



Introduction and Background

Karachi is the twelfth largest city in the world, with a population of at least 20.3 million people.¹ 60% of Karachi residents live in slums and informal settlements. Slum residents face overcrowding that outpaces the local infrastructure for sanitation. Tap water and bore water are common sources of drinking water, which are contaminated and unsafe. Unemployment is high and education is low. Families tend to be large, and houses tend to only have 2-3 rooms. Overcrowding and lack of sanitation facilitates the spread of infectious diseases. The chronic disease burden is also high, with diabetes, kidney disease, liver disease, and high cholesterol being the most prevalent.¹ Unfortunately, health care usage remains startlingly low.

Pakistan spends about 0.5-0.8% of its GDP on health care. Its underfunded health sector is also saddled with corruption, political instability, and inequitable distribution of resources.² These issues are compounded in slums, where adequate care may not exist locally, and lower income levels prevent usage when it does. Slum residents often rely on healers, alternative medicine, or self-prescribed medications from pharmacies.² Reasons for choosing these methods over proper health care facilities include easy access, low costs, and low waiting times. Immunization rates are also low due to lack of awareness, accessibility, and cost. Those that do utilize health care facilities rely on NGOs and government services.²

Atya Clinic is situated in an impoverished neighborhood on the border between North Nazimabad and Orangi Town, the world's largest slum. Patients come from the surrounding neighborhoods. This clinic opened in 2024 and provided local residents an accessible and affordable health care option that did not previously exist in the area. In this poster, I detail the health needs of patients at this clinic based on the cases I observed and the data kept by the clinic itself.

Rahbar Wellness Center, Atya Khanum Branch

- Location: Block R, North Nazimabad, Karachi, Pakistan
- Staff: general practitioner, compounder, clinic manager, housekeeper, security guard
- Services: family medicine, BP and blood sugar screenings, free prescription and OTC medications, discounted referrals for lab testing, vitamins and nutritional supplements
- Patients³: average of 1,080 patients/month
 - 88% make under \$356.30 per month
 - Female > male patients, especially in the population
 - All age groups seen



Website for
info about
this clinic
and to
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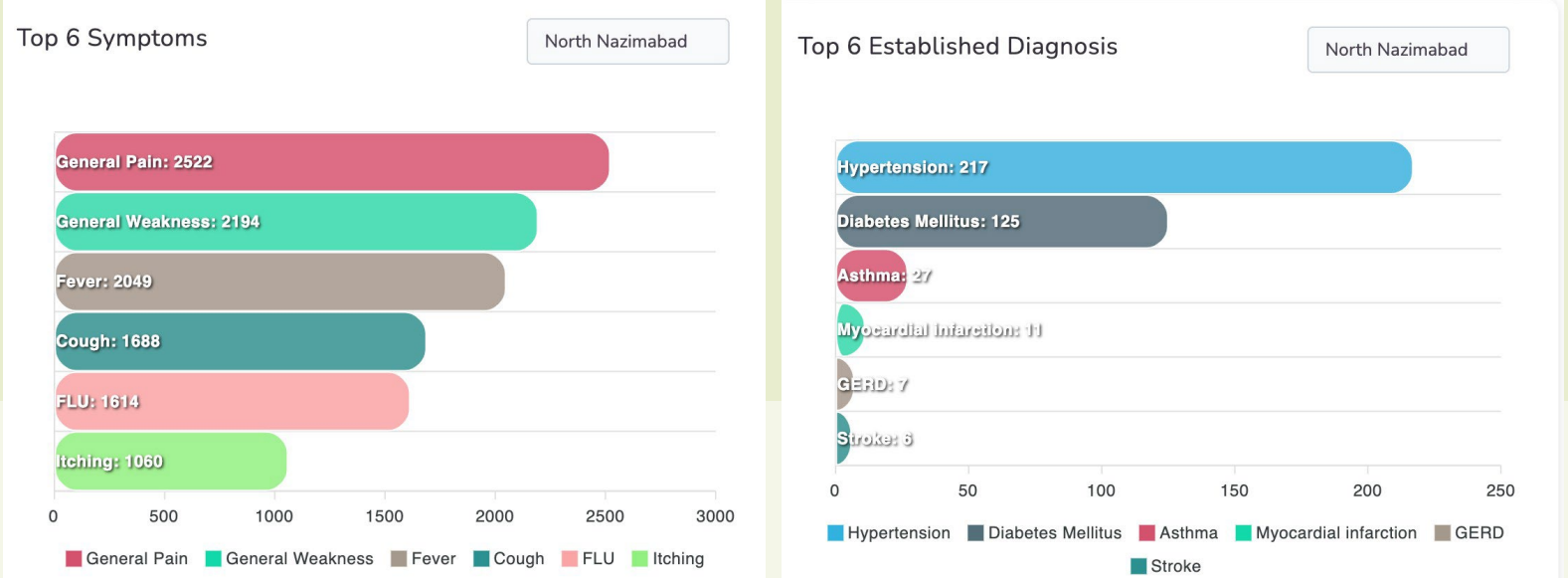


Figure 1: Top 6 chief complaints for which patients sought care since the clinic opened³

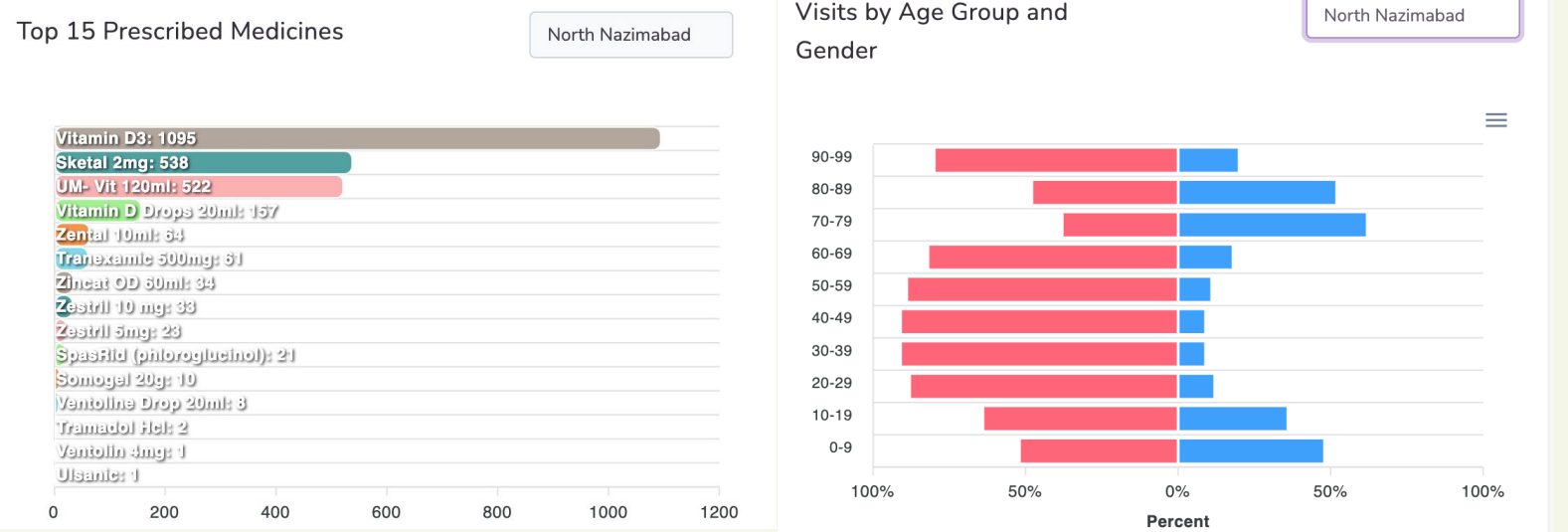


Figure 3: Top 15 medications prescribed to clinic patients. Most commonly prescribed for nutrient deficiencies, bacterial or parasitic GI illnesses, menstruation, and hypertension³

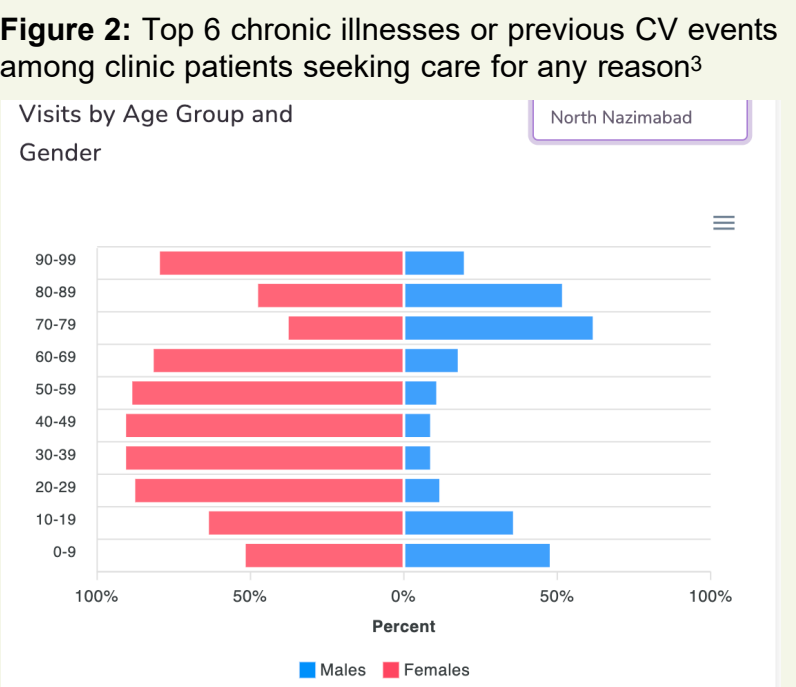


Figure 4: age and gender distribution of patients³

Observed Cases

Patient Population: I shadowed for 5 days from 2 pm – 8 pm. We would see about 30-50 patients seen per day from surrounding areas. The line started to form around 12 pm and was always long by the time the clinic opened. There were often fights outside or with the clinic staff about the limited number of entry tickets. Most of the patients were women, the majority of whom wore niqab, and children, including unaccompanied minors or children bringing their younger family members. Several patients were from villages in Sindh or KPK who were visiting or working in Karachi. These patients often spoke Saraiki or Pashto rather than Urdu. However, most patients spoke Urdu to some degree.

Clinic Flow: Upon arrival, patients go to the front window to register with the clinic manager. The security guard keeps order and maintains the flow outside. Patients receive a token and wait in the waiting room. The housekeeper sanitizes the room and brings in the patient. After assessing a patient, the doctor writes a prescription or referral to local labs or specialists with which she has a working relationship and can request a discount. Before leaving, the patient gives the prescription slip to the compounder, who dispenses free medications, provides POC testing, gives detailed instructions for medication use, and keeps a detailed record to report back to Rahbar Trust.



Left to right: line outside to register and receive tokens from clinic manager; waiting room filled with women and children; doctor assessing a woman and her child; compounder taking inventory of medications received from Rahbar Trust to report back to parent non-profit.

Cases: Below, I detail some of the cases I observed. These were either cases that I saw the most of or that the doctor pointed out as typical for the clinic.

Antibiotic-Resistant Staph Skin Infections: Each day, I saw at least 5-6 patients, mostly children, presenting with furuncles on the face and head. These patients all came from Qasba Colony. The doctor suspected an SSTI due to the presentation, geographical distribution in a single neighborhood, and blended family homes facilitating skin-to-skin contact. Augmentin caused remission after a full course, but the furuncles recurred a few weeks later in many patients. She recommended they get a culture done, but most did not follow through due to time and resource constraints. Because Augmentin can be purchased without prescription and is often used empirically by the average Pakistani, the doctor suspected resistance.

Diarrheal Illness: During my trip, at the end of July, Karachi was suffering a historic heat wave, leading to a rise in diarrheal illnesses due to food and water-borne pathogens. The neighborhoods surrounding the clinic had open sewage and poor drinking water infrastructure, leading to a high burden of bacterial and parasitic infections. At least 5-10 patients per day, especially children, reported acute diarrhea. Based on symptoms, the doctor prescribed various antibiotics or antiparasitics and ORS. She also educated them on boiling their drinking water, storing food properly, and solely eating food prepared at home to avoid contamination from unregulated food vendors.

Anemia (“kun ki kami”): A patient showed us lab results suggesting she had iron-deficiency anemia. In the past, she was treated at an unofficial clinic with an IV iron infusion. The doctor was suspicious because these clinics promote the use of IV treatments to make more money. After a physical exam and HPI, the doctor asked some questions to figure out what the cause of the anemia was, including asking about parasites and family history of thalassemia, which is prevalent in Pakistan. She prescribed iron supplements after discouraging reliance on IVs. The Desi diet is not iron-rich, and many patients cannot consistently afford beef or milk. She also made some suggestions on dietary changes.

Breast-Feeding and Nutrition: One new mother reported bone and muscle pain since giving birth. She breastfeeds the child several times per day. After a dietary assessment, the doctor was concerned about hypocalcemia in this patient. She prescribed calcium supplements. According to her, nutritional deficiencies are the underlying cause of most general weakness in this population due to lack of nutritional foods or education about healthy diets.

Jaundice (“piliya”): Two patients reported jaundice, which they understood to be a disease itself. They went to a hakeem, or healer, to remove it using use specific plants, prayers, and even incense. Apparently, some of the plants used in rural South Asia are hepatoprotective due to their anti-inflammatory and anti-microbial properties, which allows these remedies to temporarily work. However, Pakistan has a high burden of hepatitis C due to poor sterilization of medical equipment, unhygienic dental procedures, and roadside barbershops. Alternative medicine cannot rid the body of the virus, so sole dependence on these treatments could result in permanent liver damage.

Chikungunya: Another two patients mentioned that they had just recovered from Chikungunya. They described a rash and severe arthralgias which felt like being beaten with a stick. Chikungunya had been spreading in Karachi due to the heat, lack of mosquito nets, sporadic rains, and standing water from inadequate drainage.

Loneliness: If there were no clear medical issues, the doctor would sit and listen to the patient’s problems, offering brief counseling and prayers. Certain issues, such as income and domestic disputes, are taboo to talk about with others, which can be isolating. This is especially true for women who are confined to the house.

Observed Cases (cont.)

Hypertension: Three patients came to clinic for continuous management of hypertension. One of these patients came in because she had become symptomatic but had no way of measuring her BP at home. Another was visiting from a village and had run out of medications months ago due to discontinuous care. The doctor also had to discourage patients from changing doses at their whim.

Medication-Sharing: An unaccompanied 10-year-old was sick with an acute diarrheal illness. She was prescribed a course of antibiotics and given ORS. When she came into clinic for her follow-up, she admitted she had not finished her course because her uncle was sick with similar symptoms and her aunt had her share her medications. She could not refuse for fear of being seen as disrespectful. She was also happy to help her uncle. Pakistani culture tends to be more family-focused, valuing the collective over the individual.

Post-Op Care: One patient reported requiring 21 surgical debridements for a hernia repair that occurred last year. The wound was not healing, and she was once again experiencing a fever after her last debridement. Possible factors include inadequate post-op management by doctors, lack of resources for after-surgery care, and rise in antibiotic-resistance in Karachi. The patient was emotionally exhausted, ill, and scared from dealing with complications.

Challenges and Future Directions

- Need for **nutritional supplements**
- More **POC testing capabilities**
 - Patients often did not have the time or resources to obtain testing from labs that the doctor recommended
- > 1 **general practitioner**, possibly also a **male provider**
 - Another GP would decrease wait times and patient load
 - The majority of patients were women and felt comfortable being assessed by a female doctor
 - It is possible that less men came to the clinic for care due to issues with working hours and because the doctor is female
- **Patient educational material**
 - Infection prevention, immunizations, nutrition, contraception
 - Should exist in multiple languages and include pictures
- Promoting **responsible antibiotic usage** and **discouraging Rx-sharing**
- **Facilitating trust** in medical practitioners and **integrating traditional medicine** to increase acceptability of treatment:
 - Some patients expressed frustration about the clinic’s capabilities and accused the staff of taking bribes, which commonly occurs in Karachi health care facilities
 - Malpractice is high in Pakistan, especially against low-income patients, and is not usually prosecuted. This inspires fear in those who are already neglected by their government.
 - Some patients wanted quick fixes to their problems, such as IVs and antibiotics, and had their own conflicting explanatory models for their illnesses. These patients were often noncompliant with her suggestions because they disagreed with her assessment and treatment recommendations

References

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2. Muhammad, Q., Eiman, H., Fazal, F., Ibrahim, M., & Gondal M.F. (2023). Healthcare in Pakistan: Navigating Challenges and Building a Brighter Future. *Cureus*. doi: 10.7759/cureus.40218.
3. Rahbar Trust. (2024). *Live Clinics Updates*. <https://rahbartrust.org/free-clinic-stats/>

Acknowledgements

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- **To donate to this clinic’s efforts:**
https://www.launchgood.com/v4/campaign/free_medical_clinics_in_karachi