JOURNAL OF POLITICAL STABILITY ARCHIVE

Online ISSN: 3006-5879 Print ISSN: 3006-5860
DOI: https://doi.org/10.63468/jpsa.3.1.74
Vol. 3 No. 1 (2025)
https://journalpsa.com.pk/index.php/JPSA/about

Recognized by: Higher Education Commission (HEC), Government of Pakistan

Comprehensive Case Study: The Karachi Institute of Kidney Diseases (KIKD) – A Beacon of Hope in Public Health

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ABSTRACT

Chronic Kidney Disease (CKD) is a major public health challenge in the modern-day setting that has been responsible for 1.5 millon deaths globally in 2023. Its burden is borne disproportionately by low to middle income countries; Pakistan, for example, is eighth highest for prevalence in the world. The present case study provides an exhaustive examination of the Karachi Institute of Kidney Diseases (KIKD), located in Karachi, Pakistan's megacity, wherein every year, more than 100 000 residents are afflicted by renal disorders that can be attributed to risk factors ranging from hypertension to the consumption of contaminated water. Drawing upon my previous experience as Metropolitan Commissioner and Administrator of Karachi, this analysis attempts to trace KIKD's institutional development from an underused "ghost building" that lay abandoned for eight years to it being the second-largest public dialysis facility in the city today. The transformation was fundamentally underlined by the introduction of a solid public-private partnership (PPP) model that united the Karachi Metropolitan Corporation (KMC) and the philanthropic KIKD Association to overcome the bureaucratic inertia and funding shortfalls. The research raises important leadership interventions to note, in particular, the decisive setting up of a specialized isolation unit for the dialysis patients infected with the new corona virus at the outbreak of the pandemic, which helped prevent a potential mortality crisis among the vulnerable renal population

when other facilities declined to admit. Currently, KIKD provides free and comprehensive care that includes lithotripsy, intensive care unit (ICU) support, and vascular surgery, thus plugging the gap of care for the urban poor who do not afford the cost of private treatments of more than PKR 60 000 per month. Employing SWOT and PESTEL Analytical frameworks, the research highlights that although KIKD is adept in managing political friction with bipartisan endorsement, it is vulnerable to macro-economic volatility and acute water scarcity (afflicting Karachi) that is compromising the institutional ability to meet the daily demand for purified water required for dialysis. Ultimately, the case study describes KIKD not only as a hospital, but also as a "ray of hope" and a replicable example of municipal health governance thereby advocating for its prospective evolution into a teaching and transplantation institute that can combat the silent killer that is kidney disease in a sustainable manner.
Keywords: Chronic Kidney Disease, Public-Private Partnership, Karachi Institute of Kidney Disease (KIKD), Healthcare Administration, Dialysis, Karachi, Public Health, Renal Failure.

INTRODUCTION

Epidemiology of Kidney Disease in the World

Chronic Kidney Disease (CKD) has become one of the greatest public health challenges of the 21st century. It is frequently called a "silent killer", because it usually advances to advanced stages with no overt clinical symptoms, thus leaving patients and health care systems alike wanting in preparing for the desperate management needed at End-Stage Renal Disease (ESRD). The global burden of kidney disease is rising at an alarming pace, fueled by ageing populations and the rapid rise in non-communicable diseases (NCDs).

The Global Burden of Disease (GBD) Study 2023 shows that the number of adults living with CKD has risen globally to near 800 million and 14 per cent of total adults in the world are affected (News - Medical.Net, 2025). CKD is no longer a marginal health issue but a central one, it is now ranked as the 12th leading cause of disability globally and it claimed about 1.5 million lives in 2023 alone (News-Medical.Net, 2025). As with all pathological phenomena setup before us, the epidemiological transition can be contrasted: If previously infectious diseases were the on top of the charts of causes of death worldwide, today, NCDs such as hypertension and diabetes are the primary causes of renal failure. As the GBD 2023 analysis gave a further light to the fact that kidney failure with replacement therapy (KFRT) is affecting about 4.59 million people in the world, with a steady increase over the last 3 decades (GBD 2023 Kidney Failure Collaborators, 2024).

In low to middle income countries (LMICs) this burden is disproportionate due to the "double burden" of disease. These nations are at once facing unsolved problems of infectious disease as well as burgeoning problems from lifestyle related factors. The economic repercussion is staggering; in developed countries, the treatment of ESRD accounts for 2- 3 per cent of the health care budget annually

when it affects less than 0.1 per cent of the population. For developing economies this places a financial burden on society that often makes life-saving measures like dialysis or transplantation unavailable or unaffordable for the vast majority. It is projected that CKD will be the fifth leading cause of years of life lost by 2040 (News-Medical.Net, 2025), which is a troubling warning to health administrators all over the world: if preventative, scalable, and even curative interventions are not rolled out, renal disease will bankrupt fragile health systems.

Epidemiology of Kidney Disease in Pakistan

Pakistan experiences a renal health crisis of significant proportions, which is reflective of the pattern in other parts of the world but is compounded by local systemic failures. The country ranks eighth in the world for prevalence of kidney disease (Dawn, 15 March 2019). This statistic represents millions of lives which have been derailed by debilitating illness. Academic literature supports this alarming indication; studies do indicate the total prevalence of CKD in Pakistan ranging from 21.2% to 24% of the adult population (Imtiaz et al., 2024; Jessani et al., 2014).

The epidemiology in Pakistan is unique because of the presence of certain risk factors. Unlike in the West where age and obesity are major factors, Pakistan is facing a compound of unmanaged diabetes, hypertension and environmental nephrotoxins. The most common cause of CKD has been found to be diabetic nephropathy (27.1 per cent) in the local studies, followed by CKD of unknown etiology (16.6 per cent) and renal stone disease (12.4 per cent) (Imtiaz et al. 2024). Pakistan is in the so called "stone belt", where nephrolithiasis is endemic and is often associated with dehydration resulting from a hot climate and the consumption of mineral-rich, often contaminated groundwater. Untreated, these stones cause obstructive nephropathy and eventual renal failure (Khan et al., 2023). Furthermore, uncontrolled over-the-counter non-steroidal anti-inflammatory drugs (NSAIDs) and general mass use of uncertified herbal or "hakeem" remedies, containing heavy metals, is a major cause of interstitial nephritis and acute kidney injury (AKI), which often leads to CKD (Cowasjee et al., 2020). Annually around twenty thousand deaths occur in Pakistan due to kidney diseases alone (Dawn, 15th March 2019).

Epidemiology of Kidney Disease in Karachi

Karachi being the megacity of Pakistan has a peculiar and poignant epidemiologic picture with regard to renal health. With a population of more than 16 million, the city serves as a gateway for complicated medical cases from the interior of Sindh and Balochistan but the city's inhabitants are also at high risk. Community based cohort studies from urban Karachi show the prevalence of CKD ranging from 16.6 to 25.3 % with age and hypertension being important associated factors (Jessani et al. 2014).

Rapid urbanization in Karachi has triggered environmental degradation, which is a critical determinant of health. The city's water supply is often contaminated; ingestion of brackish or contaminated water, high in Total Dissolved Solids (TDS), is a major cause of renal calculi and urinary infection (Dawn, 21st July 2019). Moreover, the sedentary, urban lifestyle has led to a wave of Type 2 diabetes

and hypertension - two major causes of CKD. In my capacity as Administrator, I have observed that kidney disease in Karachi is not only a medical but also a socio-economic problem. The "urban poor" who live in densely populated areas like Federal B Area, Orangi and Korangi are hardly benefiting from early screening access. By the time these patients arrive at tertiary care facilities they are often in ESRD and in need of immediate dialysis. Experts have warned that more than 100 thousand people suffers from kidney disease every year in Karachi (Daily Times, 7 March, 2024).

Risk Factors for Kidney Diseases

The etiology of kidney disease in our context is multifactorial, creating a complex web of causation that is hard to untangle without a comprehensive public-health strategy:

Diabetes Mellitus: Diabetic nephropathy is the most common cause of CKD in Karachi. Poor glycemic control due to lack of education and lack of access to medication leads to accelerated renal injury (Imtiaz et al. 2024).

Hypertension: Uncontrolled hypertension causes damage to renal arteries, thereby causing nephrosclerosis. Studies in Pakistan have shown hypertension prevalence in 65 % of CKD subjects (Lodhi et al., 2023).

Water Quality: High TDS and biological contamination in the water supply of Karachi are a direct cause of kidney stones and recurrent urinary tract infections (UTIs) (The News, 22 June 2020).

Analgesic Abuse: The use of NSAIDs without prescription is a major problem that leads to analgesia nephropathy which is one of the most common causes of AKI in tertiary hospitals (Cowasjee et al., 2020).

Lifestyle Factors: Excessive use of betel nuts, gutka, carbonated drinks etc. has been found by city officials as a factor that contributes to renal degeneration among the younger demographics (Daily Times, 7 March 2024).

Environmental Toxins: Exposure to lead and other heavy metals in industrial areas also makes it a risk of developing CKD of unknown etiopathogenesis in migrants from rural areas (Khan et al., 2023).

The Need and Importance of Dialysis Centers

For people with reaches End Stage Renal Disease (ESRD), the kidneys are no longer functioning in the removal of metabolic waste and the need arises to maintain a Renal Replacement Therapy (RRT). In this last stage, dialysis takes over as an important life system; without dialysis, mortality is almost certain. Hemodialysis is a simulation of the native renal function that filters the circulating blood to eliminate toxins and excessive fluid to maintain physiological homeostasis. In urban centers like Karachi, there are far too many people needing dialysis chairs compared to the current number available. Private dialysis sessions are also extremely costly to the average citizen, costing between PKR3,000 to PKR5,000 a session, and requiring the patient to undergo three sessions each week. Consequently, the resultant monthly expenditure (around PKR 40,000 to PKR 60,000) is an insurmountable financial burden for those who earn a daily wage.

Literature reports that kidney failure treatment often is an unaffordable endeavor for public health systems in developing countries. In many environments, patients who start dialysis stop in months because of prohibitive costs (Jafar, 2006). Therefore, public sector dialysis centers are not only clinical facilities, but also social safety nets. By reducing catastrophic health expenditure, they help keep families from falling into a state of extreme poverty. A specialized center like Karachi Institute of kidney Diseases (KIKD) facilitates high volume quality-controlled dialysis forming an intermediary route to transplantation, or as a lifelong maintenance form.

The presence of such specialized facilities reduces the operational burden on the general hospitals so that we can offer dedicated, focused care, which helps improve the survival rate and quality of the life of the patient. Consequently, the strategic expansion of these centers is considered a must by the relevant authorities with the goal of service coverage to extend beyond Karachi to cover Interior Sindh and Balochistan (Dawn, 13 March 2021).

Rationale and Methodology

Rationale

The current case study is aimed at exploring the effectiveness of the Public-Private Partnership (PPP) model in the context of Karachi, particularly in the area of healthcare, in terms of a particular subject, Karachi Institute of Kidney Diseases (KIKD). Rapid increase in urban population in the form of megacities (Karachi) puts a lot of burden on existing medical infrastructure. KIKD is a unique example where an inactive municipal asset was rejuvenated on philanthropic cooperation. As former Administrator of Karachi, I saw firsthand how municipal infrastructure (Karachi Metropolitan Corporation, KMC) coupled with private philanthropy (KIKD Association) was able to raise a facility that was not being used out of its comatose. This study is a documentation of operational success, challenges, and analysis of expansion of KIKD that will provide a template for future municipal healthcare efforts. The overall research question examines how a specialized public sector hospital can maintain high standards of care free of cost to the patient in a volatile economic environment.

METHODOLOGY

This case study follows a qualitative methodological framework through the use of techniques for observation and the review of documents in order to obtain a complete analysis:

- **Document Analysis:** I had done an exhaustive analysis for the "News Paper Articles" collection including clippings from some of the key national dailies such as Dawn, The News, Business Recorder and Daily Times from 2019 to 2024. These documents provided a back chronology of events, financial hurdles and growth feats.

- **Digital Review:** I systematically reviewed the KIKD website (kikd.pk) as well as other relevant online sources to validate facility details, timeline of events and the services being provided.
- **Participant Observation:** As a key stakeholder (Metropolitan Commissioner and Administrator) throughout the formative and expansion phases of KIKD, I incorporated my administrative notes, speeches, and first-hand observations especially related to facility management as it relates to the Covid-19 pandemic and 2023 expansion.
- **Scientific Literature Review:** To place the analysis in the context of the scholarly literature, I did a review of peer-reviewed journals to determine the epidemiological context.
- **Analytical Tools:** Frameworks such as SWOT (Strengths, Weaknesses, Opportunities, Threats) and PESTEL (Political, Economic, Social, Technological, Environmental, Legal) were used to organize the strategic analysis of the institute.

History and Profile of Karachi Institute of Kidney Diseases (KIKD)

The Karachi Institute of Kidney Diseases (KIKD), which is located in the Federal B. Area (Block 6), a densely populated area, is a model for resilience and administrating spirit. The structure of the facility itself was constructed in 2009 with the aid of funds from a Member of the Provincial Assembly (MPA). For about eight years the building remained a "ghost building" - structurally complete but with no useful equipment, staff, or patients, which was a failure of aligning infrastructure construction with operational planning.

In 2012 the building was officially handed over to the Karachi Metropolitan Corporation (KMC). However, financial pressures and bureaucratic red tape are what caused the delay on the first patient not to be seen until 2017. This revival was the result of a Memorandums of Understanding (MoU) between KMC and Karachi Institute of Kidney Diseases Association (KIKDA), a consortium of dedicated philanthropists headed by Mr. Masood Nawab. The result of the partnership was to restore operational viability: while the association took over operational costs, maintenance and equipment procurement, KMC provided infrastructure and utilities and integral clinical staff.

The first dialysis session was started on 4th November 2017. By 14th March, 2019 the institute has been formally inaugurated by the Mayor of Karachi, Wasim Akhtar and myself as Metropolitan Commissioner (Dawn, 15th March, 2019). Initially fitted with 25 dialysis machines, KIKD grew very quickly becoming the second most significant public sector kidney hospital in Karachi next to the Sindh Institute of Urology and Transplantation (SIUT) (Dawn, 13 March 2021). A second unit was added by 2021 and further expansion brought machine capacity up to more than 60, allowing two dialysis sessions to be run in parallel across multiple working shifts - a landmark during my time as well (Pakistan Observer 2nd June 2022).

Facilities at KIKD

With administrative data and KIKD website data, the institute provides comprehensive services free-of-charge in an integrated scheme:

- **Dialysis Center:** The hub of KIKD as a dialysis center with modern dialysis machines running in three to four shifts per day with about 150-200 patients per day for a total of about 45,000 dialysis sessions per year.
- **Intensive Care Unit (ICU):** Fully equipped ICU including ventilators to take care of critic renal patients prone to cardiac arrest or severe electrolyte imbalances.
- **Lithotripsy Unit:** A state-of-the-art unit for non-invasive treatment of renal stones (ESWL), caters to Karachi's high incidence as a nephrolithiasis centre.
- **Vascular Surgery Department:** Specially dedicated to the creation and repair of arteriovenous fistulae; indispensable in light of the quite frequent failure of the dialysis access points and the previous need for external referrals which delayed lifesaving filtration (Dawn, 16 March 2023).
- **Radiology & Diagnostics:** Equipped with x ray, ultrasound and CT scan capabilities for real-time evaluation of size and stone burden and obstructive pathology of the renal tract.
- **Pathology Laboratory:** Modern lab available for renal function tests, electrolyte analysis and viral markers screenings (Hepatitis B & C) that are essential for dialysis protocols.
- **Outpatient Department (OPD):** Serving hundreds of patients daily for the screening of early CKD and managing stage 1 - 4 diabetes to delay the start of dialysis.

My Role as Metropolitan Commissioner and Administrator Karachi

This paper describes my career path as a Civil Servant within Public Health Policy (MBBS, MPH, PhD) and the impact that I had throughout my time as Metropolitan Commissioner and later as Administrator of Karachi, specifically, the Karachi Institute of Kidney Diseases (KIKD). This exposition aims to critically evaluate the role of municipal governance in the attainment and maintenance of social health, which will demolish the traditional view that municipal administration is only restricted to infrastructure and garbage management and reaffirm its intrinsic purpose of protecting the health and dignity of the citizens.

Metropolitan Commissioner (2019-2020): The COVID-19 Response at KIKD

My involvement in KIKD started when I became the Metropolitan Commissioner in March 2019 as the institution was formally inaugurated. I have described an agenda in which developing countries must focus on the development of state-wide preventive measures like health, which will capture the focus needed by a specialized hospital like KIKD (Dawn, 15 March 2019). The outbreak of the COVID-19 pandemic in early 2020 posed an unprecedented crisis on the healthcare infrastructure in Karachi forcing the medical sector to deny patients infected with the SARS-CoV-2 the right to dialysis in open dialysis halls. Understanding the mortality potential of untreated dialysis, I issued a decisive direction on the administration in June 2020, making KIKD, in addition to SIUT and Indus Hospital, a

qualified organization to provide care to COVID-positive dialysis patients. I agreed to the quick construction of an isolated dialysis unit, have personally checked High Dependency Unit (HDU) and Intensive Care Unit (ICU) set-ups to confirm adherence to infection control protocols, and requested healthcare staff to follow preventive tools but deliver patient care without any fear (The News, 22 June 2020). Therefore, KIKD effectively dialyzed sixteen COVID-positive patients daily at the height of the wave, leaving continuity of life-saving dialysis regardless of the COVID-status.

Administrator of Karachi (2022-2023): Expansion and Modernization of KIKD

When I assumed the position of Administrator of Karachi I came back to KIKD with a strategic vision of expansion. I envisaged KIKD a mainstream pillar to the millions of kidney patients in Pakistan, which was echoed on my visit to Karachi Institute of Kidney Disease (Urdu Point, 20 May 2022). The strategic emphasis shifted to the stabilization of crisis and the modernization and capacity building.

Department of Vascular Surgery: The Vascular Surgery Department at KIKD was opened in March 2023, thus solving the recurrent vascular access complications among dialysis patients, specifically fistula failures, which before had to travel to Civil Hospital or Jinnah Postgraduate Medical Centre (JPMC) and took a long time to be solved. Combining vascular surgery services with KIKD was an effective way to bridge the continuum of care to provide better patient outcomes (Dawn, 16 March 2023).

Expansion of Infrastructure and Academic Affiliation: The No-Objection Certificates (NOCs) needed to build a third floor to increase the capacity of the institute was obtained. Routine site visits were conducted to make sure the philanthropic construction venture was not hindered by bureaucracy. In addition, Furthermore, the establishment of an academic relationship between KIKD and Karachi Metropolitan University (KMU) was encouraged, which would see KIKD transform into a teaching hospital that has the potential to produce future nephrologists and urologists.

Preventive Advocacy: In my speeches to the media and during the key note speech on the World Kidney Day 2023, I pointed out that prevention is the only sustainable approach to renal health. I used the KIKD platform to conduct awareness campaigns targeting water consumption and lifestyle changes. I emphasized that the sectoral health development requires the large-scale strategic planning over the ad-hoc intervention and outlined the use of betel nut and gutka as the key determinants of the renal pathology among the young people (Dawn, 16 March 2023).

Analytical Framework

To fully grasp the place that KIKD occupies in the health care landscape in Karachi I have used standard tools of strategic analysis.

SWOT Analysis

Strengths

- **Free of Cost:** Elimination of financial barriers by the zero-cost model ensures health equity for the poorest patients.

- **Strategic Location:** Located in Federal B. Area in the access of thick middle and low classed population of Karachi city center.
- **Public - Private Partnership:** The MoU with KIKD Association forms the backbone of the facility It ensures that while government provides the building and staff's salaries, the private sector arranges for the maintenance of equipment and the supply of consumables, finally circumventing the long-drawn government procurement cycles.
- **Comprehensive Care:** The "One-window" operation with ICU, laboratory, lithotripsy, and dialysis means no patient is lost.

Weaknesses

- **Funding Reliance:** The model is highly dependent on donor support for the day to day consumption of consumables. Any dip in philanthropy threatens operations.
- **Staff Retention:** Most times, government salary scales cannot hold the best of scholars working in the government as compared to the lucrative private sector.
- **Resource Gap:** The demand (more than 100 000 annual patients) far exceeds the supply (60 machines) so the waiting list is long (Daily Times, 7 March 2024).

Opportunities

- **Transplantation:** There is a definite route towards the establishment of a transplant unit for kidneys which will complete the spectrum of care for renal disorders.
- **Academic Wing:** Affiliation with KMU also gives the opportunity to start postgraduate training programmes in nephrology (FCPS/MD).
- **Preventive Clinics:** The establishment of community outreach programmes for diabetes and blood pressure control could help mitigate the inflow of ESRD patients.

Threats

- **Economic Inflation:** The economic forces of inflation in the price of imported dialysis kits, filters and machinery due to devaluation of the currency is considered to be a major threat to the budget allocated to the donor association.
- **Water Crisis:** Dialysis requires thousands of liters of purified water every day; Karachi's water shortage has become an operational threat.
- **Political Instability:** The local government administration keeps on changing this can retard funding approval and exclusion of policies (Dawn, 21 July base in 2019).

PESTEL Analysis

- **Political:** The devolution of health to the local government (KMC) as opposed to the provincial government (Sindh) provide an initial route to occasional friction, in terms of the funding and jurisdiction. However, KIKD has worked its way through this with some bipartisan support.
- **Economic:** The economic instability in Pakistan directly affects the cost of healthcare provision. The costs of electricity and imported medical supplies have sky-rocketed, putting pressure on the donor association.

- **Social:** Poor health literacy about hypertension and diabetes leads to late presentation of patients. The high prevalence of betel - nut and gutka consumption in Karachi is a unique social risk factor recognized by the mayor (Daily Times, 7 March 2024).
- **Technological:** KIKD involves the need to constantly upgrade the dialysis machines and reverse-osmosis (RO) plants. Keeping up with technological changes in nephrology (e.g., hemodiafiltration--HDF) requires large capital.
- **Environmental:** Water scarcity and quality are key. The facility is dependent on tanker water which has to be treated rigorously; any failure in a RO system can lead to mass pyrogenic reactions in patients.
- **Legal:** To avoid litigation and closure, the facility will have to abide by the Sindh Healthcare Commission (SHCC) requirements on waste disposal and patient safety.

Situational Analysis

Currently, KIKD is working at maximum capacity. The waiting list for dialysis slots is getting longer by the day. While the infrastructure has been developed in the vertical sense (new floors), the budget allocated to operate it by KMC is far from adequate, requiring the continued heavy reliance on the KIKD Association. The institute acts as a vital buffer, without which the load of patients would put SIUT and Civil Hospital under a lot of pressure. The addition of the vascular surgery unit and the impending affiliation with the Karachi Metropolitan University positions it to change from a 'treatment centre' to a 'centre of excellence'.

CONCLUSION

The Karachi Institute of Kidney Diseases is just one of the possibilities that can be realized where there is political will linked with the generosity of civil society. From derelict structure in 2009 to a vibrant and life-saving center in 2024, KIKD has closed the gap between rich and poor people in accessing renal care, and become an example of the working model of public-private partnerships effectively applied in the Global South. Clinical encounters have suggested that the patients have seen that there is a “Ray of Hope" in these walls and this facility has stayed strong during the pandemic with other institutions closing down. However, the challenge is yet to be resolved. With over 100,000 people in Karachi every year developing kidney disease, KIKD needs to move beyond being the dialysis center and into a true institute for transplantation and research. This model suggests that despite limited government funds, opportunities for partnerships abound if trust is built, and health outcome in Karachi depends on building these partnerships and proactively on addressing the 'silent killer' before it strikes.

REFERENCES

Business Recorder. (2020, June 22). Covid-19 patients: Institute of Kidney Diseases to provide dialysis facilities. https://www.brecorder.com/news/10000052/covid-19-patients-institute-of-kidney-diseases-to-provide-dialysis-facilities

Cowasjee, A., Khan, S. A., & Jafri, L. (2020). Prevalence of risk factors of acute kidney injury in a tertiary care hospital in Pakistan. *Journal of the Pakistan Medical Association*. https://doi.org/10.5455/JPMA.20286

Daily Times. (2024, March 7). Efforts underway to develop hospitals managed by KMC: Karachi mayor. https://dailytimes.com.pk/1176818/efforts-underway-to-develop-hospitals-managed-by-kmc-karachi-mayor/

Dawn. (2019, March 15). Pakistan ranks eighth globally in kidney diseases, say experts. https://www.dawn.com/news/1469635

Dawn. (2019, March 15). Kidney Institute opens. *Dawn*.

Dawn. (2019, July 21). KMC's kidney hospital being run by philanthropists awaits Sindh govt's funding. https://www.dawn.com/news/1495195

Dawn. (2021, March 13). New dialysis unit opened at KIKD. https://www.dawn.com/news/1612147

Dawn. (2022, June 2). Wahab opens hospital's expansion project. https://www.dawn.com/news/1692611

Dawn. (2023, March 16). Health sector needs large-scale improvement: Administrator. https://www.nation.com.pk/16-Mar-2023/health-sector-needs-large-scale-improvement-administrator

GBD 2023 Kidney Failure Collaborators. (2024). Global, regional, and national prevalence of kidney failure with replacement therapy and associated aetiologies, 1990–2023: a systematic analysis for the Global Burden of Disease Study 2023. *The Lancet*. https://doi.org/10.1016/S0140-6736(24)01646-3

Imtiaz, Z., et al. (2024). Prevalence of Chronic Kidney Disease in a High-Risk Population in Urban Lahore, Pakistan: A Cross-sectional Study. *Cureus*, 16(6), e63296. https://doi.org/10.7759/cureus.63296

Jafar, T. H. (2006). The Growing Burden of Chronic Kidney Disease in Pakistan. *The New England Journal of Medicine*, 354, 995-997. https://doi.org/10.1056/NEJMp058319

Jessani, S., Bux, R., & Jafar, T. H. (2014). Prevalence, determinants, and management of chronic kidney disease in Karachi, Pakistan – a community based cross-sectional study. *BMC Nephrology*, 15, 90. https://doi.org/10.1186/1471-2369-15-90

Khan, A., et al. (2023). Epidemiology and Risk Factors Of Chronic Kidney Disease In Rural Areas (Badin) Of Sind, Pakistan. *Journal of the Pakistan Medical Association*, 73(7), 1399-1402. https://doi.org/10.47391/JPMA.6764

Lodhi, M., Farooq, B., Qureshi, Z., Malik, F., & Khan, M. (2023). Risk Factors of Chronic Kidney Disease. *Biological and Clinical Sciences Research Journal*, 2023(1), 368. https://doi.org/10.54112/bcsrj.v2023i1.368

News-Medical.Net. (2025, November 7). New study reveals CKD affects nearly 800 million adults worldwide. *News-Medical.Net*. Retrieved from https://www.news-medical.net/news/20251107/New-study-reveals-CKD-affects-nearly-800-million-adults-worldwide.aspx

Pakistan Observer. (2022, June 2). KIKD to perform 100 dialysis at a time after expansion: Murtaza. https://pakobserver.net/kikd-to-perform-100-dialysis-at-a-time-after-expansion-murtaza/

The News. (2020, June 22). KMC-run kidney institute all set for dialysis of COVID-19 patients. https://www.thenews.com.pk/print/676059-kmc-run-kidney-institute-all-set-for-dialysis-of-covid-19-patients

UrduPoint. (2022, May 20). KIKD A Ray of Hope for Kidney Diseases Patients: Administrator. https://www.urdupoint.com/en/pakistan/kikd-a-ray-of-hope-for-kidney-diseases-patien-1513670.html