First, Do No Distance: A Scalpel for Every Postcode

"If tasked with establishing a rural surgical service in Australia, how would you design it to ensure safety, equity, and sustainability?"

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Introduction

Distance is rarely measured in kilometres alone. It is measured in the diagnosis made five weeks late, the colonoscopy deferred because travel costs a day's wage, and the patient whose postcode quietly becomes their prognosis. My maternal grandfather's death taught me this before I had capacity to understand[1]. He was a rural man, former soldier, and father of seven — an individual who devoted his life to securing the survival of his family, even if it meant forgetting the fragility of his own. Patriotism was at his heart, but hepatocellular carcinoma was more unyielding. Had there been an ecosystem capable of earlier recognition, I might have known his voice and embrace for myself, rather than inheriting him vicariously through my mother's memories.

This anecdote is not proof that a different service would have generated a different outcome. Personal grief solely cannot establish causation, nor should one incident prove flaws in an entire policy argument. His story does, however, reveal the human stakes of a fragmented rural health system. Tangible harm may arise not from one absent clinician, but from a combination of delayed recognition, referral, and treatment. The ideal surgical service must therefore be designed not as an isolated operating theatre, but rather a component of an ecosystem capable of evaluating a patient from clinical speculations to definitive care.

According to the National Rural Health Commissioner paper by the Royal Australasian College of Surgeons (RACS), approximately 28% of Australians live in rural or remote areas**,** while 15.8% of Surgical Fellows worked exclusively in a regional, rural or remote location**.** It also retained the finding that five of nine specialties had fewer than 5% of surgeons with their main practice outside metropolitan areas[2]. This mismatch is not merely a workforce statistic but the manifestation of interconnected structural, financial, and political factors. A rural operating theatre cannot function on surgeons alone. It depends upon a resilient perioperative ecosystem—including anaesthetists, perioperative nurses, radiologists, pathologists, critical care clinicians, allied health professionals, and multidisciplinary teams (MDT)—whose collective expertise determines not only whether an operation can be performed, but whether it can be delivered safely and sustainably[3].

Repercussions of this imbalance extend beyond numbers. Rural surgery is not simply metropolitan surgery with fewer individuals; it is the delivery of high-risk, time-critical care within environments constrained by geography, workforce availability, infrastructure, and logistics. The tempting solution to rural scarcity is to ask more of the surgeon—to expand scopes of practice and remain constantly available through personal sacrifice. But if the safety of an entire service depends on clinicians repeatedly exceeding sustainable limits, can that service truly be called safe? If responsibility for rural access rests with the surgeon, while the resources required to deliver that care remain elsewhere, who is accountable when the system fails?

Primum Non Nocere: Safety First

Distance becomes harm when it delays, dilutes, or denies access to safe surgical care. Yet safety is achieved neither by pretending that every hospital can perform every operation nor by centralising every patient while disregarding clinical, financial, and personal expenses. It does not reside in the surgeon or hospital alone, but emerges from the interaction of appropriate patient selection, procedural complexity, anaesthetic capability, perioperative assessment, postoperative surveillance, and timely escalation.

Evidence from a non-metropolitan Australian centre reported 30-day and 90-day mortality rates of 3.8% and 5.1%, respectively, following emergency abdominal surgery—outcomes comparable with those reported in metropolitan centres[4]. Similarly, Singla et al. found no geographical factors in survival among patients with metastatic colorectal cancer[5]. This is evidence that a well-designed rural service can ensure genuine safety.

However, this is far from the whole picture. A recent national mortality audit by Wells et al. examined 1,058 deaths following colorectal resection and classified 30.3% as potentially preventable, with treatment in a rural hospital identified as an independent factor associated with preventable mortality[6]. This should not be interpreted that rural surgery is intrinsically unsafe; rather, it demonstrates how distance becomes dangerous when accompanied by insufficient resources, inconsistent optimisation, or delayed rescue. This vulnerability is further substantiated by Divakaran et al., who studied 2,579 patients undergoing major abdominal surgery at a regional Australian centre. Among those who developed major complications, 23.5% subsequently died—a measure of failure to rescue that warrants a feasible solution[7].

The defining rural surgical skill is not simply knowing when to operate; it is knowing when the safest incision belongs elsewhere. Therefore, every operation should exemplify the WHO Surgical Safety Checklist, incorporating sign-in, time-out, and sign-out phases adapted to the rural setting[8]. I propose integrating this principle into a regularly reviewed local surgical matrix. Existing traffic-light capability systems has proven useful to evaluate surgical risk, but colour-coding procedures alone risks the oversimplification of technical operative capability, theatre staffing, diagnostic services and equipment[9]. Access to blood products, availability of referral services, telehealth and transportation logistics are also salient variables to consider.

Non-technical skills must be integrated within this matrix, since failures in communication, situational awareness and escalation contribute to adverse events. A recent South Australian trial found that remote, video-based coaching of rural consultant surgeons — reviewing footage from clinics, ward rounds and theatre — produced measurable improvement in communication, teamwork and decision-making in 76% of participants, and was judged feasible and acceptable by surgeons and patients alike[10]. This matters because surgical judgement, not just infrastructure, is trainable and maintainable at a distance.

Elective and emergency operations must be reviewed against their respective referral centres, considering minimum surgical, anaesthetic and nursing workforce, blood and resuscitation products, diagnostic and postoperative monitoring facilities, and functional equipment. Retrieval and transfer arrangements, whether via the Royal Flying Doctor Service or road-based critical care transport, must be tested and confirmed before the first operative list, not assumed at the point of crisis.

Quality assurance closes the safety loop. I would strengthen the pre-existing link with the Australian and New Zealand Audit of Surgical Mortality (ANZASM) from its first operative list, with quarterly morbidity and mortality meetings held as non-negotiable[11]. The defining question is never whether an operation is rural or metropolitan. It is whether the patient, the procedure and the facility are appropriate.

The Equation of Equity

Equality offers every patient identical journeys; equity asks whether they can reach it. A report from NSW and Victoria Health discovered that oncology patients travelling for treatment report substantially greater financial burden than their metropolitan counterparts, and some declining treatment[1]. Care close to home should not become an obligation to operate close to home; it should mean that the patient's location and prognosis determine the route of care.

Geographical proximity can also coexist with profound emotional distance. Indigenous populations in regional and remote New South Wales have identified service fragmentation, poor communication, lack of trust, cultural unsafety, transport and unreliable service availability as interacting barriers to care[12]. A systematic meta-ethnographic review similarly found that culturally safe healthcare depends upon personable two-way communication, trusting relationships, a well-resourced Indigenous workforce and systems responsive to Indigenous knowledge, beliefs and values[13]. While these studies were not specific to surgery, but their implications are directly surgical: consent cannot be genuinely informed when patients do not feel safe to ask questions, disclose concerns or disagree with the proposed treatment. Therefore, this requires formal co-governance rather than consultation: local Aboriginal and Torres Strait Islander Community Controlled Health Organisations, Elders and Aboriginal Health Workers should play a pivotal role in service design and outcome review.

Emotional proximity of rural practice itself is a double-edged scalpel. Rural clinicians often share community, organisations, and personal relationships with patients. While such familiarity can strengthen rapport and provide a holistic approach to surgical care, it may also compromise objective boundaries within the physician-patient relationship. It may also erode the boundary between professional duty and personal availability. A surgeon who becomes the community's "go-to" clinician may be contacted while off call and feel morally or reputationally compelled to respond, because declining a neighbour's request can appear inconsistent with the expectation that doctors should always help. Overlapping rural relationships are often inevitable and should be managed through contextually informed reflection rather than social seclusion[14].

The solution is to replace personal accessibility with role-based, institutionally governed access. All urgent clinical requests should enter through a single hospital or regional coordination pathway and be directed to the rostered clinician, with a designated second-call consultant and automatic regional backup when local cover is unavailable. Community members, GPs and hospital staff should be explicitly informed that after-hours access belongs to the service rather than to an individual surgeon. An off-duty surgeon contacted directly should be able to redirect the request through this pathway without professional criticism, employment consequences or an expectation of continued involvement. Genuine emergencies in which immediate assistance is necessary should remain exceptions, but each exception should be documented and reviewed so that recurrent reliance on off-roster clinicians triggers additional staffing, locum support or temporary restriction of the service—not further personal sacrifice.

Equity must also question who is permitted to hold the scalpel. An Australian survey-based study of female rural general surgeons identified distance from family and friends, workforce shortages and heavy on-call commitments as major barriers to rural practice[15]. A gender diverse workforce does not automatically create culturally or clinically equitable care, but its absence restricts patient choice, narrows the recruitment pool and reinforces the belief that rural surgery is incompatible with family life. Patients should also have access to a clinician, chaperone or interpreter of their preferred gender for sensitive consultations wherever clinically feasible.

Sustainability and the Surgeon

True sustainability requires safeguarding not only patient outcomes but also the well-being of the surgical workforce, as clinical excellence cannot survive systemic exhaustion. Workforce protection must be engineered into the service to an already fractured system. Australian surgical trainees report poorer mental-health outcomes in association with longer hours, unpaid overtime, poor job security and lower job satisfaction, while more recent qualitative work identifies workload, supervision, rostering, administrative practices and workplace relationships as modifiable influences on wellbeing[16].

Rurality can exacerbate such pressures through professional isolation and separation from established support networks. Among Australian otolaryngology trainees, burnout was significantly associated with geographical separation from social supports, difficulty balancing professional and personal commitments, adverse effects on family life and discomfort approaching supervisors[17].To ensure workforce viability, employment packages should mandate funded accommodation, equitable relocation policies with partner-employment assistance, protected parental and study leave, structured mentorship programs, and unrestricted, confidential access to independent psychological care[18]. Regular telehealth consultation with metropolitan surgeons for intraoperative case-based support and career mentorship must be made widely available[19]. This deeply aligns with RACS's Retain for Rural Strategy, which identifies safe hours, locum protocols, mentorship opportunities as essential elements[20].

Rural Australia also remains substantially reliant on Specialist International Medical Graduate (SIMG) surgeons. RACS recognises their essential contribution but warns that over-reliance can leave remote services fragile when internationally trained surgeons substitute a durable surgical workforce. Sustainable integration requires structured orientation, supervision, mentorship, and access to continuing professional development. SIMGs should be supported as valued colleagues but not utilised as structural shock absorbers to compensate for shortages[20].

Another consideration is demographic and organisational fragility. RACS describes remote services where an inability to recruit successors leaves long-serving surgeons feeling trapped and unable to retire; loss of a single FRACS surgeon may destabilise supervision and, in some settings, the wider service. Every rural unit should therefore maintain a funded succession plan incorporating phased retirement, regional cross-credentialing, and bridging locums and recruitment[20].

Existing surgical hierarchy poses a substantial threat to workforce sustainability. The 2015 RACS Expert Advisory Group found that 49% of surveyed Fellows, Trainees and International Medical Graduates had experienced discrimination, bullying or sexual harassment, identifying fear of retaliation and professional consequences. Furthermore, more than 70% of hospitals documented systemic issues within a five-year period—including verbal abuse, aggressive behaviour, gender bias, inappropriate comments, and the denial of mandatory breaks—with male surgical consultants and directors most frequently identified as perpetrators[21]. In small surgical services where one senior clinician may influence rostering, assessment, references, and career progression, this jeopardises sustainability and surgical integrity[22,23]. The solution is not another anti-bullying module, but an independent authority capable of intervention.

I therefore propose a Rural Surgical Standards and Conduct Committee (RSSC)**,** operating across the regional network and external to local hospital hierarchy. Reports should receive time-bound external triage, confidential advocacy, an alternative supervisor and protection against retaliatory changes to theatre exposure, assessment, rostering or employment. Substantiated misconduct should trigger proportionate consequences, from supervised remediation to removal of supervisory privileges, review of training-post accreditation, employer discipline and referral to regulators where appropriate. Annual aggregated reporting should include response times, recurrence, resolution rates and actions taken, while formal information-sharing with RACS should prevent verified patterns from disappearing between institutions. This reflects RACS's Expert Advisory Group (EAG) call for centralised complaints management, independent scrutiny, protection from victimisation and transparent accountability. A complaints system is credible only when speaking up is safer than silence[24].

Ultimately, a sustainable service must study itself. Rural research is hindered by limited time, funding, and academic support, rendering services unable to measure unmet needs or identify weaknesses[25]. Limited rural participation in clinical trials further demonstrates that research deficits affect patients as well as clinicians. Each regional network should fund protected audit and research time, a shared rural–university research officer or data manager, registry and Australian and New Zealand Audit of Surgical Mortality (ANZASM) participation, statistical

support and funding for dissemination. Priorities should be co-designed with local communities and include indigenous data governance. Evaluation should capture not only completed procedures, but unmet needs, cancelled operations, locum dependence, workforce turnover, delayed transfer, loss to follow-up, workplace culture and completion of morbidity-and-mortality actions[26,27]. Sustainability is not measured by how long an isolated surgeon can endure. It is measured by whether the service can survive their absence.

Conclusion

There is no doubt that rural surgical service can be delivered safely, equitably, and sustainably. The danger lies in romanticising the isolated rural surgeon as invincible. Failure rarely begins with a single catastrophe; it accumulates through delayed decisions, absent resources, fragmented responsibility, and the quiet normalisation of what should never have been acceptable.

The challenge was never to eliminate distance, but to prevent it from determining who receives care, who reaches it in time, and who is left behind. Rural surgery must therefore be built on honesty, shared responsibility, and a workforce protected well enough to endure.

A scalpel for every postcode does not mean an operating theatre in every suburb. It means no patient is abandoned by geography.

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