



## The Urgency of Acute Kidney Injury

### **Kidneys are crucial**

Kidneys perform the life-sustaining function of filtering and returning approximately 200 quarts of fluid to the bloodstream every 24 hours.<sup>1</sup> **Acute kidney injury (AKI) is a sudden loss of kidney function that occurs over hours to days. It can lead to chronic kidney disease, kidney failure requiring dialysis, heart disease or death.**<sup>2</sup>

### **AKI is a familiar danger**

AKI strikes up to 18 percent of all hospitalized patients,<sup>3</sup> 39 percent of all post-operative patients<sup>4</sup> and up to 50 percent of all critically ill patients.<sup>5</sup> It will often occur in hospital patients as a complication of surgery, infection, trauma, sepsis and/or the use of drugs that are toxic to the kidneys.<sup>6</sup> In a study of cardiac surgery patients, 46 percent of the patients who were evaluated developed moderate to severe AKI.<sup>7</sup>

### **AKI is a costly health burden**

It has been estimated that annual U.S. healthcare expenditures for hospital-acquired AKI could exceed \$10 billion.<sup>8</sup>

### **When AKI strikes, everything is two to three times worse**

If a patient develops AKI during hospitalization, patient length of stay, cost of care and readmission rates can be at least two times higher than in non-AKI cases.<sup>7,9</sup> AKI is also associated with a ten-fold increase in hospital mortality rates among post-surgery patients.<sup>3</sup>

### **AKI is difficult to identify**

AKI is silent, lacking signs and symptoms useful for risk assessment.<sup>10</sup> Delays in recognizing AKI can lead to irreversible consequences,<sup>3</sup> but if the condition is recognized and managed in a timely fashion unfavorable patient outcomes can be avoided.<sup>11</sup>

### **Traditional methods are insufficient for timely diagnosis**

The 2009 UK National Confidential Enquiry into Patient Outcomes and Death (NCEPOD) Adding Insult to Injury study reported that of admitted patients who died from hospital-acquired AKI:

- 31 percent had avoidable AKI;
- 43 percent had an unacceptable recognition delay;
- 54 percent had inadequate risk assessment.<sup>12</sup>

For more information visit [NephroCheck.com](http://NephroCheck.com) and [The National Kidney Foundation](http://The National Kidney Foundation)

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- <sup>1</sup> How Your Kidneys Work. *National Kidney Foundation*. Available at <https://www.kidney.org/kidneydisease/howkidneyswrk>. [Accessed January 4, 2017]
  - <sup>2</sup> Acute Kidney Injury. *National Kidney Foundation*. Available at <https://www.kidney.org/atoz/content/AcuteKidneyInjury>. [Accessed January 4, 2016]
  - <sup>3</sup> Lewington AJ, Cerdá J, Mehta RL. Raising awareness of acute kidney injury: a global perspective of a silent killer. *Kidney Int*. 2013;84(3):457-467.
  - <sup>4</sup> Hobson C, Ozrazgat-Baslanti T, Kuxhausen A, et al. Cost and mortality associated with postoperative acute kidney injury. *Ann Surg*. 2014;00:1-8.
  - <sup>5</sup> Mandelbaum T, Scott DJ, Lee J, et al. Outcome of critically ill patients with acute kidney injury using the AKIN criteria. *Crit Care Med*. 2011;39(12):2659-2664.
  - <sup>6</sup> Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. *Kidney inter., Suppl*. 2013; 3:1-150.
  - <sup>7</sup> Dasta JF, Kane-Fill SL, Durtschi, AJ, Pathak DS, Kellum JA. Costs and outcomes of acute kidney injury (AKI) following cardiac surgery. *Nephrol Dial Transplant*. 2008;23:1970-1974.
  - <sup>8</sup> Chertow GM, Burdick E, Honour M, Bonventre JV, and Bates DW. Acute kidney injury, mortality, length of stay, and costs in hospitalized patients. *J. Am. Soc. Nephrol*. 2005;16:3365-3370.
  - <sup>9</sup> Brown JR, Parikh CR, Ross CS, et al. Impact of Perioperative Acute Kidney Injury as a Severity Index for Thirty-Day Readmission After Cardiac Surgery. *Ann Thorac Surg*. 2014;97(1):111-117.
  - <sup>10</sup> Ronco C, Ricci Z. The concept of risk and the value of novel markers of acute kidney injury. *Crit Care*. 2013;17:117-118.
  - <sup>11</sup> Mehta RL, Cerda J, Burdmann EA, et al. International Society of Nephrology's 0by25 initiative for acute kidney injury (zero preventable deaths by 2025): a human rights case for nephrology. *Lancet*. 2015.
  - <sup>12</sup> National Confidential Enquiry into Patient Outcome and Death. Adding Insult to Injury. 2009;1-98.