



# The twenty-sixth Acute Disease Quality Initiative: the Pediatric ADQI (pADQI)—a dream realized

Stuart L. Goldstein<sup>1</sup>

Received: 30 November 2023 / Revised: 4 December 2023 / Accepted: 4 December 2023 / Published online: 20 December 2023  
© The Author(s), under exclusive licence to International Pediatric Nephrology Association 2023

The Acute Disease Quality Initiative (ADQI) has a more than two-decade legacy fulfilling its mission in “providing objective, dispassionate distillation of literature as it relates to the current state of practice of diagnosis and management of acute kidney injury and other conditions in critical care nephrology” ([www.adqi.net](http://www.adqi.net)). More importantly, the research recommendations from ADQI consensus conferences identified fundamental gaps in critical care nephrology knowledge and have been leveraged to foundational design trials and initiatives to address them. The impact of ADQI on our field cannot be overstated: replacing the term acute renal failure with acute kidney injury (AKI) and proposing the first multidimensional AKI staging criteria [1], standardizing continuous renal replacement therapy nomenclature [2], providing the conceptual framework to incorporate novel AKI biomarkers with standard functional AKI markers (i.e., serum creatinine and oliguria) [3] are just a few of the transformational outcomes now considered to be the standard in AKI-related clinical care and research. In fact, I doubt if any medical student, resident, nephrologist, or intensivist in practice for less than a decade has ever used the term “acute renal failure” in their clinical documentation.

While pediatricians have been included in ADQI consensus conferences to lend pediatric-specific insights to critical care nephrology in addition to their expertise on the topic at hand, a comprehensive pediatric perspective could not be incorporated fully, which is understandable. Dr. Ayse Akcan Arikan informed me recently that I once told her I “dreamed” of a pediatric ADQI after my first ADQI work group member experience in 2004. In 2019, my ultimate pADQI co-chairs, Dr. Arikan herself and Dr. Rajit Basu, approached ADQI

leadership with a proposal for “The Pediatric ADQI,” given that many advances in critical care nephrology had first been realized in studies of children, and we had two landmark epidemiological studies of pediatric and neonatal populations in the literature [4, 5]. We are grateful to Drs. Rinaldo Bellomo, John Kellum, Ravindra Mehta, Marlies Ostermann, and Claudio Ronco for greenlighting the pADQI and for their active participation in the process.

The first manuscript from the pADQI conference was published in 2022 [6] and provides what the 46 pADQI participants viewed as current statements of the state of the art and research recommendations in the topics of epidemiology, risk assessment and diagnosis, fluid overload, renal replacement therapy, pathobiology/pharmacology/nutrition, and education/advocacy. This pADQI manuscript and its “killer figures” (terminology provided by John Kellum, all publicly available at [www.adqi.net](http://www.adqi.net)) set new standards for the ADQI process. The pADQI was the first ADQI to include an AKI-CRRT patient survivor (L. Meigs) and an expert in healthcare advocacy (Dr. O.R. Bignall) on the faculty. It was also the first to aim for and *achieve* gender equity (23 women, 23 men) and have a focus on AKI education in resource-plentiful *and* resource-challenged areas. Finally, the concepts of sex, growth, and development as biological variables were novel to ADQI, which are appropriate for a pediatric compendium.

The current issue of *Pediatric Nephrology* contains all the subsequent individual pADQI work group manuscripts, each of which goes into much greater depth and detail than what could be accommodated in a single overarching manuscript. Drs. Akcan Arikan, Basu, and I chose *Pediatric Nephrology* as the journal of choice for the pADQI collection, as it is the flagship journal of the International Pediatric Nephrology Association, and our focus in pADQI was global and not restricted to one region. Another novel aspect of pADQI was faculty representation from each continent; thus *Pediatric Nephrology* is the rightful pADQI home. We are extremely indebted to Dr. Joseph Flynn and

✉ Stuart L. Goldstein  
stuart.goldstein@cchmc.org

<sup>1</sup> Center for Acute Care Nephrology, Cincinnati Children’s Hospital Medical Center, University of Cincinnati College of Medicine, 3333 Burnet Avenue, MLC 7022, Cincinnati, Ohio 45229, USA

Professor Giovanni Montini, *Pediatric Nephrology* editors, for working with us to place all the manuscripts in one volume, and finding reviewers for the manuscripts, all of whom provided valuable comments and suggestions. The latter could not have been an easy task, since many of the global pediatric critical care nephrology experts were pADQI faculty. We are also pleased to be able to provide funding to make all of the manuscripts Open Access, which is consistent with our mission to improve outcomes for children with, or at risk for, AKI, irrespective of location.

Sadly, our community lost two giants in pediatric critical care nephrology over the term of the pADQI process. Dr. Geoffrey Fleming was a pediatric intensivist, trained at the University of Michigan, who had a huge impact on the field of AKI in the setting of extracorporeal membrane oxygenation [7] as well as pediatric resident education. Geoffrey passed as the pADQI work groups were convening during the pandemic and he was never able to participate. I can only wonder how much this wonderful achievement would have been made better by his contributions. Dr. Patrick Brophy was a pediatric nephrologist, also trained at the University of Michigan, who was one of the first five pediatricians in the Prospective Pediatric CRRT Registry, the first multicenter pediatric collaborative of its kind [8]. Our community knows that Pat was a true quadruple threat in medicine, as a clinician, researcher, educator, and administrator. We were privileged to have Pat's active and engaged contributions to pADQI as Faculty and Work Group Chair, despite the other massive commitments he had as a department of pediatrics chair and being on national and international committees and boards, and grateful that he was able to see the final output. Viewing this video of Pat's webinar with the American Society of Pediatric Nephrology provides a glimpse into his innovative and inspirational nature, as well as his compassion as a physician and patient [9].

Our pediatric critical care nephrology field has come a long, long, way since its inception in the late 1990s. I am certain the future is bright, given that the mean age of the pADQI faculty is only 46 years and they continue to advance the field. I am confident many of the gaps identified by pADQI will be addressed, to the ultimate benefit of the patients and families we serve.

On behalf of my co-chairs, the ADQI leadership, and the faculty of "The Pediatric ADQI," I hope you learn much from this pADQI compendium, and reading it sparks your own interest in critical care nephrology. I look forward to seeing what the next decade brings and reading the proceedings from pADQI 2, which will be someone else's dream to be realized.

## Declarations

**Conflict of interest** The author declares no competing interests.

## References

1. Bellomo R, Ronco C, Kellum JA, Mehta RL, Palevsky P (2004) Acute renal failure - definition, outcome measures, animal models, fluid therapy and information technology needs: the Second International Consensus Conference of the Acute Dialysis Quality Initiative (ADQI) Group. *Crit Care* 8:R204-212
2. Ronco C, Kellum JA, Mehta R (2001) Acute dialysis quality initiative (ADQI). *Nephrol Dial Transplant* 16:1555-1558
3. Murray PT, Mehta RL, Shaw A, Ronco C, Endre Z, Kellum JA, Chawla LS, Cruz D, Ince C, Okusa MD, ADQI 10 workgroup (2014) Potential use of biomarkers in acute kidney injury: report and summary of recommendations from the 10th Acute Dialysis Quality Initiative consensus conference. *Kidney Int* 85:513-521
4. Kaddourah A, Basu RK, Bagshaw SM, Goldstein SL, AWARE Investigators (2017) Epidemiology of acute kidney injury in critically ill children and young adults. *N Engl J Med* 376:11-20
5. Jetton JG, Guillet R, Askenazi DJ, Dill L, Jacobs J, Kent AL, Selewski DT, Abitbol CL, Kaskel FJ, Mhanna MJ, Ambalavanan N, Charlton JR, Neonatal Kidney Collaborative (2016) Assessment of worldwide acute kidney injury epidemiology in neonates: design of a retrospective cohort study. *Front Pediatr* 4:68
6. Goldstein SL, Akcan-Arikan A, Alobaidi R, Askenazi DJ, Bagshaw SM, Barhight M, Barreto E, Bayrakci B, Bignall ONR, Bjornstad E, Brophy PD, Chanchlani R, Charlton JR, Conroy AL, Deep A, Devarajan P, Dolan K, Fuhrman DY, Gist KM, Gorga SM, Greenberg JH, Hasson D, Ulrich EH, Iyengar A, Jetton JG, Krawczeski C, Meigs L, Menon S, Morgan J, Morgan CJ, Mottes T, Neumayr TM, Ricci Z, Selewski D, Soranno DE, Starr M, Stanski NL, Sutherland SM, Symons J, Tavares MS, Vega MW, Zappitelli M, Ronco C, Mehta RL, Kellum J, Ostermann M, Basu RK, Pediatric ADQI Collaborative (2022) Consensus-based recommendations on priority activities to address acute kidney injury in children: A Modified Delphi Consensus Statement. *JAMA Netw Open* 5:e2229442
7. Fleming GM, Askenazi DJ, Bridges BC, Cooper DS, Paden ML, Selewski DT, Zappitelli M (2012) A multicenter international survey of renal supportive therapy during ECMO: the Kidney Intervention During Extracorporeal Membrane Oxygenation (KIDMO) Group. *ASAIO J* 58:407-414
8. Goldstein SL, Somers MJ, Brophy PD, Bunchman TE, Baum M, Blowey D, Mahan JD, Flores FX, Fortenberry JD, Chua A, Alexander SR, Hackbarth R, Symons JM (2004) The Prospective Pediatric Continuous Renal Replacement Therapy (ppCRRT) Registry: design, development and data assessed. *Int J Artif Organs* 27:9-14
9. ASPN Workforce Committee (2023) American Society of Pediatric Nephrology webinar. <https://aspnep.s3.amazonaws.com/ASPN+Workforce+Committee+Webinar+-+Pat+Brophy.mp4>

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.