

## **SIGNIFICANCE STATEMENT**

Clinical decision support systems (CDSS) are being implemented in electronic health records to improve detection of AKI, but it is uncertain whether these systems improve outcomes. In a multicenter, sequential period analysis of 528,108 patients, we found that a CDSS resulted in small but sustained decreases in hospital mortality (0.8% absolute decrease), length of stay (0.3 days), and dialysis rates (2.7% absolute decrease) for patients with AKI without affecting outcomes for patients without AKI. Given that AKI occurs in 12% of hospitalized patients or 2.2 million/yr in the United States, these results would, if reproducible, translate into saving >17,000 lives or >\$1.2 billion annually.