

Globally, greater attention needed for seemingly 'minor' kidney damage

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Rates of Acute Kidney Injury among Irish patients have more than doubled in the past 10 years, according to a new study led by Professor Austin Stack, Foundation Chair of Medicine at University of Limerick's Graduate Entry Medical School and Consultant Nephrologist at University Hospital Limerick. Credit: University of Limerick

Rates of Acute Kidney Injury among Irish patients have more than doubled in the past 10 years, according to a new study led by researchers at the Graduate Entry Medical School (GEMS), University of Limerick. The research is published today in the academic journal, *Nephrology Dialysis and Transplantation*.

Acute Kidney Injury (AKI) describes the sudden and often temporary loss of [kidney](#) function that can occur when the kidney is damaged. There are many causes of AKI such as severe dehydration, acute illnesses like pneumonia, blood loss or even certain medications like anti-inflammatory drugs. In the long term, patients who suffer an AKI are more prone to [kidney failure](#) and early death.

Professor Austin Stack, lead author and Foundation Chair of Medicine at GEMS and Consultant Nephrologist at University Hospital Limerick said, "Our study has uncovered a huge surge in AKI rates over the past 10 years. We tracked over 450,000 patients in the Irish health system from 2005 to 2014 and identified more than 40,000 episodes of AKI. We found that the overall rate of AKI increased from 5.5% to 12.4% which was a growth of 126 %."

In one of the largest studies of its kind ever conducted, researchers used data from the National Kidney Disease Surveillance System, based in UL's Graduate Entry Medical School to track trends in the rates of AKI from 2005-2014. They found that the trend of rising rates of AKI was observed in both hospital and non-hospital clinical settings and among both men and women. The highest rates of AKI were detected among hospitalised patients where the rates increased from 28.8% in 2005 to 46.2% in 2014.

Dr. Leonard Browne, senior author of the study and research fellow said, "The increase in AKI could in part be explained by an increase in the number of elderly patients in the health system and a larger proportion

of patients with poorer [kidney function](#)."

AKI can range in severity from mild (Stage 1) to severe (Stage 3), where severe forms are more likely to cause kidney failure and require dialysis. According to the research findings, the most common form of AKI among Irish patients was Stage 1 which increased by 130%, (from 4.4% to 10.1%). The most severe form of AKI (Stage 3) increased by 76%, (from 0.46% to 0.81%).

According to Professor Stack, the findings show that action needs to be taken within the Irish healthcare system. "The Irish health system needs to respond with an appropriate multi-pronged cross-disciplinary approach. Acute Kidney Injury is a significant problem and puts [patients](#) at risk of kidney failure. The first step is to recognise that we have a problem across the health system. Key strategies to prevent AKI and its consequences include: greater public and physician awareness and education; early identification of high-risk individuals; early detection of AKI in all clinical settings using electronic alert systems; early use of treatment strategies including prevention of dehydration; avoidance of drugs that damage the kidneys; and, early referral to kidney specialists. We would advocate for the development and implementation of a national strategy designed to prevent the occurrence of AKI and its consequences in the health system."

"Our study also has important international significance in that it for the first time sheds light on the differential growth of AKI by severity stage and across key [clinical settings](#). Not only did we describe annual trends in the frequency of AKI by severity staging in the health system but we also highlighted major differences across key health care settings. We were intrigued by the fact that most of the increase in AKI incidence was accounted for by increases in AKI Stage 1 rather than stages 2 or 3. This would suggest that globally greater attention should be given to targeting these seemingly 'minor' AKI events and prevent the conversion

of these events to more severe forms of AKI," Professor Stack concluded.

More information: Austin G Stack et al, Temporal trends in acute kidney injury across health care settings in the Irish health system: a cohort study, *Nephrology Dialysis Transplantation* (2018). [DOI: 10.1093/ndt/gfy226](https://doi.org/10.1093/ndt/gfy226)

Provided by University of Limerick

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