prevent
- What “cure” means
- Importance of returning all calls from any of us
- Return for lab appointments (first in 4 weeks) and refill
- Provide printout on HCV and the medication
- Encourage to call pharmacist, MA, Provider should there be any questions or problems.

The Impact of COVID-19 on Pre-Clinical Physician Assistant Education: Virtual Learning Effectiveness

Meg Beal, PA-C

Introduction

A global pandemic presents the opportunity and necessity for innovative and adaptive approaches to medical education to allow for the continued progression of student learning and effective curricular delivery. After a quick pivot, much of the didactic portion of physician assistant (PA) education had to move to a remote or virtual platform rather than the usual in-person format over the past year and a half. While some hands-on learning was able to continue to occur in person, it became a much smaller portion of the students' educational experience in the pre-clinical year. Given these significant changes to the educational model, it is important to study what impact this has on students' successful acquisition of the knowledge, skills, and attitudes needed upon entry into the subsequent phase of their training in the clinical environment. Preceptors who subsequently work with the students immediately following the pre-clinical phase of training are aware of the expected level of preparedness of students at this stage. Gathering their input, along with that of the students who experienced this shift firsthand, is instrumental in determining the efficacy of these curricular modifications.

Like most other PA programs, PA students at the University of North Carolina at Chapel Hill (UNC) are in class as full-time students five days a week for the duration of the pre-clinical year. This provides a very interactive learning environment where students have the opportunity to hone communication skills as well as collaborative group learning experiences. With the COVID-19 pandemic, the school required limited gathering sizes due to concerns for disease transmission, and therefore necessitated that classroom learning move to a virtual platform about halfway through the first semester in the spring of 2020. In the UNC PA Program, during the final semester of the pre-clinical year in the fall of 2020, educational components that required hands-on experiences were gradually able to resume in-person delivery, in a small group format one day a week. The bulk of all other classwork continued through online delivery, primarily synchronously with some asynchronous work.

The UNC PA Program Class of 2021 students completed their three-semester pre-clinical year of training with very limited face-to-face instruction, and a primarily online experience. In January of 2021, these students began their clinical year of training and are now the first cohort at UNC to enter this phase having had the majority of their pre-clinical coursework completed virtually. Objective assessments are utilized to ensure students have met the expected learning outcomes from the pre-clinical year curriculum, regardless of its delivery format. However, it is the effective translation of this acquired knowledge into the clinical space that needs to be evaluated through other mechanisms to better ascertain the role of virtual curriculum delivery moving forward.

While virtual education in the setting of a global pandemic has facilitated important and useful training regarding the use of telemedicine, there is the concern that some interpersonal educational value is lost in a largely virtual training environment. Additionally, the kinesthetic skills in physical examination may be deficient with limited hands-on structured practice time. We anticipate that this modified curriculum delivery will have an impact on students' preparedness to enter the clinical learning environment in some way and seek to gain a greater understanding of this.

UNC PA students complete clinical rotation learning experiences in many different locations and settings; however, there is a collection of clinical sites and dedicated preceptors that have been consistently supportive in educating our students. While most of these are within the UNC Health network, a few are external. These preceptors have had experience precepting the UNC PA students for 4 years and have a general idea of expectations of students' preparedness in entering the clinical learning environment. In surveying this preceptor pool, it will help identify how this cohort of students compares to previous cohorts with regards to the ways in which they were prepared during the pre-clinical year. The preceptors can help identify the strengths and deficiencies of students' preparedness to engage in clinical training given the modifications in the modalities in which they were taught in the virtual classroom due to the pandemic. This will better help identify which curricular modifications have been effective and worthwhile to consider maintaining in some way, in addition to which elements of the curriculum are likely to suffer when delivered in a remote context. This input is essential in our programmatic self-assessment process.

Evaluating student perception of the curricular modifications is also important to ascertain the efficacy of the delivery model. While students do not have the same ability to compare their preparedness upon conclusion of the pre-clinical year to that of previous cohorts, they are able to attest to their own experience and observations. Being able to compare this internal feedback with the external input of the clinical preceptors will provide a more robust assessment of the impact of curricular modifications to the successful preparation of students to enter clinical training. Through these different perspectives, the program can identify what interventions and modifications are best in facilitating student learning and preparedness for clinical practice, including which elements of PA education may continue to effectively be provided in a virtual format and which are most optimally delivered in a face-to-face modality.

Methods

IRB information

An application was submitted to the institutional IRB of the University of North Carolina at Chapel Hill through the Office of Human Research Ethics and certified exempt. While the Qualtrics Survey system does acquire IP addresses for submitted surveys, this information is removed prior to data analysis and no responses are identifiable. Because this research falls

within the purview of internal programmatic self-assessment, it is secondary data use in this instance.

Preparedness Surveys

As part of accreditation, PA programs have historically been required to assess the readiness of students upon entry into the clinical learning environment. While this accreditation requirement was removed recently, the many curricular modifications necessitated by the COVID-19 pandemic presented an important opportunity to assess student preparedness and readiness in transitioning from didactic coursework to the clinical learning environment.

Qualtrics surveys (see Appendix A) were compiled to assess student preparedness for entry into clinical rotations. No personal identifying data was collected. The surveys were modified to include considerations of the impact of COVID-19 related curricular modifications on student preparedness. Two surveys were compiled: one for clinical preceptors, and one for clinical year PA students. The surveys were aligned in assessing the same program competencies with language specific to each target audience. Only preceptors who have precepted UNC PA students in the past were sent this survey, in order to ensure a point of reference for student preparedness. Additionally, preceptors were sent the survey after multiple UNC PA students had rotated through their practice area, to ensure they had multiple students on which to base their perception of clinical readiness.

Survey questions asked preceptors about general preparedness as far as various program-specific competencies (e.g., medical knowledge, history taking skills, etc.) as well as specific questions comparing the preparedness of the current cohort of students to previous cohorts. Qualitative feedback regarding perceived discrepancies was solicited, though not required for survey completion. Similarly, students were asked as to the extent to which they feel that COVID-19-related curricular modifications impacted their preparedness for entering the clinical learning environment. Qualitative feedback regarding the effect of these modifications was also solicited, though not required for survey completion.

Results

Thus far, a total of 12 out of 17 (70.6%) current second year UNC PA students have completed the preparedness survey. A total of 14 out of 21 (66%) dedicated clinical preceptors completed the preparedness survey. We will continue to collect and analyze survey responses as they are returned.

<u>Likert Scale Key:</u> 1- Strongly Disagree 2- Disagree 3- Neither Agree nor Disagree 4- Agree 5- Strongly Agree

Response Averages by Program Competency Domain		
	Students	Preceptors
<p>Medical Knowledge</p> <p><i>The student was prepared with the appropriate level of medical knowledge for the clinical year.</i></p>	4.00	4.08
<p>History Taking Skills</p> <p><i>The student was prepared to take a medical history.</i></p>	4.50	4.42
<p>Effective Communication</p> <p><i>The student was prepared to effectively communicate with patients and the healthcare team.</i></p>	4.25	4.50
<p>Physical Examination Skills</p> <p><i>The student was prepared to perform an appropriate physical exam.</i></p>	3.83	3.33
<p>Professionalism</p> <p><i>The student was prepared in exhibiting professionalism.</i></p>	5.00	4.58
<p>Cultural Competency and Sensitivity</p> <p><i>The student was prepared in demonstrating appropriate cultural competence and sensitivity.</i></p>	5.00	4.58
<p>Overall Preparedness</p> <p><i>Overall, the student was appropriately prepared for the clinical learning environment.</i></p>	3.92	4.17

Students and preceptors alike were largely in agreement regarding the students' level of preparedness pertaining to all the competency domains. Please see Appendix B for more detailed response information with graphic comparisons of student and preceptor responses. Almost all students (11/12) felt as though the curricular modifications related to COVID-19 led to some degree of deficiency in their acquisition of medical knowledge and physical examination skills. Conversely, close to half of the preceptor respondents felt that this current cohort of students did not seem to have medical knowledge or physical examination skill deficiencies upon entry into the clinical year in comparison to previous cohorts.

Regarding preparedness in history taking skills and communication, students and preceptors were closely aligned in their perceptions. Overall, both groups agreed that students were appropriately prepared, and that COVID-19 related curricular modifications did not have as significant an impact in these areas.

Physical examination skills were identified by preceptors and students alike to have more limitations. Preceptors felt that the students were less prepared than the students themselves reported. Most preceptors (7/12) reported that the students were less prepared in physical examination skills when compared to previous cohorts. Reviewing data from previous cohorts, the average rating was 4/5 on a Likert scale for earlier classes, whereas this cohort's rating for preparedness to perform a physical exam averaged 3.33/5. Qualitative data revealed themes of limited confidence and comfort to account for some of this difference. Almost all students (11/12) reported that the COVID-19 curricular modifications led to a deficiency in their ability to perform a physical exam. All qualitative data cited inadequate amount of hands-on practice time. None indicated any issue with the asynchronous content provided to introduce the examination components.

This was the first year that the program did not utilize women's health and men's health teaching groups for trainings of more sensitive examinations on patients, including genitourinary and breast exams. Students learned examination techniques and skills using task trainer manikins but were unable to practice additionally with professional patients. Half of preceptors who responded to this question (and did not select "not applicable") noted a discrepancy in this cohort's skills with these examinations compared to previous cohorts. Most students (9/12) felt that the absence of this training experience had a significant impact on their ability to perform these exams in the clinical environment.

Preparedness in the way of professionalism and cultural competency and sensitivity domains was rated highest by both students and preceptors. Students did not feel that curricular modifications had much of an impact on this part of their pre-clinical education. About one third of preceptor respondents felt that this cohort exhibited some degree of deficiency in these areas when compared to previous classes of students.

Overall preparedness was positively perceived by both groups. Students felt that the pandemic led to overall deficiencies in their readiness to enter the clinical learning environment much more than their preceptors.

Discussion

While the COVID-19 pandemic certainly caused a great deal of disruption initially to both the clinical learning and clinical practice environments, many lessons continue to be gleaned. Clinically, telehealth capabilities were quickly incorporated into workflows. In the education space, more traditionally structured programs quickly adapted to virtual and asynchronous learning to prevent delays in student progression through the curriculum.

Remote education can be achieved both through synchronous and asynchronous content presentation. Virtual learning offers a certain degree flexibility, and even more so with asynchronous delivery. While there are issues with internet connection or other external distractors to consider, students overall seem to be accepting of the virtual classroom. When implemented effectively, it has the potential to lead to successful attainment of the knowledge, skills, and attitudes required of medical trainees.

Distance education, virtual classrooms, and remote instruction are not new modalities in physician assistant education. Although the vast majority of the over 275 physician assistant programs in the United States follow a more traditional delivery model, there had already been increasing numbers of programs delivering their curricula through these other means before the onset of the pandemic. When comparing the academic achievement of students educated via synchronous distance education compared to traditional delivery models, no significant difference has been found. Additionally, Physician Assistant National Certification Examination (PANCE) pass rates for programs who offer some unspecified amount of distance or online education are equivalent to, if not slightly higher when compared to the overall national average³. There are clearly ways to effectively prepare students not only for

success on clinical rotations, but also ultimately in passing the boards and entering practice through distance instruction, as the pandemic has necessitated further exploring. What this looks like and how this is achieved is something that each program must pursue uniquely based on the structure and nuances of their particular curriculum.

Instruction in physical examination, specifically for medical novices, has been found to be equally effective when using live demonstrations as compared to online modules⁵. This suggests that there are ways to provide instruction more effectively in physical examination techniques in a distant education model. Successful clinical skills training has occurred with use of videos in place of in-person tutorials in medical education with equivalent results. Students also express a preference for the flexibility that this option offers when the content is suitable to this format. There is a paucity of literature addressing effective clinical skill instruction in pre-clinical physician assistant education virtually. While our student course evaluation scores for all classes in which physical examination skills are taught throughout the pre-clinical year were consistent with previous years, the qualitative feedback indicated a desire for more hands-on learning opportunities. This highlights the need to strike the optimal balance between asynchronous instruction, delivering effective instruction through a more flexible model, while ensuring sufficient hands-on practice and skill refinement is also provided.

Requiring more frequent low stakes video recordings of students practicing the examination techniques may provide the repetition necessary to enhance students' abilities in this area when dedicated in-person time is not feasible. Repeated practice helps solidify and strengthen skills. Even when not in-person for class sessions, this would provide an avenue for ensuring acquisition of foundational skills with the opportunity for individualized feedback. Given the issues of lack of confidence in their physical examination skills, more feedback can help to strengthen this. Ultimately, there needs to be some sort of in-person demonstration opportunity and assessment, however, to ensure that competence is achieved.

In the past, our foundational physical exam course utilized an entirely in-person instruction design, including lectures introducing physical examination skills and their basic considerations. During the next iteration of the pre-clinical curriculum, we will implement this structure of foundational asynchronous videos of content pertaining to basic clinical skills along with assigned videos for students to record of themselves to submit for feedback as they practice the skills. This will allow for utilization of in-person time entirely for more focused hands-on practice and application of the physical exam skills, with opportunity for feedback.

While the students all passed their summative assessment at the end of the pre-clinical year, which included all basic physical examination skills, these skills should have been more extensively evaluated in retrospect to provide greater opportunity for specific feedback and growth, and ultimately enhance students' confidence and comfort before embarking into the clinical phase.

There are additional avenues to explore to understand the efficacy of distance education more fully in physician assistant training. Employer feedback regarding preparedness of new graduates upon entering clinical practice can help further identify the effectiveness of virtual education. The triangulation of data collected from students, preceptors, and employers will together provide a more robust analysis of effective delivery modalities of various components of physician assistant education. Ultimately, this information will help guide ongoing programmatic improvement efforts to optimize the structure of the curriculum in striking a balance between traditional instruction and distance education (both synchronous and asynchronous) to best prepare our future physician assistant graduates. Adapting to the pivots required by the pandemic has paved the way for innovation in curricular delivery models that may be able to increase flexibility for learners while preparing them well for the various phases of training and clinical practice.

Conclusion

Virtual or remote delivery of some elements of pre-clinical physician assistant education does not appear to be inferior to traditional instruction in successful student attainment of the knowledge, skills, and attitudes needed to prepare them for the clinical learning environment. History taking, and communication skills do not appear to lose effectiveness when taught remotely. We will continue to provide instruction related to some of this content through virtual modalities. Further delineation of what material is more effectively provided synchronously and asynchronously will be important to study moving forward.

Hands on physical examination instruction and practice is important to maintain in a more traditional laboratory environment to promote not only proficiency, but also student confidence and comfort when taking these skills into the clinical space. Maximizing use of in-person time for kinesthetic skills will remain a priority. In addition, we will directly measure student comfort and confidence with physical examination techniques during the pre-clinical phase to address these elements found to contribute to deficient preparedness.

While there is overall alignment in perceptions of students and preceptors regarding how prepared students were at the beginning of their clinical rotation experience, students overestimated the negative impact of the COVID-19 pandemic on their level of preparedness when compared to previous cohorts than preceptors identified.

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Appendix A

Preceptor Survey Questions

Medical Knowledge

The student was prepared with the appropriate level of medical knowledge for the clinical year. [Likert 1-5]
Have you noticed a significant difference in the overall medical knowledge of the clinical PA students this year when compared to previous years? [Yes-Somewhat-No]
In what particular areas have you noticed discrepancies in their medical knowledge? [free text]

Patient Care

The student was prepared to take a medical history. [Likert 1-5]
Have you noticed any significant deficiency in the UNC PA students' ability to take a medical history compared to previous years? [Yes-Somewhat-No]
What areas of deficiency have you noticed in their history taking skills? [free text]
The student was prepared to perform an appropriate physical exam. [Likert 1-5]
Have you noticed any significant deficiency in the UNC PA students' ability to perform an appropriate physical exam compared to previous years? [Yes-Somewhat-No]
What areas of deficiency have you noticed in their physical exam skills? [free text]
This is the first year our students have not had training with live patients in conducting male genital/urinary exams, rectal exams, female pelvic exams, and breast exams in advance of the clinical year. Have you noticed a discrepancy in the students' preparation regarding their ability to perform these sensitive exams? [Yes-Somewhat-No-Not Applicable]
Is the deficiency related more to their level of confidence in approaching the exam or their skill in conducting the exam? [free text]

Professionalism and Cultural Sensitivity and Humility

The student was prepared in exhibiting professionalism. [Likert 1-5]
Have you appreciated a significant difference in the level of professionalism exhibited by the clinical PA students this year? [Yes-Somewhat-No]
Please elaborate on these professionalism issues. [free text]
The student was prepared in demonstrating appropriate cultural competence and sensitivity. [Likert 1-5]
Have you appreciated a significant difference in the level of cultural competence and sensitivity exhibited by the clinical PA students this year? [Yes-Somewhat-No]
Please elaborate on these cultural considerations. [free text]

Interpersonal and Communication Skills

The student was prepared to effectively communicate with patients and the healthcare team. [Likert 1-5]
Have the students demonstrated difficulty in effectively communicating with any of the following people, when compared to previous cohorts? Patients? Preceptors? Other Healthcare team members? [Yes-Somewhat-No]
Please elaborate on the communication deficits you have noticed.

Overall

Overall, the student was appropriately prepared for the clinical learning environment. [Likert 1-5]
Have you appreciated a global deficiency in the preparedness of students you are precepting this year when compared to previous cohorts of students? [Yes-Somewhat-No]
Please provide any additional comments you would like to share. [free text]

Student Survey Questions

Medical Knowledge

I felt prepared with the appropriate level of medical knowledge to enter into the clinical year.

[Likert 1-5]

Do you feel like curricular modifications related to COVID-19 led to a deficiency in your acquisition of medical knowledge during the pre-clinical year? [Yes-Somewhat-No]

How do you feel that your medical knowledge was affected? [free text]

Patient Care

I was prepared to take a medical history upon entering into the clinical year. [Likert 1-5]

Do you feel like curricular modifications related to COVID-19 led to a deficiency in your ability to take a medical history? [Yes-Somewhat-No]

How do you feel that your history taking skills were affected? [free text]

I was prepared to perform an appropriate physical exam upon entering into the clinical year. [Likert 1-5]

Do you feel like curricular modifications related to COVID-19 led to a deficiency in your ability to appropriately perform a physical exam? [Yes-Somewhat-No]

How do you feel that your physical exam skills were affected? [free text]

This is the first year our students have not had training with live patients in conducting male genital/urinary exams, rectal exams, female pelvic exams, and breast exams in advance of the clinical year. Do you feel that the absence of this training had a significant impact on your ability to perform these sensitive exams in the clinical environment? [Yes-Somewhat-No]

How do you feel like the training would have better prepared you? [free text]

Professionalism and Cultural Sensitivity and Humility

I was prepared to exhibit professionalism upon entering into the clinical year. [Likert 1-5]

Do you feel like curricular modifications related to COVID-19 led to a deficiency in your ability to demonstrate professionalism in the clinical environment? [Yes-Somewhat-No]

Please elaborate on how the pre-clinical year impacted your preparedness for professionalism in the clinical environment. [free text]

I was prepared to demonstrate appropriate cultural competence and sensitivity upon entering into the clinical year. [Likert 1-5]

Do you feel like curricular modifications related to COVID-19 led to a deficiency in your ability to exhibit cultural competence and sensitivity upon entering into the clinical year? [Yes-Somewhat-No]

Please elaborate on the impact COVID-19 modifications had on these cultural considerations. [free text]

Interpersonal and Communication Skills

I was prepared to effectively communicate with patients and the healthcare team upon entering into the clinical year. [Likert 1-5]

Have you found it difficult to effectively communicate with any of the following people in the clinical environment? Patients? Preceptors? Other Healthcare team members? [Yes-Somewhat-No]

Please elaborate on the communication challenges you have encountered and how the pre-clinical year could have better prepared you for them. [free text]

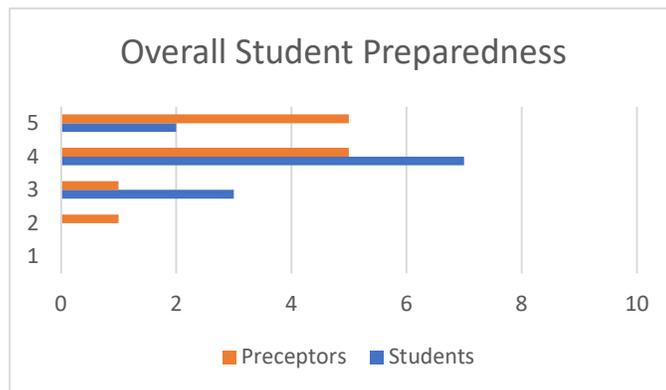
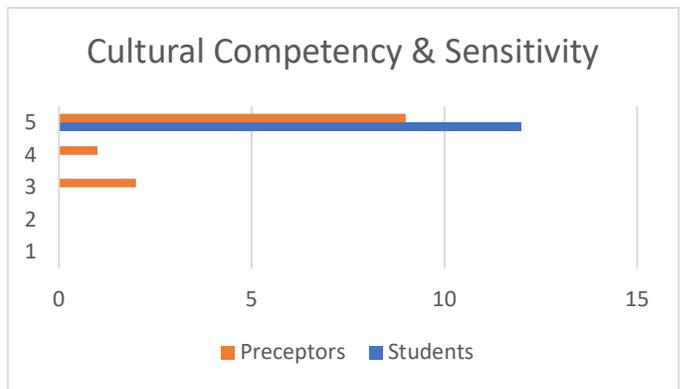
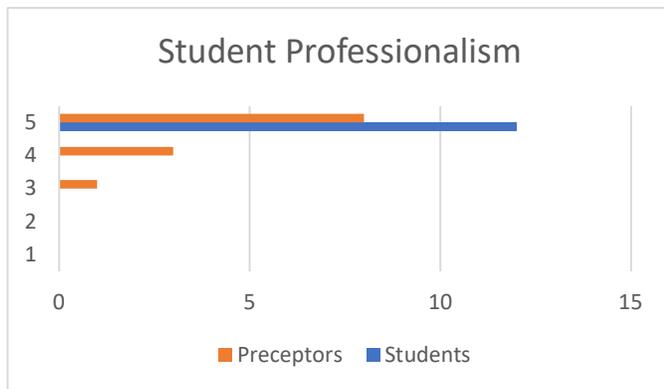
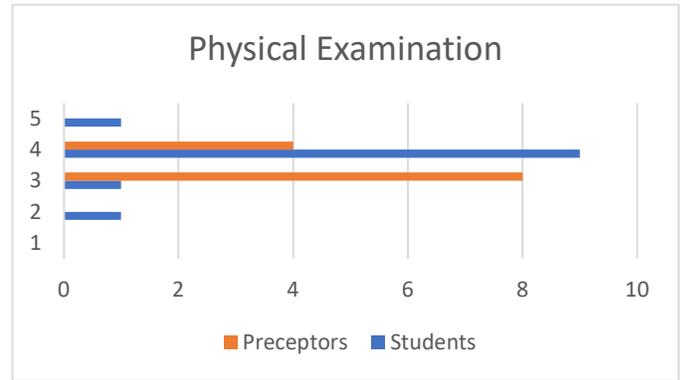
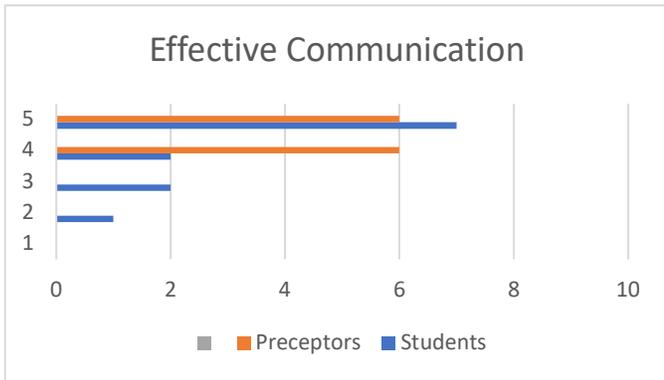
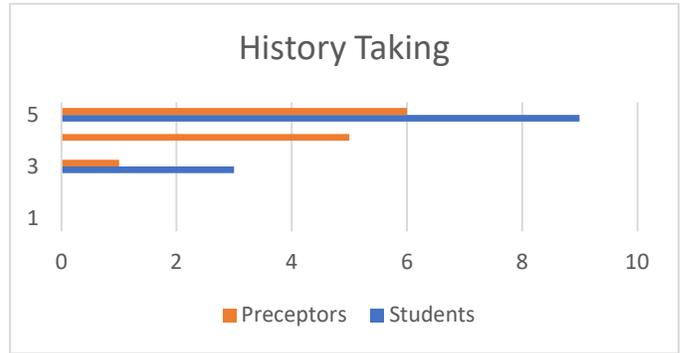
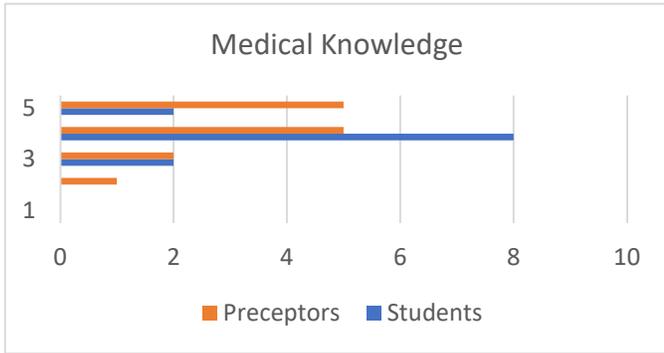
Overall

Overall, I was appropriately prepared for the clinical learning environment. [Likert 1-5]

Do you feel overall that COVID-19 modifications to the pre-clinical year significantly impacted your preparedness to enter into the clinical year in comparison to previous cohorts. [Yes-Somewhat-No]

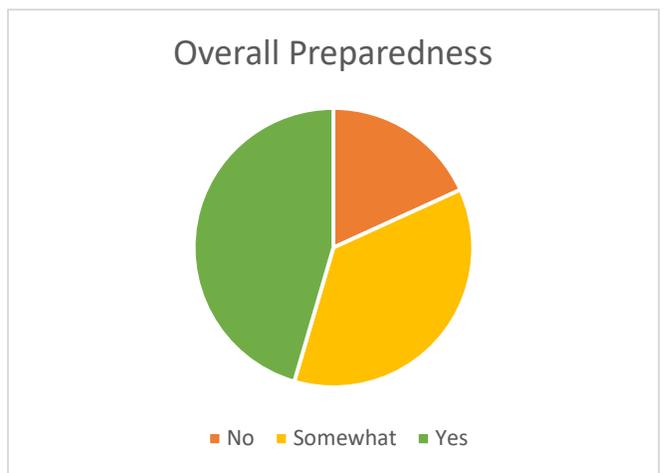
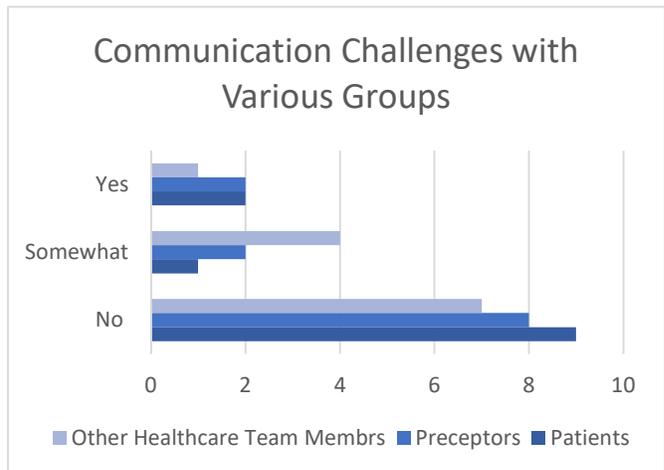
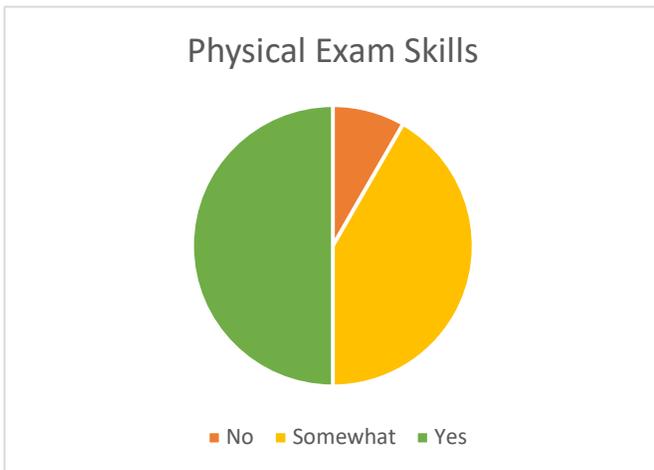
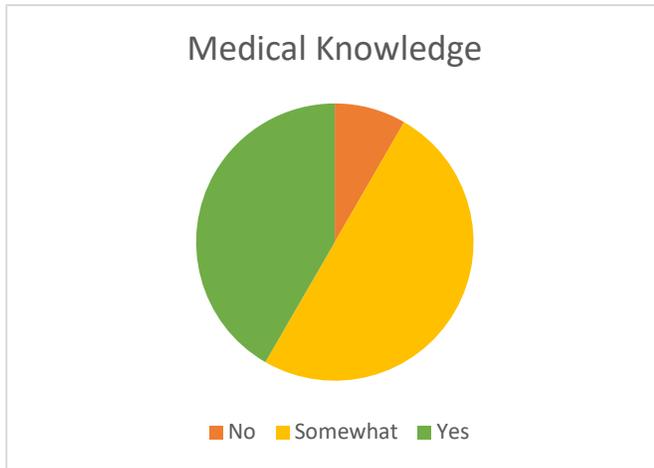
Please provide any additional comments you would like to share. [free text]

Appendix B
Perceptions of Student Preparedness



Appendix C

Students' Perceptions of Whether COVID-19 Curricular Modifications Led to Deficiencies

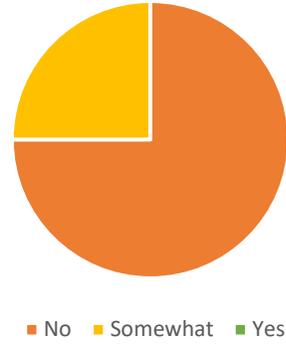


Preceptors' Perceptions of Cohort Deficiencies in Comparison to Previous Years

Medical Knowledge



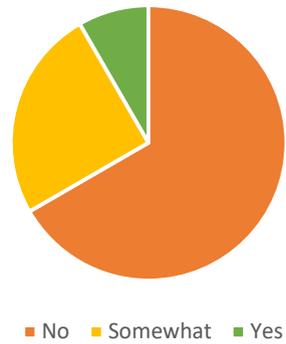
History Taking



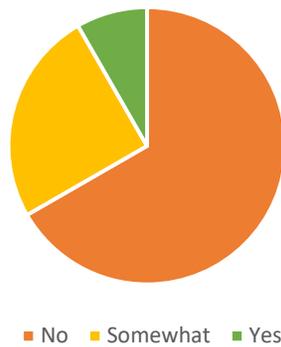
Physical Examination Skills



Professionalism



Overall Preparedness



Development of the North Carolina Medical Society Telehealth Policy

Carroll Labron Chambers Jr., MD, MBA, FASA

Introduction

Although Telehealth has been in use for years, the state of North Carolina lags in the regulation of this technology (1.) North Carolina is one of seven states without any laws regarding the use of Telehealth (1.) The North Carolina Medical Board (NCMB) has no specific regulations as well, other than a reference to the Federation of State Medical Boards general statement on Telehealth that providers should be licensed in the state where the patient is located (2.) Of the many policies of the North Carolina Medical Society (NCMS), prior to the pandemic, none covered the area of Telehealth. Without the benefit of these laws/regulations, third party payers are not obligated to compensate providers for any Telehealth service.

With the declaration of the Public Health Emergency (PHE) associated with the COVID-19 pandemic on January 27, 2020, restrictions regarding the use of Telehealth for patient care were lifted (3.) It was seen as the only means for patients to seek care without direct physical interaction with providers.

Full reimbursement for synchronous virtual visits was allowed, and soon, most non-emergent patient/provider interactions were conducted virtually. In particular, “audio only” synchronous virtual visits were paid for, thus allowing patients lacking a smartphone to benefit from the technology. Although not covered specifically, asynchronous modalities such as text and email expanded as well. Lastly, remote physiologic monitoring was used in “hospital at home” scenarios to keep COVID-19 positive non-critical patients out of hospital units (4.)

The Policy Committee of the NCMS was formed in the fall of 2019 with the mandate of revising current NCMS policies and identifying potential areas in need of policy development. The initial work involved reconciling NCMS policies to be in alignment with the objectives outlined in Healthy NC2030 (North Carolina Institute of Medicine) and was completed by Fall 2020. The Chairs of the committee solicited input regarding areas in potential need of policy development.

I have an interest in Telehealth, having completed several online courses, and having started a Graduate Certificate in Connected Care: Telehealth and Digital Innovation through Thomas Jefferson University. I knew that North Carolina was lagging other states in Telehealth regulation, and that the NCMS had no Telehealth policy, despite providing support to practices with a free Telehealth platform during the PHE. There was the question of whether Telehealth services would continue to be paid for after the PHE ended. In addition, I had communicated with the NCMS Advocacy team regarding Telehealth. It was felt likely that Telehealth legislation would be introduced in the 2021 North Carolina legislative session and that the Advocacy team would benefit from the NCMS having a Telehealth policy for them to reference.

The purpose of this project was thus to include Telehealth to be considered for policy development.

Methods

A workgroup was set up with the task to develop the policy for approval by the full committee. The workgroup consisted of eight members that included me as well as volunteers from the Policy Committee.

To create an initial framework for the policy development, input and thoughts were provided from different stakeholders such as Mid-Atlantic Telehealth Resource Center (MATRC) and the Center for Connected Care Policy (CCHP.) Both are federally funded, non-partisan, and non-industry supported organizations that function as subject matter resources for Digital Health (See Appendix 1). The framework added the discussion to identify important concerns such as the need for demanding continued reimbursement for audio only or phone visits, in areas with underserved populations with little access to technology outside basic mobile phones.

To further understand what the experience among NCMS members was, what the barriers were and to assess whether there had been an increase in using Telehealth, a survey was created (Appendix 2). The survey was distributed through the NCMS daily newsletter, Morning Rounds.

Around 140 responses were received which is in keeping with the usual response to such surveys (Appendix 3).

In addition, other stakeholders offered their input as per the letter from the North Carolina Academy of Family Physicians, offering their leadership's perceptions regarding the adoption of Telehealth in North Carolina (Appendix 4).

The data from the survey informed the draft of the revised Telehealth policy, which was presented to the Policy Committee for review as well as gather additional input from the Committee. The input from this discussion generated a third version.

Results

In analyzing the results from the survey as well as the Committee members input and thoughts several things become apparent:

- Most providers were using more Telehealth than before the PHE.
- Many were concerned about barriers to access, in particular lack of patient Internet access, patient knowledge, or coverage and reimbursement.
- Primary care providers expressed a strong desire to link Telehealth to the patient's primary care provider or Patient Centered Medical Home (PCMH.) The issue (from their perspective) was insurers using out-of-state Telehealth providers to undercut local primary care providers/PCMHs.

The final version of the Telehealth Policy (Appendix 5) was presented to the North Carolina Medical Society Board of Directors (NCMSBOD) for review and approval in March 2021. The Board determined that the general definition from the Center for Connected Health Policy (CCHP) provided an adequate explanation and thus avoided the perception that the NCMS was endorsing specific modalities for care and thus removed the language describing specific components of Telehealth. In addition, the reference to the [NCMS' Access to Care and Social Supports for all Populations policy](#) was felt to be redundant and thus removed (Appendix 6).

Conclusion

For those who are curious as to the ultimate benefit of the NCMS having a Telehealth policy, I would suggest you follow the course of North Carolina House Bill 139. It was introduced this past spring. Passed the North Carolina House without difficulty but did not get a hearing in the North Carolina Senate. The House inserted it into their budget to get it enacted. The bill contains many aspects covered within the NCMS Telehealth policy. Unfortunately, it has become a negotiating tool between hospital systems, who want continuation of compensated Telehealth patient care after the PHE ends, and insurers, who want to “horse trade” various issues beneficial to them as they believe their costs will increase with continued reimbursement for Telehealth services. The NCMS Advocacy team has been actively tracking this bill.

Thus, in reviewing this experience with the benefit of hindsight, what did I learn regarding leadership? In other words, given that I have now been through two NCMS Kanof Institute for Physician Leadership programs (Healthcare Leadership and Management, as well as the Leadership College,) am I better prepared to be a physician leader? I believe I had the opportunity to gain experience using the skills I gained through the programs.

A classic description of a physician leader is someone who exerts influence and facilitates communications among others. In that sense I was able to guide the conversations among both the workgroup and committee members. I was careful not to direct these interactions, but rather pose questions for thought and discussion.

Because all our meetings were virtual, I had to work with individuals without having the feedback of observing body language. Some always “called in” rather than using the Zoom application. This required interpreting their vocal expressions. I researched several articles and books on conducting virtual conversations and meetings that were produced recently.

Leadership is a process of social influence, which maximizes the efforts of others, towards the achievement of a goal. Kevin Kruse, Forbes, April 9, 2013. I came across this article and felt it was appropriate for this situation. I sought to influence the Policy Committee, and ultimately the NCMS Board of Directors, to take a stand on an issue I set as a goal. Kruse does make the point in his article that influence is too broad a descriptor, as there are bad leaders with significant influence.

Lastly, I feel all leaders should have feedback and accountability. While I couldn't have 365-degree evaluations from the staff and committee, I made it a point to seek feedback from the NCMS staff and the Committee Chair after every meeting. Could I have handled the discussion better? Was I seeking as many inputs as possible? Was I using our resources appropriately? I was sincere in asking and incorporating their opinions.

References

Center for Connected Health Policy

<https://cchp.org>

North Carolina Medical Board

Telemedicine Position Statement

<https://www.ncmedboard.org/resources-information/professional-resources/laws-rules-position-statements/position-statements/telemedicine>

Federation of State Medical Boards

Model Policy for the Appropriate Use of Telemedicine Technologies

<https://www.fsmb.org/advocacy/telemedicine/>

Office for Civil Rights at the Department of Health and Human Services

Notification of Enforcement Discretion for Telehealth Remote

<https://www.hhs.gov/hipaa/for-professionals/special-topics/emergency-preparedness/notification-enforcement-discretion-telehealth/index.html>

Remote Patient Monitoring: COVID-19 Applications and Policy Challenges

Healthcare Information and Management Systems Society

<https://www.himss.org/news/remote-patient-monitoring-covid-19>

Appendix 1

DRAFT: Telehealth Policy Discussion Framework

Draft Outline – Things to Consider/Include:

Definitions

Access

Coverage & Reimbursement

Modalities

Privacy and Security (HIPAA)

Standards of Care

Vendors

Legal/Regulatory

Interstate Compact?

Fraud

The patient

Definitions:

Telehealth is defined by the Center for Connected Health Policy (CCHP) as: *a collection of means or methods for enhancing health care, public health, and health education delivery and support using telecommunications technologies.*

Telehealth is used as a universal term for the various virtual care service applications such as:

Live videoconferencing (synchronous): live, two-way interaction between a person and a provider using audiovisual telecommunications technology.

Store-and-Forward (asynchronous): transmission of recorded health history through an electronic communications system to a practitioner, usually a specialist, who uses the information to evaluate the case of render a service outside of a real-time or live interaction.

Remote Patient Monitoring (RPM): personal health and medical data collection from an individual in one location via electronic communication technologies, which is transmitted to a provider in a different location for use in care and related support.

Mobile Health (mHealth): health care and public health practice and education supported by mobile communication devices such as cell phones, tablet computers, and PDAs. Applications can range from targeted text messages that promote healthy behavior to wide-scale alerts about disease outbreaks, to name a few examples.

Access

The North Carolina Medical Society supports access to comprehensive, quality care and social supports as necessary to promote health, prevent and manage disease, reduce premature death and preventable morbidity, and achieve health equity for everyone in North Carolina, as written in the NCMS' [*Access to Care and Social Supports for all Populations*](#) policy.

Barriers to Telehealth Access:

- Lack of statewide broadband access
- Device feasibility
- Legal/Regulatory barriers
- Payer barriers, i.e., policy, coverage, reimbursement, originating site

The North Carolina Medical Society supports efforts and funding for programs and innovations that resolve existing barriers to telehealth access for health care providers and persons of North Carolina.

Coverage & Reimbursement

What should be considered:

- Infrastructure expenses
- Technology fees (i.e., monthly/annual vendor service fee, upgrades, etc.)
- Staff requirements
- Administrative requirements
- Standard of care
- Eligible services
- Coding (clear coding requirements, education, etc.)
- Modality flexibility
- Value-based telehealth (clinical and quality metrics)

Vendor choice (patient-provider relationship benefit)

Examples:

The North Carolina Medical Society supports telehealth coverage for all appropriate medical services, patient types, provider types, locations, secure devices, and modalities, by all government and commercial payers.

The North Carolina Medical Society supports appropriate reimbursement, no less than 85% of an equivalent in-office visit of the same nature, for telehealth services provided by any qualified health care provider.

Appendix 2

Survey Questions:

1. Do you currently utilize telehealth in your practice?
 1. If no, what has prevented you from utilizing telehealth in your practice?
 2. If yes, go to following questions:
2. Do you anticipate continued use of telehealth post-pandemic?
 1. Yes
 2. No
 3. Unsure
3. What barriers have you experienced with telehealth?
 1. Insurance coverage
 2. Reimbursement
 3. Lack of training
 4. Lack patient knowledge
 5. Internet access (patients)
 6. Other: _____
4. What benefits have you experienced with telehealth?
 1. Patient access
 2. Time management efficiency
 3. Decreased No-Show rate
 4. Convenient
 5. Other: _____
5. Draft Policy and comment

Disclaimer for the drafts: Do you have any comments you would like to share regarding this draft telehealth policy? Please note that this draft is merely for soliciting feedback and will undergo continued review by the NCMS Policy Committee before potential submission to the NCMS Board of Directors.

What information do we want to capture: optional or required?

- Name (optional)

- Title (optional)
- Organization (optional)
- Specialty
- County (location)

Appendix 3

Q1	Do you currently utilize telehealth in your practice?		
	Answer Choices	Responses	
	YES (please move on to following questions)	81.88%	113
	NO (please go to comment box below)	18.12%	25
	If no, what is preventing you from utilizing telehealth in your practice?		14
		Answered	138
		Skipped	1

Two reasons listed for not utilizing telehealth: (1) exam limitations and (2) patients not interested

Q2	Do you anticipate continued use of telehealth post-pandemic?		
	Answer Choices	Responses	
	YES	76.92%	100
	NO	10.00%	13
	UNSURE	13.08%	17
		Answered	130
		Skipped	9

Q3	What barriers have you experienced with telehealth?		
	Answer Choices	Responses	
	Lack of coverage and reimbursement	39.84%	49
	Cost	16.26%	20
	Lack of training	14.63%	18
	Lack of patient knowledge	46.34%	57
	Lack of internet access (patients)	59.35%	73
	Other (please specify)	20.33%	25
		Answered	123
		Skipped	16

Biggest and most noted barriers are connectivity issues, liability concerns, education, and coverage/reimbursement.

The only additional concerns mentioned in addition to above were exam limitations, time-consuming, EHR integration, and HIPAA

TELEHEALTH DRAFT POLICY INPUT
Include interstate compact support
Include Audio-only as one of the covered and reimbursed applications (same as audio/visual payment)
Explicit language supporting and encouraging state-wide broadband access
Financial support for telehealth devices, Wi-Fi hotspots, and monitoring devices for loan or gift program to patients in need
Continuity of care and the provider-patient relationship should be emphasized, specifically highlighting the connection to the medical home
Interoperability
Billing standardization across insurance companies (i.e. POS, modifiers)
The NC Society of Pathologists notes that telehealth in our specialty involves remote sharing patients' tissue slides (digitized or by real-time video link) for consultation or (since COVID) primary diagnosis. We would appreciate this form of telehealth being referenced in the policy. Primary diagnosis by telehealth (for pathologists) is regulated and not widely available, however provisions for emergency use authorization allowed expanded use of pathology telehealth during COVID. We would like to see these continue into the future and will need support for training and ensuring security.
Statement regarding liability and extent of service; Use of Telehealth should not put the medical care provider at increased risk of audit by insurers; Protections from malpractice or privacy breach due to hackers, technology issues, internet breaches
Please consider adding a statement supporting the continued use of telehealth (with audio and visual) for medication assisted treatment for opioid use disorder, both for initial intake and ongoing treatment. This has been valuable for the treatment of rural patients with limited access to treatment and also with limited ability to drive to treatment and therapy. The medical board supporting this with a statement is helpful in advising pharmacies of policy as well.
I like the policy. My only concern comes in the gates being opened to the IT world with this and regulations and requirements coming into play that make the use from the office side cost prohibitive. Not sure how to make this clear to the General Assembly, maybe a component of our need to work

directly with the development of the regulatory side to make sure we provide reasonable measures to protect the privacy of patient information.

Telehealth should be utilized to enhance the value and effectiveness of the medical home. Policy should clearly state that insurance companies should not contract with doctors who have NO physician-patient medical home relationship with the patients so that those doctors can provide telehealth services for the patients outside the medical home setting, and in competition with physicians who are going to a lot of trouble and expense to provide a good medical home for their patients. The AMA has good telehealth policy, if it is interpreted properly by payers and physicians.

Be more specific with barriers--"lack of patient knowledge"--what does this mean--use of technology, ability to diagnose severity, ability to articulate problem

I like the policy. My only concern comes in the gates being opened to the IT world with this and regulations and requirements coming into play that make the use from the office side cost prohibitive. Not sure how to make this clear to the General Assembly, maybe a component of our need to work directly with the development of the regulatory side to make sure we provide reasonable measures to protect the privacy of patient information.

I feel strongly that the statement must contain language that when care is being delivered by telehealth the medical provider has the responsibility to connect a patient with a higher level of care when needed. (Steve North)

Help with financial cost for rural counties to support telehealth

Need something stating expansion of Medicaid with telehealth reimbursement is essential to providing care for vulnerable populations and to improve access to care in a more cost-efficient way and to lower costs of chronic disease management.

Also, need state government to take the lead with telehealth coverage for state employees and retirees in state provided coverage.

While I think telehealth is excellent, I would like the policy to say something with regards to monitoring for high quality of care and ensuring that the wholesale acceptance of telehealth does not lead to the loss of local providers esp. in rural communities (ie through natl telehealth companies overtaking small local providers).

I think if there were to be something added around the need for telehealth in primary care especially to continue to provide health care and prevent trips to specialists, urgent cares and emergency room visits. We need to assert that physicians drive primary care and public health care as well.

[NCAFP Comments - Separate letter](#)

Appendix 4



919.833.2110 PH
919.833.1801 FAX

November 18, 2020

Dear NC Medical Society Policy Committee:

RE: Comments on Proposed Policy on Telehealth

On behalf of the leadership of the NC Academy of Family Physicians and our 4,200 members across the state, we would like to offer these comments regarding the NC Medical Society's proposed policy on telehealth.

We appreciate the development of this important policy and agree with most aspects of it. However, we believe the policy should explicitly state that telehealth is best utilized in the context of an existing clinician-patient relationship.

It should be noted that the NC Medical Board policy on telemedicine states that "providing care to patients via telemedicine **will** be held to the **same established standard of care** as those practicing in traditional in-person medical settings." We do not believe the same level of care can be achieved in telemedicine without the involvement of a member of the patient's pre-existing care team. Thus, to be consistent with the NC Medical Board Policy, we believe the policy of the NC Medical Society should -- at a minimum -- note that in almost all instances (short of an emergency situation like a hurricane) telehealth should involve a pre-existing relationship with the patient, whether this is through a medical home or care by a patient's existing sub-specialty provider.

Furthermore, fragmenting care by utilizing unknown third-party telehealth vendors has the potential to lower quality and increase cost. This is exactly the opposite of what we all should be striving for as we move toward value-based healthcare.

If you have any questions regarding our comments, please do not hesitate to contact me or our Executive Vice President, Greg Griggs.

With best regards,

David A. Rinehart, MD President, NCAFP

2501 Blue Ridge Rd., Ste. 120, Raleigh, NC 27607

ncafp.com

Appendix 5

NCMS Policy Committee

Laura Gerald, MD, Co-Chair

Lisa Shock, DrPH, MPH, PA-C, Co-Chair

The NCMS Policy Committee recommends the following to the NCMS Board of Directors:

Telehealth

The NCMS does not currently have a policy on telehealth, so the NCMS Policy Committee has developed the policy recommendation below to be presented to the NCMS Board of Directors.

Recommendation:

Telehealth is defined by the Center for Connected Health Policy (CCHP) as: a collection of means or methods for enhancing health care, public health, and health education delivery and support using telecommunications technologies.

Telehealth is used as a universal term for the various virtual care service applications such as:

Live videoconferencing (synchronous): live, two-way interaction between a person and a provider using audiovisual telecommunications technology.

Store-and-Forward (asynchronous): transmission of recorded health history through an electronic communications system to a practitioner, usually a specialist, who uses the information to evaluate the case of render a service outside of a real-time or live interaction.

Audio-Only: live, two-way interaction between a person and a provider using audio-only telecommunication technology.

Remote Patient Monitoring (RPM): personal health and medical data collection from an individual in one location via electronic communication technologies, which is transmitted to a provider in a different location for use in care and related support.

Mobile Health (mHealth): health care and public health practice and education supported by mobile communication devices such as cell phones, tablet computers, and PDAs. Applications can range from targeted text messages that promote healthy behavior to wide-scale alerts about disease outbreaks, to name a few examples.

The North Carolina Medical Society (NCMS) supports access to comprehensive quality care and social supports as necessary to promote health, prevent and manage disease, reduce premature death and preventable morbidity, and achieve health equity for everyone in North Carolina, as written in the [NCMS' Access to Care and Social Supports for all Populations policy](#).

The NCMS supports and encourages efforts and funding for programs and innovations that resolve existing barriers to telehealth access for health care providers and persons of North Carolina.

The NCMS promotes equitable telehealth coverage for all appropriate medical services, patient types, provider types, locations, secure devices, and modalities, by all government and commercial payers.

The NCMS advocates for parity in payment for telehealth services provided and accurately documented by any licensed and qualified health care provider when medically appropriate.

The NCMS advocates for the promotion of transparency to patients and providers regarding their choice when accessing telehealth services, and for preserving continuity of care with the patient's established providers, including their medical home.

The NCMS advocates for the continuing efforts to safeguard patient privacy and program integrity through effective and considerate regulations and requirements that allow for the support and innovation of technology-based care.

The NCMS supports ongoing efforts to establish and define quality metrics for telehealth visits that align with the service standard of care as well as preserves and promotes patient safety and access.

Appendix 6

Final Policy approved by the North Carolina Medical Society Board of Directors May 15, 2021.

ACCESS TO CARE

Telehealth

The North Carolina Medical Society supports efforts and funding for programs and innovations that resolve existing barriers to telehealth access for health care providers and persons of North Carolina;

The North Carolina Medical Society supports equitable telehealth coverage for all appropriate medical services, patient types, provider types, locations, secure devices and modalities, by all government and commercial payers;

The North Carolina Medical Society supports parity in payment for telehealth services provided and accurately documented by any licensed and qualified health care provider when medically appropriate;

The North Carolina Medical Society supports the promotion of transparency to patients and providers regarding their choice when accessing telehealth services, and for preserving continuity of care with the patient's established providers, including their medical home;

The North Carolina Medical Society supports continuing efforts to safeguard patient privacy and program integrity through elective and considerate regulations and requirements that allow for the support and innovations of technology-based care; and

The North Carolina Medical Society supports ongoing efforts to establish and define quality metrics for telehealth visits that align with the service standard of care as well as preserves and promotes patient safety and access.

The North Carolina Medical Society, for the purposes of this policy, supports the definition of telehealth as presented by the Center for Connected Health Policy (CCHP), which defines telehealth as a collection of means or methods for enhancing health care, public health, and health education delivery and support using telecommunication technologies

Heart Strive: A Virtual Approach to Post-ACS Care

Emily Cole, PA-C

Introduction

As we entered a life of masks, mandates, widespread sorrow, drenched from the waves of the devastation from COVID-19, we also forged a new path in what it means to provide virtual care. We came to a place of new birth, in more ways than one: emotionally, relationally, technologically. We redefined possibility regarding reaching patients in a virtual format. Cardiac rehabilitation or often coined “cardiac rehab”, is a scientifically proven rehabilitation program offered to patients who have recently suffered Acute Coronary Syndrome (ACS), have had recent revascularization, stable angina, systolic heart failure, among other indications, to provide education regarding heart disease and secondary prevention strategies (Wenger, 2020). Traditional cardiac rehab takes place on average three times per week for an average of three months, though different programs will vary in frequency and duration. Cardiac rehab has the potential to mitigate future risk of cardiac events and death but also to close the health literacy gap surrounding one of the deadliest diseases on the planet: heart disease (Kocheneck, 2020).

In the last year, as the pandemic marched on, the number of patients referred and successfully completing cardiac rehab, in my own experience, significantly decreased. Frequently, my patients would decline referral, citing the pandemic and risk for exposure as a reason they did not feel comfortable attending. Who could blame them? Access suddenly became a problem. Or maybe not so suddenly.

If we rewind to pre-pandemic times, I was referring patients almost daily to cardiac rehab with the hopes that we could continue to improve the outcomes and overall quality of life for patients. In Asheville, NC, we are the center for heart care in Western North Carolina, serving patients in the rural surrounding counties. We serve the counties of Buncombe, Henderson, McDowell, Madison, Jackson, Cherokee, and beyond. It is not uncommon for a patient to drive over an hour to be evaluated in our office. However, committing to trek that distance three times per week to cardiac rehab simply is not feasible or conducive to their current life situation. Other patient populations lived closer, but due to lack of insurance coverage or out of pocket cost, did not have the financial means to attend. Still others were in a socioeconomic scenario where they had to work two jobs to make ends meet; this left almost zero time to participate in such a rigorous program. Such individuals were unable to improve their health, decrease cardiac risk, or improve quality of life through the means of cardiac rehab because they did not have the proximity, financial means, or job flexibility to do so. All these concerns did not start with the onslaught of COVID-19. Even before the pandemic began, within the US and the United Kingdom, only 10-30% of patients who were eligible for the program were participating despite the proven benefits (Cortes, 2006; Bethell, 2009). At a time where many have evaluated their own health risks, there has never been a more pivotal time than the present to use this introspection to help close the gap on this paradox.

As we have seen the medical community reach new heights with the advances in virtual care throughout this last year, it was clear there had to be a better way to reach those who so often were unable to create a more healthful situation because of their socioeconomic scenario or because of a looming pandemic. With this, the idea of Heart Strive was born: a virtual approach to post-ACS Care. Heart Strive is a website that provides easily understood, evidence-based information, incorporating common themes of cardiac rehab and implementing the core values of lifestyle medicine to provide the tools necessary to create a more healthful heart. All of this can be accessed at the convenience of the patient. This website has the potential to improve heart health literacy and provide access to resources that patients can use to change their life practically and sustainably.

Methods

To construct a powerhouse resource of information that was evidence-based and reliable, a large amount of literature review was required. Woven throughout the guidelines on secondary prevention set forth by the American College of Cardiology (ACC), the European Society of Cardiology (ESC), and the American Heart Association (AHA), are key lifestyle interventions to prevent further cardiac morbidity and mortality (AHA/ACFF 2011; Piepoli, 2016). These same lifestyle interventions are well outlined and articulated by The American College of Lifestyle Medicine (ACLM) through the *Pillars of Lifestyle Medicine*. The Lifestyle Medicine Pillars include: Nutrition, Physical Activity, Sleep, Avoidance of Risky Behaviors, Stress Reduction, and Social Connectedness. Heart Strive marries the pillars of ACLM with the lifestyle recommendations in the guidelines set forth by the ACC/AHA for secondary prevention of heart disease to provide a comprehensive framework for virtual post-ACS care.

In addition to careful review of the guidelines, a focused review of the specific needs of Buncombe and the surrounding counties were investigated. By use of the Robert Wood Johnson Foundation website on county statistics, it was discovered that a focus specifically on tobacco cessation and access to healthy food was necessary (County Health Rankings 2020). Once the specific local needs were identified, local resources were then researched and are provided on the Heart Strive website to facilitate easier access for aid in those particular areas. For example, online sources for smoking cessation on the state, national, and even local levels are given and financial avenues to obtain pharmacologic support for smoking cessation are provided. Another example of local support includes access to local farmer's markets, transportation maps, and resources from supporting agencies like Appalachian Sustainable Agriculture Project (ASAP). These were incorporated to make these recommendations practical and easier to implement in the daily lives of patients. These same types of local resources were investigated and incorporated into the Heart Strive website for the remaining pillars of lifestyle medicine where applicable and available.

In addition to the extensive literature review, a considerable amount of time was dedicated to building a platform of access: building the website itself. This was done by trial and error, reworking the platform using feedback from peers on accessibility and ease of facilitation.

Focus was given particularly on the ease of utilization from a mobile device as in many cases, this is a patient's only avenue for internet access.

Discussion

Nutrition

Nutrition is a hot topic. With every magazine cover and newspaper headlining a new and improved diet, it is no wonder why the American population is largely confused about what they should or should not be eating for heart health. Many patients who are post-ACS do not suddenly improve their dietary habits overnight. It often takes a lot of self-education, trial, and error. There are a multitude of great resources available, but what advice should they follow? There is so much information! Dr. David Katz, founder and former director of Yale University's Griffin Prevention Research Center, referred to this as "pseudo-confusion" during his interview with Dr. Danielle Belardo, a cardiologist out of Newport Beach, California, on her podcast called *Nutrition Rounds*, where they discuss an array of nutrition topics. He argued that overall, many know what food is generally healthy or not healthy, but we get caught up on the nuances of one diet or another and fail to follow the most basic principles of nutrition. By and large, the recommendations from the major medical community have been to focus on eating whole foods including fruits, vegetables, legumes, nuts and seeds (Belardo, 2019). This has not changed and is not new. At Heart Strive, we bring the most up to date, evidence-based information available to provide patients with an easily understood knowledge base about how to implement healthy eating into their lifestyle to make sustainable change. One of the cornerstone aspects of Heart Strive is to help provide the logistical "know-how" to implement the education provided. This is accomplished through information and access to local resources that pull this knowledge base to fruition. With information on how to afford healthy food, where to go, and tasty recipes, Heart Strive is a gateway to healthful eating for the heart.

Physical Activity

"How soon can I get back to my regular activities?". This is a common question that arises at outpatient clinic visits after a patient has suffered from an MI (myocardial infarction). Many are anxious to get back to what is considered "normal" for them after a hospitalization. However, much trepidation is felt about doing any type of physical activity because they are afraid that it will bring on the symptoms they had before their event. They are concerned that they are going to damage their heart if they push too hard. Patients should have a conversation with their healthcare provider prior to engaging in any type of significant physical activity. This is of utmost importance. The section on physical activity is intended to provide a springboard for those who have been evaluated by their provider and deemed safe to start engaging in more physical activity to optimize their heart health to avoid cardiac events in the future. It provides the guidelines from the American College of Cardiology and the recommendations for what patients should be working toward in regard to their physical activity and how to implement step by step ways to incorporate more physical activity into their daily life. We underscore the importance of movement and avoiding sedentary behavior.

Sleep

While many tend to focus primarily on diet and exercise after a cardiac event, it is also important to focus on implementing a well-balanced life and giving your body time to rest and recover. There have been studies linking insomnia with increased cardiovascular risk and the factors that contribute to coronary disease (Bonnet, 2021). Implementing smart sleep hygiene can be extremely important in that recovery. We provide tips on how to develop healthy sleeping habits, and common pitfalls to avoid.

Avoidance of Risky Behaviors

One important Pillar is the avoidance of risky behaviors. This encompasses a large number of behaviors such as tobacco use, alcohol use, and illicit drug use, among other things. However, for the purpose of this project, tobacco cessation was the primary focus considering the largest area of improvement for Buncombe and the surrounding counties together is a decrease in the incidence of tobacco use (County Health Rankings, 2020). Patients often hear their providers recommend they quit smoking, but many patients still need help beyond simply suggesting that they do so. At Heart Strive, a clear description of options is discussed and the benefits and risks to each strategy. We discuss pharmacological vs non-pharmacological therapies and the importance of utilizing both to be successful in smoking cessation. There are resources for those with Medicaid and how to obtain free nicotine replacement therapy. There are numerous local resources for quit support; these modalities extend from telephone to in person, online, to even smartphone apps that can aid in quitting. There are resources for veterans as well. Furthermore, logistical support on how to obtain available resources is clearly explained. This is part of the piece that sets Heart Strive apart: providing local, practical, and 4 logistically feasible options to make these suggested goals a reality to propel patients to a more healthful life.

Stress Reduction and Social Connectedness

After an acute cardiac event, the prevalence of depression can range from 20-30% and it is possible that the risk for depression could be as much as three times greater than the general population (Thomas et al 2006). When we think about reducing risk for a cardiac event, many do not think about the implications of stress reduction. But studies have shown that up to 27% of patients were able to pinpoint a psychosocial trigger for their event (Tofler, 2021). For example, in one small observational study, over 17% of patients experienced anger within the two hours prior to onset of cardiac event (Behar, 1993). In another study, emotional stress was associated with an increased 30-day rehospitalization (Tofler, 2017). Why is this important in a post-ACS atmosphere? The goal is to prevent progression of heart disease, improve quality of life, and to avoid further morbidity or mortality. One study that followed just under 300 middle-aged women who were hospitalized for ACS were followed over a period of five years. After this time, the presence of two or more depressive symptoms and the lack of social integration were independent predictors of recurrent cardiac events (Mostofsky, 2014). In this section, Heart Strive's main goal is to demonstrate to individuals that their emotional and psychological wellbeing is certainly connected to their physical wellbeing. It is to in a sense to grant

permission for people to address their emotional and psychosocial needs in order to also improve their heart health.

Potential Impact

Heart Strive has the potential to change the way we approach the focus of lifestyle management regarding post-ACS care. Because this is a virtual format, anyone who has suffered from a cardiac event can access this information and rest assured they are guided with reliable, straight-forward, easily understood information that positions them to improve their heart health. Access and availability are no longer a barrier. This is a profound step forward in regard to access and health literacy, particularly for the surrounding WNC area.

Future growth could incorporate more in-depth local resources based on location, giving those outside of WNC even more of a platform to connect their lifestyle changes to local community and support—implementing further a vital element of lifestyle medicine: social connectedness. Furthermore, additional development in the areas of sleep, social connectedness, and stress reduction and how those directly relate to heart health on the Heart Strive platform would provide an even more comprehensive approach to cardiac care. Heart Strive is not a virtual cardiac rehab. However, with expansion and support it certainly has the potential to develop into a full-fledged virtual cardiac rehab. Further investigation would need to be completed to determine the true impacts of virtual cardiac rehab in regard to cardiac morbidity and mortality to measure its true impact.

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An Introduction to Healthy NC 2030: Transforming Primary Care Through Social Determinants of Health and Lifestyle Medicine Interventions

Bonnie S. Coyle, MD, MS

Introduction

Despite being a world economic and scientific leader, the US lags behind many other countries on health-related metrics. Our life expectancy is shorter, and in a concerning turn of events, life expectancy in the US has actually dropped slightly for the past several years.¹ We pay nearly twice as much per person for health care as the next closest country, and yet we have higher rates of most chronic diseases, higher rates of suicide and injury, and significantly worse behavioral health problems.²⁻⁵ How can it be that our country, with all of its technological advances and high standard of living, still cannot compete with other industrialized nations to keep our residents and communities healthy? While the answer to this question is complex, two key concepts play a major role – we overlook the dramatic impact that addressing Social Determinants of Health (SDOH) and Lifestyle Medicine (LM) have on improving the health of our communities. Ultimately, we will need to adopt a paradigm shift in the delivery of health care if we truly want to reduce the cost of health care while also creating healthier communities.

The North Carolina Institute of Medicine (NCIOM) in partnership with the North Carolina Division of Health and Human Services (NCDHHS) has issued the Healthy North Carolina 2030 (HNC 2030) report, which includes a set of health indicators with ten-year targets designed to guide state-wide efforts to improve health and well-being. The report acknowledges that health begins in communities and families, and that health outcomes are largely driven by social determinants of health and personal health behaviors.¹³ The HNC2030 framework is an excellent foundation on which to build this current project, which strives to incorporate SDOH and LM interventions effectively into primary care services, to positively affect health outcomes like development of chronic disease and life expectancy.

SDOH are the economic and social conditions that influence individual and group differences in health status, such as education, income, employment, housing stability, neighborhood environments, influence/power and individual behaviors. Over the past twenty years a large body of evidence has accumulated that reveals a powerful role for these social determinants – apart from medical care- in shaping health across a wide range of health indicators, settings, and populations. In fact, it is now generally accepted that medical care only impacts about 20% of measures of morbidity and mortality in our country, while SDOH account for more than 60%.⁶⁻⁹ SDOH are much stronger predictors of how long we will live and how healthy or unhealthy our lives will be. Countries that spend more on social programs, rather than medical care, have better health outcomes than the US.¹⁰ Spending more on high-tech medical care does not necessarily improve health status – building and promoting social capital and

empowering families and communities to adopt healthier lifestyles may be a far more effective approach.

Lifestyle Medicine is the evidence-based field of medicine that seeks to prevent, treat and reverse disease with lifestyle modifications. Eighty percent of the costs of health care in the US are for the care of individuals with chronic conditions. Research has shown that we could prevent 80% of chronic disease if we adhered to just four behaviors: 1) Not smoking; 2) Maintaining a normal weight/BMI; 3) Being physically active; 4) Eating a healthy diet including recommended consumption of fruits and vegetables and avoidance of excess processed and animal-based foods. Research shows that only 3% of Americans adhere to all four of these behaviors.^{11,12} In many cases, SDOH create barriers to individuals adopting healthier lifestyles.

Health Care transformation is imperative if we want to create healthy people living in healthy communities. Health care systems that collaborate with public health and social agencies will promote stronger opportunities for improved health in the patients and families they serve. Interventions that incorporate SDOH and LM are necessary, especially for vulnerable and marginalized populations. My project will work with providers in the North Carolina Medical Society's (NCMS) Community Provider Program (CPP) to try to accomplish the following: to educate providers and their staff about Healthy North Carolina 2030 (HNC2030), introduce the concepts of SDOH and LM, and to determine and then track important health outcomes in support of HNC 2030 metrics. By taking this more holistic and preventive approach that more effectively addresses the root causes of poor health, we can begin to transform our health care system from a sick care system to a true health care system.

This project is intended to extend over a period of several years, in partnership with NCMS and the CPP program. This paper reports on the initial developmental stage of the overall project.

METHODS

The project's developmental stage consists of several phases, including an assessment of the practices to determine readiness, SDOH and LM screening tool and metric development, and finally training and preliminary implementation of interventions. The assessment phase included interviews with CPP primary care practices and evaluation of potential screening tools. To better understand current technology capabilities and data collection practices among CPP participants, we conducted interviews with several pediatric, ob-gyn and family practices throughout North Carolina. Interview questions are included in Table 1.

After conducting the interviews, the results were then used to determine what assessment tools and performance metrics could be tracked to help primary care physicians better assess SDOH and LM contributors to the health problems of their patients. Special attention was paid to understanding current screening tools and electronic health records being used by the practices, to facilitate ease of implementation of recommended tools. Healthy NC2030 metrics were evaluated to determine which metrics were most applicable and relevant for busy clinicians to consider as they implement practice-transforming interventions. A determination was made to use the NCCare360 SDOH assessment questionnaire and the American College of

Lifestyle Medicine’s (ACLM) short form questionnaire, as well as several clinical metrics as the assessment tools within the practices. A core set of Healthy NC 2030 metrics were identified to include as population health metrics. The SDOH tool is shown in Table 2. Lifestyle Behaviors will be assessed according to the six pillars of Lifestyle Medicine including Sleep, Nutrition, Physical Activity, Substance Use, Stress and Social Connectedness. A question to elicit patient motivation level for change is also included.

To provide training to primary care providers, a Summit has been planned in conjunction with NCMS’ annual CPP meeting. The summit will provide an overview of main concepts related to Healthy NC 2030, Social Determinants of Health, NCCares 360, community resources and introductory sessions on LM. Representatives from the NCDHHS, the American College of Lifestyle Medicine (ACLM), CPP, local health departments and community organizations will be among the presenters. The Summit is scheduled for September 24 and 25, 2021 and will offer CME credits to attendees. Although initially intended to be an in-person Summit, the venue will likely be switched to a virtual environment due to the current surge in COVID cases in North Carolina. CPP participants will be in attendance, and the Summit is open to other practitioners and allied health care personnel in North Carolina.

The survey tool has been shared with pilot practices to begin to collect baseline data to determine which SDOH and lifestyle behaviors most impact their patients. After the Summit has been held, pilot sites will be asked to implement the use of the NCCare 360 platform in their practices and one or two lifestyle interventions focused on the metrics demonstrating the greatest need from their individual assessments. Guidance and recommendations will be provided from Summit presenters to assist in the implementation of effective interventions. Survey tools, NCCare360 and Healthy NC2030 metrics will be used to evaluate the success of the program.

Table 1. Interview Questions for Pilot Practices

1. Tell me about the practice – how many patients, demographics, specialties including dental?
2. How many total providers are at the practice? Do you have Case Management support?
3. What is the insurance breakout for patients?
4. Are there any specific strengths/weaknesses you have identified for QI projects for the practice?
5. What EHR do you use? How useful is it for data pulls, can it be easily modified for additional data collection?
6. What current metrics do you track, if any?
7. Do providers receive report cards? Do you provide any incentives to providers/other staff for achieving certain metric goals?
8. Are any providers interested or certified in Lifestyle Medicine?
9. Does the clinic work with any social service or health promotion programs, for example, DPP, Reach Out and Read, etc.?

10. Does the clinic partner with any other agencies for various programs/services?
11. Is there any connection with local public health programs or services?
12. Are you or others familiar with Healthy NC 2030?
13. As you look at the Healthy NC 2030 metrics, which do you see as most relevant, and/or most likely to be collectible?
14. Do you have regular meetings/trainings for providers or other staff?

Table 2.

<u>Standardized SDOH Screening Questions</u>	
There are programs to help people with needs that can affect their health, but they aren't reaching everyone who may need them. Are there things you need help with?	
Food	
1.	Within the past 12 months, did you worry that your food would run out before you got money to buy more? (Y/N)
2.	Within the past 12 months, did the food you bought just not last and you didn't have money to get more? (Y/N)
Housing/Utilities	
4.	Do you have housing? (Y/N)
5.	Are you worried about losing your housing? (Y/N)
6.	Within the past 12 months, have you or your family members you live with been unable to get utilities (heat, electricity) when it was really needed? (Y/N)
Transportation	
7.	Within the past 12 months, has lack of transportation kept you from medical appointments, getting your medicines, non-medical meetings or appointments, work, or from getting things that you need? (Y/N)
Interpersonal Safety	
8.	Do you feel physically and emotionally safe where you currently live? (Y/N)
9.	Within the past 12 months, have you been hit, slapped, kicked or otherwise physically hurt by someone? (Y/N)
10.	Within the past 12 months, have you been humiliated or emotionally abused in other ways by your partner or ex-partner? (Y/N)
Optional to Add	
11.	Are any of your needs urgent? For example, I don't have food for tonight, I don't have a place to sleep tonight, I am afraid I will get hurt if I go home today? (Y/N)

RESULTS

Several important general findings were determined as part of the interview process and will be used in the subsequent development of this project over the next few years.

A summary of important findings include:

1. The practices generally had a larger number of providers, but limited access to support staff such as social workers, care coordinators, nutritionists, health educators or community health workers.

2. The practices largely serve Medicaid insured patients, thus highlighting the vulnerable population to be reached.
3. All practices utilize an electronic health record, though few are looking at population level metrics. Most are using them as a patient documentation tool only. Limited resources were available at the practices for data analysis and reporting.
4. The practices were in the early stages of creating report cards to measure health outcomes or adherence to prevention recommendations. Some of the practices were considering implementation of incentives for provider adherence, but only one was already providing financial incentives.
5. There were varying degrees of collaboration with social service or public health agencies, and integration of SDOH tools and referral options. Some had very robust population health approaches integrated with clinical care, while others were very limited. In general, where collaboration and integration were strong, there was a champion physician particularly interested in community health approaches who took the lead to promote efforts.
6. There was generally good interest by at least one or two providers at each practice to learn more about LM. In one practice, there was already a board-certified practitioner.
7. None of the practices were familiar with Healthy NC2030, or had only cursory understanding/knowledge of the initiative. All were open to learning more.
8. Most practices had inconsistent administrative meetings for providers in which to share best practices or provide training on educational topics of interest.

The pilot practices are currently collecting baseline data from their patients related to SDOH and lifestyle behaviors and metrics. Preliminary data from the baseline surveys is not available at this time and will be shared at the LEAN Conference in October.

DISCUSSION

To reduce costs and improve health outcomes, healthcare institutions in the United States needs to shift from reactive clinical treatment and management of chronic conditions to proactive and preventive medicine strategies. Knowledge and practice in the social determinants of health and lifestyle medicine can be an important catalyst for this much needed change. This project seeks to provide important SDOH and LM training to clinicians working with vulnerable programs across North Carolina in the CPP program, to help the state achieve the Healthy NC2030 objectives.

This pilot project is in its preliminary stages of planning and has identified important barriers to effective implementation of efforts to modify health services to focus on SDOH and LM. CPP practices have limited ancillary staff, such as nutritionists, care coordinators, health educators, etc., with important skill sets to assist patients with SDOH and to encourage individual behavior change. Strategies and funding streams need to be identified to help practices transform

service delivery to a more effective model. Linkage to public health and social service programs may provide necessary resources to assist patients more effectively. Collaborative efforts need to be promoted across the state to facilitate medical practices to interact with social service programs more seamlessly.

In addition, CPP practices are in the beginning stages of data collection, report card development and sharing of metrics with their providers. Many practices lack resources for data analysis, and therefore may face barriers to implementing this more population health approach to improving the health of their patients. Most of the practices did not have administrative time built into provider schedules to review data and provide time for educational opportunities. Value-based efforts will likely demonstrate the need to provide administrative time for such activities.

Most of the practices had not heard of HNC2030 and had limited understanding of LM. To improve health status of patient populations, there is a strong need to find ways to link delivery of medical services with public health efforts. Collaboration between these two related fields will provide opportunities to markedly improve health outcomes and reduce costs.

Reach Out and Read (ROR) and the Diabetes Prevention Program (DPP) were the two most commonly mentioned programs being implemented at the practices. Most practices have not partnered in any way with their local health departments, and many had not yet implemented the NCCare360 platform for social referrals. Therefore, significant opportunities exist to increase community engagement at the practices, in addition to the above-mentioned programs. Additional evidence-based programs for consideration are Tobacco Cessation services, Community-based Physical Activity Programs, Group Nutrition programs and Culinary Medicine efforts, and support of Community Gardens and Community Supported Agriculture (CSA) programs.

To improve the health of our communities, there is a compelling need to align medical education, research, and clinical practice in the US with principles of SDOH and LM. Healthy NC2030 provides an excellent framework to build a model where academia, health care systems, and community agencies all collaborate to transform our health care system into one that will empower families and communities to achieve new levels of health. It is imperative that physicians begin to think differently about the delivery of health care services in order to promote healthy populations and communities. Incorporating SDOH and LM interventions into the routine delivery of primary care services can positively influence the trajectory of health status in North Carolina and the US.

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Expanding Substance Use Disorder Education for Duke Medical Students

Nicole Helmke, MD

Introduction

Substance use is a major contributor of preventable death and disease in the United States. Cigarette smoking accounts for 480,000 deaths per year in the US (CDC Tobacco Free, 2021). From 2011 to 2015, an average of 95,158 alcohol-attributable deaths occurred per year in the US through a combination of acute causes such as alcohol poisoning, injuries and violence and chronic causes such as liver disease, cancer, and heart disease (Esser, 2020). According to CDC data, in 2018 almost 70,000 people died from drug overdoses, and nearly 70% of these deaths involved an opioid (Hedegaard et al, 2018).

Substance use is common in the United States, and among people older than age 12 surveyed in 2019, 60% had used a substance (tobacco, alcohol, kratom, or an illicit drug) within the past month (Substance Abuse and Mental Health Services Administration, 2020). Substance use occurs on a spectrum ranging between abstinence, moderate use, at-risk use, and disordered use. The diagnosis of a substance use disorder (SUD) involves a loss of control of the substance use, physiologic dependence, excessive time spent on substance use and/or significant problems caused by the substance, based on criteria from the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM V) (American Psychiatric Association, 2013). Among people 12 or older surveyed in 2019, the percentage of people in the United States with a substance use disorder (SUD) remained stable from the previous four years at 7.4% (20.4 million people), with 71.1% of these having an alcohol use disorder, 40.7% having an illicit drug use disorder, and 11.8% with both disorders (Substance Abuse and Mental Health Services Administration, 2020). With a significant proportion of the US population in need of specialized treatment for substance use disorders, this need has unfortunately remained largely unmet with minimal progress over recent years. Among 21.6 million people who needed SUD treatment in 2019, only 12.2% received specialty treatment, which was like prior years (Substance Abuse and Mental Health Services Administration, 2020).

Expanding access to treatment for substance use disorders is an important component of the public health response to the drug overdose epidemic. Providing formal education for medical students on the identification and treatment of substance use disorders is critical for their future practice. This is particularly true for alcohol, opioid, and tobacco use disorders as there are safe and affordable evidence-based medication-assisted therapies available to treat these conditions. According to the Association of American Medical Colleges (AAMC), as a response to this need, among the 131 accredited US medical schools, the number of educational events dedicated to addiction medicine increased by 200% from 2014 to 2019, and the footprint of opioids and addiction medicine within the overall medical school curriculum has grown from a range of 0.04%–0.11% in 2013–2014 to a range of 0.14%–0.22% in 2018–2019 (Blood et al, 2020). Among the five medical schools in North Carolina (Brody School of Medicine at East Carolina University, Duke University School of Medicine, University of North Carolina at Chapel

Hill School of Medicine, Wake Forest School of Medicine, and Campbell University), Duke is currently the only school which does not offer the 8-hour buprenorphine waiver training (“X waiver”) as standard course work for its medical students. Buprenorphine waiver training is available online to medical students without cost through the Providers Clinical Support System (PCSS) and NC Governor’s Institute (Providers Clinical Support System, n.d.).

Although medical schools have varying amounts of time and didactic material dedicated to addressing substance use disorders, there is an informal education to which students are consistently exposed throughout their medical training. This unofficial formative experience present in medical schools is often referred to as the “hidden curriculum”. The hidden curriculum includes the unspoken messages and attitudes that medical students absorb while rotating through hospitals and clinics and can conflict with the ideals that many students bring into their medical school journey (Lehmann et al, 2018). The hidden curriculum is transmitted both in clinical settings as well as in the cafeteria, team room and informal conversations that medical students witness between their mentors and teachers. It is the method for transmitting the culture of medicine through stories, symbols, rituals, and hierarchies, and can include both positive and negative messages, such as a physician taking extra time to comfort a grieving family or a team making negative comments about a frequently admitted patient (Lehmann et al, 2018).

It is not difficult to recognize the ways that the hidden curriculum about substance use is transmitted to medical students from early in their medical training. As the opioid epidemic has hit our country in recent years, the general public awareness and support for treatment of substance use disorders has also increased. In 2017, Americans preferred treatment over stricter punishments for people afflicted by SUDs (58% vs 26%) (APA, 2017). However, as medical students rotate through emergency rooms and hospital wards, they often encounter patients in their worst moments. They will work with residents, faculty and staff who are tired and often have less-than charitable views or optimism for the recovery of patients in the throes of active substance use. For example, a medical student rotating through the emergency room may hear casual remarks by staff about intoxicated patients “just coming in for a bed and turkey sandwich”, from ED providers skeptical about resources available for substance use treatment or the likelihood of a particular patient following through with rehab, or from psychiatry staff dismissing a patient’s suicidal comments because they are just “drunk-acidal” or “crack-acidal”. The tension created by balancing the needs of substance using patients and the necessity to manage limited resources was identified as a major theme in an ethnographic study of social stigma toward substance users in a busy county hospital emergency department (Henderson et al, 2008). Another study examining the negative shift in physicians-in-training attitudes toward patients with SUDs found that the belief that alcohol and drug-abusing patients overutilize health care resources increased during training (Lindberg et al, 2006). There was also a persistent belief throughout the years of training that providing SUD care is repetitive and detracts from the care of other patients, and that the satisfaction derived from providing this care diminished over years of training (Lindberg et al., 2006). A general decline in empathy has been observed in medical students throughout their training, which has been attributed to a combination of factors within the formal, informal, and hidden curricula of

medical training, specifically citing lack of positive role models and mentorship as one of the factors (Neumann et al., 2011; Newton et al., 2008). Another troubling aspect of the hidden curriculum is the lip service that is given to the impact of SUDs and the importance of offering treatment, which contrasts with the lack of exposure that students have to formal didactics or clinical rotations in addiction medicine. In most medical schools, there remains an education gap between the prevalence of patients suffering from addiction in all clinical settings and the number of hours of training in addiction medicine provided in the curriculum (Ayu et al., 2015). Regardless of whether students will go on to prescribe buprenorphine or treat addictions in their clinical practice, all future doctors will encounter patients with SUDs and would benefit from the opportunity to reflect on their personal histories, clinical experiences and biases that impact their views of substance use.

As a dual-trained both internal medicine and psychiatry, I can treat patients with substance use disorders in a variety of settings including primary care, the emergency department, outpatient psychiatry and inpatient medicine. I have obtained my buprenorphine X waiver and have experience working in an outpatient SUD clinic during my psychiatry training, prescribing buprenorphine for OUD as well as treating a variety of other substance use disorders. In addition, I have an educational interest in the knowledge and attitudes of medical students toward patients with substance use disorders. Having identified a need for additional SUD curriculum in the Duke School of Medicine curriculum, I sought to partner with the Department of Psychiatry and medical school Curriculum Committee to develop an additional SUD course in the clinical years.

Goal/Objective

The objective of this project was to develop additional didactic experiences for medical students in their clinical years that would help them to explore the historical and cultural contexts of substance use, reflect on their own experiences and biases toward patients with SUDs, and complete the buprenorphine waiver training.

This coursework will add to existing lectures covering pharmacology, diagnosis and treatment of substance use disorders in the first-year pre-clinical curriculum and the initial experience that students will have treating patients with substance use during their second year clinical rotations of psychiatry, internal medicine, obstetrics, pediatrics, and others. The aim of additional didactics, however, is to go beyond diagnosis and treatment to encourage students to engage in self-reflection and to explicitly address the hidden curriculum and biases against patients with SUDs that students encounter during their clerkships. With additional historical background, self-reflection, and experience interacting with patients with substance use disorders, students may feel more comfortable and empowered to treat and advocate for this important population in their future specialties. In addition, even students who will never write a prescription for buprenorphine in their careers may contribute to the general attitude of the medical profession toward patients with substance use disorders and can improve access to treatment simply by identifying patients in need of treatment, providing brief empathic interventions, and referring patients for treatment.

Methods

This project began by meeting with education leadership including the Director of Undergraduate Medical Education and Vice Chair for Education in the Department of Psychiatry to gain support for this new educational initiative. In addition, I held several meetings with the co-director of the first year preclinical Body and Disease course to learn how substance use disorders were covered in the preclinical years and to collaborate on ways to introduce a more longitudinal addictions thread spanning the four years of medical school (Table 1). I continued to give the lecture on Substance Use Disorders for the second-year psychiatry clerkship throughout the year and spoke to faculty from the Cultural Determinants of Health Disparities course about their course contents to avoid redundancy. Finally, I collaborated with the fourth-year residency boot camp (Capstone) course directors to identify opportunities for expanding SUD coverage within their course. Based on these discussions, there was robust support from both the medical school and the Department of Psychiatry for expanding the footprint of substance use disorder education within the existing curriculum, but barriers identified with regards to time in an already condensed curriculum.

Simultaneously, I was able to meet with representatives from the Mountain Area Health Education Center (MAHEC), the North Carolina Governor's Institute, and education leaders from other North Carolina Medical schools to learn how other medical schools and residency programs are incorporating waiver training and addictions education for benchmarking purposes.

In January of 2021, I requested permission from the Capstone course directors to include buprenorphine training in residency boot camp course for graduating medical students in spring of 2021, as most NC medical schools had indicated that this was where they had been able to incorporate waiver training in their respective curriculums. This was initially declined due to concerns: 1) that a mandatory lecture would not be applicable to all students, 2) that buprenorphine prescribing is too specialized for this stage of training, where the focus is otherwise on the basics of prescribing, 3) that time constraints do not allow for lengthy waiver training, as Capstone lectures are only 1-2 hours long and students would not be able to get credit for the 8 hours of coursework for waiver training. Instead, an overview lecture entitled "Management of Substance Use for Inpatients and Outpatients" was presented as a one-hour elective during Capstone, with a survey distributed at the end of the lecture to gauge student interest in future SUD didactics.

To continue to develop my own knowledge and clinical skill in treating substance use disorders, I attended the NC Governor's Institute Addiction Medicine Conference and gained support from clinical leadership to begin rounding on the hospital Opioid Use Disorder consult team in the following year and to begin to add buprenorphine patients to my outpatient primary care panel.

Ultimately, a substance use disorders elective was developed for third and fourth year students. Students will meet weekly for two hours in the evenings for eight weeks. This course

will help students to develop a foundational knowledge in the historical and cultural contexts of substance use and the impact of systemic bias on treatment and criminalization of substance use disorders, to explore the intersection of substance use with wide-ranging medical specialties, and to develop strategies to advocate for the care of patients suffering from SUD through treatment and harm-reduction strategies. Course participants will participate in buprenorphine waiver training and will engage in self-reflection and advocacy activities. Weekly didactic lectures are outlined below in Table 2 and specific School of Medicine Program Objectives addressed by this elective are summarized in Table 3.

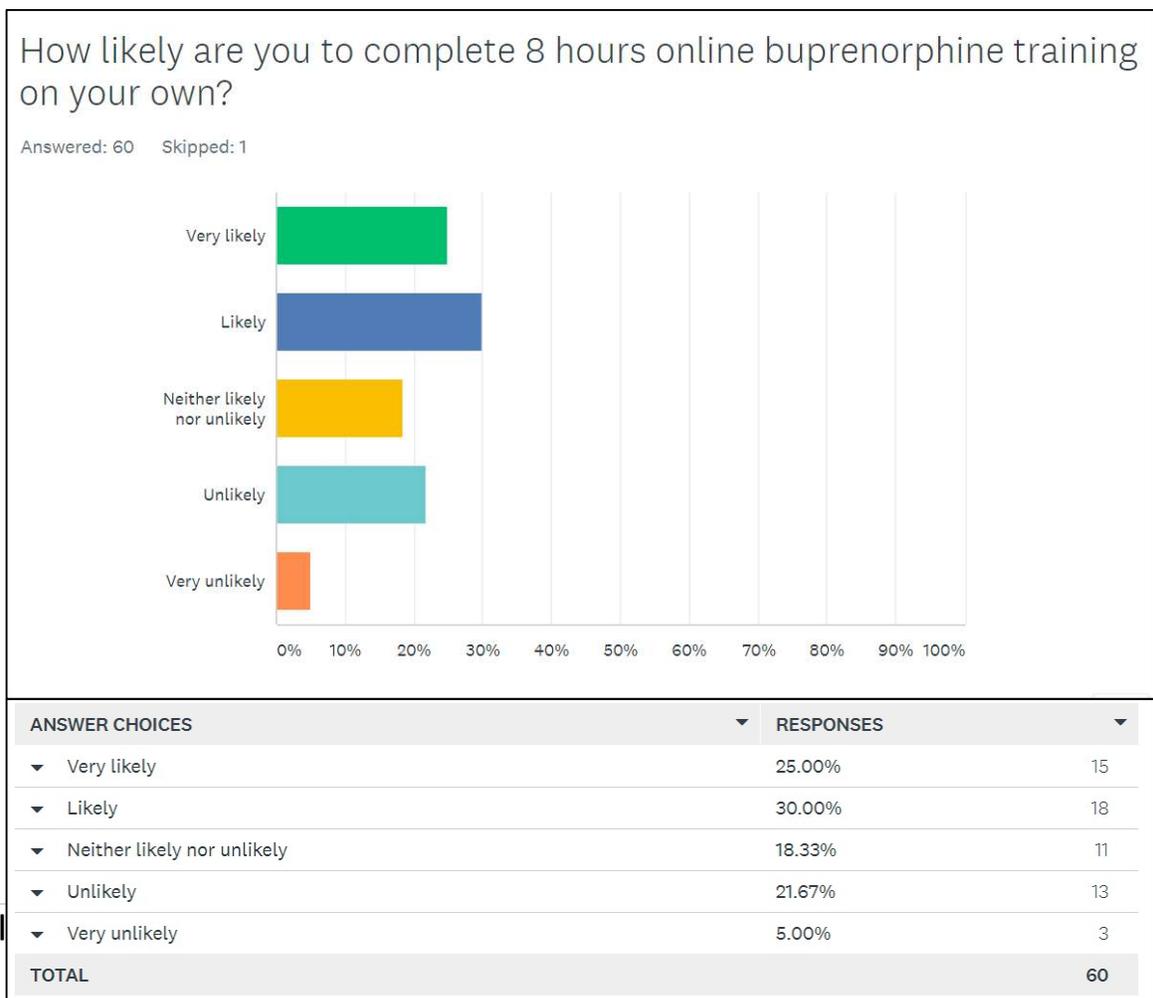
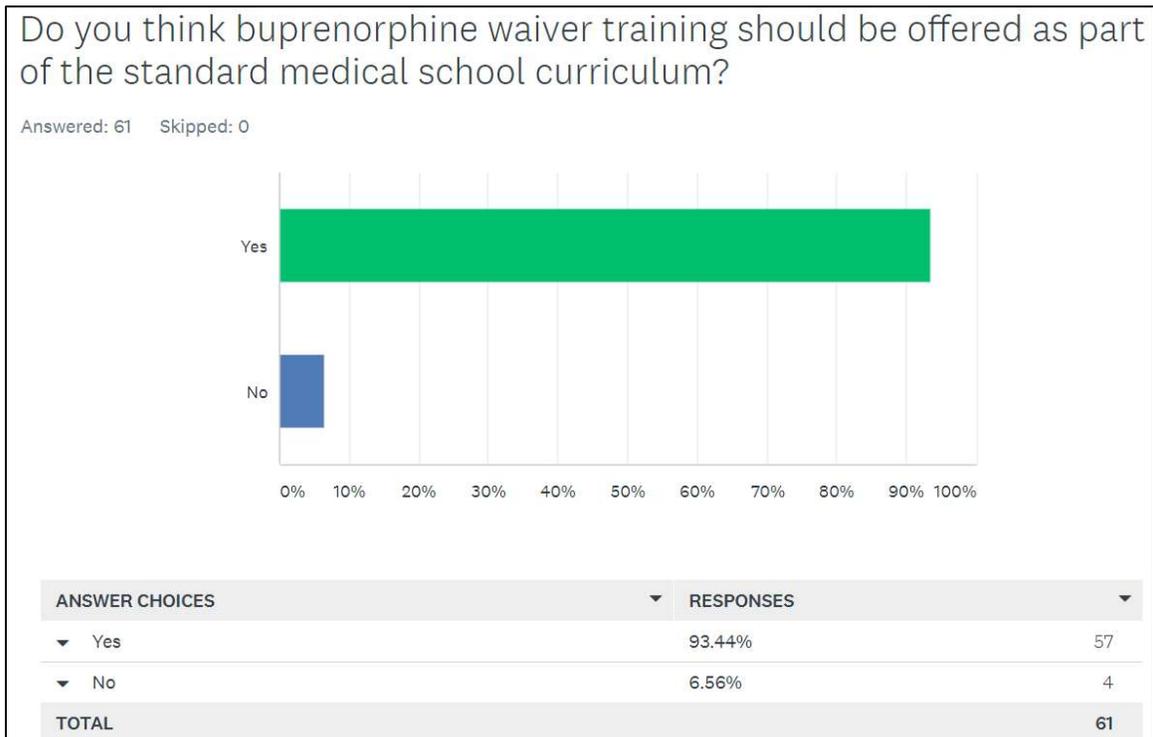
The course was proposed first to the medical school's Assistant Dean for Clinical Education and Associate Dean for Curricular Affairs who provided feedback on structure and course logistics. After gaining initial support, permission was gained from the smoking cessation clinic, opioid use disorder hospital consult team, Veteran's Affairs (VA) SUD clinic, and other individual outpatient buprenorphine prescribers for learners to rotate with them for a half-day during the elective to gain clinical exposure. Finally, the course proposal was presented to the SOM Curriculum Committee in August 2021.

Results

There was strong interest in additional SUD training among graduating fourth year medical students. Out of 112 graduating medical students enrolled in Capstone in 2021, 80 students (71%) freely chose to attend an elective lecture on the management of substance use disorders, and 61 of these students (76% response rate) completed a survey at the end regarding buprenorphine training. Of respondents, 93% (57 out of 61) felt that waiver training should be offered as part of the standard medical school curriculum (Figure 1). Comments included, "You could make an argument for putting the training at any point in the curriculum; I think the main point is that it should be put somewhere." When asked, "How likely are you to complete the 8 hour online buprenorphine training on your own?", 55% of students reported they were "likely" (18 out of 61) or "very likely" (15 out of 61) to complete the training on their own during free time after the Capstone course, while less than half (44%) responded neutrally (11 out of 61) or felt they were unlikely to complete it outside of standard course work (16 out of 61). Some comments included, "Hard to find time/motivation outside of required responsibilities," and "I would do it if it counted toward credit for Capstone or if it were required".

This data, along with the course proposal outlined above, was shared with the Duke SOM Curriculum Committee in August 2021 and approval was granted for the first session of an elective entitled "Cultural Contexts of Substance Use Disorder Treatment" to be offered in January 2022.

Figure 1. Survey results from fourth year medical students who participated in Capstone lecture “Management of Substance Use for Inpatients and Outpatients”, N = 61.



Conclusions

Through this project, I was able to meet with a network of educators in the medical school and form collaborations that will enable future curriculum development around substance use disorders. Ultimately, a new SUD elective will be introduced into the third and fourth year curriculum and we hope to continue the Capstone SUD experience for graduating fourth year students as well. The elective will allow several motivated medical students to participate in self-reflection, deepen their knowledge and skills around the treatment of substance use disorders, and complete their buprenorphine waiver training.

Some limitations of this project were identified. Although there is widespread support for additional educational opportunities around substance use within the medical school, there are many competing demands for time in the curriculum and because of this, buprenorphine waiver training remains outside of the mandatory standard medical school curriculum at Duke. Due to the nature of the elective which is structured as a discussion-based seminar with individual clinical experiences and personal reflection, enrollment will be initially capped at 15 students per session, and this will limit the impact to a relatively small proportion of motivated students. However, success of this course in a smaller didactic setting may lead to future interest in incorporating parts of the elective curriculum into the mandatory curriculum for all students, if demand for enrollment in the elective exceeds available space.

Future Directions

Next steps for the project will include:

- Recruiting guest lecturers and panelists for the course
- Continuing to develop and refine course content
- Formalizing clinical experiences

The first session of the new SUD elective will begin in January of 2022. A survey will be distributed to participants before and after the course to assess their attitudes and knowledge around substance use disorders as well as willingness to incorporate SUD treatment and/or buprenorphine prescribing into their future practice.

Based on partnerships formed during the development of this course, there are also plans to continue to work with the first year course directors and second year clerkship directors to coordinate and expand substance use disorder curriculum as a more cohesive thread throughout the Duke SOM curriculum.

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Appendix

Table 1. Current SUD-specific curriculum content in the first year pre-clinical Body and Disease course.

Content areas	Topics
Biopsychosocial	<ul style="list-style-type: none">• Lectures<ul style="list-style-type: none">○ Neurobiology of substance use disorders (SUDs)○ Biopsychosocial elements of SUDs○ Disparities in care provision and outcomes○ Addiction as a social justice issue○ Social determinants influencing risk and care access○ Opioid crisis across the US
Clinical	<ul style="list-style-type: none">• Lectures<ul style="list-style-type: none">○ Opioid pathways○ Opioid pharmacology○ Pharmacotherapy of opioid withdrawal and opioid use disorder○ Inpatient hospital management of opioid use disorder○ Alcohol pharmacology○ Alcohol use disorders○ Pharmacotherapy of alcohol use disorders○ Nicotine and marijuana pharmacology○ Tobacco use disorders
Application	<ul style="list-style-type: none">• Case-based exercise on opioid use disorder• Drug overdose simulation exercise• Motivational interviewing skill development• Motivational interview of a standardized patient
Patient-centered workshops	<ul style="list-style-type: none">• Workshops on long-term recovery and therapeutic alliance

Adapted from Muzyk et al., “Empowering preclinical medical students to provide holistic, equitable, and person-centered substance use disorder care” (unpublished manuscript)

Table 2. Curriculum outline by week for the new SUD elective “Cultural Contexts of Substance Use Disorder Treatment”.

Week	Lecture	Out of class work
1	<p>Overview: Introduction to psychotropic substances and their historical context</p> <p>The local scene: SUDs in Durham, and the relationship between substance use and social determinants of health</p>	<p>Sign up for ½ day clinical experience to be completed during 8-week elective, as possible, on one of the following services:</p> <ul style="list-style-type: none"> • VA SUD clinic • COMET (Hospital OUD service) • Smoking cessation clinic • Primary care MAT clinic
2	<p>Physicians and substance use: How our professions and personal histories impact us</p>	<p>Reflection paper: Personal experience / background with SUD, how it impacts student perception</p>
3	<p>Systemic bias, the criminal justice system, and the War Against Drugs</p> <p>Drug court and diversion programs: the criminal justice system today</p>	<p>Advocacy project: write a letter, email or phone call to an organization (med school, local / state government, etc.) advocating for an SUD issue or social determinant of health related to SUDs.</p>
4	<p>Safe prescribing of opioid medications – acute, peri-op, and chronic pain management</p>	<p>Patient perspective video: “SUD Training - A Lesson In Listening”</p> <p>https://www.youtube.com/watch?v=krTWhYBBNqY</p>
5	<p>Current issues in SUD: E-cigarettes, CBD and medical marijuana</p> <p>Naloxone and harm reduction programs</p>	

6	Review of SUD treatments: Alcohol, opioid, & tobacco relapse prevention	Buprenorphine waiver training: https://pcssnow.org/medications-for-addiction-treatment/waiver-training-for-medical-students/
7	Panel Discussion (ID, GI, primary care, anesthesia/surgery, OB, psych, EM subspecialists): Interactions with SUD in practice	Brief writing assignment: Reflect on a clinic experience with a patient using substance during medical school and what opportunities there were for improvement?
8	Case presentations from SUD services Course wrap-up	

Table 3. Duke University School of Medicine Program Objectives addressed by the new SUD elective course “Cultural Contexts of Substance Use Disorder Treatment”.

Duke University School of Medicine Program Objectives to be addressed by this Elective	Methods used to assist students in achieving objectives.	Methods by which students’ achievement of the objectives will be measured and documented.
Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health.	Lecture, ½ day clinical experience	Students are accountable for information presented in lecture. Attendance will be recorded. Students will present a case from their clinical experience.
Apply principles of social-behavioral sciences to provision of patient care, including assessment of the impact of psychosocial and cultural	Lecture	Students are accountable for information presented in lecture. Attendance will be recorded.

influences on health, disease, care seeking, care compliance, and barriers to and attitudes toward care		
Identify and perform learning activities that address one's gaps in knowledge, skills, and/or attitudes.	Self-reflection paper	Individual feedback on paper submitted to instructor.
Communicate effectively with colleagues within one's profession or specialty, other health professionals, and health related agencies.	Advocacy project	Completion of advocacy activity
Demonstrate accountability to patients, society, and the profession.	Self-reflection paper	Completion of paper
Advocate for quality patient care and optimal patient care systems.	Advocacy project	Completion of advocacy activity
Explain basic principles of human behavior.	Lecture	Students are accountable for information presented in lecture. Attendance will be recorded.

Burnout Amongst Dermatologists in North Carolina – Are We Just Scratching the Surface?

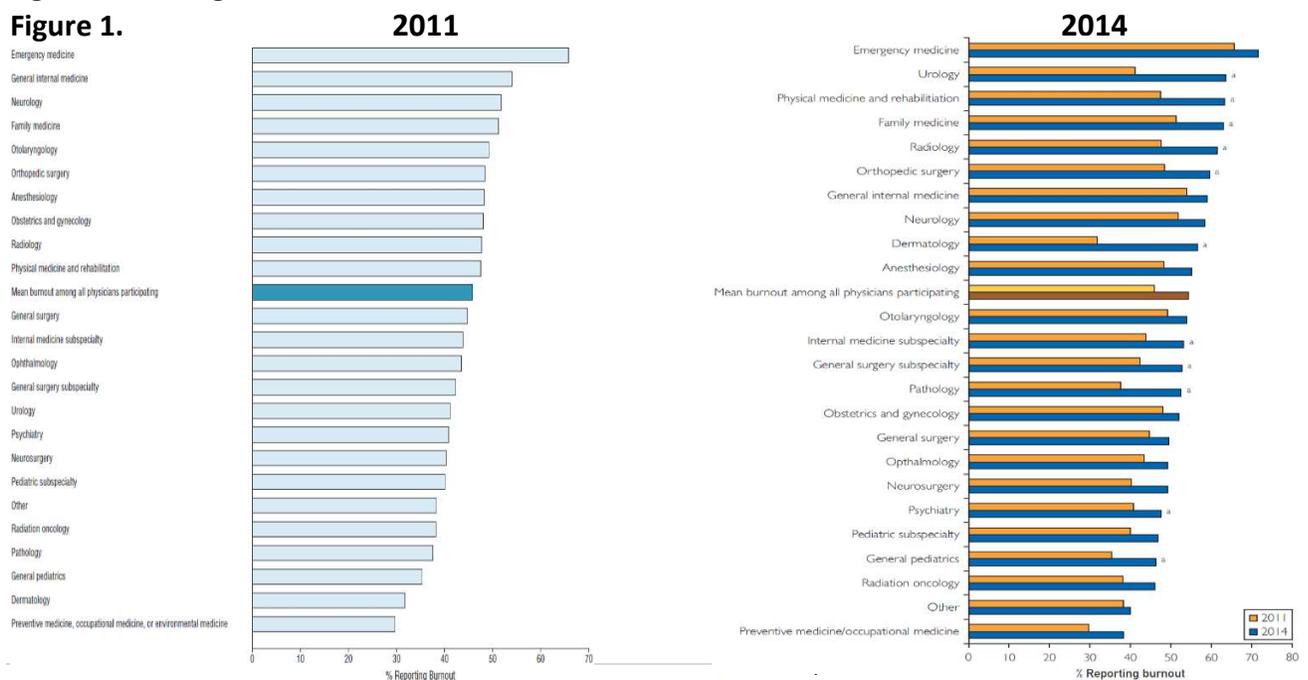
William W. Huang, MD, MPH, FAAD

Introduction

Burnout is a syndrome of emotional exhaustion, loss of meaning in work, feelings of ineffectiveness, and can cause depersonalization, a tendency to view people as objects rather than as human beings (Maslach, Jackson, & Leiter, 1996). It has become an epidemic amongst healthcare providers over the past decade and is important not only as it has effects on an individual’s personal life but also because of the impact on the quality of care providers can provide. Burnout has shown to be the cause of patient care errors and further impacts physician turnover (Dyrbye & Shanafelt, 2011). Specifically addressing physician burnout can potentially lead to fewer physician suicides, decreased physician turnover and associated costs to the healthcare system, as well as improved patient satisfaction and outcomes.

In 2011, Dr. Shanafelt and her colleagues surveyed physicians nationwide in a variety of medical and surgical specialties. They found physicians were more likely to have symptoms of burnout and to be dissatisfied with work-life balance when compared to a probability- based sample of working U.S. adults. At this point, dermatologists were well below the average and had the 2nd lowest rate of burnout amongst practicing physicians (Shanafelt et al., 2012). Fast forward just a few years later to 2014, the authors repeated their survey study and discovered the situation had worsened. Dermatologists were now amongst the top 10 specialties experiencing burnout, well above the average among all physicians, and had experienced the greatest increase (**Figure 1**) over time (Shanafelt et al., 2015). This is a curious finding since dermatologists typically have relatively few dermatologic medical emergencies to treat and modest working hours. Why the significant change?

Figure 1.



A recent PubMed search (8.30.2021) found over 20,000 unique articles on burnout when using the search term “burnout.” A PubMed search performed immediately afterwards using the search terms “burnout” AND “dermatology” revealed only 91 results. Not much is known in the literature regarding why so many dermatologists are experiencing burnout. One way to understand and combat burnout in dermatology is to identify which factors cause dermatologists specifically to experience this. As a practicing dermatologist in this state for over the past ten years and as a former North Carolina Dermatology Association President (NCDA) (2020), I wanted to better understand the problem of burnout amongst the NCDA membership and to work with burnout experts and the NCDA Executive Committee to find possible solutions to help those in practice. The project aims to explore possible explanations for this dramatic shift by measuring the prevalence of burnout, burnout specific symptoms, and drivers of burnout to find potential solutions to the problem. This is especially relevant during the COVID-19 crisis affecting all physicians. Physician burnout is likely to increase even further because of the pandemic, during which anxiety, depression, and insomnia amongst healthcare workers have increased.

Methods

After approval through our Institutional Review Board (IRB), an anonymous Research Electronic Data Capture (REDCap) survey was created based on the Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996). The survey asked questions assessing the prevalence and severity of burnout symptoms during the COVID-19 pandemic amongst dermatologists in North Carolina. In addition, participants were asked to describe the factors that contributed to burnout in dermatology in a free text format. Demographic information such as sex, age, full or part time work, and geographical region of their workplace was collected. With additional input from burnout experts from Wake Forest Baptist Health (Dr. Cormac O’Donovan) and the North Carolina Physicians Health Program (Dr. Clark Gaither), the survey instrument was further adjusted (**Appendix 1**).

After review, input, and approval by the North Carolina Dermatology Association (NCDA) Executive Committee, an invitation to complete the survey was sent to the general membership (**Appendix 1**). A reminder follow-up e-mail was sent one week later. The survey remained open for a total of two weeks.

Results

A total of 44 members of the NCDA completed the survey representing a response rate of approximately 10% (44 out of 423 total NCDA members). 29 respondents were in private practice and 15 respondents were in academic practice. 29 respondents identified working in a suburban area and 15 respondents identified working in an urban area. The average years in practice was 23.05 years with a range of 7 years to 47 years in practice.

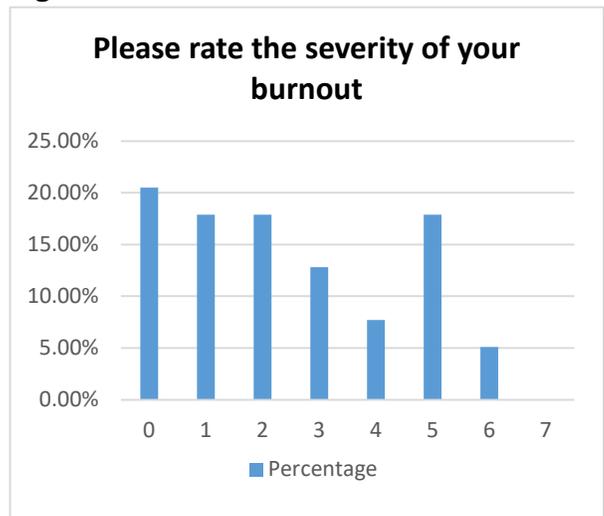
When asked “Do you feel burned out from work”, the members responded - Never (11.4%), A few times a year or less (29.5%), Once a month or less (13.6%), A few times a month (15.9%), Once a week (0.0%), A few times a week (25.0%), Every day (4.5%) (**Figure 2a**). When asked

“Please rate the severity of your burnout on a scale of 0 (none) to 7 (most severe)”, the members responded - 0 (I am not burned out) (20.5%), 1 (It does not interfere with my life) (17.9%), 2 (17.9%), 3 (12.8%), 4 (7.7%), 5 (17.9%), 6 (5.1%), 7 (It is so severe that I am thinking of leaving medicine altogether) (0.0%) (Figure 2b).

Figure 2a.



Figure 2b.



When asked, “Do you think the COVID-19 pandemic has contributed to your burnout?”, the members responded – Yes (55.8%), No (44.2%). When asked, “If you answered yes to the above question, what factors surrounding COVID-19 do you think have contributed to your burnout?”, the members responded - Fear of contracting COVID-19 (36.7%), Fear of exposing loved ones to COVID-19 (30.0%), Practicing medicine in a non-dermatological setting to assist overwhelmed specialties like internal medicine and critical care (6.7%), Feeling isolated from your colleagues (46.7%), Feeling isolated from your loved ones (23.3%), Inability to participate in hobbies because of social distancing requirements (43.3%), Finding childcare for your children (13.3%), Uncertainty about the future (56.7%), Concern about being laid off (0.0%), Reduction in your compensation (30.0%), Decrease in ancillary staff (43.3%), Reduction in protected time (20.0%), Addition of teledermatology duties (30.0%), Other (13.3%), COVID-19 has not impacted my burnout (13.3%).

Regarding changes made during the pandemic to clinic, members responded – Reduced clinic volume (65.0%), Reduced time in clinic (30.0%), Transitioned to virtual practice meetings (42.5%), Implemented teledermatology (82.5%), Provided PPE for staff (95.0%), Implemented COVID-19 screenings for patients (75.0%), Emphasized institutional mental health and support resources (32.5%), Cut back on ancillary staff (through lay-offs and/or furloughs) (40.0%), Laid off or furloughed physicians (0.0%).

Finally looking at the implementation of telemedicine, 82.5% of respondents stated they had started to offer teledermatology during the pandemic. Overall, 70% of respondents did not feel that teledermatology contributed to their burnout. However, 49% of respondents did not feel that teledermatology was an effective method of patient care.

Discussion

As mentioned in the introduction, burnout is a syndrome of emotional exhaustion, loss of meaning in work, feelings of ineffectiveness, and can even cause depersonalization. The main drivers of burnout typically fall into one of the following six categories that contribute to job related burnout - work overload, lack of control, insufficient reward, breakdown of community, absence of fairness, and conflicting values.

My previous research in 2019 with colleagues was done with a nationwide sample of dermatologists in academic practice. That research revealed that there are a variety of factors contributing to burnout amongst dermatologists including but not limited to: excessive documentation and time spent on the electronic medical record, lack of protected time for pursuing academic interests such as research or teaching, increased administrative demand for productivity causing a sense that institutions value finances over proper patient care and academic pursuits, bureaucratic tasks especially concerning insurance matters, and lack of support or appreciation shown by administrative bodies to the physicians (Dorrell, Feldman, & Huang, 2019).

In my opinion, burnout has been one of those epidemics amongst physicians that has largely been forgotten during the COVID-19 pandemic. For the past several years it was not possible to attend a medical education meeting without hearing a talk about burnout, resilience, or wellness. There is evidence that burnout amongst dermatologists is rising and rising at a rate faster than any other medical specialty (Shanafelt et al., 2015). The COVID-19 pandemic has only made this concerning trend worse. Burnout is an innate hazard of our profession and tends to be progressive in nature. Burnout will occur anytime and anywhere there is a major mismatch between the nature of the job and the nature of the person who does the job. Burnout is impossible to alleviate unless the underlying causes are correctly identified and addressed. At an individual level, dermatologists can nourish their physical, emotional, mental, and spiritual wellbeing. At an employer level, organizations can survey the workplace for the presence of the six major categories which lead to job related burnout. Providers often confuse stress and burnout, but they are very different. With stress the damage is primarily physical. With burnout the damage is primarily emotional. Burnout can lead to disengagement, feelings of helplessness/hopelessness, loss of motivation, anxiety, detachment, and depression. Physicians in general are already at higher risk for substance abuse and suicide, and burnout only compounds the issue.

The goal of this project was to identify the prevalence of burnout amongst members of the North Carolina Dermatology Association (NCDA) which represents over 75% of all dermatologists practicing in this state. COVID-19 has potentially added to the risk for burnout among dermatologists. Members who completed the survey experienced burnout from almost never (11.4%) to a few times a month (15.9%) to every day (4.5%). In addition, their overall severity of burnout ranged from none (20.5%) to mild (35.8) to moderate (38.4%) to severe (5.1%). 56% of respondents felt that the COVID-19 pandemic contributed to their burnout citing a variety of factors including - fear of contracting COVID-19 (36.7%), fear of exposing loved ones

to COVID-19 (30.0%), feeling isolated from your colleagues (46.7%), feeling isolated from your loved ones (23.3%), inability to participate in hobbies because of social distancing requirements (43.3%), uncertainty about the future (56.7%), reduction in your compensation (30.0%), decrease in ancillary staff (43.3%), and the addition of teledermatology duties (30.0%). A potential silver lining from COVID-19 has been bringing telemedicine to the forefront of medicine including dermatology. Most providers in our survey (82.5%) began offering teledermatology during the COVID-19 pandemic. Although most (70%) did not feel that teledermatology contributed to their burnout, about half (49%) did not feel like teledermatology was an effective method of patient care. Given the need to closely visually inspect and palpate the hair, skin, nails, and mucous membranes of a patient often with the aid of a dermatoscope, teledermatology may not be appropriate for many clinical situations.

The limitations of the project include a relatively low response rate (10% of members) and inherent bias with a voluntary survey study. Similar to many medical professional organizations, members associate the NCDA with high quality CME meetings (annual, summer) and statewide advocacy efforts. This is the first survey of its kind distributed to the general membership which could have accounted for the relatively low response rate. In addition, this was a voluntary survey with no financial incentive to complete and took approximately 10 minutes to finish which could have also contributed to lower engagement. The results of the survey were shared and presented at the most recent NCDA Executive Committee meeting (July 2021). As a leader within the organization, it was important for me to do this work and place it on the radar for the future of our organization as burnout is not going away. The results were well received by the NCDA Executive Committee with a commitment for possible future survey efforts. Specifically, on the survey when asked, "How can the NCDA better support dermatologic providers experiencing burnout?", no respondent gave a response. Moving forward, I hope to work further with the NCDA and the North Carolina Physicians Health Program to take a more detailed analysis of the data to come up with possible solutions to support dermatologists across this state. In addition, we hope to repeat this study at a later date/time to have comparison data to evaluate trends.

Conclusion

As a native North Carolinian, a practicing dermatologist, and immediate Past President of the North Carolina Dermatology Association, this project evaluating burnout among dermatologists in the state of North Carolina was particularly meaningful. Being able to work with burnout experts (Dr. Clark Gaither, Dr. Cormac O'Donovan) made our survey instrument more precise than my original research in 2019 when I surveyed dermatologists nationwide. Dermatologists in North Carolina experienced a wide range in both the frequency and severity of their burnout which is consistent with my past research. A repeat survey will help determine if this is improving, stable, or worsening. Physicians faced a variety of issues during the pandemic including reduced clinic time, reduced clinic volume, furloughed staff, and implementation of telemedicine. In particular, the vast majority of providers started offering

telemedicine during the pandemic. Despite many feeling that telemedicine was not an effective delivery method of patient care, most did not feel this was a contributor to burnout.

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Appendix 1.

Burnout Survey Invitation and Questions

Invitation



North Carolina Dermatology Association

Dear NCDA Membership,

The North Carolina Dermatology Association (NCDA) is performing a brief survey to evaluate the level of burnout and how burnout has evolved during COVID-19 amongst dermatology care providers in this state.

Please kindly consider participating in the below brief survey. We know that everyone is incredibly busy and we want to be respectful of your time. All responses are anonymous. Your participation is completely voluntary, but very much appreciated.

Thank you kindly in advance for your time, participation, and engagement. The more responses we receive, the better we will be able to understand burnout in our specialty in our state.

[Take the survey here.](#) [[ncmedsoc.org](#)]

We look forward to sharing what we learn about burnout in dermatology with you!

Be well. Stay safe. Hope to see each of you very soon at the [NCDA 2021 Summer Meeting](#) [[ncmedsoc.org](#)] taking place July 9 - 11 at the Omni Grove Park inn!

Respectfully,

NCDA Executive Committee

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This message is a service of the North Carolina Dermatology Association (NCDA)
[www.ncderm.org](#) [[ncmedsoc.org](#)] | [ncderm@ncmedsoc.org](#) | [Privacy Policy](#) [[ncmedsoc.org](#)] | [Opt Out](#) [[ncmedsoc.org](#)]

Questions

Please select your gender

Please select your age group

Please select the setting of your practice. (Select all that apply)

Which of the following best describes you? (Please select all that apply)

Which of the following best describes you? (Please select all that apply)

Which of the following best describes you? (Please select all that apply)

Which city/town do you primarily practice out of?

Please select the type of setting in which you practice

How many years have you been in practice?

Do you feel burned out from your work?

Have you become more callous toward people since beginning this job?

If you have experienced burnout in the past 12 months, which of the following signs or symptoms of emotional exhaustion have you experienced? Check all that apply.

Please rate the severity of this burnout symptom, chronic fatigue, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, insomnia, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, forgetfulness/impaired concentration and attention, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, physical symptoms, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, increased illness, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, loss of appetite, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, anxiety, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, depression, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, anger, on a scale of 1 (least severe) to 7 (most severe)

If you have experienced burnout in the past 12 months, which of the following signs or symptoms of detachment have you experienced? Check all that apply.

Please rate the severity of this burnout symptom, loss of enjoyment, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, pessimism, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, isolation, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, detachment, on a scale of 1 (least severe) to 7 (most severe)

If you have experienced burnout in the past 12 months, which of the following signs or symptoms of lack of accomplishment have you experienced? Check all that apply.

Please rate the severity of this burnout symptom, feelings of apathy and hopelessness, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, increased irritability, on a scale of 1 (least severe) to 7 (most severe)

Please rate the severity of this burnout symptom, lack of productivity and poor performance, on a scale of 1 (least severe) to 7 (most severe)

How often do you feel overloaded with work?

How often do you feel you lack control in your work life?

How often do you feel you are insufficiently rewarded for your work?

How often do you feel there is a breakdown of community in your work environment?

How often do you feel there is an absence of fairness at work?

How often do you feel your values conflict with others (co-workers, patients) at work?

If you have experienced other signs or symptoms of burnout in the past 12 months that were not represented in the previous 3 questions, please describe those signs/symptoms.

Please rate the severity of your burnout on a scale of 1 (least severe) to 7 (most severe)

Do you think the COVID-19 pandemic has contributed to your burnout?

If you answered yes to the above question, what factors surrounding COVID-19 do you think have contributed to your burnout?

If you answered "other," please describe what COVID-19 factors you believe have contributed to your burnout.

Has your clinic/practice implemented any of these changes during the pandemic?

Please describe any other notable clinic/practice changes in response to the pandemic that have affected your workflow or lifestyle.

Have you felt supported by your clinic/practice during the pandemic?

If you answered "no" to the above question, please describe why you have not felt supported by your clinic or practice during the pandemic.

Have you participated in teledermatology in response to the COVID-19 pandemic?

If you answered yes to the above question, do you believe teledermatology has contributed to your burnout?

If you answered yes to above question, how greatly do you think teledermatology has contributed to your sense of burnout?

In your opinion, has teledermatology been an effective method of patient care during the COVID-19 pandemic?

Please describe what benefits you believe teledermatology has for both clinicians and patients.

Please describe any limitations you have found with teledermatology in regard to clinician workflow or patient care.

Do you plan to continue using teledermatology for patient care in the future? More than one answer may be selected.

If you could revisit your career, would you choose to pursue the same healthcare provider role (physician/PA/NP) again?

If you could revisit your specialty within medicine, would you choose dermatology again?

How can the NCDA better support dermatologic providers experiencing burnout?

GET IN MY BELLY!!! Nothing After Midnight? Time to Make a Change

Amy Virginia Isenberg, MD, MPH, FASA

Introduction

Nil Per O's, one of our favorite Latin phrases.

“NPO after midnight” the night before surgery has been a standard order for years. Anesthesiologists love empty stomachs as much as surgeons love clean, empty bowels. Traditionally, patients starved from midnight until operation time or lied about their NPO status, unknowingly setting themselves up for an inadvertent aspiration event with ICU admission and high mortality (Mandell 2019).

The pre-operative suite was not a happy place. Our patients were angry. They were hangry. Or conversely, they were fibbing about their NPO status, chock full of food and beverage because they just couldn't go without sustenance. Many (understandable) rule breaking excuses are given: diabetes, nausea, or simply incessant tummy rumblings that needed assuaging. Patients suffered from pre-op headaches. They had pronounced cases of the grumpies. Standard IVs were tricky to place in patients dried up like hungry little raisins. When a case was scheduled for the afternoon or ended up late in the evening because of emergency delays, I would be fearful and cautious when uttering those words, “So when was the last time you had something to eat or drink”? With hatred in their starving eyes, patients would growl at me “NOTHING SINCE MIDNIGHT”!!!!!!!

This year it was finally time for a change. It was time to reevaluate the NPO guidelines and modernize the rules to reflect current research and updated protocols. Times have been a changing, but your traditional anesthesiologist is often hesitant to deviate from the old accepted tried and true, “if it ain't broke don't fix it” practices of medicine. Physicians are a little more experimental in Europe (they get beer at lunch) and we were starting to see evidence of success in their patient populations regarding NPO changes.

Thankfully in this information age we share data and experiences faster and better than in the past. Literature has been popping up in the last few years about liberalizing ye old NPO rules successfully. After lots of studies in Europe (NICE guidelines) and the USA, anesthesiologists were convinced the new NPO rules could work, and the American Society of Anesthesiologists consolidated the evidence-based findings and updated their practice guidelines in 2017. Convincing the surgeons to change their practices (which is sometimes tricky) was being helped along by the new evidence-based ERAS (Enhanced Recovery After Surgery) protocols which had at their heart encouraging early bowel function.

The purpose of my project was to help our anesthesia department bring the modern NPO guidelines into our protocols in the New Hanover Regional Medical Center system. Not just modernizing for the sake of following the new trends, but to be in line with the now widely

accepted ERAS guidelines to help patients recover better and more quickly after surgery; and secondarily to hopefully improve the patient surgery experience.

Methods

The first order of business was to establish a new NPO rule. We wanted this rule to be easy for medical folks and patients to understand and to implement into real life practice. We knew we wanted to maintain the no FOOD per o's after midnight (to decrease the chance of a particulate aspiration/gastric acid aspiration) but allow patients to DRINK CLEAR LIQUIDS up to two hours before surgery since clear liquids empty from the stomach quickly.

We conferred with representative nurses and physicians across surgical specialties. We wanted to know what their pros and cons were for changing the NPO rule and what each surgical line (colorectal, vascular, pediatric, etc.) thought were optimal goals. We were able to piggyback on some of the already implemented ERAS protocols in the surgical lines which encouraged carbohydrate rich beverages prior to surgery to achieve our goal of novel NPO rule implementation.

We developed NPO rules to be used for adult populations and for pediatric populations. Our basic NPO dictum was for adults: No food after midnight but you can drink water ad lib up to two hours before surgery. For the pediatric population it was the same idea, but water amounts were quantified based on child age/weight because, you know, kids are not just little adults. (See appendix)

We chose water as our clear liquid beverage because that is very straight forward, and everyone has access to water. No one accidentally adds cream or pulp to their water. We didn't want to cause surgery delays because someone just can't understand what a "clear beverage" is. The GI guys don't like red liquids. By stating "only water after midnight" we reduce the chances of a Hardee's sausage biscuit being accidentally slipped into a patient. ONLY WATER.

We are social people so we made it a priority to speak with the surgeons and their staff at medical meetings as well as in the hospital lounge to chat about the NPO change and let them know what we would be telling our shared patients. We made efforts to disseminate the NPO changes with standardized language (Appendix 1) to the surgery scheduling offices and the pre op call centers. We would even inform the medicine doctors about the changes when we could catch them between fancy coffees and COVID-19 patients.

We needed a lot of help updating and uploading the new official NPO protocols into the order sets (Appendix 2 and 3). It takes a while to make changes in the EPIC system so that the NPO rules are enacted for floor patients as well as outpatients and all the other special patients that don't fall into those categories. Therefore, the updated NPO rule switchover was implemented first at the small outpatient surgery centers so that the information dissemination could be better controlled and monitored. We wanted to know if there would be roadblocks or problems before the official roll out to the big hospital.

Results

The project was accomplished and the new NPO rules were implemented. We had to make small changes the NPO directions during the early small surgery site rollout due to unforeseen issues. Because my first impulse was to design a rule that was “No food after midnight; you can sip water until you get in your car to come to the hospital”, I did not imagine that an adult would want to know EXACTLY how many ounces of water they could drink, so we needed to quantify that (no more than 24 ounces). The pediatric rules thankfully were created by our pediatric anesthesiology colleagues, they fussed amongst themselves and then delivered unto us their guidance, with age-specific maximum ounces, of course.

The call centers often gave the old NPO after midnight advice. We discovered this when patients would complain the morning of surgery that they had not had anything to eat or drink after midnight. We would try to track down the guilty call center for reminders about the change. The language was standardized across hospitals.

Patients objectively seemed happier with the new rule. When queried by the pre op nurses about whether they liked the updated NPO guidelines, patients always said yes. No official poll or survey was taken because in the realm of possibilities, I cannot think of anyone who would like to starve and be unable to wet their whistle prior to surgery. I just did not imagine a “no” answer was possible, nor have we yet encountered any. Also, I did not have the wherewithal to implement that tool as I was already calling in too many favors by asking for changes. We did not receive any complaints related to the updated guidelines after they had been implemented.

Conclusion

The instructions for the KIPL project were very broad and inspiring. However, in the time of COVID-19 and my overwhelming (at times) family responsibilities, I knew that this year I could not tackle and achieve my goal of removing private equity from medicine. (I will be glad to help someone else!)

I chose this NPO modernization project because I wanted a project with a concrete goal and a clear path to achievement. It was a necessary, timely and important change. It helps patients and my colleagues. It is a change that everyone loves, and we have had no negative outcomes, only small criticisms that have helped make implementation easier and clearer. No one got angry or yelled at me for trying to make this pre op adjustment.

NPO after midnight was a hard habit to break for the ones that give the order. It is very ingrained in our medical culture. However, it took patients no time to adapt. They are much happier and feel better prior to their procedures. I think the pre op surgery staff is happy with the new rules as well. Patients seem less edgy and the veins a little plumper for those IVs. Do we need a formal survey to assess and quantify these changes? Be my guest, but in my opinion, no. This change was a whole-hearted win-win. Updating the NPO guidelines to be more

favorable and humane to patients does not merit a study at this point because it is already well studied, and it just makes sense. I bet someone would like to know if it “increased patient satisfaction” ...I will leave that for someone else to go win some bon points with the hospital surveyors.

I learned a few things besides the difficulty in breaking ingrained habits. The hospital system is large, and each site does things a little differently, so I have to pay attention to that and respect their customs, culture and boundaries. Everyone has an opinion...listen damn it. The things that I think are simple and readily apparent (duh don't go crazy guzzling water before surgery) are not always so and I need to figure out why and fix the problem. I am bossy and had to modulate that. It takes a village to make a change. Encourage all your friends and their friends to get on board. Talk to all the types of medical staff because they want to know and to help. Get the message out clearly and often. Computer order sets are tricky to change implement so be nice to the IT guys and delegate this to someone who speaks computer. Our ERAS coordinator is the best in the world and the heart of all our good changes to help patients recover from surgery and save money for the hospital. Thank you, Kim, you are our sustaining force.

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Appendix

1. Patient Instruction NPO Guidelines:

“Nothing to eat after midnight the day before your surgery. This means NO food, gum, hard candy, use of tobacco products or e-cigarettes.

After midnight, you may have one bottle (12 ounces) of WATER per hour for a maximum of 2 bottles (24 ounces) up until 1 hour prior to arrival time for surgery.”

2. Adult NPO order set:

3. Pediatric NPO instructions:

MED (My Education & Diagnosis) School for Patients: Interactive Digital Platforms for Patients to Better Understand Their Diagnosis and Engage in Their Medical Care

CD Jarrett, MD, FAAOS*

Abstract

Background. Patient education continues to be an important aspect of medical practice and has been shown to coincide with improved outcomes, higher quality, and decreased overall cost of care. In search for more information, a large percentage of patients seek medical knowledge from the Internet. Unfortunately, several studies report that a large percentage of online medical information is inaccurate or deficient. As a result, patients can become more confused and frustrated with their lack of understanding of their medical diagnosis. Online interactive small group sessions directed by licensed medical experts are a potential adjuvant resource for both patients and providers alike. This project piloted one such program in attempts to validate its viability and effectiveness.

Methods. An interactive small group online lecture series termed M.E.D. (My Education & Diagnosis) School for Patients was piloted. The program created a tiered curriculum specifically geared for patients of varying baseline knowledge and interest of their medical diagnosis. Patients were invited to participate with a trial session based on similar recent medical diagnoses. A questionnaire was conducted with participants and compared to a control group.

Results. All participants admitted to regularly using the Internet to research medical information. None of which felt very confident that the information they found was accurate. None of the participants intentionally discussed online information with their medical provider. Forty percent of participants felt that they had a good understanding of their diagnosis prior to the session compared to 80% afterwards. Prior to the session, 60% of participants stated that they would regularly participate with small group educational lectures compared to 80% afterwards.

Conclusion. Customized and interactive small group online educational sessions can be a supplemental resource for both patients and providers to improve patient education. Further study is needed to maximize the efficacy of this medium.

Introduction

Patient education is a critical aspect of the practice of medicine that directly impacts prognosis, outcomes, and cost of care^{1,2}. The modern approach of medical practices has transitioned from paternalistic to patient centered. With this shift, patients are required to be equal and willing participants in their medical decision-making³⁻⁵. A patient that possesses an improved understanding of their medical diagnosis may likely be more engaged in their care, have a higher compliance rate, lower complication rate, and lower overall cost of care^{1,2,5,6}.

With the transition to increased patient engagement, providers are being asked to elevate patients understanding of their medical diagnosis as well as the science of their treatment options^{1,2}. Unfortunately, providers are being asked to perform this task with in an ever-diminishing amount of time. This often leads to patients leaving their medical appointment with an incomplete understanding⁴. Consequentially, enthusiastic patients will find their way to the Internet⁷⁻¹⁰. Forty percent of Americans use the Internet to search for health and medical information¹¹. Unfortunately, published studies report a high percentage of inaccurate or deficient information of online medical information^{12,13}. As a result, patients return back to their next medical appointment in need for even more time to clarify disinformation and re-education; thus perpetuating the cycle¹⁴.

Online interactive medical education platforms, for patients, taught by medical experts might be beneficial avenue to break this cycle. This platform can be a resource to engage patients with accurate well-taught topics, for medical providers to supplement their limited time, as well as for insurers to improve compliance and outcomes. This project attempted to develop and test a prototype for patient-centered small group collaborative digital lecture series. Patient experience, outcome scores, and matriculation rate will be evaluated and compared to control cohort. The findings will allow broader application and usher in additional options for patient education.

Methods

A digital platform tiered lecture series [**M.E.D.** (my education and diagnosis) **School for Patients**] will be prototyped with an administered questionnaire to illicit feedback from participants and a control cohort (n=5).

Procedure

Each lecture is designed to be scientific-based small cohort of patients with similar diagnosis. Patients will start with basic 101 introductory lecture classroom and gradually progress to more in depth lectures to match their comfort level and personal interests. Each group lecture will be limited to 5-10 participants and average approximately 45 minutes in length. The lecture will start with a 15-minute formal didactic by a medical expert covering the pathophysiology of the topic. The initial didactic format will center with a traditional “chalk –board” type lecture. The next 15 minutes will cover the scientific background of treatment options. The final 15 minutes will be a question/ answer period. Participants will be encouraged to engage throughout the discussion. The option for anonymous questions will be allowed through a facilitator.

During the initial pilot phase, a formal questionnaire was administered to the participating patients and a control cohort including the following questions:

1. Do you have a good understanding of your diagnosis?
2. Do you research information about your medical diagnosis on the internet?
3. Do you have a high confidence that the online information you find is accurate?

4. Do you intentionally bring information you find online with you to your doctor's appointment?
5. Would you participate with a small group educational lecture series conducted by qualified medical professionals?

This information was elicited before/ after the pilot session for the participants and before/ after their doctor's appointment for the control cohort.

With the pending next phase of this pilot program, in-depth semi-structured interviews were conducted using an interview guide. The interview guide was designed with the focus on patient perspective on education material, platform, and engagement. Participants had freedom to express views and experiences in their own words and diverge from the interview guide. Interviews began by asking participants to share their expectations, experience, and recommendations on acquiring health information from expert sources. The simultaneous process of generative data and analysis allowed themes to direct continued data acquisition. (15)

Results

Prior to the pilot session, 40% of participants felt that they had a good understanding of their diagnosis. After the session, 80% felt that they had a good understanding. Prior to the session, 100% of participants use the Internet to research information on medical diagnosis. None of the participants felt very confident that the information they found online tended to be accurate. None of the participants intentionally bring online information to their doctor's visit. Prior to the session, 60% of participants would participate with small group educational lectures conducted by qualified medical professionals. After the session, 80% of participants would participate in similar sessions.

Prior to their doctor's visit, 20% of the control group felt that they had a good understanding of their diagnosis. After their visit, 40% felt that they had a good understanding. Prior to their doctor's visit, 80% of the control group uses the Internet to research information on medical diagnosis. Twenty percent of the control group felt very confident that the information they found online tended to be accurate. Twenty percent of the control group intentionally brings online information to their doctor's visit. Prior to their doctor's visit, 40% of participants would participate with small group educational lectures conducted by qualified medical professionals. After their doctor's visit, 60% of participants would participate in small group educational sessions.

Discussion

Patient education continues to be an important aspect of modern medical care^{1,2}. Providers are no longer charged with sole decision making for their patients but must encourage active patient participation¹⁻⁵. (This leveling to collective decision-making has resulted in two effects. In one aspect, society has responded with an insatiable thirst for medical knowledge⁷⁻¹¹.)

Unfortunately, the Internet feeds this craving with volumes of easily assessable inaccurate or incomplete information^{12-14,16,17}. In a national survey, Baker and colleagues reported that 40% of Americans use the Internet for advice on health and medical information¹⁶. A third of the respondents acknowledged that the information they found online impacted their medical decision making¹⁶.

The innovative nature of medicine in our state has encouraged providers to become more efficient in diagnosing and treating patients at a relatively expedient pace. Unfortunately, this can be at the detriment of adequate face time with patients. As physicians are asked to see an ever-increasing number of patients over a diminishing amount of time, these diverging objectives grow further apart. As a result, many patients go home without a clear understanding of their diagnosis and why their treatment is so important⁴.

In this preliminary work, a pilot program [M.E.D. School for Patients] was implemented to provide patients with a small group interactive educational session to supplement their medical care. After session, more participants expressed a better understanding of their diagnosis. Most participants in the pilot session as well as patients in the control group use the Internet as a source of medical information. However, most did not feel very strongly that the information they found was accurate. Interestingly, most participants and control patients did not intentionally bring information they found online to discuss with their medical provider. More participants in the session and the control group expressed an increase understanding of their diagnosis after the pilot session and after their doctor's visit, respectively. More also expressed interested in participating with possible small group interactive lectures in the future.

Patients now, more than ever, truly desire to better understand their body as well as the science behind their proposed pathology. This quest unfortunately leads to a domino effect of online misinformation, skepticism of their diagnosis, poor compliance for their recommended treatment, and many more questions for their provider for which the provider may not have the time to answer adequately^{14,18,19}. Helft et al. reported an increasing amount of time was required by Oncologist to specifically address and clarify patient acquired online information¹⁴. Murray and colleagues found that 85% of physicians report patients routinely bring in online information to the visit¹⁸. Approximately 40% of physicians stated that the visit was less productive as a result¹⁸.

To address this issue, more collaborative arrangements between our patients, medical provider, and insurers that support regularly scheduled small classroom, intimate chalkboard lectures with question/ answer sessions are needed. Historical data on effectiveness of didactic lectures and digital information for patient education tend to be inconclusive. This might be a result from the difficulty of prior attempts to adequately match with a patients' comprehension or interest level. However, the patient-physician relationship has evolved over the past few decades. More patients seem to be interested in learning the "science" of medicine. With the advances of on-line classroom technology and mediums, medical providers can educate, support, and motivate patients in a collaborative environment without the intimidating forum of a lecture hall or medical office.

These collaborative arrangements can be a win/ win/ win model. Insurers realize that an informed patient leads to better outcome and lower cost thus may be incentivize their customers to participate and may be willing to provide resources to those that lecture. Patients may be less likely to feel the need to go to invalidated online resources/ social media/ chat boards to understand their diagnosis and may be more engaged with their provider's treatment plan. Also, providers may find that the time constrained patient visits can be more fruitful with this resource readily available.

Our practice is currently planning on continuing our program with an annual rotating curriculum. We have administrative staff and providers engaged in the program. One anticipated barrier is gaining appropriate investment with insurers. With utilization of currently available quality metrics, we hope to provide objective data to them to bridge any perceived gaps in proof of concept.

Conclusion

Many patients want and are encouraged to have an improved understanding of their medical diagnosis. Currently, medical providers may not have sufficient time or resources needed to adequately do so. Interactive small group tiered lectures appear to be an effective adjuvant resource to supplement the medical providers clinic visit and provide reliable accurate information for patients. Further investigation is needed to identify how best to improve this modality and incorporate them into a routine workflow.

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Transportation of Patients During a Mental Health Crisis

Michelle Rose Metzler, PA-S

Introduction

In any given year, one in five adults in the United States has a diagnosable mental disorder and 1 in 25 adults has a serious mental illness (U.S. Department of Health and Human Services [DHHS], 2017). The involvement of law enforcement in transportation of people experiencing a mental health crisis has the potential to lead to misperceptions that people with mental health disorders are violent. According to the American Psychiatry Association (n.d.), “people with mental illnesses are no more likely to be violent than those without a mental health disorder. In fact, those with mental illness are 10 times more likely to be the victims of violent crime.” Furthermore, people with untreated serious mental illness are 16 times more likely to be killed during a law enforcement encounter than other civilians and 25% of fatal law enforcement encounters involves an individual with serious mental illness (Fuller, n.d.).

These statistics and the research to be presented suggests:

- Community members and patients with mental health diagnosis are not more violent
- Law enforcement involvement is inversely associated with safety
- Use of law enforcement is not best practice and does not appear to encourage more people to seek care
- There is no standard of transportation for individuals experiencing a mental health crisis

The current approach to crisis care in mental health is patchwork, delivers minimal treatment for some people and leaves many to fall through the cracks (USDHHS, 2020). This often results in “multiple hospital readmissions, life in the criminal justice system, homelessness, early death and suicide (USDHHS, 2020). In the setting of our current haphazard approach to mental health crisis care, the Substance Abuse and Mental Health Services Administration (SAMHSA, 2020) created a Best Practice Toolkit as they recognize that our country’s approach to crisis mental health care must be transformed. SAMHSA (2020) acknowledges that “in too many communities, the “crisis system” has been unofficially handed over to law enforcement” and recommends the use of Mobile Crisis Team services in lieu of transportation by law enforcement. Best practice guidelines noted by SAMHSA (2020) for mobile crisis teams are to respond, “without law enforcement accompaniment unless special circumstances warrant inclusion in order to support true justice system diversion.”

As previously stated, the current approach to mental health crisis care is patchwork and this also includes transportation. There is no set federal standard of transportation during a mental health crisis. This leads to differences from state to state and even within states. North Carolina encourages alternative transportation use, but there is no law stating that alternatives solutions to transportation be used. There are 7 different Local Management Entities (LME) that are used

and even within those LME's the source of transportation during mental health crisis varies (Kinsley, 2019).

If community members and patients with mental health diagnosis are not more violent, involvement of law enforcement is inversely associated with safety for both parties and the recognition of handing over mental health crisis care to law enforcement is not best practice, why is the use of law enforcement being used as the main means to transport our patients and loved ones to the care they need?

The goal of this project is to understand why we are using law enforcement for mental health transportation and what practices would be better, more humane and in alignment with how we treat non-mental health crises. I chose this topic because during my behavioral medicine rotation with psychiatry consult in a North Carolina (NC) emergency department (ED), I was surprised to learn that law enforcement, often with use of handcuffs, is used for mental health crisis transportation not only to the ED, but also for transfer of mental health patients from the ED to much needed inpatient care. An ED psychiatric evaluation unit (PEU) is meant to serve only as a 24-hour safe area for evaluation before the patient is discharged to inpatient care, outpatient care or home. Patients in the PEU repeatedly expressed confusion, angst and anger at extended time in the PEU and use of law enforcement in their care and transportation. It seemed the use of law enforcement only further traumatized these patients. Furthermore, since many patients lacked support systems and health insurance, already traumatized human beings were being involuntarily committed (IVC) and often held while being medically and/or physically restrained for days or even weeks in the PEU (Nicks & Manthey, 2012).

Methods

I used key informative interviews (KIIs) via phone or Zoom. My goal was to connect with a minimum of fifteen differing informants by June 30, 2021. A diversity of informants was chosen, including mental health agency representatives, community residents and leaders, health care providers, professors, and law enforcement officials. Seven of the fifteen informants selected were interviewed with each interview scheduled for 30-60 minutes. Interviews were designed to try to answer the main broad question of "why are we using law enforcement for mental health crisis care?"

The UCLA Center for Health Policy Research (n.d.) provided useful steps on developing a script to perform the KIIs. The tools provided helped to determine what information to share with informants and collect from them, including creating an introduction to my project and formulating additional questions. The background information collected during the process also helped me to formulate additional questions. These questions were:

- Is the use of law enforcement necessary for safety reasons?
- Is the use of law enforcement best practice for care of patients during a mental health crisis?
- What are the effects of using law enforcement during a mental health crisis?

- Do you believe there is a need for alternative transportation solutions? If yes, what solutions do you propose?
- What can health care providers do to improve the care provided during a mental health crisis?

The scripted I created asked key and probing questions that went beyond the interview questions. Time during the interview was also reserved for the key informant to provide any additional information or comments. Before ending the call, an attempt was made to briefly summarize all the information obtained from the informant. Both notetaking and voice recording of the interviews were used with approval of the informants. I served as the interviewer.

Results

Key Informants	Organization/ Association	Why?	Safety?	Best Practice?	Effects?	Next steps?
Dr. CB	International Mental Health Agency Leader & NC Psychiatrist	Policies (IVC)	Not discussed	No	Not discussed	Advocacy
Dr. MS	NC Professor of Psychiatry	-Policies (IVC) -Cost shifting/lack of funding -Risk Adverse -Historically “free good”	Patients portrayed more violent than they are	No	-Stigmatizing -Demoralizing -Discriminatory -Reduces Care Seeking	Policy changes, advocacy and reallocate funds
Ash N.	Mental Health Community Leader in NC	-grossly unequal funding of LE over mental health care budgets -History of racism and incarceration of BIPOC	No and actually less safe, also quoting patients with SMI being 16x more likely	No	-Stigmatizing -Criminalizing -Discriminatory -Reduces Care Seeking	Policy changes, advocacy and reallocate funds
L. Will R. Shaw Joy B-N Helen T	Criminal Justice Specialist & NC Mental Health Agency Representatives	-Policies (IVC) -Limited alternatives due to underfunding of mental healthcare (Imbalance of community-based services)	Sometimes but not to the extent it is currently used	No	-Stigmatizing -Criminalizing -Discriminatory -Reduces Care Seeking	Policy changes and advocacy

Chart 1 - Key Informant Interview results

The overwhelming response by all informants to the main question, “why are we using law enforcement for mental health crisis care?” was the need for legislative policies or policy changes, particularly in regards to involuntary commitment (IVC). Other consistent reasons were voiced slightly different, but all amounted to the limited alternatives to the use of law enforcement for transport. This was noted to be due to underfunding of mental healthcare and the imbalance of community-based services. Something specific mentioned by the Mental Health Community Leader informant was inequity of many NC city and county budgets. In one NC county, the recent fiscal year budget allots the sheriff department millions of dollars more, over 6 times more, the amount available to spend on mental health. In a similar vein, the NC Professor of Psychiatry noted that historically, use of law enforcement was thought to be a “free good” offered to citizens. However, they mentioned, if you look at the budget, it is not so free after all and is just a form of cost shifting which leads to limited alternative solutions. This budget issue was also mentioned by the Criminal Justice Specialist and NC Mental Health Agency Representatives.

The use of law enforcement for the most part is not necessarily thought by informants to be for safety reasons. Minus the response by Ash N. the general agreement was that in rare situations the use of law enforcement would be safer, but not to the extent to which it is currently being used. The Mental Health Community Leader informant was the only informant who reported use of law enforcement as less safe. They quoted a statistic that was also presented in my background research - patients with a serious mental illness being 16 times more likely to be killed during a law enforcement encounter than other civilians.

The consensus was “no” to the use of law enforcement as being best practice for care of patients during a mental health crisis. There was also clear solidarity in responses on the effects of using law enforcement being criminalizing, stigmatizing, detrimental to care and treatment seeking and discriminatory toward BIPOC and community members of lower socioeconomic status.

Changes in legislative policies and reallocation of local and state budget funds for alternate transportation options were agreed to be of the utmost importance for what health care providers can do to support behavioral health patients. Key informants all recommended that providers need to get involved in making policy changes at a local and state level. At the very least, it is important for health care providers to be having conversations with family, friends, and community members as part of an effort to de-stigmatize mental health diagnoses.

The time set aside for unstructured questions and conversation lead to additional meaningful information from key informants. The NC Professor of Psychiatry provided a resource for some existing data on the link between similar adverse experiences of psychiatry residences with patient care during their emergency department residency and professional burnout that threatens to shape long-term plans regarding care of publicly insured mental health patients (Dennis & Swartz, 2015). The need for more disaggregated data on race in psychiatric

evaluation units, amount of time spent under IVC receiving care and who and how often are use of restraint being used was also discussed with the NC Professor of Psychiatry and the NC Mental Health Agency Representatives. The importance of disaggregated data and data reporting was noted to be akin to recent insights provided by the maternal mortality data that has been released in recent years which has led to a better understanding of the racial disparities and a shift in how care is provided.

My interview with the International Mental Health Agency Leader and NC Psychiatrist briefly covered the key questions from the script but the majority of the interview was additional information provided by the informant. The main takeaways encompass two federal political movements that provide hope for future changes to mental health crisis care. One is a federal bipartisan bill passed last year that will result in a roll out of the 9-8-8 number to call for mental health crisis (Federal Communications Commission, 2021). The new 988 number is akin to dialing 911, but specifically reserved for mental health crises. The other movement is the increase in mobile support teams and facilities that give patients a place to go to receive care immediately, diverting patients away from the emergency department. The informant noted the National Association of State Mental Health Program Directors are dedicated to transforming the mental health crisis systems. The International Mental Health Agency Leader and NC Psychiatrist emphasized that “there is hope.” The need for hope was a resounding message by all informants.

Discussion and Impact

At the onset of my project, I struggled with which type of method to use to better understand why the use of law enforcement, often with restraints, is used for mental health transportation and what practices would be better, more humane and in alignment with how we treat non-mental health crises. Prior to deciding to use KIIS, a NCMS colleague recommended I look into NC legislative bill, HB564, that was reviewed in 2017 by the NC Commission on Children with Special Health Care Needs. The outcome of the bill was unknown, but the language drafted by the commission was thought to express my similar concern with the use of law enforcement for transportation, although specifically for minors.

What I learned about HB564, now Session Law 2018-33, helped to shape my project and the path to conducting KIIs. HB654 became Session Law 2018-22 during the 2017-2018 NC legislative session (2017). The statute’s main purpose was to revise the laws pertaining to involuntary commitment (IVC), including the use of law enforcement for transportation, in order to improve the delivery of behavioral health services in NC. The statute suggests transportation should be provided by non-law enforcement but did not make it mandatory or provide funds for other forms of transportation. There is also no requirement for law enforcement to report the frequency of restraint use, referred to as “shackling” by many in the mental health community, including two of the key informants.

Interestingly, the laws associated with IVC were mentioned by all informants as one of the main reasons law enforcement is still used today for the transportation of patients during a mental

health crisis. Given that informant responses indicated that transportation during a mental health crisis is intimately tied to the IVC process, a better understanding of involuntary commitment under the law is needed.

Involuntary commitment “is a legal intervention by which a judge, or someone acting in a judicial capacity, may order that a person with symptoms of a serious mental disorder, and meeting other specified criteria, be confined in a psychiatric hospital or receive supervised outpatient treatment for some period of time” (USHHS, 2019) - making it basically legal to allow for mental health unit admission of individuals against their will. Each state has a differing IVC process, often leaving it unclear and subject to misuse. In North Carolina, someone who is a perceived threat to hurt themselves or others is a candidate for IVC, as is being unable to meet basic needs, such as being homeless (Hedman et al., 2016).

The ability to decline medications and treatment which is the doctrine of informed consent for clinical treatment that has been the cornerstone of medical ethics is not honored to our patients, loved ones, community members when under IVC, nor is the use of restraints by law enforcement during transportation of a mental health patient. If an IVC patient refuses medication, they can be forcefully restrained by security officers and/or healthcare providers and medicated. I witnessed this over and over again during my behavioral medicine clinical rotation in a NC Emergency Department Psychiatric Unit. It was traumatizing for me, so I can only imagine the effects it had on the patients.

On the flipside, the benefit of involuntarily committing someone who recently attempted a suicide or has suicidal or homicidal ideation (HI) with an intent and plan is fairly obvious - it could save them from ending their life or in the case of HI protecting another life or the community at large. Even so, a person can be committed in the absence of an ongoing suicidal ideation which would then put them at greater risk of loss of liberty and rights. In theory, emergency commitment will increase treatment access for people with mental illnesses or those unable to meet basic needs, but “the actual impact of these policies, has not been evaluated” and is unknown (Hedman et al., 2016).

Moreover, while working on this project I learned that 56% of NC adults with mental illness do not receive treatment (Kinsley, 2019). We may not have the data to understand the full impact of IVC but it seems clear our current system does not encourage more people to seek care for their mental illness. There are multiple factors contributing, but stigma was noted in 2019 by the NCDHHS to be a strong factor. Other factors include a chronically underfunded mental healthcare system, lack of insurance with over 1 million people uninsured, a bifurcated payment system, an imbalance of community-based services relative to inpatient and residential care, boarding in the emergency department and insufficient community-based resources (Kinsley, 2019). There are a lot of factors, yet might the use of law enforcement for transportation be contributing to the strong factor of stigma and low rates of individuals struggling with mental health issues to seek care? The results of my completed KIIs suggest the answer to this question is yes.

In regard to results, I recognize there are limitations. Namely, the number and diversity of informants interviewed. My goal was to connect with a minimum of fifteen differing informants and a diversity of informants were chosen. However, due to unforeseen personal obstacles and a full educational load during the clinical year of my physician assistant program, the amount of time I was able to dedicate to repeatedly reach out and petition busy informants in the effort to establish an interview time was limited. Furthermore, all the law enforcement officials I contacted declined to be interviewed or did not respond to my emails or voice messages. In the end, I was only able to interview seven informants.

The UCLA Center for Health Policy Research (n.d.) warned of the challenge of completing interviews. Making it into someone's busy schedule, not to mention my onerous physician assistant program schedule, to complete interviews was one of the most challenging hurdles of this project and lead to limitations in my results. I was persistent, but despite repeated calls and emails I was unable to set up some interviews by the pre-designated project cut-off date. As previously mentioned, another contributing factor was the nonresponse or declination by some informants to participate in the interview process. The inability to complete a larger number of KIIs with a wide range of key informants reduces the power of the results and increases bias.

Despite the limitation of completing a larger number of interviews and missing some important voices in the conversation, particularly that of law enforcement, all the information I was gathering helped me feel confident in the need to better understand the current legislative policies and become an advocate. I was motivated to use the leadership skills of patient advocacy, policy development and understanding of governmental affair provided and promoted by the NCMS leadership college.

To better understand policies and governmental affairs, I researched the current mental health bills being sponsored this legislative session in NC and learned of bills, HB 788 and HB786. These bills attempt to address more humane mental healthcare transportation with a primary focus on improving mental health care access. It is much needed legislation impacting mental health public safety responses and further investment in treatment and recovery services. In researching and performing KIIs, it is evident that both HB 788 and HB 786 take steps towards decriminalizing the transportation and care provided during a mental health crisis.

Understanding the broader concept of this leadership project being to not only gather data, but to also influence change, I committed to advocating for HB 788 and 786. I emailed all the NC House Healthcare Committee (NCHHC) members to share my project information, requested time to speak with them and expressed my support for HB 788 and 786. During the NCHHC proceedings, I established a healthy line of communication with many of the representatives.

Entering the public policy arena was intimidating, but this projected reassured me of the importance of my efforts. The project helped to highlight the necessity for health care providers to take a role in advocating for the delivery of quality care at a systems level. I not only decided to take a personal responsibility in promoting positive change, but also felt equipped with the

leadership skills to drive transformation by motivating and inspiring other healthcare providers and students to take action.

While working on this project, I made connections with student and state organizations, particularly with a chapter of White Coats for Black Lives (WC4BL) in which I was a founding member and NC Peer Voices, respectively, to work together to advocate for policies effecting mental health care. I helped to organize mass emailing campaigns with WC4BL and Peer Voices NC to reduce barriers to contacting representatives. With the help of the NCMS Intern (2021), I was able to empower other healthcare students to learn about healthcare policies, especially HB 788 and 786, by directing them to NCMS website. The website provides succinct summaries of all policies and is a great resource to all healthcare providers (see appendices for more information on HB 788 and HB 786). I also provided information on how to contact state representatives and created email templates (see appendices for sample template) to reduce barriers for others looking to get involved in advocacy.

Conclusion

Choosing to try to better understand transportation during a mental health crisis, as complicated as it is, has helped me become more aware of the policies in place that effect the care of patients and community members during a mental health crisis. It has also given me more tools to better advocate for policy changes geared towards more compassionate and humane care. I plan to continue collaborating with the incoming WC4BL members and Peer Voice NC to carry on communication with legislators to promote the passage of the needed mental health care bills, HB 788 and 786, that are up for funding this legislative session.

The questions posed for this project and conversations that ensued with informants, community members, healthcare providers, fellow healthcare students and legislators are important and relevant because reporting of mental health disorders, not surprisingly, is on a steady rise as we battle the Covid-19 pandemic (Panchal et al., 2021). The pandemic has also “created new barriers for people already suffering from mental illness” and disproportionately affects people of lower socioeconomic status and communities of color (Panchal et al., 2021). The current movement and outcry for racial and social justice has opened the door on many questions that have been hidden in the dark for decades, making the conversations I had, the interviews I performed, and my advocacy work to improve mental health crises care even more meaningful and valuable.

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Appendices

Sample Email Template to Send to Representatives:

Dear Representatives or Rep. _____,

Please let me introduce myself, _____, a (physician assistant/ healthcare provider/ community member/ etc.). (Share personal story here).

There are two current bills, HB 788 and 786, to provide not only more humane mental healthcare transportation but also improved mental health care in general. This is much needed legislation impacting mental health public safety responses and it also further invests in treatment and recovery services. For those of you that are already sponsors of these bills, thank you. We are at a crucial point in legislative session and because these bills contain an appropriation, they can be brought to the committee floor despite not meeting the crossover deadline. Key members of the mental healthcare community and I believe that HB 788 and 786 are steps in the right direction to reduce further traumatization of patients, community members and loved ones during a mental health crisis. Would you be willing to support HB 786 and 788 and bring them to the committee floor for discussion?

Thank you for your time and consideration. I'm happy to share more information about these bills at your request.

Sincerely,

Summaries of HB 788 and HB 786 (NCMS Intern, 2021):

HB 788 – Achieve Better Mental Health Recovery Results

Primary House Sponsors: Rep. John Autry (D-Mecklenburg); Rep. Donny Lambeth (R-Forsyth); Rep. Wayne Sasser (R-Cabarrus, Rowan, Stanly); Rep. Terry Brown, Jr. (D-Mecklenburg)

Summary

This bill:

- Appropriates \$600K in nonrecurring funds for the 2021-2022 fiscal year to DHHS to be allocated to the Promise Resource Network for the establishment for four peer-run wellness centers to address mental health crises prevention and post-crisis response.
- Establishes the position of Mental Health Recovery Policy Chief within the Division of Mental Health, Developmental Disabilities, and Substance Abuse Services.
- Tasks the Chief with ensuring that mental health recovery values and outcomes are drivers of State policy.

Requires the Division to publish a biennial NC Mental Health Recovery and Resiliency Agenda on its website.

Requires the Chief to ensure that individuals with personal experiences of mental health recovery inform the development of the Agenda.

Appropriates \$100K in recurring funds for the 2021-2022 fiscal year and \$100K in recurring funds for the 2022-2023 fiscal year to the Division to be used to fund the salary and benefits for the Chief position.

Movement

Filed – 5/3/2021

HB 786 – Enhance Local Response/Mental Health Crises

Primary House Sponsors: Rep. John Autry (D-Mecklenburg); Rep. Donny Lambeth (R-Forsyth); Rep. Donna White (R-Johnston); Rep. Cynthia Ball (D-Wake)

Summary

This bill appropriates \$2M in nonrecurring funds in the 2021-2022 fiscal year to the Department of Public Safety to be distributed as grants to municipal police departments and county sheriff's offices for at least one of the following purposes: (1) to establish nonpolice units to address nonviolent, noncriminal 911 calls regarding mental health, homelessness, substance use, or other behavioral health crises; (2) to establish co-responder response models in which law enforcement personnel and mental health specialists jointly respond to 911 calls regarding mental or behavioral health crises; or (3) to establish a mental health division or to bolster existing mental health services within a police department or sheriff's office and to increase the amount of law enforcement personnel and 911 communications personnel that have received Crisis Intervention Training.

This bill also requires the grants to be awarded to police departments and sheriff's offices that have active response models for mental or behavioral health crises or that are developing response models that will be in use on or before January 1, 2022.

Movement

Filed – 5/3/2021

Using Virtual Town Halls for the Promotion of COVID-19 Research and Vaccine Promotion among African American and Hispanic Communities in North Carolina During the COVID-19 Pandemic

Julio Nasim, MD

Introduction

In late 2019, a new virus was first identified in Wuhan, China, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and was declared a global pandemic by March 2020¹. The disease manifestations were named coronavirus disease 2019 (COVID-19). The manifestations range from asymptomatic to critical with multiple organ systems potentially involved¹. By September 2021, more than 4.7 million lives were lost to COVID-19 globally,² with more than 660,000 deaths in the United States³ and the numbers continue to climb by the day.

The African American and Latinx population was disproportionately affected by COVID-19 due to several social and economic drivers such as neighborhood and physical environment, and lack of access to healthcare^{4,5,6,7}. Individuals of these communities also tend to have high rates of diabetes mellitus, obesity, and hypertension, which are additional risk factors linked to severe cases of COVID-19⁷.

The research of efficacious and safe vaccines against COVID-19 has been a top priority globally since the beginning of the pandemic. The development of vaccines and their equitable and easy access can reduce the negative impact on the health, social emotional and economic well-being in many communities that have increased cases of COVID-19⁸. However, there is a large amount of mistrust and hesitancy experienced by minorities with the health care system, which has resulted in less African American and Latinx individuals being willing to be part of the trials to develop of COVID-19 vaccines.

It is reasonable to suggest this has translated into individuals not trusting the process enough to want to receive the vaccine when available. The distrust towards the health care system and research stems from both present and previous disparities as well as a history of abuse and neglect. One well-known example is the Tuskegee Syphilis Study where doctors deliberately allowed syphilis to progress in African American individuals without providing treatment^{9,10}. Another example is the case of Henrietta Lack, an African American cancer patient, whose cells were taken without her permission¹¹.

Locally, there is the example of the Eugenics Board of North Carolina that promoted the sterilization of individuals against their consent which operated until the 1970s and which disproportionately targeted African Americans^{12,13}. These factors have specially eroded the trust of the African American community^{14,15}.

Additional barriers to vaccination for Spanish-speaking communities has been the lack of reliable information in Spanish about the COVID-19 vaccine and beliefs that immigration status and deportation would be involved with being vaccinated^{16,17,18,19}.

There is also more widespread distrust in vaccines in the general population due to the damaging research published by Dr. Andrew Wakefield in the Lancet related to the MMR vaccine being linked to autism²⁰. The research has since been retracted, but the distrust and doubt related to vaccines remains strong.

To address this situation, the purpose of this project was to:

- A) Increase diversity in research participation
- B) Help persuade African American and Hispanic individuals to obtain their vaccination to help reduce the impact of COVID-19 in those communities who have been disproportionately affected by COVID-19.

Methods

For my project, I focused on virtual Town Halls as a strategy of communication. The use of virtual live events is a strategy recommended by the CDC to generate demand for COVID-19, secure the community's trust and address vaccine misinformation²¹.

The Town Halls were the result of a multidisciplinary effort that including medical and non-medical organizations such as the local newspaper Que Pasa, the national television station Telemundo, the local radio station Radio Onda de Amor, the Forsyth Health Department, the Cabarrus Health Department, Wake Forest School of Medicine, the Maya Angelou Center for Health Equity, and the National Institute of Health Community Engagement Alliance.

The meetings were performed in a Question/Answer format and answered by a panel of experts. The composition of the panel changed which each Town Hall. I was consistently a panelist participating as an Infectious Disease expert. In addition, most Town Halls had a member of the faculty of Wake Forest University that performs basic research on COVID-19, a member of the African American or Latinx community, and a community leader.

As part of the method, great attention was placed on which questions were addressed during each session to ensure that the most common concerns from these communities were addressed. The questions were selected with feedback from community leaders and members outside of the medical field.

The questions were distributed in advance so the speakers would have time to prepare for the answers. In addition, the audience was invited to voice concerns and ask questions at the end of each Town Hall.

A total of four meetings were held in North Carolina from July 2020 to May 2021. The events were viewed by more than 27000 people. Of those, the vast majority were from the Latinx population although the exact percentage cannot be confirmed. The encounters took place using different virtual platforms to achieve the maximum possible impact.

The first meeting was specifically designed to promote research participation by African American and Latinx communities for COVID-19 research. As the pandemic progressed, and

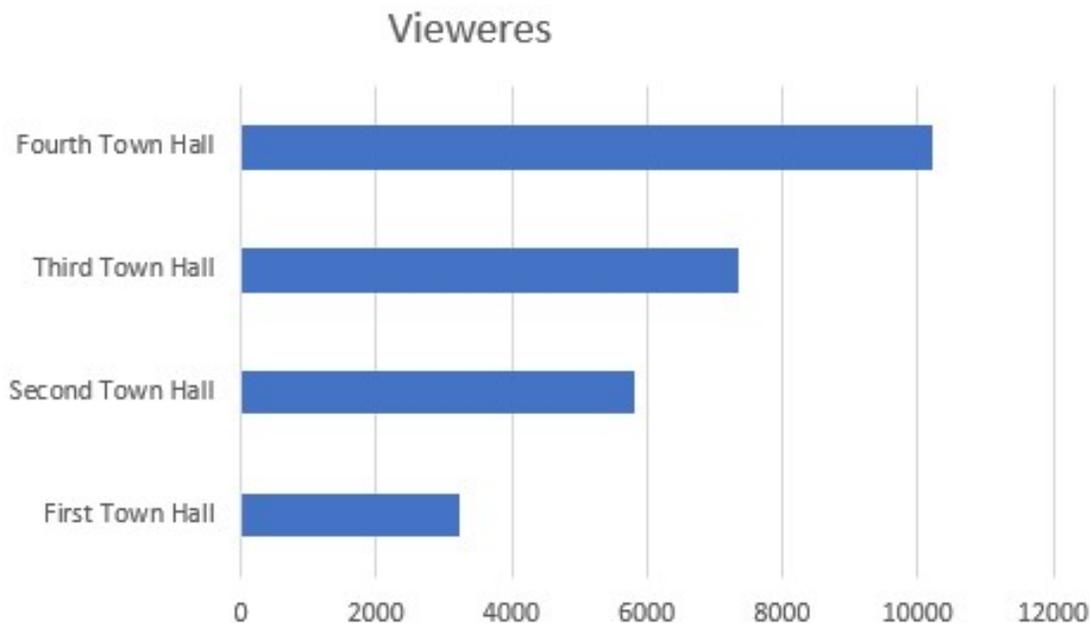
vaccines for COVID-19 became available for the public, the focus of the Town Hall switched from promoting participation in the COVID-19 trials to vaccine hesitancy.

Additionally, as part of the project surveys were conducted among the viewers in Spanish during the last two Town Halls to provide insight regarding the organization of future meetings as well as to measure the impact of the talks to the audience. The main purpose with the survey was to ensure that the Town Halls were providing a clear message to the audience.

Results

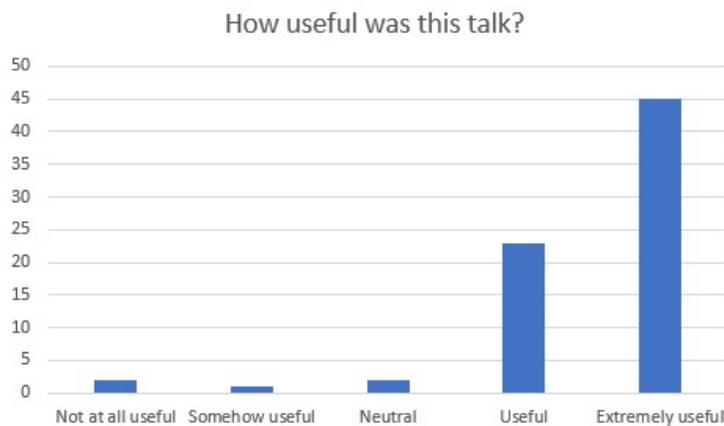
The ratings of the Town Halls exceeded expectations. The number of people watching the meeting progressively increased with time thanks to aggressive marketing and promotion campaigns across different platforms on social media as well as through traditional means of communications such as posters, radios, and newspapers.

The highest number of participants was at the last Town Hall with over 10,000 people participating. This number does not take into consideration the off-line views after the videos were uploaded to different YouTube channels, Facebook webpages and the webpage of Wake Forest University.



In terms of the surveys, there was a low response rate, out of the 71 respondents who completed the surveys during the last two Town Hall, 45 (63%) found the Town Hall to be extremely useful, 23 (32%) qualified the Town Hall as useful, while only 2 (2.81%) qualified the experience as not at all useful (see graph 2 for details).

This scale was subjective and based on the discretion of the person filling the form.



Discussion

COVID-19 trials have been challenged with recruiting volunteers from minorities. This has been conveyed by multiple organizations from different sectors and the perfect example is the phrase "I won't be used as a guinea pig for white people", published in the New York Times on October ²². Unfortunately, I have heard that phrase multiple times while working as a researcher in a clinical research unit dedicated to the development of COVID-19 vaccines. I found many African American and Latinx patients who were reluctant to participate as volunteers in the trials. With time, there was also more hesitancy in these communities towards getting vaccinated ²³.

The Town Halls were part of a combination of strategies that may have helped promote vaccination among African American and Latinx communities in North Carolina during the height of the COVID-19 pandemic.

There were several limitations. The main limitation was the number of Town Halls that were held due to time constraints as the panel of experts were participating while also fulfilling clinical duties during the pandemic and most of the Town Halls took place between clinical rounds. Unfortunately, this meant declining several requests from other organizations and health departments to conduct Town Halls in other counties of North Carolina.

Another major challenge that had to be resolved was the avoidance of controversial topics such as the use of fetal cells in research and other religious considerations to not offend the multiple organizations involved, many of them faith based.

Additionally, the response rate to the survey was disproportionately lower compared with the total number of people that attended the Town Halls. This could have been in part due to

distrust of the data tracking related to the vaccine, and the fact that data was only collected in the last two events due to logistical issues.

On the other hand, most of the surveys had very positive comments which suggests that the Town Halls were well received by the community.

The Town Hall that seemed to yield the most success was the last two Town Halls conducted in Spanish and which received recognition both locally and nationally.

The Spanish Town Hall helped fill a gap with trustworthy, reliable information for the Latinx community in a time of great need when and without many alternative sources.

From a leadership perspective, the project allowed me to foster my skills in multiple areas that are an integral part of the leadership program and I used many of the tools learned during the program.

I had to interact with people with multiple color energies and very different backgrounds to achieve a common goal. It did require significant teamwork and interdisciplinary coordination with different institutions including my university, multiple local radio stations, national television, newspapers, many local organizations of community outreach, local health departments and the National Institute of Health. All the organizations had their own particularities and slightly different agendas that required negotiation and achievement of consensus towards a common goal.

I did also become acquainted with the most complex details of the US healthcare system that I did not usually reflect on such as healthcare access for minorities, payment structure and allocation of resources in times of crisis.

I learned a new set of skills regarding public speaking with direct feedback from professional speakers which allowed me to perform in public with more confidence.

I learned how to analyze the media and conferences from the perspective of a producer and not just as a consumer. After observing many videos of similar conferences and communication formats, like the conferences of Dr. Antony Fauci and the general news aided in preparation for the talks.

The most anxiety provoking part of the event was the open questions section at the end of each Town Hall. Fortunately, after watching many hours of similar events, I was able to predict most concerns that were raised by the audience in advance.

The whole project was very intimidating at the beginning, nevertheless as time progressed and the feedback was positive, I became more comfortable with the format and the talks became easier with time.

The number of views continued to grow steadily with each Town Hall thanks to our great marketing campaign and the word of mouth. The total outreach was enhanced by the fact that the Town Halls were also quoted for print educational material by the National Institute of Health ²⁴ and covered by articles of the local media ^{25,26,27}.

Although the total impact of the actions performed is hard to quantify in the absence of a control group, in July 2021, the Centers for Disease Control and Prevention released a report highlighting how North Carolina's focus on equity in administering vaccines increased COVID-19 vaccination rates in African American and Latinx communities with the state showing some of the best indicators in the country among minorities ^{28,29}. I firmly believe that the Town Halls were at least in part responsible for that positive result.

In summary, the Town Halls with tailored messages for the African American and Latinx communities represent an effective communication strategy to help overcome hesitancy in those communities to the COVID-19 vaccine.

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Appendix

Online Questionnaire for Town Hall Number 3 and 4.

Question 1: ¿Cuál es su edad? (What is your age?).

Question 2: ¿Qué tan probable era que usted se pusiera la vacuna ANTES de ver la charla? (How likely were you to receive the vaccine BEFORE watching the Town Hall?).

Question 3: ¿Qué tan probable es que usted se ponga la vacuna DESPUÉS de ver la charla? (How likely are you to receive the vaccine AFTER watching the Town Hall?)

Question 4: ¿Qué tan útil le pareció el contenido de la charla para aprender sobre el tema de las vacunas contra el COVID? (How useful did you find the content to learn about the COVID vaccines?).

Question 5: ¿Nos dejaría algún comentario adicional? (Do you have any comments for us?).

Recruit, Retain, and Reach: Increase the Black Physician Pipeline

Sheila Stallings, MD

Introduction

Since the COVID 19 pandemic, the health inequities among the Black community have become quite evident. Several factors contribute to these health disparities, but one problem has been a lack of diversity among physicians. “African Americans make up 13% of the U.S. population, but only 4% of U.S. doctors and less than 7% of U.S. medical students. Research has found that physicians of color are more likely to treat minority patients and practice in underserved communities. And it has been argued that sharing a racial or cultural background with one’s doctor helps promote better communication and trust.” (Harvard Business Review Torres, 2018 p. 1)

Black representation in the medical field is important more than ever as the COVID 19 pandemic has disproportionately impacted Blacks. Study after study has shown the positive benefits of having a diverse workforce in providing health care. “Research shows that health outcomes are better when they are treated by black doctors.” (Stallings, E, 2019) Increasing the number of Black professionals in the physician pipeline can help to promote positive outcomes in Black and Brown patients (www.aapcho.org).

The American Medical Association (AMA) continues to look at ways to address physician diversity with strategic pathways to enhance recruitment into medicine. By implementing programs on a national level, the focus is on medical school diversity and how to get more Black people in the physician pipeline. In the January 2021 newsletter, AMA published an article to address the disparity and described how AMA is including the goal to increase Black people in the physician pipeline as a goal in the strategic plans (www.ama-assn.org). The article found that in 2019, of 21,863 students who entered medical school in 2019, only 1,626 were African American. As Murphy (2021) suggest, “few realize the disproportionate impact of the early 20th century Flexner Report on medical schools with mostly Black medical students and further the impact of that on the pipeline causing an estimated 30,000-35,000 fewer Black physicians in this country. “

The purpose of my project is to explore ways to encourage Black students to pursue a career in medicine. The focus is on the need to support school age (pre-K to high school) medical programs to help inspire future Black doctors. The goal is to identify barriers faced by the local NC medical schools and strategies to help overcome these barriers. Early medical education and exposure have been most impactful to help recruit, retain, and reach future Black physicians.

Methods

Part 1: Black physicians in the community completed a survey with five semi-structured questions (see appendix 1). The physician questionnaire was a tool to gather preliminary information to help guide my project into a more meaningful and impactful discussion. The brief survey was distributed to ten Black physicians (5 female, 5 males, age: 35-60) in various settings (private practice, administrative, academic) in the local community.

Part 2: The focus was on the four local medical school in the North Carolina: Duke University, East Carolina University, University of North Carolina Chapel Hill, and Wake Forest University. An interview was conducted with a Diversity Equity and Inclusion (DEI) staff from each medical school. The DEI focus was to help identify barriers and strategic planning by each medical school in the recruitment of African American students. Four questions (Appendix 2) were asked to see what sponsored programs have been successful and what barriers faced by each school.

Results

Part 1 (Physician Survey)

1. 4 of 10 physicians participated in a mentorship program as a child
2. 10 of 10 physicians had an interest in becoming a doctor before college (3-elementary school; 4-middle school; 3-high school)
3. 8 of 10 attended medical programs (summer/weekend programs) before college
4. 1 of 10 physicians are legacy physicians
5. 5 of 10 physicians serve as mentors in the community

Part 2 (DEI interviews)

Barriers/Challenges: Faced by NC Medical Schools

Students	Funding	Educators
Negative image of science and math, too difficult, boring, too much work	Lack of funding for programs in early grades (elementary, middle, high school)	Lack of knowledge about medical programs for students
Lack of adequate preparation for college programs because career decisions are made too late	Parents/students unable to afford medical programs	No central location to find information about health careers or career options and teaching materials
Not enough Black role models that look like them	Lack of parents/student's knowledge about financial aid application/paperwork	Lack of educators that look like students to tap as mentors or speakers to motivate students
Limited positive views of health care professionals (lack of trust in the medical field)	Limited capacity of students in program due to limited funding	Lack of resources to take trips, organize internships or other programs

Discussion

The purpose of the physician questionnaire was to understand the journey to becoming a physician, its challenges, and a pathway to help stimulate the Black physician pipeline. As a Black female physician faced with many obstacles on my medical journey, it was a challenge to have a primary focus especially when there are so many components contributing to the *leaky* pipeline. There are multifactorial layers to recruit, retain, and reach others to help generate and maintain future doctors, more importantly future Black doctors. The questionnaire revealed the dire need to have more mentorship programs on the elementary, middle, and high schools to help encourage Black students to pursue a medical career. A response from one of the surveyed Black physician and community leader:

“We have to get downstream and get more kids interested in healthcare in secondary school. We need those kids to be exposed to physicians who look like them and can open their eyes to the potential of healthcare as a profession. We need to support pipeline programs, provide summer programs, and scholarship opportunities. Many Black and Brown kids simply haven’t seen doctors who look like them- so can’t see themselves as physicians”.

The focus of my project shifted from an emphasis on pre-medical college programs to the importance of early age medical programs for Black youth. The DEI faculty member from each medical school was able to share challenges and various strategies to overcome barriers to help increase the number of Black physicians in our country.

Strategic Planning

Each medical school has age-appropriate programs to target students from elementary school to high school. Many challenges include the lack of resources to address academic and socio-economic barriers such as transportation, food insecurities, and lack of knowledge about healthcare professional opportunities, and inability to pay for Science, Technology, Engineering, Mathematics (STEM) programs. The medical schools acknowledge the importance of having community-based, after school, and on-campus programs to reach a broader population of young Black students. The DEI department goal is to strategically break down barriers and increase the possibilities of being a physician simply by eliminating obstacles.

Each NC medical school has a mentorship program to increase exposure among the local schools and the medical students. The medical schools reach out to the local community to increase the presence of Black role models in the elementary, middle, and high school. The African American medical students are encouraged and trained to serve as mentors for the sponsored medical and STEM programs.

The COVID pandemic has been a major obstacle and has limited the medical field exposure and hands-on activities for the school aged children. The pandemic has also allowed the medical schools to become more creative and use technology to reach more students with less funding resources. If the programs remain in the virtual platform, technology (internet, computer access) becomes a growing problem that is less of a problem when in-person. Other barriers when using the virtual platform, includes the home distractions, lack of full engagement, lack hands-on activities, maintaining a safe home environment. The medical schools are looking at innovative ways to engage school age students through virtual and safe platforms geared toward the sciences. Pipeline programs to help underrepresented students also offer benefits to medical students as well. Through teaching the children, medical students can also benefit from medical-based programs. It helps to build leadership skills in communication, team building, and community service.

Students	Funding	Educators
Negative image of science and math, too difficult, boring, too much work CREATE MORE INTERACTIVE STEM AND MEDICAL PROGRAMS	Lack of funding for programs in early grades (elementary, middle, high school) APPLY FOR FUNDING SOURCES INTERNALLY AND EXTERNALLY	Lack of knowledge about medical programs for students PARTNERSHIP WITH LOCAL SCHOOLS
Lack of adequate preparation for college programs because career decisions are made too late MEDICAL PROGRAM FOR THE YOUTH	Parents/students unable to afford medical programs OFFER SCHOLARSHIPS / FREE PROGRAMS	No central location to find information about health careers or career options and teaching materials COLLABORATION WITH MEDICAL SCHOOLS TO SPONSOR HEALTH CAREER FAIRS
Not enough Black role models that look like them MENTORSHIP PROGRAMS TEACH MEDICAL STUDENTS TO SERVE AS MENTORS	Lack of parents/student's knowledge about financial aid application/paperwork OFFER SCHOLARSHIPS / FREE PROGRAMS	Lack of educators that look like students to tap as mentors or speakers to motivate students PARTNERSHIP WITH LOCAL SCHOOLS TO HELP WITH MENTORSHIP TRAINING
Limited positive views of health care professionals (lack of trust in the medical field) CAREER FAIRS / MENTORSHIP PROGRAM	Limited capacity of students in program due to limited funding CREATE MORE VIRTUAL, HYBRID PROGRAMS TO REACH MORE STUDENTS (COST-EFFECTIVE)	Lack of resources to take trips, organize internships or other programs for students PARTNERSHIP WITH LOCAL SCHOOL

Conclusion/Impact

The NC medical schools have made great strides to expose Black youth to the medical profession, but they need more financial and academic resources to help sustain these programs. There are other impactful strategies shown to help promote Blacks in medicine to include: mentorship programs, active counselor and teacher participation, school-based enrichment programs, marketing of medical programs, and collaboration of events and ideas for all the NC medical schools.

Mentorship is a key factor for retention and advancement across the pipeline from student to physician. Mentorship program (students and faculty) is another way to “Pay it Forward” and help recruit future Black physicians in the community.

The presence of medical programs within the school systems will allow more access to disadvantaged Black youth (K-12). School-based programs have the capability to reach more in a school and after-school settings. Partnerships with local community centers to bring Black medical students and physicians into black and brown communities.

Enhancement of marketing tools (school websites, career fairs to help promote and attract participation in youth programs. Finally, there needs to be more collaboration among all NC medical schools to include host events (ie. medical career fairs, medical summer programs) to collectively promote Black and Brown students in medicine.

As the U.S. population becomes more diverse, the goal of increasing Black physicians in the workforce is a leading strategy in reducing health disparities (Jackson & Gracia, 2014 p. 57-61). Minority patients that visit health professionals of the same race often report feeling more satisfied with care, having better communication, and longer visits than patients visiting providers of another race. We must recruit, retain, and reach the Black youth at an early age to prime the medical school and physician pipeline. It is important for the medical community to continue to sponsor medical programs at the elementary, middle, and high school levels to promote careers in medicine. Let's work together for a call to action to close the healthcare disparity gap and increase Black physicians in this country. As Williams & Mullan (2017 p.2) stated, "...we need more Black doctors because Black lives do matter and Black doctors are best suited to make that case as clinicians today and as role models for tomorrow."

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Appendix 1

Physician Survey:

1. As a child, were you influenced by a mentorship program? If so, explain.
2. Did your interest in becoming a doctor occur before college? If so, when?
3. Did you attend any formal medical programs? If so, when (elementary, middle, high school, college, post-graduate).
4. Are you a part of the medical doctor legacy? If so, who in your family?
5. Do you mentor others to pursue a career in medicine? If so , how do/have you served as a mentor?

Appendix 2

Questions for the medical school faculty member:

1. What programs do you offer to recruit more people of color in the medical field?
2. What programs do you have for minority youth (elementary, middle, high school)?
Barriers?
3. Once you recruit, how does the school emphasize the importance of students to reach others to keep infiltrating the Black physician pipeline?
4. Are there mentorship programs for medical students and faculty members to participate?

