



# Kidney Disease: Improving Global Outcomes (KDIGO)



# KIDNEY DISEASE: IMPROVING GLOBAL OUTCOMES (KDIGO)

Independently incorporated, non-profit foundation governed by an international board with the stated mission to:

Improve the care and outcomes of kidney disease patients worldwide by promoting coordination, collaboration, and integration of initiatives to develop and implement clinical practices guidelines.



# KDIGO BOARD - 2008

**Co-Chairs: Kai-Uwe Eckardt, MD GERMANY  
Garabed Eknoyan, MD USA**

Omar I. Abboud, MD, SUDAN

Mona Al Rukhaimi, MD, UAE

Sharon Adler, MD, USA

Sharon P. Andreoli, MD, USA

Mustafa Arici, MD, TURKEY

Robert Atkins, MD, AUSTRALIA

Kamal F. Badr, MD LEBANON

Fred Brown, MBA, USA

Evelyn Butera, RN, USA

Daniel Cattran, MD, CANADA

Jorge Cannata-Andia, MD, SPAIN

Jeremy R. Chapman, MD, AUSTRALIA

Ricardo Correa-Rotter, MD, MEXICO

Olivier Coustere, FRANCE

Adrian Covic, MD, ROMANIA

Jonathon Craig, MD, AUSTRALIA

Angel de Francisco, MD, SPAIN

Paul de Jong, MD, NETHERLANDS

Jean-Yves DeVos, RN, BELGIUM

Tilman Drüeke, MD, FRANCE

Knud Erben, GERMANY

Denis P. Fouque, MD, FRANCE

Gordon Guyatt, MD, CANADA

Philip Halloran, MD, CANADA



# KDIGO BOARD - 2008

David Harris, MD, AUSTRALIA

Vivekanand Jha, MD, INDIA

Michelle Josephson, MD, USA

Suhnggwon Kim, MD, KOREA

Adeera Levin, MD, CANADA

Phillip K.T. Li, MD, HONG KONG

Francesco Locatelli, MD, ITALY

Alison MacLeod, MD, UK

Pablo Massari, MD, ARGENTINA

Linda McCann, RD, USA

Peter McCullough, MD, USA

Rafique Moosa, MD, SOUTH AFRICA

Brian Pereira, MD, USA

Miguel C. Riella, MD, BRAZIL

Bernardo Rodriguez-Iturbe, MD,

VENEZUELA

Robert Schrier, MD USA

Trent Tipple, MD, USA

Yusuke Tsukamoto, MD, JAPAN

Raymond Vanholder, MD, BELGIUM

Yves Vanrenterghem, MD, BELGIUM

Giancarlo Viberti, MD, UK

David Wheeler, MD, UK

Carmine Zoccali, MD, ITALY



# KDIGO – WORK GROUPS 2008

**Evidence Rating** – Alison MacLeod, *UK*  
Katrin Uhlig, *USA*

**Website/Guideline Database** – Raymond Vanholder, *Belgium*

**Mineral and Bone Disorder** – Sharon Moe, *USA*  
Tilman Drüeke, *France*

**Liaison Task Force** – Raymond Vanholder, *Chair*  
James Tattersall, *EBPG*  
Robert MacTier, *UK Renal Association*  
Marcello Tonelli, *CSN*  
Martin Gallagher, *CARI*  
Michael Rocco, *KDOQI*



# KDIGO INITIATIVES

- Clinical Practice Guideline Development
- International Review/ Methodology
- Global Guideline Coordination
- Website Guideline Database
- Controversies Conferences
- Mineral and Bone Initiative



# Guiding principles for the KDIGO guideline development process

- **Scientific and methodological rigor:** The process includes an independent evidence-review, following a pre-defined methodology, adapted from the GRADE system.
- **Interdisciplinary approach:** Work Group members are chosen for their expertise in the respective fields, commitment to objective evaluation and quality of care, with due consideration of international representation reflecting the mission statement of KDIGO.

# Guiding principles for the KDIGO guideline development process

- **Independence of Work Groups:** The workgroup has complete independence in the formulation of recommendations. Full transparency is requested with respect to any relationship with interest groups and industry, that might be perceived as a potential conflict of interest.
- **Openness of the guideline development process:** Following their initial review by KDIGO Executive Committee and the Board, the draft guidelines are subjected to an organizational and public review process that invites comment from international groups and professionals whom the guidelines will affect. Comments submitted at each phase of the review process will be carefully reviewed and considered by the work group prior to finalizing the guidelines.



# Topic Selection and Prioritization Process

For Clinical Practice  
Guidelines and  
Conferences

# Prioritization of CPG Development\*

- Consistency with the mission of the organization.
- Feasibility of implementation.
- Efficiency and utility of the results.

\* Recommendations of the Institute of Medicine



# WHO Guidelines for Guidelines

- Stage 1. Maximum potential benefit to individual or group of patients *if resources were unlimited*.
- Stage 2. Assess tradeoffs between cost of applying intervention on a population basis and its health impact (*very limited vs. unlimited resources*).
- Stage 3. Provide evidentiary basis and assistance necessary for local Guideline Development Groups *in adopting and grading the recommendations for regional implementation considering available resources*.

# KDIGO Criteria for CPG Topic Selection

- Prevalence of clinical problem.
- Burden of illness imposed by the problem.
- Variability in practice
- Potential of guidelines to improve health outcomes.

International Evidence  
Review Team

**Grading Evidence and  
Recommendations for Clinical  
Practice Guidelines.  
A Position Statement from  
KDIGO**

*Kidney Int 70:2058-2065, 2006*

# KDIGO Clinical Practice Guidelines

- **Prevention, Diagnosis, Evaluation and Treatment of Hepatitis C in Chronic Kidney Disease**

Workgroup co-chairs: Michel Jadoul (Belgium) and David Roth (USA). Published – April 2008, *Kidney Int*

- **Diagnosis, Evaluation, Prevention and Treatment of Chronic Kidney Disease Related Mineral and Bone Disorders (CKD-MBD)**

Workgroup co-chairs: Tilman Drüeke (France) and Sharon Moe (USA). Anticipated Publication – Fall 2008, *Kidney Int*

- **Care of the Kidney Transplant Recipient**

Workgroup co-chairs: Bertram Kasiske (USA) and Martin Zeier (Germany). Anticipated Publication – Winter 2008, *Kidney Int*

- **Acute Kidney Injury,**

Workgroup co-chairs: Norbert Lameire (Belgium) and John Kellum (USA). Anticipated Publication – 2009



# Guideline Coordination Initiative

- Joint effort of leaders of five English-language guideline development groups
- Exploring the feasibility of a collaborative and integrated international approach to the development of new guidelines and the updating of existing guidelines in the field of kidney disease

# Guideline Coordination

- **Canadian Society of Nephrology (CSN) Guidelines**
- **Caring for Australians with Renal Impairment (CARI) Guidelines - ANZSN**
- **United Kingdom Renal Association Guidelines**
- **European Best Practice (EBPG) Guidelines – ERA/EDTA**
- **Kidney Disease Outcomes Quality Initiative (KDOQI) Guidelines - NKF**
- **KDIGO**



# Guideline Coordination

- Globalize (Share) the Evidence – Localize the Decision Making
- New CPGs: Global KDIGO Guidelines – Local Implementation
- Existing CPGs: Coordinated, cooperative process of updating

# Guideline Coordination

## What we can do together

- **Uniformity in grading the evidence and strength of recommendations** (*“Grading the evidence and recommendations for clinical practice guidelines-A position statement from KDIGO”*).
- **Reconciliation of currently recommended targets** (*KDIGO Website-Compare Guidelines*).
- **Hepatitis C guidelines as first global guidelines in nephrology for subsequent adoption by participating organizations**, which could then devote their resources to implementation. Extend to CKD-MBD and Transplant CPGs, with opportunity to provide input and participate early in the review process.

# Coordination with WHO

- Liaison member on Guideline Development Groups (*where applicable*).
- Participation in Controversies Conferences.
- Incorporation of KDIGO CKD Staging into ICD 10-11.
- Adopt the WHO Guidelines for Guidelines methodology.

# Website Guideline Database

Comparison of guidelines as a tool  
for the harmonization of  
recommended interventions: The  
KDIGO website

*Kidney International, 2007*

# Website Resources

- **International Clinical Practice Guidelines in Nephrology**
  - Guideline Development Summaries
  - Target Ranges Comparisons
- **Position Statements**
  - CKD-Mineral and Bone Disorder
  - Classification of CKD

[www.KDIGO.org](http://www.KDIGO.org)



# Website Resources

- **Global Nephrology Guideline Database:**
  - Guideline Overviews
  - Guideline Summaries by Topic
  - Guideline Target Comparisons

**WWW.KDIGO.ORG**



# KDIGO Controversies Conferences

- **WHAT DO WE KNOW**  
*(Available Evidence)*
- **WHAT CAN WE DO WITH WHAT WE KNOW**  
*(Recommendations vs. Guidelines)*
- **WHAT DO WE NEED TO KNOW**  
*(Gaps in knowledge, Research questions)*



Third KDIGO  
Controversies Conference

Care of the Kidney  
Transplant Recipient

Co-chairs: F. Delmonico, *USA*  
M. Zeier, *Germany*

*Lisbon, Portugal*  
*February 2-4, 2006*

# Fourth KDIGO Controversies Conference

## CKD as a Global Public Health Problem: Approaches and Initiatives

**Co-Chairs:** Andrew Levey, Kai-Uwe Eckardt,  
Adeera Levin, Allan Collins, Meguid El-  
Nahas

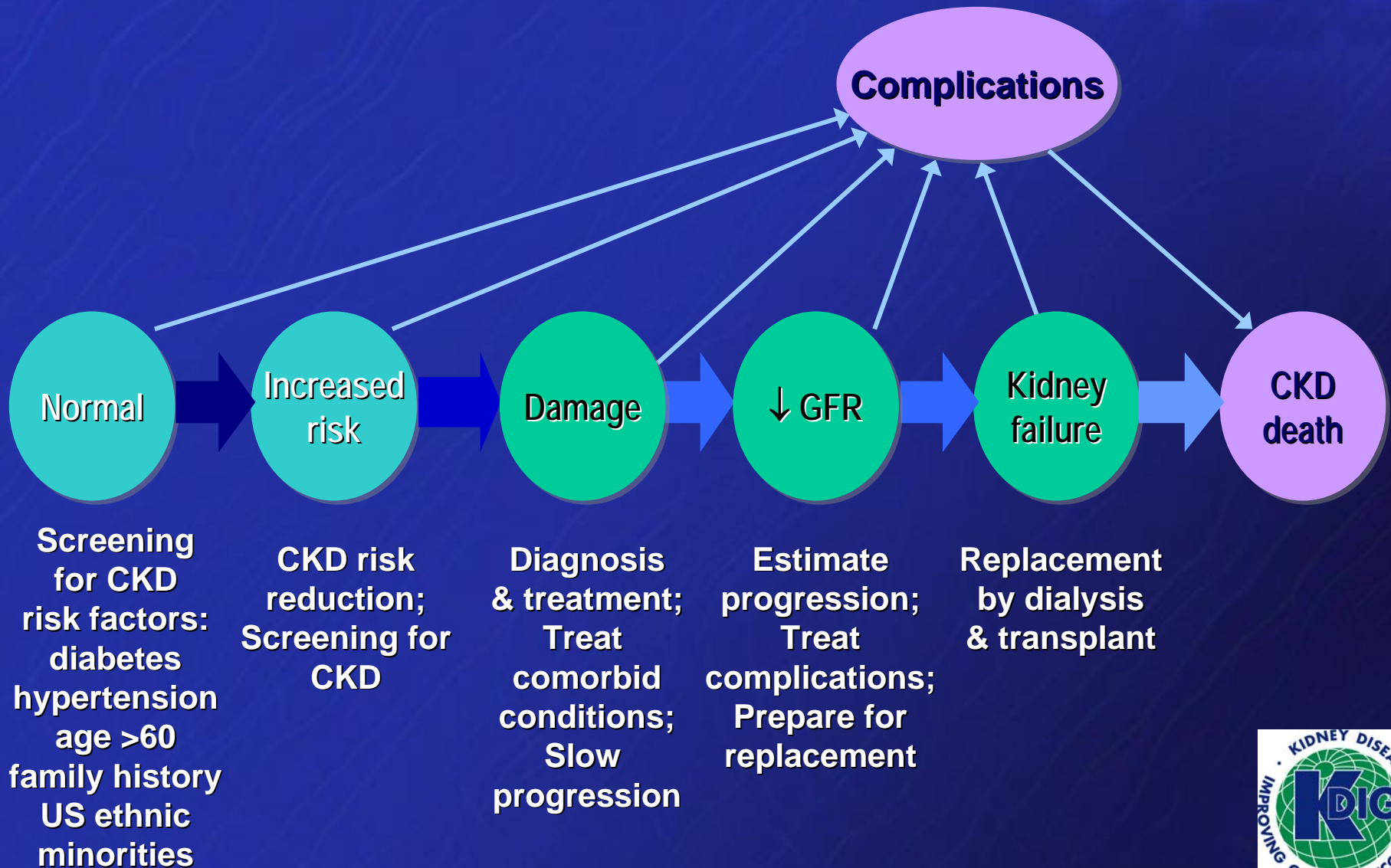
*Amsterdam, Netherlands  
October 12-14, 2006*

# NKF-KDOQI Definition of CKD KDIGO Modifications (Amsterdam 2004)

Structural or functional abnormalities of the kidneys for  $\geq 3$  months, as manifested by either:

- 1. Kidney damage**, with or without decreased GFR, as defined by
  - pathologic abnormalities
  - markers of kidney damage
    - urinary abnormalities (**proteinuria**)
    - blood abnormalities (renal tubular syndromes)
    - imaging abnormalities
  - **kidney transplantation**
- 2. GFR  $< 60$  ml/min/1.73 m<sup>2</sup>**, with or without kidney damage

# Conceptual Model for CKD



# Sixth KDIGO Controversies Conference

Coordination of Global Practice  
Guidelines for Anemia in CKD

**Co-Chairs: Francesco Locatelli &  
Allen Nissenson**

*New York*  
*October 15-16, 2007*

# Fifth KDIGO Controversies Conference

## Clinical Practice Guidelines: Methodology and Transparency

**Co-Chairs: Robert Alpern, Charles  
van Ypersele, Katrin Uhlig, &  
Alison MacLeod**

*New York  
October 12-13, 2007*

# KDIGO Position Statements

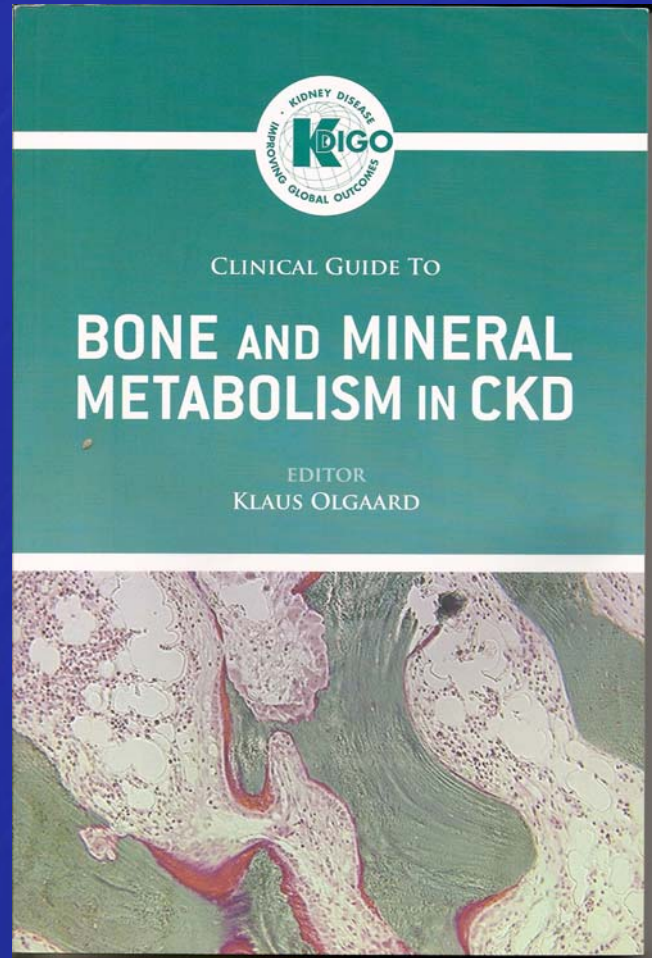
- **Definition and classification of chronic kidney disease: a position statement from Kidney Disease: Improving Global Outcomes (KDIGO)** Levey AS, et al: Kidney Int 2005;67:2089-2100.
- **Definition, evaluation, and classification of renal osteodystrophy: a position statement from Kidney Disease: Improving Global Outcomes (KDIGO)** Moe S, et al: Kidney Int 2006;69:1945-1953.
- **A report of the Lisbon Conference on the care of the kidney transplant recipient.** Abbud-Filho M, et al: Transplantation 83:S1-22, 2007
- **Chronic kidney disease as a global public health problem: approaches and initiatives - a position statement from Kidney Disease Improving Global Outcomes. (KDIGO)** Levey AS, et al: Kidney Int 72:247-259, 2007



# Mineral and Bone Initiative

- Educational Resources: Clinical Guide to Bone and Mineral Metabolism in CKD
- Position Statements: Chronic Kidney Disease-Mineral and Bone Disorder
- Bone Biopsy/Bone Biomarker Correlation Study

# Clinical Guide to Bone and Mineral Metabolism in CKD

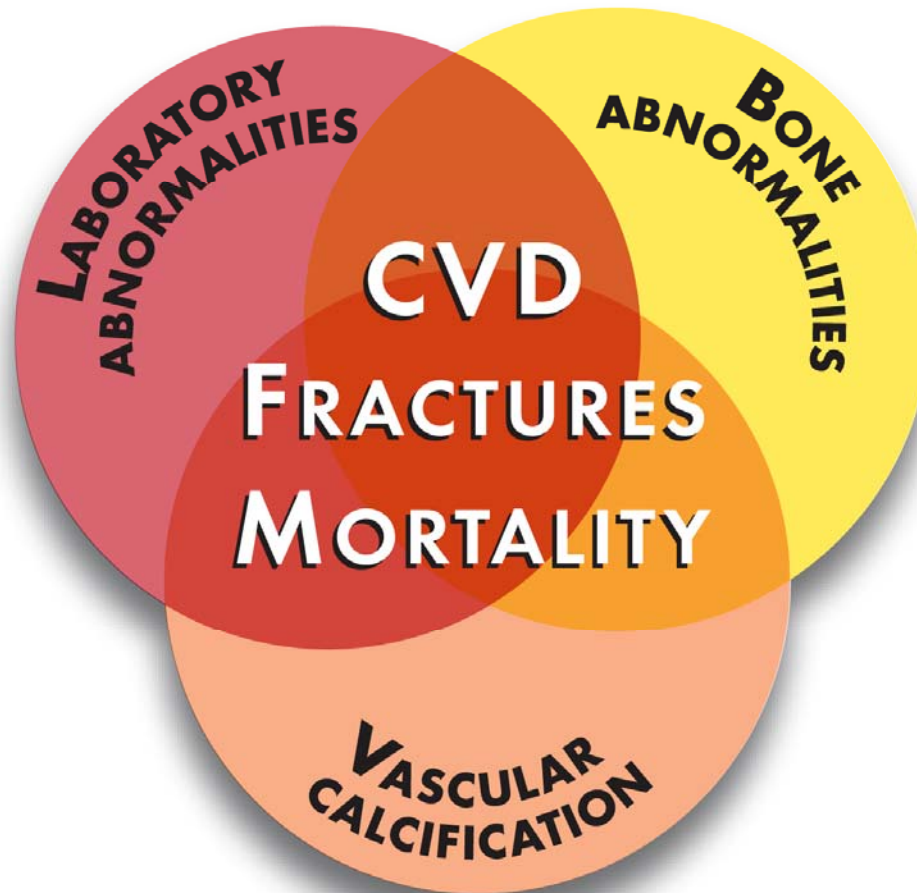


# Second KDIGO Controversies Conference

Definition, Evaluation, and  
Classification of Renal  
Osteodystrophy.  
A Position Statement from  
KDIGO

*Kidney Int 69:1945-1953, 2006*

# CHRONIC KIDNEY DISEASE— MINERAL AND BONE DISORDER



## CKD-MBD

# **Clinical Study:**

## **Analysis of the Correlation between Bone-related Serum Markers and Bone Histology in CKD**

# Study Objectives

- Determine the prevalence of bone biopsy abnormalities using each of the categories of the TMV system by isolated criteria, and to determine if there is a preponderance of one combination classification over another by the TMV system.
- Determine the correlation of PTH and other biomarkers with parameters of bone histomorphometry by the TMV system.

# Study Objectives

- Determine the predictive value (or sensitivity/specificity) of PTH and other biomarkers for assessing parameters of bone histomorphometry by the TMV system.
- Determine if the predictive value of these biomarkers for assessing parameters of bone histomorphometry is enhanced when used in combination with each other.
- Determine if the date of the serum/plasma sample, the type of sample, the country, and the concomitant treatments affects these results.

# Study Process/Description

- Cross-sectional analysis looking at patients who have had a bone biopsy with histomorphometric assessment and have stored plasma or serum samples that correspond in acquisition time to the bone biopsy.
- **Serum Analysis:**
  - Serum CTX-I (Nordic Bioscience, DK)
  - Serum Bone Specific Alkaline Phosphatase (Quidel, US)
  - Whole PTH test (Scantibodies, US)
  - Intact PTH assay (Roche Elecsys)

# Study Reporting

- **Series of three publications beginning in 2009:**
  - **Manuscript 1:** General study overview and analysis of correlations supporting clinical use of blood biomarkers for non-invasive evaluation of bone metabolism in CKD
  - **Manuscript 2:** Prevalence of bone metabolism abnormalities, geographical distinctions, and the relevance of the Bone Turnover/Mineralization/Volume classification system as proposed in KDIGO position statement on CKD-MBD.
  - **Manuscript 3:** Presentation of the findings from the Bone Biopsy Quality Assurance portion of the study evaluating the consistency and standardization of bone histomorphometry analyses between bone pathology labs

# SUMMARY

# KDIGO Activities in 2007

- **Controversies Conferences:** *Clinical Practice Guidelines: Methodology and Transparency; Coordination of Global Guideline for Anemia in CKD*
- **Position Statements:** *CKD as a Global Public Health Problem*
- **Guideline Coordination:** *Liaison Task Force, Annual Organizational Meeting with 5 guideline organizations and ISN*
- **Coordination with WHO:** *Liaison member on Guideline Development Groups, Incorporate CKD Staging in ICD 10-11, WHO Guidelines on Guidelines methodology*
- **Clinical Practice Guidelines:** *Hepatitis C; CKD-MBD; Care of the Kidney Transplant Recipient*

# KDIGO Activities in 2008

- **Position Statements:** *Clinical Practice Guidelines for Anemia in Chronic Kidney Disease: Problems and Solutions; Clinical Practice Guidelines: Methodology and Transparency*
- **Guideline Coordination:** *Summary of 5-Year Guideline Development Plan; Liaison Task Force, Annual Organizational Meeting with 5 guideline organizations and ISN*
- **Coordination with WHO:** *Liaison member on Guideline Development Groups, Incorporate CKD Staging in ICD 10-11, WHO Guidelines on Guidelines methodology*
- **Clinical Practice Guidelines:** *Publication of Hepatitis C & ongoing development of CKD-MBD; Care of the Kidney Transplant Recipient; Acute Kidney Injury*

THANK YOU