Opinion

Redesigning a dialysis unit – a contemporary approach

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Knowledge is necessary to innovate. To innovate is necessary to plan. After forty years of leading chronic patients in dialysis it is an obligation to stop for reflection.[1] What can we offer to these patients besides technology and new dialysis modalities for better adherence to their treatment and better quality of life? How to approach them? Results from patient surveys point out that they prefer quality of life instead of quantity of life. For years, nephrologists have been working hard to achieve low mortality rates, low hospitalization index and the best quality for patients on dialysis.[2] In Brazil we have a low budget for the treatment of kidney diseases, around 90% of those treatments are financed by the government. The questions are: why do we have the same results for years? Can the limited budget justify these results? Does the patient's experience get better over the years?[3] Have we tried to implement new methods and processes to improve our results and patient experience? To plan something different we need to understand our local reality, preceding a situational diagnosis, watching our local environment, the most prevalent diseases and the existing gaps. Otherwise, we cannot go anywhere. The Dialysis facility design is an important aspect of the long-term functional success of any unit so it is important that designing should be done with care.[4]

Recently, we had the opportunity to be part of a team in charge of planning and build a new intra hospital dialysis unit in South Brazil, so that was the opportunity to redesign a dialysis unit. The current service now has 1053m², 38 chairs (17 private), an Isolation box for Hepatitis B and C, contact isolation, air isolation and unknown serologies, 2 multi-professional offices, one procedure room, peritoneal dialysis room, a local pharmacy (satellite), 2 administrative rooms and water treatment (double pace reverse osmose). Patients treated at this service have a predominance of males, with a mean age of 68 years (76.6% over 61 years). The most prevalent pathologies are hypertension (83.7%) and diabetes (53.5%).

Quality indicators are mandatory to monitor infections, hand washing adherence, falls, and monthly exam results. Quality tools such as checklists, risk maps, and notifications are implemented. It was a wonderful time to bring all known concepts into practice. From the beginning, we consider staff and patient experience our major drive to design the architectural plants, flows, and processes. Discussing possible scenarios in a multidisciplinary team, including the high leadership institution, we were able to think about new ways of working, guided by a new mindset and some predominant questions Table 1.

Table 1 The predominant questions for an innovative dialysis unit

1 What would be our goal?
2 How to achieve an excellent experience for our patients?
3 What would be our benchmarking?
4 What differential approaches would be offered in medical and assistance areas?
5 How would we add value to our work and not only be another dialysis local unit?

First, we need to build a safe facility where all protocols are well-designed and known by the team,[5] to have a safety culture, psychological safety, and leadership. Adverse events are well described in dialysis as: errors in identification, infection, medication, falls, and problems in following protocols.[6] It is our responsibility to mitigate and prevent harm.

To achieve an excellent experience is necessary to have assistance indicators monthly to measure good dialysis as; good KT/V, anemia control, phosphorus, and potassium control (biochemical ones). Donabedian recommended that healthcare quality be evaluated in terms of structure, process, and outcome We must keep this in mind to think about a dialysis unit. Becoming a benchmark is a huge challenge.

For outcome indicators, we can measure mortality, hospitalization index, and patient experience. An ideal dialysis unit would be where the patient will be at the center of everything.

Our 3 years experience is:

I. Patients were invited to have an expanded perception of themselves, their entire treatment, and their contribution to these processes. We use an applicative program (APP) in which the patient evaluates his treatment.

II. Safety culture was elected as our main purpose. Our goal was based on patient safety principles, according to institution rules.

III. As previously mentioned above, our patients do not have only kidney disease. They have systemic presentations of the disease. Specific subjects were selected to start to cover this need Table 2.

Table 2 Subjects chosen to take our extreme attention for better patient care

1 Depression and anxiety	A psychiatrist and psychologist evaluate and follow up for all patients on dialysis. An institutional protocol for suicidal ideation was developed. Covid seems to have affected mental health.
2 Safety culture	Empower patients on patient safety using the SAFETY4ME platform, (app) where they could answer their perception about team care. The results appear in a dashboard for proper decisions.
3 Vascular access team inside the unit	Traditionally vascular access is a big problem, to solve access problems in real time. Our patients do not choose a day to lose access and prompt professional is not easy to find. A vascular surgeon comes to the unit 4 times a week to revise the fistulas and catheters.
4 Nephrologists can pass and remove dialysis catheter at the unit with ultrasound equipment and facilities	
5 Renal biopsies can be realized in the same place	
6 Clinical appointments at the same place/ multidisciplinary team	Patients have the option for appointments on the same day of the dialysis for regular monthly revision and/or urgent needs.
7 Nutri Renal programs:	patients get together every 4-5 months with the multidisciplinary team including nutritionists and cooks. Delicious diets are prepared and tested. At this moment they can take off their doubts about eating. "IT is not what not to eat, it is about what to eat." It is our motto.
8 Financial classes program (this subject was chosen by the patients) while in dialysis. The classes are given using a link by a bank program. They can earn a certificate.	
9 Clinical pharmacists to medication control, traceability, and storage.	
10 Physiotherapy during dialysis (shortly)	
11 Renal caregiver's courses:	family and caregivers must be engaged in the treatment
12 Virtual glasses worn during dialysis:	our experience in the intensive care unit is very rewarding. Shortly we will bring to all patients who want it.

In the current healthcare scenario, an innovative approach to the management and provision of dialysis care is imperative, centered on the patient, focusing on the patient's experience and safety. By incorporating the principles of patient-centered care, we recognize the importance of personalizing dialysis services according to individual needs, thus promoting a more collaborative and empathetic relationship between healthcare professionals and patients. Furthermore, the emphasis on the patient experience not only improves the quality of life during treatment, but also strengthens treatment adherence, resulting in better clinical outcomes.

Patient safety emerges as a non-negotiable priority in this context. The implementation of robust security practices, including rigorous protocols, constant training and innovative technologies, is crucial to mitigating risks and ensuring favorable results. Strengthening a safety culture promotes transparency, continuous learning, process improvement and psychological safety. The proposal for a new vision for dialysis service management, based on patient-centered care, patient experience, and safety, not only meets contemporary demands, but also aims to establish high standards for excellence in the field of dialysis. Adopting this innovative approach will not only benefit patients directly, but also strengthen the sustainability and effectiveness of the healthcare system.[7–22]

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Conflicts of interest

The authors declares that there is no conflict of interest.

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