of patients randomized to the higher target haemoglobin level is largely accounted for, not by those who achieved their target, but by the patients who failed to achieve their target, with protocol-driven escalations in their dose of epoetin [10]. Being a post hoc analysis, these data need to be interpreted with caution, but they are of a similar observational nature as the data quoted by Dr Coyne [9]. Along the same lines, data from another retrospective analysis in a very large patient cohort revealed that persistently and transiently low haemoglobin levels and highly variable Hb levels were associated with increased risk of death, whereas transiently and persistently high Hb levels were not associated with increased risk of death [11].

While CHOIR and CREATE have indicated that aiming for Hb levels >13 g/dl is associated with increased risk and should therefore be avoided, as stated in the KDOQI guideline, both studies do not justify the conclusion that (temporal) achievement of Hb levels in the higher target range is dangerous.

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2. Shaldon S. Conflict of interest in clinical guidelines should be avoided. Nephrol Dial Transplant 2008; 23: 1771

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A multi-centre evaluation of the RIFLE criteria for early acute kidney injury in critically ill patients

Sir,

I read with interest the article by Bagshaw et al. [1]. The data for this observational study are sourced from the Australian New Zealand Intensive Care Society Adult Patient Database (ANZICS APD) [2]. Unfortunately, this database was developed without keeping RIFLE [3] or AKIN criteria in mind with neither the patients’ weight nor the hourly urine output or baseline creatinine recorded. As a consequence, the extrapolation of data from this extensive database is sadly not conducive for RIFLE staging of acute kidney injury (AKI). The assumption that only ‘minor’ changes were needed to extrapolate the ANZICS APD to RIFLE is a conclusion that cannot be justified.

Without the above information, any retrospective study will fail to accurately represent the true incidence and staging of RIFLE AKI. To assume that all patients weigh 70 kg completely defeats the purpose of RIFLE calculating an individualized urine output and allowing for the degree of AKI to be based on the patient’s size. Likewise, the urine criteria for RIFLE are based on 6- and/or 12-h outputs and not a 24-h output. Averaging a urine output from 24-h data will miss the true incidence of RIFLE oliguria, especially in patients who present with initial oliguria on admission but respond well to aggressive resuscitation over the first 6–12 h.

I find the most erroneous assumption, however, to be that no attempt was made to determine the patient’s true baseline creatinine. While this remains the most difficult variable to collect from an acutely unwell patient, it is the single most important variable in determining which biochemical stage of RIFLE AKI a patient will fall into when creatinine is used instead of urine output. Not a single patient in this cohort of 120 000 patients had his or her baseline creatinine truly evaluated. Assuming that all the patients have a baseline eGFR of 75 ml/min [2,4], as well as assuming that all patients weigh 70 kg, cannot be a reasonable substitution for a group of patients who are likely to have extremely varied baseline renal functions. This is compounded by the fact that any error between the assumed baseline renal function (75 ml/min) and true baseline renal function will be multiplied by factors of 1.5-, 2- and 3-fold as a patient moves through each RIFLE stage. Furthermore, the use of a 75 ml/min eGFR as a substitution, although growing in the literature, is not validated and makes no allowances for patients who frequently have a degree of chronic renal impairment.

In summary, while the ANZICS APD is an excellent initiative, in its present form it is unable to provide any reliable data about RIFLE staging in AKI. Perhaps the ANZICS APD could be modified in the future to better account for these variables pertaining to RIFLE and AKI, especially as it would appear that the RIFLE criteria are now being widely adopted in the critical care literature.

Conflict of interest: None declared.
Sir,

In reply to the comments by Morgan, we generally concur and offer the following additional commentary.

We agree that the addition of patient weight, hourly urine output and baseline serum creatinine as core variables to the Australia New Zealand Intensive Care Society (ANZICS) Adult Patient Database (APD) would have tremendous value and certainly advance its capability for additional evaluation of acute kidney injury (AKI) and other kidney-related issues.

At the time of analysis, however, these variables were not available [1]. Accordingly, assumptions about the data and their application to calculate the RIFLE categories were necessary. We recognize these assumptions potentially introduce some misclassification of the cohort and, as expected, influence incidence and outcome estimates. We, however, contend that any bias introduced due to misclassification resulting from these assumptions was likely to be balanced given they were applied systematically across the entire cohort.

Moreover, the validated collection of these variables (i.e. patient weight, urine output, baseline serum creatinine) can be problematic. For example, the measurement of weight in critically ill patients is highly variable and context specific (i.e. ideal versus actual). Accurate estimates of prehospitalization baseline creatinine (or estimated glomerular filtration rate), in particular for those with chronic kidney disease, in critically ill patients are often impossible. Moreover, values at the time of ICU admission may be grossly modified by factors such as acute resuscitation. Likewise, the urine output can be modified by factors independent of kidney injury or function (i.e. fluid therapy, diuretic therapy). However, we also recognize that while the urine output criteria proposed for the RIFLE classification likely have significance, they have yet to be prospectively evaluated and validated. We appropriately acknowledge and discuss these limitations in our manuscript [2,3].

We are further reassured, however, by additional epidemiologic investigations that have found relative consistency in incidence rates and effect estimates for AKI and associated clinical outcomes with the RIFLE criteria (many having modified the original RIFLE criteria or omitting the urine output criteria altogether) [4,5]. We contend that our study is strengthened by inclusion of a very large heterogeneous cohort (over 120,000 critically ill patients) from multiple centres across Australia. As such, in the very least, it provides a broad estimate of the burden of early AKI (within 24 h of ICU admission) in critically ill patients. Finally, we certainly agree and would welcome additional prospective evaluation of the performance of the RIFLE criteria in similar cohorts of critically ill patients.

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**Spontaneous remission of hyperparathyroidism**

Sir,

We read with great interest the case report concerning spontaneous remission of severe hyperparathyroidism published by our Japanese colleagues [1].

We wish to underscore two things from their report.

Firstly, 17 years ago we presented a chronic kidney disease patient with spontaneous inflammation remission of a parathyroid tumour. By fine-needle aspiration biopsy, an inflammatory process was proven [2]. In the next 5 years, three more patients with similar clinical symptoms were observed [3]. In two of them, inflammatory changes of...