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TOP-FIVE
RECOMMENDATIONS on low-value practices

Better care. **Better** decision-making. **Better** use of resources.

The Australian and New Zealand Society of Nephrology (ANZSN) is a not-for-profit organisation representing the interests of health professionals committed to the prevention and treatment of kidney disease.

Through the ANZSN, members support a range of research, education and clinical care initiatives to promote evidenced-based practice and quality outcomes for patients in Australia, New Zealand and the region.

1. Do not give multiple daily doses of aminoglycoside antibiotics to patients with normal and stable kidney function as the risk of toxicity is less with a single daily dose

2. Do not use oral acetylcysteine before giving radiocontrast to patients at increased risk for contrast-induced acute kidney injury

3. Do not give routine prophylactic antibiotics to a child after the first urinary tract infection if at low risk of recurrent urinary tract infections

4. Do not intensively lower HbA1C<6.5 per cent to <8.0 per cent in patients with early (stage 1–3) chronic kidney disease as intense lowering increases the risk of hypoglycaemia and mortality, noting that the individual target depends on factors such as severity of CKD, macrovascular complications, comorbidities, life expectancy and others

5. Do not prescribe aspirin therapy for primary prevention of cardiovascular disease in patients with stage 1–3 chronic kidney disease as there is no proven benefit and it is associated with increased risk of impaired haemostasis

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1 Do not give multiple daily doses of aminoglycoside antibiotics to patients with normal and stable kidney function as the risk of toxicity is less with a single daily dose

Aminoglycosides are powerful and widely used antibiotics. Acute kidney injury (AKI) is a well-known complication of aminoglycosides. Because efficacy of these antibiotics is concentration-dependent rather than time-dependent and their renal toxicity depends more on duration of therapeutic levels than on peak levels, frequent doses should be avoided. For instance, once- and three-times daily aminoglycoside antibiotics appear to be equally effective in the treatment of pulmonary exacerbations of cystic fibrosis and to be less toxic to children's kidneys. Similarly, a twice daily gentamicin dosing regimen has been proven neither less nephrotoxic nor more efficient than a once daily regimen in the treatment of infective endocarditis. The use of extended-interval (once daily) dosing for aminoglycosides is also effective and safe for immunocompromised patients with febrile neutropenia.

2 Do not use oral acetylcysteine before giving radiocontrast to patients at increased risk for contrast-induced acute kidney injury

Routine use of acetylcysteine for patients undergoing angiography is not recommended. The largest randomised trial to date of 5,177 patients at high risk of renal complications who underwent angiography showed there was no benefit of oral acetylcysteine over placebo for the prevention of contrast-induced acute kidney injury (CI-AKI) or for the prevention of death, need for dialysis, or persistent decline in kidney function at 90 days. Unlike in previous protocols, the study population excluded patients with preserved kidney function (it included patients with stage 3 or 4 chronic kidney disease; those with stage 3A were required to have diabetes mellitus which increases the risk of CI-AKI in patients with impaired kidney function). This enhanced the generalisability of the results among patients at higher risk for AKI and other adverse outcomes.

3 Do not give routine prophylactic antibiotics to a child after the first urinary tract infection if at low risk of recurrent urinary tract infections

A conservative approach to the management of urinary tract infection (UTI) is warranted for most children. While the evidence related to risk factors for recurrent UTIs and the risks and benefits of antibiotic prophylaxis in children is limited, the existing evidence indicates that antimicrobial prophylaxis is not associated with decreased risk of recurrent UTI but is associated with an increased risk of resistant infections. Accordingly, the routine use of prophylactic antibiotics for children after a first UTI is not recommended.

4 Do not intensively lower HbA1C<6.5 per cent to <8.0 per cent in patients with early (stage 1–3) chronic kidney disease as intense lowering increases the risk of hypoglycaemia and mortality, noting that the individual target depends on factors such as severity of CKD, macrovascular complications, comorbidities, life expectancy and others

Diabetes mellitus is associated with significant cardiovascular morbidity and mortality and is the leading cause of chronic kidney disease (CKD) worldwide. Type 2 diabetes is also increasing in prevalence. Evidence indicates that tight glycaemic control in diabetic patients results in clinically significant preservation of kidney function. As such, patients with stage 1–3 CKD stemming from type 1 or type 2 diabetes mellitus should aim to achieve a HbA1c target of approximately 6.5 per cent to <8.0 per cent.

Caution is recommended against intensively lowering HbA1c levels below this target range because of proven increased risks of hypoglycaemia and possibly death. While a lower HbA1c target (<6.5 per cent or <7 per cent) may be preferred in some patients, less stringent glycaemic goals (<7.5 per cent or <8 per cent) may be appropriate for others, especially those with a history of hypoglycaemia, long duration of diabetes, advanced atherosclerosis or advanced age/fragility.

SGLT2 inhibitors are first-line therapy for organ protection in patients with CKD (eGFR >= 30 ml/min/1.73m2 and diabetes) in addition to metformin therapy because of its glucose-lowering effects.

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5

Do not prescribe aspirin therapy for primary prevention of cardiovascular disease in patients with stage 1-3 chronic kidney disease as there is no proven benefit and it is associated with increased risk of impaired haemostasis

Chronic kidney disease is a well-known independent cardiovascular risk factor. Evidence for anti-platelet therapy indicates that low-dose aspirin reduces the risk of cardiovascular disease (CVD) by 25-33 per cent, especially in patients with established CVD or those at high risk. In patients with CKD such potential benefits need to be carefully weighed against an increased risk of bleeding. A meta-analysis of serious vascular events and major bleeds in 22 primary and secondary prevention trials involving a combined 120,000 individuals has found that in primary prevention without previous disease, aspirin is of uncertain net value. Moreover, high cumulative exposure to nonsteroidal anti-inflammatory drugs (NSAIDs) is associated with an increased risk for rapid CKD progression in the community-based elderly.

For the list of references supporting these recommendations and further information on the development process, see **evolve.edu.au/recommendations/anzsn**
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WHAT IS EVOLVE?

As part of a global movement, Evolve is a flagship initiative led by physicians, specialties and the Royal Australasian College of Physicians (RACP) to drive high-value, high-quality care in Australia and New Zealand.

Evolve aims to reduce low-value care by supporting physicians to:

- be leaders in changing clinical behaviour for better patient care
- make better decisions, and
- make better use of resources.

Evolve works with specialties to identify their 'Top-Five' clinical practices that, in particular circumstances, may be overused, provide little or no benefit, or cause unnecessary harm. Evolve 'Top-Five' recommendations on low-value practices are developed through a rigorous, peer-reviewed process; led by clinical experts, informed by evidence and guided by consultation.

Evolve enables physicians to:

- safely and responsibly phase out low-value tests, treatments and procedures, where appropriate
- enhance the safety and quality of healthcare
- provide high-value care to patients based on evidence and expertise, and
- influence the best use of health resources, reducing wasted expenditure and the carbon footprint of the healthcare system.

The RACP, through Evolve, is a founding member of Choosing Wisely Australia® and Choosing Wisely New Zealand, with all Evolve 'Top-Five' recommendations part of the Choosing Wisely campaign.

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