ASN Presidential Address 2012: Time to Cure Kidney Disease

Ronald J. Falk
American Society of Nephrology; University of North Carolina Kidney Center; and Division of Nephrology and Hypertension, University of North Carolina, Chapel Hill, North Carolina

Forty years ago on October 30, 1972, President Richard Nixon signed the Social Security Amendments of 1972 that included Public Law 92–603 authorizing the End Stage Renal Disease Program under Medicare.1 The document on which that legislation was passed was written in 1967 by the late Dr. Carl Gottschalk, a University of North Carolina faculty member and President Emeritus of the American Society of Nephrology (ASN), and it was constructed by the founding fathers of nephrology (Figure 1). This effort harkens back to a time filled with both dread and optimism, when the “artificial kidney” was only available for those individuals who could afford it or were deemed “treatable.” However, it was thought that transplantation was possible and that individuals could, in fact, be dialyzed for a while and then be “cured” by kidney transplantation.

The most common causes of kidney failure were deemed infectious in origin and included postinfectious GN and pyelonephritis. In the Gottschalk report, prodigious energy was devoted to the concepts of an end stage kidney disease dialysis program and funding generated and earmarked for preventative efforts to rid the population of causes of kidney disease. Substantial discussion was aimed at providing the infrastructure for educating the next generation of young physicians and scientists.

I, like many of you, am old enough but young enough to have witnessed the explosive scientific, therapeutic, and humanistic evolution of our field over these past four decades. A central hope of Dr. Gottschalk and his colleagues has been realized. In the United States and much of the developed world, unrestricted access to state-of-the-art and life-sustaining dialytic therapy is available to all. This achievement is incredible when we consider therapies available for end organ failure of liver, heart, or lung disease. This success story was based on concerted legislative action, spearheaded by the late Dr. George Schreiner, a past president of the ASN. Our understanding and involvement in legislature that impacts kidney health are critical.

As a kidney community, we have come very far but still have a long journey ahead of us before we are able to restore the health of those people that we serve. We should revisit the fundamental tenets considered by our predecessors—restoration of health, science and discovery, prevention, and training—and yes, cure. These principles are hopeful and simple concepts to articulate but difficult to achieve as we focus on the stark realities of the sicknesses that we see and treat each and every day.

It is this reality that has filled our vernacular with words overflowing with negative connotations: “end stage,” “chronic,” “progressive,” “inexorable,” and the “3 Ds” of doubling of the serum creatinine, dialysis, and death. Such words send powerful messages to our patients, our trainees, and indeed, ourselves. Is it possible that we can no longer imagine a time when we can prevent or cure kidney disease? I am incurably optimistic about the infinite talent and spirit of our kidney community.

“Cure” is an interesting word and an imprecisely defined concept. The word is derived from Latin cura, meaning care or concern and by extension, healing or remedy. In modern parlance and science fiction lore, cure has taken on special meaning. In the science fiction Star Trek world, Dr. Leonard McCoy (“Bones”) of the Starship Enterprise lands on modern-day Earth.3 When he asks a hospitalized woman her condition, she replies, “kidney dialysis.” Dr. McCoy responds with considerable exasperation, “What’s this . . . the Dark Ages?” He provides her with pills to swallow and informs her that she will be well in the morning.3 Now that is a cure.

Our surgical colleagues are not far behind in touting the notion that “a chance to cut is a chance to cure.” In the oncology arena, the word “cure” has become a rallying cry for fundraising and is frequently defined as remission of 5 years or more. Remarkably, nephrologists rarely, if ever, utter the word “cure” in our practice or even let the concept penetrate our consciousness. Perhaps this consequence is intrinsic of the very personalities that ultimately drove us into this field. Does this intellectual rigor force us to conclude that cure should be the complete and absolute abrogation of disease?

For me, “cure” is best defined as “restoration of health.” Imagine conditions
in which there is complete abrogation of disease or cure but not complete restoration of health. For example, consider the case of a patient cured of ulcerative colitis by colectomy but left with a lifetime of nocturnal fecal incontinence and chronic diarrhea. Consider the real-life example of a kidney transplant patient who, at the age of 42 years, receives a transplant from a sibling; 35 productive and healthy years later, the patient dies in his sleep. Consider the 26-year-old patient with rapidly progressive necrotizing GN and pulmonary hemorrhage who, after 6 months of therapy, remains in complete remission at the age of 56 years and now has children and grandchildren. On reflection, you too can recall cases of real restoration of health.

What can the ASN, the kidney community, and individual caregivers do now to cure kidney disease? There are at least five general areas to consider, and I am confident you will think of many more:

1. maintain and amplify scientific discovery and real breakthroughs;
2. interact with industry innovators;
3. prevent kidney disease;
4. educate the next generation; and
5. embrace team-based practice patterns.

**SCIENTIFIC DISCOVERY AND BREAKTHROUGHS**

One of the important recommendations of the Gottschalk Committee was that knowledge and treatment of renal disease should evolve in a balanced fashion. As kidney scientists, we are living in a magnificent era. The fields of molecular and cell biology, chemistry, epidemiology, and bioinformatics have provided the substrate for astonishing discoveries. Techniques that once mired investigative time and effort have been transformed and streamlined by industries anxious to make scientific discovery easier. Although the purists will scoff, no longer does one need to clone by brute force but rather “clones by phone.” A dizzying array of platforms is now available for sequencing DNA, RNA, proteins, and glycoproteins that has cracked open scientific conundrums, allowing us to glimpse the interactive landscape of genes, proteins, and the environment.

Thanks to all of you, kidney science has kept pace. Consider the number of diseases that were, until recently, named only by an eponym. In the insightful and still timely words of a physician named John Milner Fothergill in 1887, “so long as a disease carries a man’s name it shows we know little about it.” Thankfully, we now have a much better understanding of intrinsic components of these various diseases. In the late 1960s and early 1970s, transplantation, in its infancy, was thought to be a potential cure. Today, kidney transplantation is a routine procedure with excellent 5-year graft and patient survival.

Kidney science has come a long way, but to cure kidney disease, we must first know the root causes of the diseases that we see and treat. What is the genesis of an autoimmune response? What really induces diabetic kidney disease? How does a single nucleotide polymorphism give rise to disease? What prevents tubular cells from injury, and what accelerates their repair? What causes and prevents fibrosis? And for now, why can we not actually restore health on dialysis? Have we reached the technological limit with the current forms of dialytic therapy? With the great strides that have been made in nano- and material science, why can we not build a completely different dialysis platform?

**INTERACTION WITH INDUSTRY INNOVATORS**

We must leverage the expertise, resources, and innovative drive of industry to make kidney health and disease a target for the development of drugs, devices, and biologics that will move kidney treatment forward. We in the kidney field are desperate for new therapies for the diseases that we treat. For the concept of curing kidney disease to become a reality, the health care industry must play a prominent role.

However, the relationship between industry and academia has been thwarted by ever-present concerns pertaining to perceived conflicts of interest. Conflict-of-interest issues present valid concerns. We have historically done an abysmal job of placing firewalls between industry and

---

**Figure 1.** (Left panel) Carl W. Gottschalk, MD, was Chair of the Committee on Chronic Kidney Disease. (Right panel) The Gottschalk Committee report, submitted to the US Bureau of the Budget, recommended a national kidney disease treatment program, eventually leading to the ESRD amendment to Medicare.
educational programs. The conflict-of-interest pendulum has swung to the point where industry and academia warily approach one another. Now, with firewalls in place, we must appropriately rebalance this relationship in an effort to better serve the patients for which we care.

The ASN’s Kidney Health Initiative (KHI) aims at alleviating these barriers. This summer, the US Food and Drug Administration (FDA) commissioner Dr. Margaret Hamburg and I signed a Memorandum of Understanding between the ASN and the FDA that seeks to develop a platform for constructive collaborations between the FDA, academia, patient support groups, and multiple members of industry. The mission of the KHI is to advance scientific understanding of kidney health and patient safety, foster development of therapies for diseases that affect the kidney, and create a collaborative environment between the FDA and nephrology community for drug and device evaluation, biologics assessments, and food product concerns.

The KHI will help write a new and exciting chapter in our fight against kidney disease. We face a major challenge in determining the best way of recruiting and registering patients wanting to participate in studies that may advance their own health and the health of the kidney population in general. Kidney researchers and practicing physicians need to continue to interact so that kidney patients have access to and participate in kidney studies. In this regard, the National Institute of Diabetes and Digestive and Kidney Diseases has taken steps to fund networks that develop registries, including a glomerular disease network.

**PREVENTION OF KIDNEY DISEASE**

Prevention of kidney disease is integral to the cure of kidney disease. In the 1960s and 1970s, prevention focused on infection-induced kidney disease. In the modern era, prevention begins with public awareness. It is disconcerting that there is little awareness of kidney issues outside of the kidney community, and the onus for public awareness of kidney health and disease falls on all of us.

In 2011, the *Science* breakthrough of the year was prevention of HIV not by treating the afflicted individual but by treating family members. We should follow this approach and tailor it to our own needs by educating family members about nutrition and BP control.

In the hospitalized setting, we need to proactively prevent AKI.

One area of the KHI pertains to food products. As a kidney community, we have seldom contributed to national debates on nutrition. For us to meaningfully participate in the prevention of kidney disease and its complications, we must project our collective voices into the fray of discussion and debate regarding nutritional labeling, dietary supplements, and food safety concerns.

**TRAINING THE NEXT GENERATION**

The Gottschalk Report raised the concern of training the next generation of professionals and researchers. Forty years ago, fears existed that there would not be enough physicians to care for a growing population of patients requiring dialytic therapy and that there would not be enough people interested in kidney science. The ASN shares both of these concerns today and continues developing and improving systems and programs to attract the best and brightest into the kidney space.

We must assure the next generation of kidney researchers that there will be money available for them to explore academic careers. This issue is critical, both here and abroad. The ASN continues to advocate for the preservation and increase in funding for kidney research. Kidney societies across the globe must promote public awareness of kidney health and disease so that all lawmakers are pressured to invest in kidney science.

Opportunities for kidney science trainees remain a lynchpin in the development of the next generation of kidney scientists, and funding for trainees requires a sustainable approach. The ASN has responded by establishing the ASN Foundation for Kidney Research with the tagline, “Time for a Cure.” The first goal of this foundation is to fund ASN fellowship grants by raising $20 million dollars in endowment for this purpose. In less than 1 year, ASN has raised $14 million dollars to that goal. In the next portion of this plenary program, we will describe the initial funding for the ASN Foundation for Kidney Research. Moving forward, the ASN research fellowship program will be flanked by two other endowments: one for student scholars and one for career development awards.

**EMBRACE TEAM-BASED PRACTICE PATTERNS**

Restoration of health remains a lofty goal. I challenge all of us to ask, “How can I help restore the health of the individual sitting in front of me?” In practice, we do not ask this question solely by ourselves. Rather, we do so as a team of providers working in concert in clinics, dialysis units, and hospital environments, shoulder-to-shoulder with nurses, pharmacists, physician assistants, and other professionals. As a health care team, we have the best chance of restoring patient health. For this reason and for the very first time at this Kidney Week, the ASN is providing nursing, pharmacy, and physician assistant credits not in separate tracks but mimicking how we practice—“shoulder-to-shoulder”—as teams, learning how best to care for those patients who we serve.

I leave you with one last thought. In the final analysis, the only definition of restoration of health that really counts is the definition enunciated by the patient but with the full participation of the patient and usually their family. As health care evolves from past to present and as we look to the future, I hope we are not so removed by time, space, or practice pattern that we lose those precious moments of human interaction and understanding that permit us to listen to and learn the patient’s definition of cure.

I fully appreciate the broad and challenging ocean of real and perceived
themselves. However, for us to cure kidney disease, we must first imagine and then embrace the notion that we can cure kidney disease, although we do not know how to do so at present. We must challenge each of us with research laboratories to stretch the envelope of scientific discovery. We must challenge industry and innovators to rethink current therapy and develop truly new paradigms for clinical care. We must challenge each other, all of us who care for patients, to ask our patients how we may restore their health.

It is time. The time is now to cure kidney disease. The challenges are real as are the depths of your creativity, your compassion, your dedication, and your unlimited potential. The future of kidney medicine is so very bright.

ACKNOWLEDGMENTS

Kidney Week this year boasts a record-setting number of abstracts—more than 5000. The magnificent quality of this year’s Kidney Week offerings speaks volumes about the pace of discovery that improves kidney health and triumphs over kidney disease.

The creative planning and organization of Kidney Week is a consequence of the expertise of the Program Committee, most ably led by Manikkam Suthanthiran, and the Post-Graduate Education Committee, led by Mark Rosenberg. The synergy between these groups has resulted in a beautifully well orchestrated program that promises to kindle new ideas and force us to reconsider some of our strongest beliefs, all while making new friends and re-engaging with long-time acquaintances.

I extend my heartfelt thanks to so many individuals that time precludes their naming. Education Committee members are virtual education outfitters—continually elevating and refining the ASN’s educational offerings with special emphasis on maintenance of certification, NephSAP, and now hundreds of hours of distance learning. Similarly, the Communications Committee and dedicated Editorial Board members produce the exceedingly successful publications JASN, CJASN, and Kidney News.

The ASN has become increasingly integrated into legislative and regulatory policy with ongoing initiatives that are ever-emanating from the Public Policy Board. The Patient Safety Task Force has assured that kidney safety issues were included in the American Board of Internal Medicine’s Choosing Wisely Campaign. The Manpower Committee has formulated a plan to bring the best and brightest into the kidney space. Beyond the committees and task forces, ASN advisory groups assure that the ASN remains well advised, with clarity and focus among the divergent interests and issues germane to kidney health and disease.

The ASN has the great good fortune of a dedicated and talented staff operating in our newly acquired Washington, DC headquarters. The staff is led by Executive Director Tod Ibrahim, who provides creative leadership and counsel. I thank my fellow members of council for their attentiveness to every issue of strategy, policy, and purpose as we navigate the ASN through ever-shifting currents and riptides of economic and political change.

I am most grateful for my professional home at the University of North Carolina in Chapel Hill, which has nurtured my professional growth, and especially, my longstanding colleague Dr. Charles Jennette. My colleagues have cared for me and covered for me during my numerous ASN forays. They are met by my nuclear family of three energetic and compassionate offspring, Ben, Kristine and John, who have used their unique abilities to keep me well grounded. Finally and most importantly, I want to acknowledge and thank my loving nephrologist spouse of over 30 years, Dr. Katherine Huffman Falk, with whom I trained side by side and who has been my constant and best companion and friend. Happily, she has intrinsic common sense, dispensed in sometimes large and frequent doses.

A heartfelt thanks to all, and thank you for the privilege of serving as your president this past year.

DISCLOSURES

None.

REFERENCES