



St George Hospital & Community Health Services

Pathology testing stewardship to reduce environmental impact.

Background

While the overall benefits of our healthcare system are obvious, it is important to note that many healthcare practices provide little benefit to patients, yet consume substantial resources and generate an environmental impact. Frequent testing of routine parameters unlikely to have meaningfully changed or ordering more complex tests where there is a low pretest probability of disease can lead to waste (not to mention the burden on patients of unnecessary venepuncture). A meta-analysis found that between 12% and 44% of ordered pathology tests are not clinically indicated and a life cycle carbon footprint study of common pathology tests showed that phlebotomy and collection tubes account for most of the environmental impact of routine tests.

Intervention

St George Hospital in Sydney has implemented a policy of pathology testing stewardship in the Department of Medicine aimed at reducing unnecessary pathology testing.

The key elements of the policy are:

1. Limit routine and non-urgent pathology testing to two days per week (Mondays and Thursdays)
2. Urgent and clinically indicated tests are completed whenever necessary

The policy was communicated to medical staff through department meetings, staff orientations, and posters in areas frequented by junior medical officers.

Results

A retrospective cohort analysis found the policy led to a 10% decrease in the rate of pathology collections with both environmental (reduced CO₂ emissions by 53g per admission) and financial (saved \$22 per admission) benefits. Estimated annual savings were 264kg CO₂ emissions and over \$100,000. There was no appreciable impact on patient safety.

Key lessons:

1. Develop a clear policy limiting routine testing to specific days
2. Engage staff, especially junior doctors, in policy development and communication
3. Use visual aids like posters to reinforce the policy
4. Allow flexibility for clinically necessary testing outside scheduled days
5. Monitor outcomes, including number of tests, costs, and patient safety indicators
6. Consider specialty-specific approaches, as different units and teams may wish to vary their approach.

References

McAlister S, et al. Carbon emissions and hospital pathology stewardship: a retrospective cohort analysis. Intern Med J. 2023 Apr;53(4):584-589. <https://onlinelibrary.wiley.com/doi/abs/10.1111/imj.15622>

Zhi M, et al. The landscape of inappropriate laboratory testing: a 15-year meta-analysis. PLoS One 2013; 8: e78962. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0078962>

McAlister S, et al. The carbon footprint of pathology testing. Med J Aust 2020; 212: 377–82. <https://www.mja.com.au/journal/2020/212/8/carbon-footprint-pathology-testing>