Clendening Fellowship Proposal:
TOBACCO CESSATION METHODS WITHIN A MODEL CHRONIC DISEASE PROGRAM IN BRAZIL
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I. Introduction:

Integrated healthcare is, in essence, the way of the future. As we move away from a segregated model of medicine where patients are bounced between arrays of disjointed specialists, we press towards the concept of a medical home in an attempt to create a “one-stop shop” where patients can effectively manage compound chronic illnesses. This transition is taking place globally and has become especially important in underserved and impoverished areas where health of the public tends to suffer. Given that there is a worldwide epidemic of chronic illness, it is essential to help patients manage symptoms and prevent worsening of their conditions. Factors such as tobacco use compound not only the mortality of this epidemic, but also the health care costs associated with treating these patients. The purpose of this study is to describe the patterns of tobacco use among patients treated at a large model chronic disease clinic in the public health care system in Brazil. A population-based survey will be conducted of the patients attending the clinic for an 8-week period that is intended to describe the environmental factors associated exposure to tobacco smoke, as well as possible predictors of tobacco use and cessation strategies among the patients treated. This study in turn will act as an indicator of the effectiveness of an integrated health care model in regards to tobacco cessation.

II. Background:

By 2030, over 8 million people will die annually from tobacco, and 80% of these deaths will occur in developing countries. Many countries are attempting to contravene this trend by becoming signatories to the World Health Organization’s international tobacco treaty—the Framework Convention on Tobacco Control (Cupertino and Richter, Abstract 1). Although Brazil provides universal coverage for evidence-based tobacco treatments, it continues to have disparities in tobacco prevalence and access to treatment. Through this project I hope to conduct research to understand access to tobacco treatment for Brazilian smokers.

This project combines several factors of interest, the first and foremost being the concept of global health. After much international travel and study, I have adopted a global perspective on healthcare as well as a fiery dedication to incorporate international medicine into my professional career. I have observed and served in many underserved areas in and outside of the United States and have learned that while language, culture, and beliefs may vary widely across the world, there is a universal need for patient treatment to prioritize dignity, tolerance and compassion. While practicing medicine has been my lifelong goal, I discovered a profound interest and aptitude for language during my undergraduate career. This interest prompted me to pursue the study of the Spanish language as my major, and to later study Portuguese. I have spent a total of nine months abroad in Spanish-speaking countries (Mexico 2008, Costa Rica 2010) studying the language and immersing myself in Latin-American culture. Through this I have discovered that I have a particular interest in working with Latin-American populations. After picking up Brazilian Portuguese near the end of my college education, visiting Brazil has
become a particular interest as I would like to establish fluency in the language, and to spend
time in the vast, progressive country that provides an ideal model addressing help disparities
such as tobacco cessation.

Integrated care is another area of interest for me, as I spent a year after my undergraduate
studies with the national service organization AmeriCorps, serving in a community health center
for the underserved in Lawrence, Kansas. This center used an integrated care model of medicine,
and utilized my AmeriCorps colleagues and myself to supplement the medical care provided by
the physicians with services such as wellness education, diabetes management, nutrition
counseling, behavioral health, and what became my area of knowledge: tobacco cessation. As a
former cigarette smoker myself who took several attempts to quit, I sympathize greatly with
patients dealing with addiction compounded with different physical and mental illnesses. What I
came to learn above all else was that while many patient complaints stem from their disease,
most of their ailments are also deeply rooted in their personal lives, family and financial
situations, and their hopes and fears for the future. For these patients, I thoroughly believe that
the medical condition cannot be treated without addressing the root and secondary issues at hand,
and many of them are complex and require a multi-disciplinary approach. Tobacco use, for
example, is strongly correlated with mental illness and low socio-economic status. From a
patient perspective, it is also a means of managing stress and maintaining mood stability. It is my
belief that all of these issues must be addressed through an integrated approach.

During my time in this position I had the pleasure of coming into contact with Dr.
Kimber Richter and Dr. Paula Cupertino from the Department of Public Health and Preventative
Medicine here at KUMC. Dr. Richter and Dr. Cupertino have done an extensive amount of work
in the area of tobacco cessation, and run the UKanQuit program that is implemented in the
medical center. They have also conducted impressive research in the area of tobacco cessation in
a health center (O Centro HIPERDIA Juiz de Fora) in Minas Gerais, Brazil. It is through these
contacts that I became aware of the clinic in Brazil, and it is through their resources and research
that I have become educated on the topic and can learn methods to observe patterns of tobacco
use. They have been more than generous in making themselves available to me for guidance in
this project, and fortunately they both have plans to be in Brazil during the time of my project.

III. Description:

Although Brazil is the second largest producer of tobacco in the world, it is also a world
leader in public health approaches to tobacco control. The Instituto Nacional do Câncer
implemented an evidence-based tobacco control plan designed to deliver group treatment and
provide access to free cessation medication through Brazil’s universal health care system, with a
focus on primary care. Brazil also has one of the largest populations and one of the largest
income gaps between the rich and poor in the world. Its primary care system is specifically
structured to overcome access barriers and health disparities. In 1988 Brazil decentralized
primary care services and relocated the facilities into the communities they served (These
community-based primary care facilities are called Unidades Basicas da Saúde—UBS’s)
(Cupertino and Richter, Abstract 2).

The purpose of this project is to study the smoking cessation treatment offered at an
outpatient clinic for patients with uncontrolled chronic disease. I have subdivided my project into
four phases of organizational work. While the bulk of the work directly related to the project will
take place during my 8-week stay in Brazil, much work will be dedicated to the subject and
experience in the months before and following the trip. Below is a description of the aim of each of the phases:

**Phase I: Preparation**

The majority of preparation for the trip will revolve around achieving sufficient fluency in the Brazilian dialect of Portuguese, as communication will become essential once I have been placed in the clinical setting. As was mentioned in the background section, I have already achieved fluency in the Spanish language, and subsequently became proficient in Brazilian Portuguese after taking two courses in the subject. Understanding that fluency is only truly achieved after becoming immersed in the language and culture, I have resources already in place that will help me to be as prepared as possible to begin speaking the language comfortably from the first day of arrival.

In addition to a text book and interactive online programs that I have attained through my classes, Dr. Richter has been kind enough to provide me with CD’s and books on tape that will help develop my listening and pronunciation skills. I have also come in contact with a native Brazilian student named Tainara, who is currently working under Dr. Richter in the Department of Public Health. Tainara has agreed to meet with me 2-4 hours per week on campus (increasing with proximity to the trip). Because she is also learning to speak English, we have a mutual agreement to spend half of the sessions speaking in English for her benefit, and the other half in Portuguese for my benefit. I have participated in language exchange interactions such as this before and have found them extremely effective in improving upon conversation skills, as well as for picking up sayings and nuances that are not taught in text books or classical methods of teaching.

Besides intensive work on language skills, preparation will be needed in researching the health clinic and developing and/or deciding upon a survey to be distributed to the patients in the clinic. This survey may be based off of a current model survey, or may be created through collaboration between myself and the department, who in the past have derived survey items from the WHO Global Adult Tobacco Survey (GATS). The primary purpose of the survey would be to narrow the focus of the study to target populations, specifically prevalence of smoking in correlation with socioeconomic status and other disease status. The single most important data I hope to collect from these surveys is a comprehensive identification of smoking cessation strategies (ie. Bupropion, Varenicline, Nicotine Replacement Therapy, counseling, etc) tailored to the resources and needs of lower to middle income populations. In other words, I hope to make observations over what cessation strategies are most effective in a setting where underserved populations with chronic illness have access to all forms of therapy (as compared to the United States, where they may have limited access to the same resources). (See Supplementary Materials)

I currently have in my possession multiple works and abstracts revolving around various aspects of tobacco cessation programs in the clinic, authored by Dr. Richter and Dr. Cupertino themselves. Becoming familiar with their works and publications will give me the background information on the clinic and programs in Brazil that I will need to proceed with my project. As many of them were written in Portuguese, they have also provided a wonderful exposure to applicable vocabulary and scientific writing. Much as Dr. Richter and Dr. Cupertino have aided in equipping me with the resources I need for this project, I would in turn like to make myself available to them as a research tool. In the months leading up to the trip, I plan to visit the Department of Public Health and Preventative Medicine frequently to touch bases with their
current research and offer my services. I hope to make my data collection and analysis readily available for use by their department should they find any use for it in a publication. In this way, I intend to incorporate the current goals of the department within the project to make it of practical worth.

**Phase II: Observation, Screening, and Distribution of Survey**

In a planning meeting for the project earlier in the semester, it was recommended by Dr. Paula Cupertino that I spend a period of 3 weeks familiarizing myself with the clinic and staff. She described the clinic as having three main branches of care for chronic disease; hypertension, diabetes, and renal disease. I have the option of dividing my time among the three departments, or focusing heavily on one or two of them. In the current timeline, I have designated a week within each. During these weeks I would become acquainted with different staff throughout the center, and observe the integrated nature of the clinic which also features a full pharmacy, social work department, dentistry, nutrition counseling, and physical therapy services. After three weeks of becoming familiar with the setting, it is Dr. Cupertino’s hope that my language and comfort levels will be adequate to interact with patients more directly.

Once I have been introduced into the clinic, I would then present to them the survey and explain the mission and aims of my project. Distribution of the survey would ideally occur through participation of the care providers after identifying patients who use tobacco products. Patients attending the clinic are already screened for smoking status, and project staff may invite the patients to participate in the survey. Patients who have already initiated cessation therapy will also take the survey as a means of assessing the efficacy of the integrated therapy of the center. Cessation outcomes will be assessed after about 4 weeks, and if time allows, again at 8 weeks. It will be my responsibility to manage and distribute the surveys, whether to providers or patients, and to collect the surveys following appointments.

**Phase III: Data Collection and Analysis**

Once the surveys have been collected, I will create and maintain a database of the survey information, one that I hope would provide indicators of smoking prevalence and health behaviors that would allow me to evaluate risk factors for tobacco use (specifically cigarette smoking) and barriers to seeking cessation therapy or strategies, as well as the cessation strategies indicated for low income patients. If possible, I would like to subdivide the survey results into demographics such as age, gender, socioeconomic status, and compound illness prevalence. I plan to analyze this data in comparison to other current tobacco cessation studies in Brazil, preferably studies generated by past studies through the same center, and other similar USB’s (if data is available).

The data collected would be held in comparison to the Brazilian national smoking cessation statistics to see if an integrated care model as used in O Centro Hiperdia in Juiz de Fora is indicated for higher successful quit rates, and if so, specifically what strategies have had success among the low income populations. This information could prove useful to Dr. Cupertino, Dr. Richter, and the Department of Public Health as they have been solely responsible for the implementation of many of the tobacco cessation programs in the center. If specific
smoking cessation strategies prove effective in a large scale center such as this model clinic in Brazil, they may be indicated for other community health centers around the world.

As data collection and analysis is a new concept and task for me, this will require collaboration with the project staff at the clinic (namely Dr. Cupertino and Dr. Richter).

**Phase IV: Write-up and Ongoing Application of Findings**

I would ideally like to create a work worthy of publication after conducting a thorough analysis of the data collected in the clinic. This may require additional outside work with the Department of Public Health and Preventative Medicine before and after the duration of the summer. This work would be in the form of a comprehensive analysis of the effectiveness of specific smoking cessation strategies in relation to low income individuals with chronic disease.

In addition to this, I hope to be able to bring back information to put into practical use in smaller scale health centers such as the JayDoc Free Clinic here at KUMC, and the clinic I served my AmeriCorps term in (Heartland Community Health Center, Lawrence, KS). While both centers screen for tobacco use and provide occasional counseling, there is not any established program in place to treat patients with chronic disease and a compound smoking addiction. As an ongoing effort to address the health disparities associated with individual smokers seeking cessation therapy, perhaps I could help facilitate the implementation of a program that provides evidence-based therapy and continuity to patients of the centers.

Lastly, I am considering writing a more illustrative and reflective piece on the health disparities faced by underserved and impoverished communities around the world. By the completion of this summer project in Brazil, I will have traveled to Guatemala with KUMC’s International Outreach team for a week long medical mission trip, and to either Ecuador or the Dominican Republic with another global health organization immediately prior to traveling to Brazil. Traveling and writing are two great passions of mine, and I believe my perspective as a medical student could provide for a unique insight on the future of humanitarian global medicine. I plan to distribute any data and product created during this project for use by the medical center, as well as to present on my topic during the fall semester.

**Timeline:**

**February:**
- **Begin Phase I:**
  - 1st: Begin Portuguese conversation sessions with Tainara (2-4 hrs/week), Portuguese language tapes provided by Dr. Richter
  - 18th: Submit Proposal

**March:**
- Solidify schedule and coordinate with Dr. Richter and Dr. Cupertino for dates, contacts
- Purchase airline ticket
- Continue Portuguese conversation practice and tapes
- Establish contact with clinic, explain project

**April**
- Develop survey to be used with Dr. Richter, Dr. Cupertino
- Continue Portuguese conversation practice and tapes

**May**
- 17th: Last summative exam
- 19th: Depart for unrelated 2 week medical mission trip (Ecuador or Dominican Republic)
- Continue Portuguese conversation practice and tapes

**June**
- 2nd: Depart from country of MMF to Brazil (Begin 8 week project)
**Begin Phase II:**
Week 1 (June 2-8): Familiarize with homestay, community, city, and clinic contacts
Week 2 (June 9-15): Spend work week in hypertension clinic, observe and distribute survey to providers/patients
Week 3 (June 16-22): Spend work week in diabetes clinic, observe and distribute survey to providers/patients
Week 4 (June 23-29): Spend work week in renal clinic, observe and distribute survey to providers/patients

**July**

**Begin Phase III:**
Week 5 (June 30-July 6): Shadow patients of the clinic, observe and distribute survey, collect survey results
Week 6 (July 7-13): Continue to shadow patients, observe and distribute survey, collect survey results

**Begin Phase 4:**
Week 7 (July 14-20): Data collection, write-up of observations
Week 8 (July 21-27): Data analysis and write-up
By the 28th: Return to US
29th: Begin Fall semester

**August**
Continue Ongoing Applications
Prepare Clendening Presentation of Topic

**IV. Methods:**

My primary mentor, Dr. Cupertino, plans to travel to Brazil over the summer for several weeks overlapping my trip, and Dr. Richter will most likely be there for a period of time as well. They have several contacts in Juiz de Fora, as well as various other cities in Brazil that would facilitate safe and easy travel. In addition to this, it is likely that my Portuguese professor from undergraduate studies will be in Rocinha, Rio de Janeiro with his Institute. I may be able to contact him for additional information and travel information inside the city of Rio.

**Transportation:**

**International Travel:**
I plan to travel to Rio de Janeiro by plane, and may be flying directly from a medical mission trip in another Latin-American country (most likely Ecuador or Dominican Republic). I may be able to travel by bus from Ecuador via the Amazon basin region, which would be a viable option as well. Fortunately, airfare from all of these cities falls in the same price range.

**Domestic Travel:**
From Rio, I would most likely take a bus about 2 hours inland from to the state of Minas Gerais, where Juiz de Fora is located. Juiz de Fora has many highway connections with the metropolitan areas of Brasília, Belo Horizonte, and Rio de Janeiro. Transportation to these destinations by bus is an affordable option for weekend trips.

The primary method of travel to and from the clinic will most likely be by bus, and taxis are also available. Dr. Cupertino has agreed to arrange someone to meet me upon my arrival into the country, and to help orient me to the city.

**Accommodations:**

**Juiz de Fora:**
Juiz de Fora is home of a large Federal University and several private-owned colleges, making it a popular and safe destination for students by Brazilian standards. Much of the
research promoted through the clinic (Centro HIPERDIA de Juiz de Fora) is supported by the Universidade Federal de Juiz de Fora. I may have access to the campus for academic resources and space to work.

**Homestay:**

Dr. Paula Cupertino has been generous in offering her sister’s home in Juiz de Fora as an option for my lodging at no cost. For her and her sister’s hospitality, I am prepared to pay at least $100 USD/week, as well as contribute to food costs and house duties. I have lived with two other families through homestay programs in both Mexico and Costa Rica, and am familiar with the etiquette and responsibilities expected out of students living abroad. As an alternative to this option, I’ve located a hostel (Pousada Aconchega de Minas) that offers an extended stay option for about $35 USD/night. It may also be possible to seek accommodations through the University.

**Centro HIPERDIA de Juiz de Fora:**

The center opened in 2010, and has very established relationships with representatives from KUMC Department of Public Health and Preventative Medicine- Dr. Richter and Dr. Cupertino. They have conducted extensive research in the clinic and implemented various programs related to tobacco cessation.

**Contacts/Mentors:**

**Dr. Kimber Richter, PhD, MPH,** has conducted research and service as a Fulbright Postgraduate Scholar to Australia and Fulbright Senior Specialist to Portugal. She has traveled 5 times to Brazil for conferences, informal consultations, and project planning, and has intermediate skills in conversational Portuguese. She is highly committed to supporting tobacco control and research in Brazil. Her research focuses on gathering smokers’ perspectives on smoking cessation, the epidemiology of smoking, treating nicotine dependence, and multi-component health interventions in clinical and community settings.

**Ana Paula Cupertino, PhD** is a former faculty member of UFJF in Juiz de Fora, where she was awarded numerous teaching awards and was Principal Investigator of Brazil’s first community-based epidemiological study of health psychology and aging. Her research skills include community-based participatory research, community-based epidemiological studies, and clinical trials. Her tobacco control research focuses on smoking cessation among U.S. Latinos. Dr. Cupertino is a skilled mentor and she serves as co-investigator and consultant to KUMC faculty who conduct disparities-related research. She conducts research in Brazil and the U.S. and is fluent in Portuguese, Spanish, and English.

**Oscarina da Silva Ezequiel, MD, PhD** spans the interface between UFJF medical faculty and UBS primary care through her work on quality of care in UBS’s. Dr. da Silva Ezequiel has collaborated with Drs. Richter and Cupertino on the development of this application.

**Paul Sneed** is an Assistant Professor of Brazilian Literature & Cultural Studies, University of Kansas and Co-founder of the Two Brothers Institute of Rocinha, Rio de Janeiro. He was my Portuguese professor, and would serve as a primary contact in facilitating travel to and from Rio.
de Janeiro. He may also provide an opportunity to volunteer and provide educational information regarding tobacco use in youth.

V. Budget:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airfare (from KC, Quito or Santo Domingo, return to KC)</td>
<td>$1,200</td>
</tr>
<tr>
<td>Bus from Rio to Minas Gerais/Return to Rio</td>
<td>$100</td>
</tr>
<tr>
<td>Payment to homestay (Dr. Cupertino’s contacts) for hospitality/food costs</td>
<td>$100/week, total $800</td>
</tr>
<tr>
<td>Food and necessities</td>
<td>$200/week, total $1,600</td>
</tr>
<tr>
<td>Other travel expenses</td>
<td>$100/week, total $800</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$4,400</strong></td>
</tr>
<tr>
<td>Clendening stipend</td>
<td>($2,500)</td>
</tr>
<tr>
<td>Savings from personal airline miles earned</td>
<td>($1,000)</td>
</tr>
<tr>
<td><strong>Out-of-pocket expenses</strong></td>
<td><strong>$900</strong></td>
</tr>
</tbody>
</table>

VI. Bibliography


Supplementary Materials: In the following two pages, I’ve included items from the GATS specifically regarding cessation treatment (beginning at 30) that I will use as a guideline when selecting survey items:
PESQUISA ESPECIAL DE TABAGISMO DOS MORADORES DE 15 ANOS OU MAIS DE IDADE (NASCIDOS ATÉ 27/09/1993)

37 e 38
Nos últimos doze meses ___ usou algum dos seguintes procedimentos para parar de fumar?
(Lêa cada item)

a. Aconselhamento por profissional de saúde incluindo clínicas de cessação de fumar?
   7247
   1 Sim  2 Não  → (seja item b)
   Recebeu este aconselhamento no Sistema Único de Saúde - (SUS)?
   7255
   1 Sim  3 Não
   2 b. Reposição de nicotina com: adesivo, pastilha, spray, inalador ou goma de mascar?
   7248
   1 Sim  3 Não  → (seja item c)
   Recebeu este tratamento no Sistema Único de Saúde - (SUS)?
   7256
   1 Sim  3 Não
   3 c. Outros medicamentos com receita médica?
   7249
   1 Sim  3 Não  → (seja item d)
   Recebeu este tratamento no Sistema Único de Saúde - (SUS)?
   7257
   1 Sim  3 Não
   4 d. Homeopatia, Acupuntura?
   7250
   1 Sim  3 Não  → (seja item e)
   Recebeu este tratamento no Sistema Único de Saúde - (SUS)?
   7258
   1 Sim  3 Não
   5 e. Chás, ervas ou plantas medicinais?
   7251
   1 Sim  3 Não
   6 f. Serviços de ajuda por telefone para parar de fumar?
   7252
   1 Sim  3 Não
   7 g. Trocou por outro produto do tabaco que não faz fumaça?
   7253
   1 Sim  3 Não
   8 h. Alguns outro (especifique)?
   7254
   1 Sim  3 Não

Se o informante responder Sim ao item f → siga 39
Caso contrário → passe ao 41.

Observação: O questionário aceita mais de uma resposta. O entrevistador marca todas as opções que o respondente informar.

39 Em que lugares ___ conseguiu ou viu o número do telefone do serviço de ajuda para parar de fumar?

01 Nas embalagens ou maços de cigarros ou de outros produtos do tabaco
   7259
02 Até onde um médico ou profissional de saúde do SUS.
   7260
03 Até onde um médico ou profissional de saúde particular.
   7261
04 Na internet.
   7262
05 No rádio.
   7263
06 Na televisão
   7264
07 Nos outdoors ou pôster.
   7265
08 Nos folhetos informativos.
   7266
09 Nos jornais ou revistas.
   7267
10 Até onde um amigo/familiar/conhecido.
   7268
11 Outros (especifique)
   7269

(passe ao 41)

40 Qual das seguintes afirmativas melhor descreve o que ___ pensa sobre parar de fumar? (Leia cada item).

2740
2 Estou planejando parar de fumar no próximo mês.
4 Estou pensando em parar de fumar nos próximos doze meses.
6 Estou pensando em parar algum dia, mas não nos próximos doze meses.
8 Não estou interessado em parar de fumar.

(siga 41)