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Nomenclature for kidney function and disease: Executive summary and glossary from a Kidney Disease: Improving Global Outcomes (KDIGO) consensus conference

To the Editor:

The worldwide burden of kidney disease is rising, but public awareness remains limited, underscoring the need for more effective communication by stakeholders in the kidney health community. Despite this need for clarity, the nomenclature for describing kidney function and disease lacks uniformity. In June 2019, Kidney Disease Improving Global Outcomes (KDIGO) convened a Consensus Conference with the goal of standardizing and refining the nomenclature used in the English language to describe kidney function and disease, and of developing a glossary that could be used in scientific publications. Guiding principles of the conference were that the revised nomenclature should be patient centered, precise, and consistent with nomenclature used in the KDIGO guidelines. Conference attendees reached general consensus on the following recommendations: (1) to use "kidney" rather than "renal" or "nephro-" when referring to kidney disease and kidney function; (2) to use "kidney failure" with appropriate descriptions of presence or absence of symptoms, signs, and treatment rather than "end-stage kidney disease"; (3) to use the KDIGO definition and classification of acute kidney diseases and disorders (AKD) and acute kidney injury (AKI), rather than alternative descriptions to define and classify severity of AKD and AKI; (4) to use the KDIGO definition and classification of chronic kidney disease (CKD) rather than alternative descriptions to define and classify severity of CKD; and (5) to use specific kidney measures, such as albuminuria or decreased glomerular filtration rate (GFR), rather than "abnormal" or "reduced" kidney function to describe alterations in kidney structure and function. A complete glossary (Table S1) as agreed upon by the meeting participants is published in Levey et al¹ and can also be found online: <https://kdigo.org/conferences/nomenclature/>.

Achieving consensus among conference attendees and publication of the conference report and glossary are only the first steps in implementation of a revised nomenclature. Elements of the glossary will be included in online updates to the newly released (11th) edition of the *AMA Manual of Style*.² Medical journals adopting the recommendations will need to determine how to implement them, and this process will require education of editorial staff as well as proactive communication with authors generally and with regard to specific manuscripts. If successful, further implementation in clinical

practice, research, and public health will require more widespread dissemination and professional education. Improving communication with patients and the public will require efforts to enhance patient education and health literacy for the public and guides to communication with patients. Professional societies, industry, and patient advocacy organizations will be critical to these efforts.

Advances in research, particularly in precision medicine, will introduce a myriad of new terms and novel concepts requiring incorporation into disease definitions and classifications. In addition, the increasing prominence and participation of patient and caregiver communities in defining research objectives and best practices in clinical care will further elucidate the characteristics of patient-centered terminology. Expanding and updating the KDIGO glossary can be accomplished as part of the activities of future KDIGO guideline Work Groups and conferences.

DISCLAIMER

Note that this commentary has been adapted for this journal with permission of KDIGO and the International Society of Nephrology from a similar version that is being published concurrently in multiple journals. The full report from which this executive summary is based on can be found in Levey et al.¹

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clinical research/practice, editorial/personal viewpoint, kidney disease, kidney failure/injury, kidney transplantation/nephrology

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REFERENCES

1. Levey AS, Eckardt K-U, Dorman NM, et al. Nomenclature for kidney function and disease: report of a kidney disease: improving Global Outcomes (KDIGO) Consensus Conference. *Kidney Int.* 2020;97(6):1117-1129.
2. American Medical Association. *American Medical Association (AMA) Manual of Style*. 11th ed. Oxford, UK: Oxford University Press; 2020.

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