US Centre Summer Research Grant

Recipient name: Matthew T. Purcell

Project title: Public Health Campaigns Across Race and Space in the 20th Century US South

Summary of project:

Increased life expectancy and improvements in health across the life course of individuals has been a hallmark of social and economic development throughout the 20th and 21st centuries. Part of this phenomena has been due to the implementation of targeted public health campaigns. Understanding how these campaigns were structured, what strategies and innovations were utilised, and to what extent their outcomes affected change are all critical to our understanding of social change in the past as well as into the future.

My project looks at two campaigns, midwifery education and hookworm eradication, which both occurred within the US South. The midwifery education campaign only encompasses Florida, while the hookworm campaign occurred across the US South more generally. For both campaigns, I analyse the social factors influencing their implementation and effectiveness. In general, this includes interactions between agents within the campaign as well as outside the campaign and social characteristics of individuals within the campaign (SES status, race, spatial location, family structure, etc.). My analysis for the midwife programme incorporates social capital theory. The hypothesis is that public health campaigns focused on knowledge transfers must increase the absolute number of connections between teachers and students to have a positive effect. The paper also stresses that a relative increase in institutional social capital (connections to larger entities like government agencies or philanthropies) flowing to marginalised groups can increase the sustainability of knowledge transfer programmes.

Part two of the project focused on hookworm campaigns is still in development. I found data over the summer that includes both county-level and individual-level statistics of hookworm surveillance and treatment. My plan is to use the individual level data to identify social determinants of successful and unsuccessful treatment regimens. By linking individuals to families through the census, I will be able to show the effect of social variables on treatment outcomes. These can be at the micro-level such as family structure and parents' occupation or at the meso-level with variables like neighbourhood and school funding, etc. With the county level data, I plan to challenge results found by previous authors on the impact of hookworm eradication on the long-run economic and demographic trajectory of the US South.

Findings on Research Trip

The summer's research trip was spent in Tallahassee, Florida at the State Archives of Florida and New York City at Columbia University and the Rockefeller Archive Center. Below is a brief description of some key documents I was able to find and how they relate to my ongoing research project.

Midwifery Education Campaign

Midwife Record Cards

There are 3,077 pages of record cards at the State Archive of Florida. Each individual record card is 2 pages. The record card documents a single individual's history within the program for a 4 to 6 year period. After the 4 to 6 year period is over, individuals are given a new card. Based on the annual health reports, I estimate there are ~1000 individuals in these records. The records span the years 1934 to 1961.

The first page of these cards contains biographical data. I am transcribing the midwife's name, address, year of birth, years of practice, race, literacy, highest academic level of schooling. From this information, I will describe changes in the makeup of this particular healthcare labor force. Changes in the distribution of the age and educational background of the midwives will inform how effective reform policies were. During the late 1930s, the State Board of Health stated its aim to recruit younger and better educated midwives. How effective this effort was has never been systematically tested. There are also potential social capital effects working alongside these distributions. For example, older midwives may have helped to enforce norms around midwifery practices. These norms could have been counter to the teachings of the midwifery education program. Therefore higher turnover may have helped reset social norms.

I am in the process of transcribing the addresses of the midwives. Once finished I plan to map out the reach of the program with special attention paid to a change in strategy that occurred in 1936. The program changed from having annual conferences in major urban centers to having multiple training workshops within each county of the state. My hypothesis is that this change allowed for the program to reach more midwives by decreasing the cost of travel. In parallel, training workshops had smaller groups which I propose would have caused there to be stronger connections between midwives and the instructors. It is from this basis that I will base one leg of my argument that social capital channels were altered by the midwife program leading to improved midwifery practices.

Fellowship/Scholarship Records (from Lobenstein Clinic and Rockefeller Foundation)
The second leg of my social capital argument brings in network connections between nurse-midwife teachers and larger institutional actors like the Rockefeller Foundation and the Lobenstein Clinic. 'Institutional social capital' allows for access to resources that can build the capacity of individuals and communities.[1] The distribution of this form of social capital will have significant effects on the success of a health education program targeting rural and marginalized groups.

From the records I gathered at Columbia and the Rockefeller Archives Center, I am able to identify the years in which Florida's nurse-midwives, who were the lead instructors in the Midwife Program, attended training at the Lobenstein Clinic in New York. The training covered the best practices of obstetrics and health education. The Rockefeller Foundation covered the cost of the program and granted a living stipend to the pioneering women. Critically, 3 of the 7 scholarships I was able to identify in the archives went to black nurses. At the time, Florida had one black-accepting teaching hospital and this institution did not have a speciality training program for midwifery or public health education. Broadening the scope to encompass all of the

[1] Evans, Peter, (1996), Government action, social capital and development: Reviewing the evidence on synergy, World Development, 24, issue 6, p. 1119-1132, https://EconPapers.repec.org/RePEc:eee:wdevel:v:24:y:1996:i:6:p:1119-1132.

traditional US South, only Virginia and Tennessee had medical institutions with midwifery or public health education specialties. And even then these institutions presented a high cost burden to an ambitious nurse due to travel and living costs. The segregated healthcare environment also left black-accepting institutions underfunded and under-equipped to be able to offer enough spots to all out-of-state nurses. In view of these factors, documenting these scholarships will help to show how institutional connection to outside actors became a critical link in the effort to build the capacity of the black nursing workforce. The very same nurses that received scholarships would return to Florida and instruct midwives equipped with knowledge on best practices as well as cultural ties to the mostly black midwife labor force.

Hookworm Eradication Campaigns

Briefly, the historiography of hookworm eradication campaigns in the US South has been largely a narrative of the beginnings of a larger public health movement both for domestic public health movements and international health campaigns.[2] More recently, economic historians and historians of public health have utilized the campaigns as potential testing grounds for theories in development economics and public health's burgeoning field of implementation science.[3] In economic history, Bleakley et al. argued that the campaigns increased school attendance rates, which in turn improved labor force outcomes and decreased fertility in counties most affected by hookworm.[4,5] These studies were carried out with old census data that can be improved upon by newer 100% census datasets. The older studies also do not adequately investigate the

[2] For US view see, *Public Health: How the Fight Against Hookworm Helped Build a System* https://resource.rockarch.org/story/public-health-how-the-fight-against-hookworm-helped-build-a-system/ For global viewpoint see, Palmer, Steven (2010) *Launching Global Health: The Caribbean Odyssey of the Rockefeller Foundation*, Ann Arbor : University of Michigan Press

[3] Elman C, McGuire RA, Wittman B. Extending public health: the Rockefeller Sanitary Commission and hookworm in the American South. Am J Public Health. 2014 Jan;104(1):47-58. doi: 10.2105/AJPH.2013.301472. Epub 2013 Nov 14. PMID: 24228676; PMCID: PMC3910046.

[4] Bleakley H, Lange F. Chronic Disease Burden and the Interaction of Education, Fertility, and Growth. Rev Econ Stat. 2009 Jan 28;91(1):52-65. doi: 10.1162/rest.91.1.52. PMID: 24163482; PMCID: PMC3806284.

[5] Hoyt Bleakley, Disease and Development: Evidence from Hookworm Eradication in the American South, The Quarterly Journal of Economics, Volume 122, Issue 1, February 2007, Pages 73–117, https://doi.org/10.1162/qjec.121.1.73

role of campaign implementation and its interaction with social factors like occupation, income and race.

At the State Archives of Florida, there is a series of hookworm case files maintained by the State Board of Health from 1910-1911. These records cover the earliest attempt by the state to survey and treat the state's high burden of hookworm infections. The case files contain such data as name, age, symptoms, history, and treatment. Also included in this series is a publication on hookworm disease dated October 1910 by Assistant State Health Officer Dr. Hiram Byrd. Together, they represent a good source for analyzing the state's first attempt at hookworm control.

From the case files, I will be able to gather a sample population of those who were infected with hookworm. An issue is that these case files only cover those that were tested and found to be infected. Fortunately, at the Rockefeller archives, I was able to find resurvey completed in 1922 for Florida, covering 12 counties (out of 60 possible at the time). Officials carrying out the survey chose a diverse array of counties to capture the different soil types, income levels, and occupational structures. These were thought to be key determinants of hookworm burden by the Rockefeller officials.[6]

The resurvey data covers white school children between the ages 6 and 18. This limits the amount I will be able to say about racial dynamics of hookworm in Florida, but the individual-level data from 1910 and 1922 can allow for questions to probe the differential effects of household and communal factors in determining the hookworm infection rates and the success of treatment campaigns over the short and long run. I hope to supplement this data with Georgia resurvey data I came across at the Rockefeller Archive Center. I am still in the early stages of transcribing this data, but the Georgia data surveys both black and white school children. The hope is that hookworm campaigns can be examined through a racial lense with this data along with the social/economic factors mentioned above.

[6] Rockefeller Foundation Record, Record Group 5, Series 2, Box 7, Folder 45.

Between the two sample periods, the tactics of the hookworm campaign 'roll out' changed. Early years (1910-1911) the campaign utilized private physicians as the dispensary point. Later years worked through school systems, using public health nurse visits as a way to dispense of the anti-hookworm medication, Thymol.[7] By using the 1922, resurvey data I will have an estimate for the appropriate at-risk population ten years earlier. Based on the difference between my estimate and the positive cases found in 1910, I can estimate the number of infected that were missed by the early campaign. The idea here is since the first roll out used private physicians and relied on individuals personally going to the physician was set up in a way that limited its efficiency. When public health campaigns have an intervention that works through a gatekeeper (in this case some health official doling out a cure) how campaigns set up their roll out can alter its efficacy.

[7] Rockefeller Foundation Record, Record Group 5, Series 2, Box 7, Folder 45.

Appendix I: Research Log

Archival Visits		
Archive (Location)	Key Documents	Date(s)
State Archives of Florida (Tallahassee, FL)	**Florida Midwife Program**: internal correspondences, midwife record cards, newspaper clippings, and manuals **Hookworm Case Files:** case records from an early hookworm campaign undertaken by Florida's Board of Health from 1910-1911	8/8/2022 to 12/8/2022
Archives and Special Collections at Columbia University Irving Medical Center (New York City, NY)	**Maternity Center Association (MCA):** Lobenstine Clinic and School Fellowship training records for nurse-midwives in the Florida Midwife Program, correspondences between the MCA and Tuskegee School of Midwifery on African-American midwifery, educational/training materials	8/9/2022 to 9/9/2022
Rockefeller Archive Center (Sleepy Hollow, NY)	**Midwife Scholarships:** Registers of midwives granted scholarships to schools besides the Lobenstein Clinic, correspondences between Rockefeller officials and state public health officials in Florida **Hookworm Eradication Campaigns:** Resurvey data from campaigns in Georgia and Florida covering the 1920s, county health department data for Georgia (1922-1934).	13/9/2022 to 20/9/2022