

**Wetmore Comprehensive Center for Excellence:
Fostering TB patients for establishing Primary care
A One-stop Care Co-Coordination Model.
Initial Analysis of Pilot Process Improvement Program.**

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Abstract

Background

For over the last half a century, the Wetmore Tuberculosis clinic in New Orleans has been providing focused TB care to the area residents in Region1 of the Office of Public Health with contractual adult and pediatric pulmonary and infectious disease physicians from LSUHSC and Tulane University Health Sciences Center. It has also served as a teaching site for medical and public health students, as well as residents and fellows giving them an opportunity to have a unique experience in evaluating and managing TB long term. The Louisiana Dept. of Health charge in this clinic is to evaluate patients for active or latent TB as a referral site and provide medical and nursing follow up and management. In the past, management of other co-morbidities were outside the scope of this program, although attempts were always made to establish primary care and other specialty coordination through other health systems and clinics in the area with limited success.

During Jan 2022- Feb 2023, a total 351 adult and pediatric patients were seen at Wetmore clinic. Out of 351, 52 cases (14.81%) were identified as Active TB, 120 cases (34%) were detected as Latent TB, 135 cases (38.46%) were undergoing evaluation of TB, 8 cases (2.27%) had Extra-pulmonary TB while 27(10.25%) were identified as no TB disease or infection cases. The remaining 3 cases were unknown and lost to follow up. 73 cases (20.79%) had history of attachment with homeless shelters in the New Orleans area but the follow up rate of this group was 53.6%. 71 cases (20.22%) had a history of incarceration. 56 of 351 cases (15.95%) had previous TB treatment. Existence of comorbidities especially Diabetes, CVD, Hypertension was observed in many patients but without any structured primary care pathway. Referrals from Emergency rooms and hospital systems were very common but with no established follow up pathway in most of the cases. Out of 351 patients, 18patients (5.13%) were HIV positive. 170 (48.43%) were either foreign born or recent immigrants

Need Assessment: Based on the above background and illustrated by examples below:

Example Cases	Needs Assessment
An African American man relocated from Los Angeles with MTB diagnosis and Abdominal complaints:	1) No Primary care therefore lacked continuity of quality care 2) Required CT scan through University Medical Center with surgical and medical follow-up 3) Household contact also tested positive
An Indian American man, working temporarily in the restaurant industry with Cavitary MTB and uncontrolled Diabetes Mellitus:	1) TB Prescription was not effective as Diabetes Mellitus not controlled 2) No Primary Care Provider, therefore, no continuity of quality care; Cannot get into any Primary care clinic
A Caucasian man with history of silicosis, COPD, Emphysema, smoker, works offshore, has TB for the 4th time despite adequate prescription:	1)Management and follow-up for recurrent TB
A Russian-born immigrant with lung masses and TB with multiple co-morbidities cannot be referred to Primary Care Provider due to insurance issues. Lung Masses appear to be metastatic cancer:	1)Coordination for primary care 2)Referral to and coordination for biopsy and oncology

Objectives:

The Wetmore Center of Excellence for Comprehensive Patient Care and Clinical Research of Mycobacterial Diseases was established for long term process improvement as a pilot model for TB clinics throughout the country

Mission: The Wetmore Center of Excellence for Comprehensive Patient Care and Clinical Research of Mycobacterial Diseases (Wetmore Center) will elevate the funding priorities of the Charles and Elizabeth Wetmore Fund by

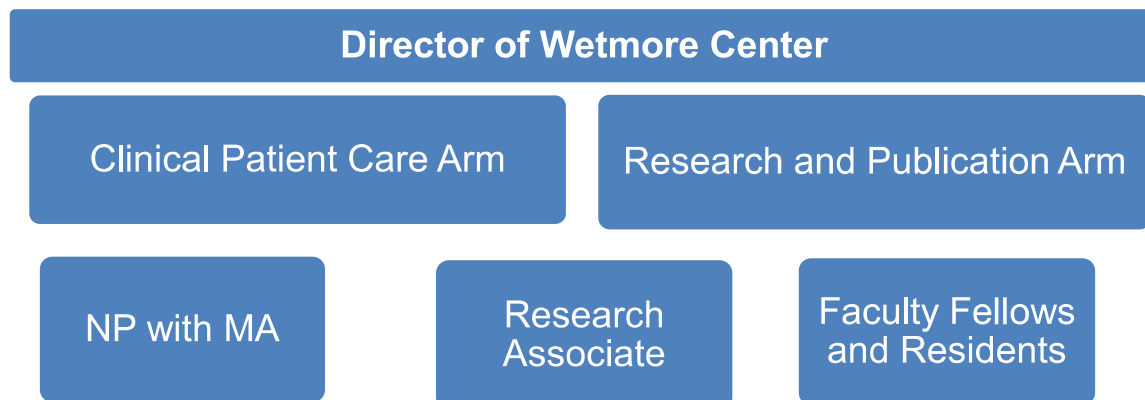
- 1) Providing care of indigent, uninsured, underserved, and underinsured native sufferers of tuberculosis and other respiratory illnesses and disorders and establish pathways for primary and specialty care.
- 2) Creating a long-term platform for collecting data, publishing, and conducting medical research with the data base of OPH in and about the City of New Orleans, LA.

Vision: To build a pilot model regional Center of Excellence with a national and international recognition providing high-quality *one-stop, one window operation* clinical and research oriented comprehensive TB and primary care to improve the quality of life for those impacted by Mycobacterial Diseases while honoring the legacy of Charles and Elizabeth Wetmore and the Wetmore Trust.

Goals of the project:

1. To build a Center of Excellence guaranteeing the long-term future of patient care and clinical research of Mycobacterial Diseases in the New Orleans, LA area
2. To integrate primary care into the Mycobacterial Disease treatment setting in one clinic venue setting facilitating improvements in patient outcomes
3. To develop strategic partnerships between LSU Health Science Center, Tulane Medical School and other New Orleans area Primary Care and Mycobacterial Disease providers to facilitate much needed expansion of existing services
4. To foster enthusiasm for Mycobacterial Disease Patient Care and Clinical Research in the next generation of Mycobacterial Diseases professionals
5. To publish a minimum of five Regional, National or International publications so that the Wetmore TB clinic outcomes are shared with other scientific venues in a structured and formal manner

Structure of Operation:



Methodology:

During our initial review, we estimated total number of Wetmore TB clinic patients encountered with MD /clinic or nurse evaluation visit and divided them in three groups:

Group 1: Those with a robust established primary care follow-up

Group 2: Those with Intermittent /sporadic /as needed primary care follow-up

Group 3: Those with no primary care at all.

Issues identified: We identified "hurdles to primary care" The challenges and limitations identified at Wetmore clinic include:

- 1) Language barrier
- 2) Transportation to/from PCP appointments
- 3) Health literacy and awareness
- 4) Family support (especially for elderly or pediatric patients)
- 5) Prescription drug access or lack of pharmacy and cost of non-TB meds
- 6) Work schedule/childcare challenges
- 7) Lack of adequate insurance

Results:

Work on this project through the Wetmore Grant started: November 2022. During the 5-month following a total of 110 adult TB patients were seen and interviewed regarding their primary care provider information and PCP follow-up. 39 of 110 patients fell under Group One with an established Primary Care, 44 of 110 patients were classified under Group 2 with Sporadic/Inconsistent Primary Care while remaining 27 of 110 patients were identified as Group 3 with No Primary Care.

Action items through Wetmore Grant:

A Nurse Practitioner was added to our clinical staff to function as a "stop gap" to address immediate primary care issues in patients visiting the Wetmore TB program who either do not have a provider or have intermittent follow-up with primary care. For example, she can provide prescriptions for vital medications until patients are able to establish with a more permanent primary care provider. This both helps address the patient's current medical issues and improves their likelihood of completing TB treatment without adverse effects related to HTN/diabetes/other chronic conditions. She is not intended to be permanent primary care for our TB patients, but rather a transitional care provider and serve as a care coordinator with the subsequent referrals to established primary care centers of the area. In this context, contacts were established with these community clinics including the Healthcare for the Homeless Clinic

program on a more formal basis and a partnership established. Communication of medical data and record as per HIPAA guidelines was formally enforced.

The challenges and limitations identified at Wetmore clinic as mentioned above were addressed as below:

1)Language barriers: We purchased an iPad internet-based video-translator device and service which improved the quality of translation services. We also gave referrals to the specific Hispanic Clinics at West Jeff. if the patient meets insurance criteria. In addition, our NP set them up with University Medical Center, Mendoza clinic and De Paul Clinics. Jefferson Clinic as an example

2) Transportation to/from PCP appointments: Most of the patients lack transportation facility and that is one of the biggest barriers in the treatment. To overcome this, some shelters and clinic offer transportation facilities from shelter to clinic and back to shelter. This issue is being looked at for better options

3) Health literacy: The NP–PCP encounter at the time of the TB clinic encounter facilitated patient and family education on subjects like health care maintenance, preventive health and nutrition

4) Family support (especially for elderly/pediatric patients): Wetmore Clinic do have pediatric clinic facility and Wetmore clinic sees patients of all the ages and coordination with local social services and charities was intensified

5) Prescription drug access or lack of pharmacy and Medication cost: When we initiated medications, our NP put together a list of low-cost medication options either through coupons/patient assistance programs or supporting Charity programs

6) Specialized care /Dental care: Partnership and connections with health systems such as LCMC /UMC and Healthcare for the Homeless through the City of New Orleans Medical Director's office are being worked out.

Specific examples of Patient Care Interventions available on request.

Conclusion:

Patients in Group I were encouraged to "stay the course" and continue their regular follow-up with close communication with the Wetmore clinic Patients in group II were encouraged to re-establish regular visits and contact with their physician of choice and those clinics were informed of these patients with records exchanged for future reference. Patients in group III

were directly referred to providers, including UMC and Healthcare for the Homeless Clinics, if they were amenable to that referral. We will continue to adapt our resources to our ongoing patient needs and present our follow up report in one year with more evaluation and outcome data. As we move forward with this concept, we will hope to enumerate specific research projects and publications which may emanate from this approach as part of the research and quality improvement arm of this project.

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References:

1. The effect of primary health care on tuberculosis in a nationwide cohort of 7.3 million Brazilian people: a quasi-experimental study, Jesus, Gabriela S et al., *The Lancet Global Health*, Volume 10, Issue 3, e390 - e397, (2022).
2. Kang, W., Du, J., Yang, S. *et al.* The prevalence and risks of major comorbidities among inpatients with pulmonary tuberculosis in China from a gender and age perspective: a large-scale multicenter observational study. *Eur J Clin Microbiol Infect Dis* 40, 787–800 (2021). <https://doi.org/10.1007/s10096-020-04077-2>.
3. Workneh MH, Bjune GA, Yimer SA, Prevalence and associated factors of tuberculosis and diabetes mellitus co-morbidity: a systematic review. *PLoS One* 12(4): e0175925. (2017). <https://doi.org/10.1371/journal.pone.0175925>.
4. Abreu RG, Rolim LS, Sousa AIA, Oliveira MRF Tuberculosis, and diabetes: association with sociodemographic characteristics and diagnosis and treatment of tuberculosis.

Brazil, 2007–2011. *Rev Bras Epidemiol* 23: e200009. (2020). <https://doi.org/10.1590/1980-549720200009>.

5. White, L.V., Edwards, T., Lee, N. *et al.* Patterns and predictors of co-morbidities in Tuberculosis: A cross-sectional study in the Philippines. *Sci Rep* 10, 4100 (2020). <https://doi.org/10.1038/s41598-020-60942-2>.
6. Baluku, J.B., Ronald, O., Bagasha, P. *et al.* Prevalence of cardiovascular risk factors in active tuberculosis in Africa: a systematic review and meta-analysis. *Sci Rep* 12, 16354 (2022). <https://doi.org/10.1038/s41598-022-20833-0>.
7. Pradipta, I.S., Idrus, L.R., Probandari, A. *et al.* Barriers and strategies to successful tuberculosis treatment in a high-burden tuberculosis setting: a qualitative study from the patient's perspective. *BMC Public Health* 21, 1903, (2021). <https://doi.org/10.1186/s12889-021-12005-y>.
8. Aldridge RW, Zenner D, White PJ, Williamson EJ, Muzyamba MC, Dhavan P, et al. Tuberculosis in migrants moving from high-incidence to low-incidence countries: a population-based cohort study of 519 955 migrants screened before entry to England, Wales, and Northern Ireland. *Lancet*.;388(10059):2510–8. (2016).
9. Cáceres G, Calderon R, Ugarte-Gil C., Tuberculosis, and comorbidities: treatment challenges in patients with comorbid diabetes mellitus and depression. *Ther Adv Infect Dis.* 20; 9:20499361221095831. doi: 10.1177/20499361221095831. PMID: 35646347; PMCID: PMC9130847, (2022).