Victor Gura

Self-Statement

TEACHING AND EDUCATIONAL LEADERSHIP

I began teaching before I graduated from medical school as an instructor in basic sciences, continued through my career, andnever stopped. During my internship, residency and fellowship I taught courses in internal medicine and nephrology at the schools of medicine at Tel-Aviv University, Hebrew University, and the University of Southern California (USC).

In 1984, mentored by the late Charles Kleeman, I started serving as an attending nephrologist at Cedars, a position that I hold to this day. In 1992 I became an Associate Clinical Professor at the Geffen School of Medicine at UCLA where I regularly gave lectures to medical students on electrolyte metabolism, hyponatremia, acute kidney injury, chronic renal failure and acid base. In that same year, at Cedars, I started teaching nephrology related topics to residents and fellows and conducting renal rounds both as lectures and at the bedside.

In 2004 Cedars was not yet using Continuous Renal Replacement Therapy (CRRT) technology. I initiated the program to implement the use of the technology at Cedars and wrote the exam that nephrologists who would prescribe CRRT had to pass to be privileged. Today, the use of CRRT is commonplace at Cedars.

In the last 30 years I successfully mentored quite a few bright students, physicians and scientists of varying genders, races and religions. Today I am still actively mentoring UCLA undergraduates who aspire to attend medical school and I continue to teach new generations of physicians.

CLINICAL ACTIVITIES

In addition to Grand Rounds and clinical teaching, I've been in private practice in internal medicine and nephrology since 1982. I attend to my patients in my office, at Cedars and in dialysis clinics. I founded and directed outpatient dialysis units for the last 30 years.

MISSION RELEVANT, LEADERSHIP, and PROFESSIONAL ACHIEVEMENTS

At Cedars I was a member of the emergency preparedness committee for seven years. Today, I assist in coordinating international speakers, which I've been doing since 2019.

In 2009 I helped introduce cutting edge parenteral nutrition technology to Cedars and I am still a member of the metabolic support team.

Prior to my tenure at Cedars, I served as chairman of the Quality Assurance Committee of Midway Medical Center, and subsequently, as chairman of the Department of Medicine in the same institution. After Midway, I served as a member of the Credentials and Ethics Committee at Brotman Medical Center.

Over the years I've been involved with the American Society of Nephrology, the International Society of Nephrology, the Renal Physician Association, The American Society of Artificial Internal Organs, the International Society of Blood Purification, the International Society of Hemodialysis,

and the Israel Medical Association. I've been invited to speak and teach at symposia and annual conferences, both nationally and internationally every year since 2008.

In 2010, as president of the International Society of Blood Purification (ISBP), I organized and presided over the 28th Annual Meeting of the ISBP and reviewed the abstracts presented at that meeting. Today I am a reviewer for the journals of the American Society of Artificial Organs, the American Society of Nephrology, and Hemodialysis International.

CREATIVE SCHOLARSHIP

Throughout my career I was bothered by the fact that the science and technology of dialysis remained static. There had not been any meaningful developments in the field for decades. Twenty three years ago, that led me to inquire and investigate different research projects seeking to make the leap to the next level of dialysis technology. The aspect that most interested me then, and still does now, is the potential for easing the pain, suffering and mortality of patients who are subjected to chronic dialysis treatments. After many napkin sketches, I came up with an idea for a wearable artificial kidney (WAK) device. Inspired by developing computer technologies that reduced large roomfuls of computer equipment into tablets and cell phones, miniaturizing a dialysis machine into a light, battery operated, wearable device should be possible. It is, of course, quite a challenge. I analyzed the statistical outcomes of dialysis treatments around the world. It then dawned on me that a wearable device that filters blood at the same rate as native kidneys would have a huge impact in improving the quality of life and reducing the rate of complications of dialysis patients. Going down that path has been difficult and frustrating, to say the least. But perseverance is worth it. After building the first model of the WAK in our lab in Cedars Sinai, we trialed it successfully in uremic pigs at the Davis research building. The successful results were published in peer reviewed journals. I was then invited to Italy by Professor Claudio Ronco to conduct our first human trial. This successful study was published in Kidney International. I was then invited by Professor Andrew Davenport to conduct the next clinical trial at the Royal Free Hospital in London. The successful results of that study were published in the Lancet. In 2012 I won the 2.0 Innovation Challenge, a competition for inventions run by the FDA. As a result, the FDA formed a special team of the agency personnel, to train me on how to go through the regulatory approval for human use. I was then able to write my own IDE submission and obtained approval for the first human trial in the US. The FDA also designated my project with "breakthrough" status and issued a letter of support for my research. I was invited by the University of Washington to carry out that trial in Seattle in collaboration with Dr. Jonathan Himmelfarb. That trial yielded great results. The data was published in JCI Insights.

Along the way, I applied for and was granted multiple patents in the US and abroad; joined several professional associations, both domestic and international; published 27 articles in peer reviewed medical journals; presented countless abstracts; and wrote 3 textbook chapters.

I was always curious to understand the pathophysiology of uremic toxicity. Through studying and understanding better the mechanisms by which kidney failure makes patients sick, we should be able to target improvements in the treatment of these patients. Furthermore, I am conducting metabolomic studies in collaboration with the UCLA Metabolomic Laboratory in order to elucidate the mechanism by which use of the WAK's continuous removal of uremic toxins would improve dialysis outcomes.

As a former field doctor in combat conditions, I understand the need for a device such as the WAK, and the conditions under which it must operate in battle and disaster zones. In 2019 the US Department of Defense awarded my project a grant to develop a dialysis device for use in battlefield hospitals and during air evacuation. The goal is to reduce military fatalities. From the framework of the WAK project, I created the Portable Continuous Renal Replacement Therapy device (PCRRT) which will operate without having to be plugged into an electrical grid or water supply. Currently, we have two additional grants pending, to bring the model 3 of the Wearable Artificial Kidney to FDA approval. One is from the Department of Defense and one from the National Institute of Health. Given the very favorable scores from the reviews of my submissions, we hope that funding from these will come through in the next few weeks.

DIVERSITY & INCLUSION

I learned very early that there is no equity or equality in this world when it comes to access to medical care. Therefore, we have a moral obligation to devote at least a part of our time to alleviate the scarcity of healthcare for those who cannot afford it. While in medical school I was able to put my personal commitment to such endeavors into action by participating in care groups that rendered medical care and vaccinations to homeless residents in the slums of Buenos Aires known as Villa Miseria. Some years later I was trained in tropical medicine and spent 3 months in the jungles of East Africa rendering care to local tribes riddled with malaria, parasite diseases, and the consequences of hunger. While in Africa, I trained 3 groups of local 50 medics. Later in my career I spent a great deal of time tending to the under-served Hispanic population of mid-city and downtown Los Angeles, for which I received a Commendation for Community Service from the Los Angeles County Board of supervisors in 1996.

I regularly participate and give presentations in patient organizations such as the American Association of Kidney Patients. Most of these patients are of racial and cultural minorities. I do all I can to inform these patients of the latest developments concerning their medical conditions and what they can and should do to manage their health. A disproportionate number of patients who will benefit from my research are African American and Hispanic. Most of them are disabled, are poor and many cannot work due to their illness. Consequently, their family members who do work are under the great financial, emotional and mental strains of caring for a disabled relative while trying to make a living. The entire picture is that of a socioeconomically depressed population that is driven further to despair by the current conventional treatment for ESKD. While my invention will not cure the problem, it would greatly alleviate it by bringing effective and affordable treatment to an underserved population, reducing the mortality and morbidity rates of ESKD, reducing the instances of hospitalization of patients, reducing the amounts of medication that patients consume daily, and enabling the patients to work, go to school and participate in life.

It would be my honor to continue to teach and inspire new generations of physicians as a professor at Cedars Sinai.

Sincerely,

Dr. Victor Gura May 30, 2024