KDIGO: mission, structure, recent and future activities

Professor Michel Jadoul, M.D.
Cliniques universitaires Saint-Luc
Université catholique de Louvain
Brussels, Belgium
DISCLOSURES

Research support: Amgen, Astra-Zeneca

Speaker: Astra-Zeneca, Bayer, Boehringer-Ingelheim, Mundipharma

Consultancy: Astellas, Astra-Zeneca, Bayer, Boehringer-Ingelheim, CSL Vifor, Fresenius Medical Care Asia Pacific, Mundipharma, Stada Eurogenerics, Vertex

Other: I am since januari 2019 cochair of Kidney Disease: Improving Global Outcomes (KDIGO)
OUTLINE

What is KDIGO – history, mission, structure

KDIGO Activities
➢ Clinical Practice Guidelines
➢ Controversies Conferences
➢ Consensus reports
➢ Implementation Activities

Challenges and Vision Forward
Clinical Practice Guidelines (DOQI) in Nephrology began in 1995 (USA)

Concept of Global Clinical Practice Guidelines explored in 2003
KDIGO launched in 2004
Non-Profit Foundation incorporated in Belgium
Initially managed by NKF (US) under a service contract

KDIGO became independent in 2012
Led by active volunteers and a small staff
Over 1,000 clinicians and scientists have participated

KDIGO is funded by many sources, is transparent and financially stable
No funding directly from industry for guidelines or guideline updates
Funding sought for general support, conferences, and implementation activities
KDIGO MISSION

Improving the care and outcomes of patients with kidney disease worldwide through the development and implementation of global clinical practice guidelines.
Executive Committee, London, September 2022
2023 KDIGO Leadership

KDIGO Co-Chairs:

Michel Jadoul, Belgium  Wolfgang Winkelmayer, USA

Executive Committee Members:

Gloria Ashuntantang, Cameroon  Meg Jardine, Australia
Sunita Bavanandam, Malaysia  Irene Lourdes de Noronha, Brazil
John Davis, CEO, USA  Michelle O’Shaughnessy, Ireland
Michelle Denberg, USA  Patrick Rossignol, Monaco
Jenny Flythe, USA  Paul Stevens, Secretary-Treasurer, UK
Masafumi Fukagawa, Japan  Rita Suri, Canada
Morgan Grams, USA, cochair elect  Sydney Tang, Hong-Kong
Joe Ix, USA  Irma Tchokhonelidze, Georgia
Markus Ketteler, Germany  Marcello Tonelli, Methods Chair, Canada
John Davis  
Chief Executive Officer  

Danielle Green  
Executive Director  

Michael Cheung  
Chief Scientific Officer  

Melissa Thompson  
Chief Operating Officer  

Amy Earley  
Guideline Development Director  

Kathleen Conn  
Director of Communications  

Tanya Green  
Events Director  

Coral Cyzewski  
Events Coordinator  

Jennifer King  
Medical Writing Director
KDIGO’s Agenda

- Clinical Practice Guidelines and updates
  - KDIGO’s core mission: development, vetting, dissemination, and implementation of guidelines

- Controversies Conferences
  - Conferences that examine significant topics in nephrology and related disciplines that are not fully resolved. Around 60 so far. Conference Report, usually in *Kidney International*. A Controversies Conference may prompt development of a guideline.
  - Consensus reports sometimes (Nomenclature / Acute Kidney Disease)

- Implementation activities
  - Gathers KOL’s from a country or region to discuss barriers and opportunities for implementation of KDIGO recommendations
KDIGO Clinical Practice Guidelines
GUIDELINE DEVELOPMENT

• Workgroup (WG) cochairs are appointed by the KDIGO cochairs
• WG cochairs propose the WG composition and discuss it with the KDIGO cochairs and staff
• KDIGO cochairs appoint the WG members
• Evidence-Review Team appointed by KDIGO (WG cochairs, KDIGO cochairs, CEO)
• 2 WG meetings (Face to face) and multiple virtual meetings during the 18-24 months process
• Content of the Guideline is the responsibility of the KDIGO WG
• Robust methodology: systematic reviews/meta-analysis by ERT of RCT (and sometimes observational studies)
• Both the Scope of Work and draft of the Guideline are submitted to Public review (register at www.kdigo.org)
GUIDELINE GOALS

• Generate a useful resource for clinicians and patients
  • Address relevant questions with actionable recommendations
  • Take on controversial topics when sufficient evidence
  • Communicate clearly: highlight figures and tables

• Stay true to evidence

• Target audience: broad, primarily clinicians

• Be mindful of implications for policy and payment

• Propose research questions
KDIGO GUIDELINES: 2020 - 2022

Transplant Candidate
April 2020

Diabetes in CKD
October 2020

Blood Pressure in CKD
March 2021
Update

Glomerular Diseases
October 2021
Update

Diabetes in CKD
October 2022
Update
Diabetes management in chronic kidney disease: a consensus report by the American Diabetes Association (ADA) and Kidney Disease: Improving Global Outcomes (KDIGO)

Ian H. de Boer¹, Kamlesh Khunti², Tami Sadusky³, Katherine R. Tuttle⁴, Joshua J. Neumiller⁵, Connie M. Rhee⁶, Sylvia E. Rosas⁷, Peter Rosing⁸,⁹ and George Bakris¹⁰

¹Kidney Research Institute, University of Washington, Seattle, Washington, USA; ²Diabetes Research Centre, University of Leicester, Leicester, UK; ³University of Washington, Seattle, Washington, USA; ⁴University of Washington, Spokane, Washington, USA; ⁵College of Pharmacy and Pharmaceutical Sciences, Washington State University, Spokane, Washington, USA; ⁶University of California, Irvine, Orange, California, USA; ⁷Joslin Diabetes Center and Harvard Medical School, Boston, Massachusetts, USA; ⁸Steno Diabetes Center Copenhagen, Copenhagen, Denmark; ⁹University of Copenhagen, Copenhagen, Denmark; and ¹⁰University of Chicago Medicine, Chicago, Illinois, USA
Who and when to screen?

- **T1D**: Yearly starting 5 years after diagnosis
- **T2D**: Yearly starting at diagnosis

How to screen?

- Spot urine ACR
- and
eGFR

What to do with a positive result?

- Repeat and confirm:
  - Evaluate possible temporary or spurious causes
  - Consider using cystatin C and creatinine to more precisely estimate GFR
  - Only persistent abnormalities define CKD

- Initiate evidence-based treatments

What defines CKD diagnosis?

- Persistent urine ACR $\geq$30 mg/g and/or
- Persistent eGFR $<60$ mL/min/1.73 m$^2$ and/or
- Other evidence of kidney damage
Based on Credence and Dapa-CKD

**First-line drug therapy**
- SGLT2i (Initiate if eGFR ≥20; continue until dialysis or transplant)
- Metformin (If eGFR ≥30)
- RAS inhibitor at maximum tolerated dose (if HTN*)
- Moderate- or high-intensity statin

**Regular reassessment** of glycemia, albuminuria, BP, CVD risk, and lipids

**Additional risk-based therapy**
- GLP-1 RA if needed to achieve individualized glycemic target
- Nonsteroidal MRA* if ACR ≥30 mg/g and normal potassium
- Dihydropyridine CCB and/or diuretic* if needed to achieve individualized BP target
- Steroidal MRA if needed for resistant hypertension if eGFR ≥45

**Antiplatelet agent for clinical ASCVD**
- Ezetimibe, PCSK9i, or licosapent ethyl if indicated based on ASCVD risk and lipids

- T2D only
- All patients (T1D and T2D)
Kidney Disease: Improving Global Outcomes (KDIGO) announces the formal launch of the update to the 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease (CKD). The CKD Guideline aims to provide state-of-the-art guidance for clinicians treating patients with kidney disease. Dr. Adeera Levin (Canada) and Dr. Paul Stevens (United Kingdom) will co-chair the CKD Guideline Update as they did for the 2012 CKD Guideline.

“The 2012 KDIGO CKD Guideline represented a significant contribution to the advancement of global nephrology and refined the CKD classification scheme emphasizing the conceptual importance of describing Cause, GFR level, and degree of Albuminuria (CGA), thereby improving the recognition and understanding of kidney diseases,” said Dr. Levin. “However, a lot has happened in global nephrology since then, and it is time to revisit this important KDIGO Guideline. We are eager to appraise the latest evidence for clinicians around the world and are confident that this update will be just as informative and impactful as the original.”

Launch of public review of the KDIGO CKD Guideline expected in Q2 2023
Register on www.kdigo.org
**EMPA-KIDNEY: key inclusion and exclusion criteria\textsuperscript{1,2}**

**Key inclusion criteria**

- Age \( \geq 18 \) years or at ‘full age’ as required by local regulation
- Evidence of CKD at risk of kidney disease progression, defined by \( \geq 3 \) months before and at the time of screening visit
  - eGFR \( \geq 45 \) to <90 ml/min/1.73 m\(^2\) with UACR A2–A3 (\( \geq 200 \) mg/g), or
  - eGFR \( \geq 20 \) to <45 ml/min/1.73 m\(^2\)
- Clinically appropriate doses of single-agent RAS-inhibition with either ACEi or ARB unless either is not tolerated or not indicated
- Neither requires an SGLT2 or SGLT1/2 inhibitor, nor that such treatment is inappropriate

**Key exclusion criteria**

- Currently receiving an SGLT2 or dual SGLT1/2 inhibitor
- T2D and prior atherosclerotic CV disease with eGFR >60 ml/min/1.73 m\(^2\)
- Receiving dual RAS-inhibition (two of ACEi, ARB, DRI)
- Any IV immunosuppression therapy in the last 3 months or anyone currently on >45 mg prednisolone (or equivalent)
- Maintenance dialysis, functioning kidney transplant or scheduled living donor transplant
- Polycystic kidney disease
- T1D\textsuperscript{†}
Empagliflozin in Patients with Chronic Kidney Disease

The EMPA-KIDNEY Collaborative Group*

![Graph showing the percentage of patients with event over years of follow-up comparing Placebo and Empagliflozin. The hazard ratio is 0.72 (95% CI, 0.64–0.82) with a P<0.001.]

<table>
<thead>
<tr>
<th>Years of Follow-up</th>
<th>Placebo</th>
<th>Empagliflozin</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>1.5</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>2.5</td>
<td>25</td>
<td>50</td>
</tr>
</tbody>
</table>

Hazard ratio, 0.72 (95% CI, 0.64–0.82) P<0.001

No. at Risk
- Placebo: 3305 3250 3129 2243 1496 592
- Empagliflozin: 3304 3252 3163 2275 1538 624
Impact of diabetes on the effects of sodium glucose co-transporter-2 inhibitors on kidney outcomes: collaborative meta-analysis of large placebo-controlled trials

Interpretation In addition to the established cardiovascular benefits of SGLT2 inhibitors, the randomised data support their use for modifying risk of kidney disease progression and acute kidney injury, not only in patients with type 2 diabetes at high cardiovascular risk, but also in patients with chronic kidney disease or heart failure irrespective of diabetes status, primary kidney disease, or kidney function.
Implementation, not hesitation, for SGLT2 inhibition as foundational therapy for chronic kidney disease

This meta-analysis is expected to change chronic kidney disease guidelines with its robust findings on the benefits of SGLT2 inhibition in a wide range of patients with chronic kidney disease, including many without diabetes.

Patrick B Mark, *Naveed Sattar
naveed.sattar@glasgow.ac.uk; @MetaMedTeam

School of Cardiovascular and Metabolic Health, College of Medical and Veterinary Sciences, University of Glasgow, Glasgow G12 8TA, UK
Chapters 1 (diagnosis) and 3 (prevention in hemodialysis) of the 2018 Guideline unchanged
Work Group membership

WORK GROUP CO-CHAIRS

Michel Jadoul, MD
Cliniques Universitaires Saint Luc
Université Catholique de Louvain
Brussels, Belgium

Paul Martin, MD, FRCP, FRCPI
Miller School of Medicine
University of Miami
Miami, FL, USA

Ahmed A. Awan, MD, FACP
Baylor College of Medicine
Houston, TX, USA

Jidong Jia, MD, PhD
Capital Medical University
Beijing, China

Marina C. Berengué, MD
La Fe University Hospital, IIS La Fe
University of Valencia-CIBERehd
Valencia, Spain

Nassim Kamar, MD, PhD
Toulouse Rangueil University Hospital;
INSERM U1291-CNRS U5051, Toulouse Institute for
Infectious and Inflammatory Disease (Infinity);
Paul Sabatier University
Toulouse, France

Annette Bruchfeld, MD, PhD, FERA
Linköping University
Linköping, Sweden;
Karolinska University Hospital and CLINTEC
Karolinska Institutet
Stockholm, Sweden

Rosmawati Mohamed, MD, MRCP, MIntMed, MBBS
University Malaya Medical Centre
Kuala Lumpur, Malaysia

Fabrizio Fabrizi, MD
Maggiore Hospital and Foundation IRCCC Cà
Granda Ospedale Maggiore Policlinico
Milan, Italy

Mário Guimarães Pessôa, MD, PhD
University of São Paulo School of Medicine
São Paulo, Brazil

David S. Goldberg, MD
Miller School of Medicine
University of Miami
Miami, FL, USA

Stanislas Pol, MD, PhD
Université de Paris et Département d’Hépatologie
Hôpital Cochin, APHP
Paris, France

Meghan E. Sise, MD, MS
Massachusetts General Hospital
Boston, MA, USA
<table>
<thead>
<tr>
<th>CKD populations</th>
<th>Direct-acting antiviral (DAA) regimensa</th>
<th>HCV genotypes</th>
<th>Quality of evidence (total N)b</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1–G3b, not KTR</td>
<td>Any licensed DAA regimen</td>
<td>All</td>
<td>Not evaluated</td>
</tr>
<tr>
<td>G4–G5ND, including KTRc</td>
<td>Sofosbuvir / Daclatasvir, 12 or 24 wk</td>
<td>All</td>
<td>High (571)</td>
</tr>
<tr>
<td></td>
<td>Glecaprevir / Pibrentasvir, 8 wk</td>
<td>All</td>
<td>High (132)</td>
</tr>
<tr>
<td></td>
<td>Grazoprevir / Elbasvir, 12 wk</td>
<td>1a, 1b, 4</td>
<td>High (857)</td>
</tr>
<tr>
<td></td>
<td>Sofosbuvir / Velpatasvir, 12 wk</td>
<td>All</td>
<td>Low (99)</td>
</tr>
<tr>
<td></td>
<td>Sofosbuvir / Ledipasvir, 12 wk</td>
<td>All</td>
<td>Very low (43)</td>
</tr>
<tr>
<td>G5D</td>
<td>Sofosbuvir / Velpatasvir, 12 wk</td>
<td>All</td>
<td>High (405)</td>
</tr>
<tr>
<td></td>
<td>Glecaprevir / Pibrentasvir, 8 wk</td>
<td>All</td>
<td>Moderate (529)</td>
</tr>
<tr>
<td></td>
<td>Sofosbuvir / Daclatasvir, 12 or 24 wk</td>
<td>All</td>
<td>Moderate (278)</td>
</tr>
<tr>
<td></td>
<td>Sofosbuvir / Ledipasvir, 12 wk</td>
<td>All</td>
<td>Moderate (962)</td>
</tr>
<tr>
<td></td>
<td>Grazoprevir / Elbasvir, 12 wk</td>
<td>All, 1b, 4</td>
<td>Moderate (220)</td>
</tr>
<tr>
<td></td>
<td>PrO ± D, 12 wk</td>
<td>All</td>
<td>Moderate (582)</td>
</tr>
<tr>
<td></td>
<td>Daclatasvir / Asunaprevir, 24 wk</td>
<td>1b</td>
<td>Low (341)</td>
</tr>
<tr>
<td>KTR, G1–G3b</td>
<td>Sofosbuvir / Ledipasvir, 12 or 24 wk</td>
<td>All</td>
<td>High (300)</td>
</tr>
<tr>
<td></td>
<td>Sofosbuvir / Daclatasvir, 12 or 24 wk</td>
<td>All</td>
<td>High (290)</td>
</tr>
<tr>
<td></td>
<td>PrO ± D, 12 wk</td>
<td>1a, 1b, 4</td>
<td>Very low (33)</td>
</tr>
<tr>
<td></td>
<td>Grazoprevir / Elbasvir, 12 wk</td>
<td>1a, 1b, 4</td>
<td>Very low (21)</td>
</tr>
</tbody>
</table>

Figure 1 | Direct-acting antiviral (DAA) regimens with evidence of effectiveness for various chronic kidney disease (CKD) populations.
Transplantation of HCV + Kidneys (deceased donors) into HCV – recipients

- 16 studies with at least 10 cases
- A total of 525 HCV-uninfected patients transplanted with a kidney from an HCV-infected donor, followed by DAA therapy
- Overall HCV cure: 97.7% (95% CI: 96.3-98.8%)
- 98% one year patient and graft survival
- A few caveats
  - 3 cases of fibrosing cholestatic hepatitis (in all 3, DAA initiated > 30 days after TP)
  - data beyond one year: limited, a single study with 5 y. data OK
  - in some studies, more BKV and CMV infections in recipients of HCV+ kidneys: more data required

Overall, HCV+ kidneys can be offered to recipients regardless of HCV status, if authorized by national/regional laws and regulations
4.2.3: We recommend that kidneys from HCV-infected donors be considered regardless of HCV status of potential kidney transplant recipients (1C).

4.2.4: When transplanting kidneys from HCV-infected donors into HCV-uninfected recipients, transplant centers must ensure that patients receive education and are engaged in discussion with sufficient information to provide informed consent. Patients should be informed of the risks and benefits of transplantation with an HCV-infected kidney, including the need for DAA treatment (Not Graded).

4.2.5: When transplanting kidneys from HCV-infected donors into HCV-uninfected recipients, transplant centers should confirm availability of DAAs for initiation in the early post-transplant period (Not Graded).
Chapter 5 (HCV-related GN)

5.1: HCV-infected patients with a typical presentation of immune-complex proliferative glomerulonephritis can be managed without a confirmatory kidney biopsy. However, a biopsy may be indicated in certain clinical circumstances (Figure 4) (Not Graded).

5.2: We recommend that patients with HCV-associated glomerulonephritis receive antiviral therapy (1A).
   5.2.1: We recommend that patients with HCV-associated glomerulonephritis, stable kidney function, and without nephrotic syndrome be treated with DAAs prior to other treatments (1C).
   5.2.2: We recommend that patients with cryoglobulinemic flare or rapidly progressive glomerulonephritis be treated with both DAAs and immunosuppressive agents with or without plasma exchange (1C).
   5.2.2.1: The decision whether to use immunosuppressive agents in patients with nephrotic syndrome should be individualized (Not Graded).

5.2.3: We recommend immunosuppressive therapy in patients with histologically active HCV-associated glomerulonephritis who do not respond to antiviral therapy, particularly those with cryoglobulinemic kidney disease (1B).
   5.2.3.1: We recommend rituximab as the first-line immunosuppressive treatment (1C).
Patient with HCV and severe glomerulonephritis (e.g., RPGN, nephrotic syndrome) undergoing DAA treatment

Yes

Distinguishing features of typical presentation

- Hematuria
- ↓C4
- Circulating cryoglobulins
- Systemic signs of cryoglobulinemia
- Rheumatoid factor

Number of factors above checked positive

5 0

Typical Atypical

No

Biopsy and consider immunosuppression
Typical presentation

Ascertained eGFR and proteinuria status

- Stable: No biopsy
- Worsening: Biopsy and consider immunosuppression

Atypical presentation or eGFR or proteinuria continues to deteriorate despite SVR
KDIGO-ISN Webinar on the KDIGO Hepatitis C Guideline Update

WEBINAR FEBRUARY, 2023

Click image to register

February 21  6 p.m. CET
KDIGO ACTIVITIES

• Clinical Practice Guidelines currently under development:
  • Glomerular Diseases Modular Update (1st: ANCA, Lupus 2023)
  • ADPKD (T1-2 2023)
  • CKD Evaluation & Management Update (T3-4 2023)
  • Anemia in CKD Update (T4 2023 or early 2024)
  • Acute Kidney Injury update (starting)
KDIGO CLINICAL PRACTICE GUIDELINES APP

for both Android and IPhone
KDIGO Controversies Conferences
Consensus Conferences
<table>
<thead>
<tr>
<th>Conference</th>
<th>Location</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controversies Conference on Women and Kidney Health</td>
<td>Athens, Greece</td>
<td>February, 2023</td>
</tr>
<tr>
<td>Controversies Conference on the Role of Complement in Kidney Disease</td>
<td>Florence, Italy</td>
<td>September, 2022</td>
</tr>
<tr>
<td>Controversies Conference on Improving CKD Quality of Care: Trends and Perspectives</td>
<td>Berlin, Germany</td>
<td>June, 2022</td>
</tr>
<tr>
<td>Controversies Conference on Symptom-Based Complications in Dialysis</td>
<td>Berlin, Germany</td>
<td>May, 2022</td>
</tr>
<tr>
<td>Controversies Conference on Challenges in Management of the Kidney Allograft: From Decline to Failure</td>
<td>Virtual</td>
<td>March, 2022</td>
</tr>
<tr>
<td>Controversies Conference on Novel Anemia Therapies in CKD</td>
<td>Virtual</td>
<td>December, 2021</td>
</tr>
</tbody>
</table>
Primary Care Perspectives Implementation Summit

HONG KONG  JULY, 2023

SEE CONFERENCE

UPCOMING CONTROVERSIES CONFERENCES

Controversies Conference on Prevention of CKD

Controversies Conference on Heart Failure in Kidney Disease

ROME, ITALY  NOVEMBER, 2023  TBD  MARCH, 2024
Consensus reports

Nomenclature for kidney function and disease: report of a Kidney Disease: Improving Global Outcomes (KDIGO) Consensus Conference


KDIGO executive conclusions

Harmonizing acute and chronic kidney disease definition and classification: report of a Kidney Disease: Improving Global Outcomes (KDIGO) Consensus Conference

Norbert H. Lameire1,2, Adeera Levin5,9, John A. Kellum3,9, Michael Cheung4, Michel Jadoul5, Wolfgang C. Winkelmay5 and Paul E. Stevens7,9; for Conference Participants8

1Renal Division, Department of Medicine, University Hospital Ghent, Ghent, Belgium; 2Division of Nephrology, The University of British Columbia, Vancouver, British Columbia, Canada; 3Department of Critical Care Medicine, Center for Critical Care Nephrology, University of Pittsburgh, Pittsburgh, Pennsylvania, USA; 4KDIGO, Brussels, Belgium; 5Cliniques Universitaires Saint Luc, Université Catholique de Louvain, Brussels, Belgium; 6Kelman Institute for Kidney Health, Section of Nephrology, Department of Medicine, Baylor College of Medicine, Houston, Texas, USA; and 7Kent Kidney Care Centre, East Kent Hospitals University NHS Foundation Trust, Canterbury, UK
KDIGO Impact
KDIGO Guidelines are the TOP FIVE MOST CITED ARTICLES in Kidney International Supplements
WHAT LIES AHEAD – CHALLENGES & FORWARD VISION

• Expand KDIGO’s Guideline portfolio
• Much more frequent updates of Guidelines
• Expand outreach beyond nephrology
• Further increase diversity in all KDIGO Activities
• Better document KDIGO’s impact on populations