Medical Issues

Editor: Mick O'Connor

THE AGEING SURGEON: UNMASKING IMPAIRMENT

Mick O'Connor and Bill Madden*

Australian age-related anti-discrimination laws prevent discrimination in the workplace on grounds of age alone. However, the ageing surgeon can face physical and cognitive challenges which may threaten patient safety. In 2023 8.4% of Australian surgeons and 8.8% of general practitioners were aged 70 years or older. On 7 August 2024, the Medical Board of Australia (MBA) released a consultation paper seeking comment from the medical profession and the wider community on health checks for late career doctors (aged 70 years and older) to consider whether additional safeguards are needed. The MBA's preferred option is to introduce general health checks by a general practitioner for doctors aged 70 and older, to support early detection of concerns with the opportunity for management before the public is at risk. The proposal would require doctors from the age of 70 years to undergo general health checks with their general practitioner (GP) or another doctor every three years, and yearly from 80 years of age. Other options are to compel extensive and detailed "fitness to practise" assessment for all doctors aged 70 and older, to be conducted by specialist occupational physicians, or to maintain the status quo, which is essentially a self-reporting requirement.

Keywords: *Surgeons; late career; physical and cognitive impairments; annual checks; mandatory reporting*

INTRODUCTION

> Keep a looking glass in your own heart, and the more carefully you scan your own frailties, the more tender you are for those of your fellow creatures. (Sir William Osler (1849–1919))

The increased rate of notifications to the Australian Health Practitioner Regulation Agency (Ahpra) of older doctors appears to have prompted the recent suggestions by the Medical Board of Australia (MBA) for health and/or cognitive tests of medical practitioners aged 70 years and over in order to allow doctors to make informed decisions about their health and practice proactively and to address health-related problems early, to avoid more serious impacts to themselves and their patients.[1] Similar regulations have not been proposed so far for other health professionals such as dental surgeons, pharmacists, nurses, chiropractors, and other members of the regulated professions who may continue to practise past 70 years with no currently mandated or proposed checks.

The preferred MBA proposal for annual health checks on Australian-registered doctors over 70 years of age does not single out specialist surgeons for additional competency assessments in their surgical field. However, we consider that surgeons and other proceduralists form a subgroup where physical

* Mike O'Connor: Adjunct Senior Lecturer, Womens and Children's Health, University of NSW. Bill Madden is a Special Counsel at Carroll & O'Dea Lawyers, an adjunct professor at the Australian Centre for Health Law Research at Queensland University of Techology and a senior fellow in the Melbourne Law Masters program at the University of Melbourne. The assistance of Professor Erwin Loh, Professor Cameron Stewart, Dr Christopher Rudge, Associate Professor George Skowronski and Dr Craig Lilienthal is gratefully acknowledged.

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Correspondence to: celticdr@bigpond.net.au.

[1] Ahpra, "Medical Board Consults on New Approach to Keep Late Career Doctors in Safe Practice" (7 August 2024) <https://www.ahpra.gov.au/News/2024-08-05-Medical-Board-consults-on-new-approach-to-keep-late-career-doctors-in-safe-practice.aspx>.

and mental capacity assume greater importance. The assessment of surgeons should include oversight of their surgical performance and that might be best determined by other members of their surgical team. There are existing mandatory obligations for all registered health practitioners under section 39 of the *Health Practitioner Regulation National Law 2009* (Qld) to report to Ahpra significant concerns about the practice of other colleagues which might jeopardise patient safety, in the sense that health practitioners must report if they have a reasonable belief that another health professional is putting patients at substantial risk of harm. These mandatory obligations extend to the employers of health practitioners.[2] Early detection of a surgeon's physical or cognitive deterioration is imperative to avoid later patient injuries. The best means of detecting impairment is uncertain, but examples of poor performance as described by the Royal Australasian College of Surgeons provides some guidance. Early intervention by individual hospitals, once impaired surgical performance is detected, will also be critical to the avoidance of ongoing surgical errors. This may include alterations in credentialling as the volume or complexity of surgery performed by ageing surgeons diminishes.

THE EVIDENCE OF DECLINE

Demographics

In Australia in 2023 there were 6,975 practising doctors aged 70 and over (5.27%), including 1,035 aged 80 years and over. As a whole the Australian workforce has aged in the past three decades: workers aged 55 years or older represented 19% of the total workforce in 2021 compared with 9% in 1991.[3] Although for many the ideal doctor is a mature practitioner with a wealth of experience who is best able to manage complex medical and surgical patients, doctors may suffer reduced physical and cognitive skills as they age. In 2017 nearly one third of 7,650 Australian surgeons and obstetricians and gynaecologists were over the age of 60 years.[4]

Increased Notifications

Thomas et al[5] recognised that as Australian doctors age, they have a higher notification rate for physical or cognitive impairment; poor records and reports; poor prescribing practises and disruptive behaviour. In Australia notifications to the MBA have almost doubled for doctors between 70 and74 years of age (from 36 per thousand in 2015 to 70 per thousand in 2023). In comparison, MBA notifications about doctors aged under 70 years have increased but to a lesser extent, from 23.4 to 38.3 per 1,000 (63%) over the same period.

It can be estimated[6] that the 7,000 late career doctors in 2023 generated 168 notifications relating to clinical care, 78 relating to communication and 85 relating to pharmacy and medications. Of these notifications some 23% of the complaints against late career doctors resulted in some form of regulatory action, in the vast majority of cases the imposition of conditions or cautions. Looking overseas, patients treated by older United States doctors (≥60 years) have been found to have higher mortality rates[7] (12.1% within 30 days of admission) compared with those patients who were treated by physicians under the age of 40 years (10.8% within 30 days of admission). The Australian Bureau of Statistics released a survey

[2] Ahpra and National Boards, "Making a Mandatory Notification About a Practitioner" (2020) <https://www.ahpra.gov.au/Notifications/mandatorynotifications/Mandatory-notifications.aspx>.

[3] Victorian Government Commission for Gender Equality in the Public Sector, "Gender and Employees of Different Ages" <https://www.genderequalitycommission.vic.gov.au/intersectionality-work/chapter-2-gender-and-employees-different-ages>.

[4] R Sherwood, "The Ageing Surgeon: When Are You Too Old to Operate?" (2019) 2(3) *O&G Magazine* <https://www.ogmagazine.org.au/21/3-21/the-ageing-surgeon/>.

[5] L Thomas et al, "Health, Performance, and Conduct Concerns among Alder Soctors: A Retrospective Cohort Study of Notifications Received by Medical Regulators in Australia" (2018) 23(2) *Journal of Patient Safety and Risk Management* 54.

[6] P Smith, "Mandatory Health Checks for Older Doctors – Will the Board's Plan Reduce Patient harm", *Australian Doctor*, 7 August 2024 <https://www.ausdoc.com.au/news/mandatory-health-checks-for-older-doctors-will-the-boards-plan-reduce-patient-harm/>.

[7] Y Tsugawa et al, "Physician Age and Outcomes in Elderly Patients in Hospital in the US: Observational Study" (2017) 16 *British Medical Journal* 357.

in May 2024 which indicated that in 2020–2021 the intention of Australian health industry workers was to retire at the mean age of 65.4 years.[8] However, 80% of Australian surgeons over the age of 65 years intend to continue working in private practice.[9] Most FRACS Fellows aged 65 years or older who intend to continue in paid employment or self-employment will maintain work predominantly because they are doing work that they enjoy.[10] Other reasons for this disparity with other health industry workers may include adverse financial circumstances, emotional needs to have relevance and self-esteem or the primacy of work in a surgeon's life[11] with few or no outside interests.

For surgeons, their patient outcomes are poorer when the surgeon has a low surgical workload rather than when the surgeon was older.[12] For some complex procedures such as pancreatectomy, surgeons older than 60 years, particularly those with low procedure volumes, have higher operative mortality rates than their younger counterparts. For most procedures, however, the age of surgeons alone is not an important predictor of operative risk. Less experienced surgeons (≤40 years of age) had comparable mortality rates to surgeons aged 41–50 years for all procedures.[13] This suggests that hospitals should impose minimum thresholds on a surgeon's credentialling for certain operations. As doctors age, they may experience physical and cognitive impairments that can impact their ability to effectively practice medicine or at least to perform surgery. The *Quality in Australian Health Care Study* reported that failure of cognitive function was the second most frequent cause of errors in the delivery of healthcare that led to adverse events in patients.[14]

We now describe the changes to physical and cognitive capacity with ageing.

The Physiology of Ageing

The American Medical Association Council on Medical Education reported in 2015 that ageing is associated with decreased mental processing speed, increased difficulty in ignoring irrelevant information, limited ability to complete complex tasks, decreased manual dexterity, and reduced ability to see and hear and suggested that "perhaps episodic re-evaluations (of physicians) after a certain age such as 70, when incidence of declines is known to increase, may be appropriate…(and) should include … neurocognitive testing".[15] However, it agreed[16] that that there was a lack of scientific evidence linking specific cognitive deficits with physician performance. The estimated prevalence of mild cognitive impairment (20,400; 21%) and dementia (6,460; 7%) may be as high as 28% in United States physicians aged 70 years and older.[17]

Older proceduralists may suffer from the physical demands of surgery. Late career surgeons may experience physical limitations due to age-related changes such as decreased strength, flexibility, and

[8] Australian Bureau of Statistics, *Retirement and Retirement Intentions, Australia* (22 May 2024) <https://www.abs.gov.au/statistics/labour/employment-and-unemployment/retirement-and-retirement-intentions-australia/latest-release>.

[9] I Loh and A Sarcevic, "The Ageing Doctor: Positive Transition to a Portfolio Career" (Insight (AMA), 8 April 2019)<https://insightplus.mja.com.au/2019/13/the-ageing-doctor-positive-transition-to-a-portfolio-career/>.

[10] Royal Australasian College of Surgeons, *RACS Surgical Workforce 2022 Census Report* (2023) <https://www.surgeons.org/-/media/Project/RACS/surgeons-org/files/reports-guidelines-publications/workforce-activities-census-reports/PUB-2022-Surgical-Workforce-Census-Report---final.pdf?rev=4df8fb5add5949109776b0b0c5bd0d4e&hash=92EBAD7C555D97E8834EF3A36A4F05B5>.

[11] C Wijeratne et al, "Professional, and Pychosocial Factors Affecting the Intention to Retire of Australian Medical Practitioners" (2017) 206(5) *Medical Journal of Australia* 209.

[12] JF Waljee et al, "Surgeon Age and Operative Mortality in the United States" (2006) 244(3) *Annals of Surgery* 353.

[13] Waljee et al, n 12.

[14] RM Wilson, et al, "An Analysis of the Causes of Adverse Events from the Quality in Australian Health Care Study" (1999) 170(9) *Medical Journal of Australia* 411.

[15] AMA Council on Medical Education (A-15), *Competency and the Aging Physician: Appropriateness of Guidelines for Testing for and Judgment of a Physician's Competence to Care for Patients* (American Medical Association, 2015).

[16] American Medical Association, *Council on Medical Education Report 5: Competency and the Aging Physician* (2015) <https://www.cppph.org/wp-content/uploads/2016/02/AMA-Council-on-Medical-Education-Aging-Physician-Report-2015.pdf>.

[17] G Devi, "Alzheimer's Disease in Physicians: Assessing Competence and Tempering Stigma" (2018) 378 *New England Journal of Medicine* 1073.

endurance. Physical strength, at its peak in the third decade of life declines by 25% by aged 65 years.[18] As surgeons age, their capacity to stand upright for long hours at the operating theatre (OP) table is limited. Their ability to concentrate also suffers. Visual acuity and accommodation decrease due to changes in the lens and pupillary shrinkage.[19] The first impairment with increasing age is physical strength, then eyesight, then dexterity, and finally cognition.[20] Pronounced changes with ageing occur after 50 years of age with more than 15% strength loss per decade.[21] They may also be more prone to musculoskeletal issues such as arthritis or back pain. Additionally, their vision, hearing, and fine motor skills may decline, affecting their ability to perform surgeries with precision. These physical limitations can have an impact upon a surgeon's overall performance and may require adjustments in their practice or even retirement from surgery.

Cognitive Impairment

Cognitive impairments can include memory loss, decreased attention span, slower processing speed, slower reaction times and difficulties in multitasking. The ability to solve unfamiliar problems, identify patterns, and think abstractly-so called "fluid intelligence"- tends to decline with age. Fluid intelligence typically peaks in early adulthood and gradually declines as individuals get older.[22] This decline may be more noticeable in tasks that require quick thinking, working memory, and mental flexibility. "Crystallized intelligence" on the other hand refers to the accumulation of knowledge and skills acquired over a lifetime through education, experiences, and cultural exposure.[23] This type of intelligence involves the ability to use acquired knowledge and expertise to solve problems, make decisions, and understand complex concepts. As individuals age, they have more opportunities to acquire knowledge and experience in various domains, which can contribute to the enhancement of their crystallized intelligence. Older adults often have a wealth of information and expertise in specific areas, which can result in higher levels of performance in tasks that rely on this type of intelligence. Research has shown that older adults tend to perform better than younger adults on tasks that require vocabulary, general knowledge, comprehension, and verbal abilities[24] – all of which are aspects of crystallised intelligence. This improvement in crystallised intelligence with age is believed to be due to the accumulation of knowledge and life experiences over time. While fluid intelligence may decline with age, the improvement in crystallized intelligence can help to compensate for this decline and contribute to overall cognitive functioning in older adults. Additionally, engaging in activities that stimulate the mind, such as reading, learning new skills, and participating in intellectually stimulating activities, can help to further enhance crystallised intelligence as individuals age. There is growing evidence that healthy lifestyles may decrease the rate of cognitive decline seen with ageing and help delay the onset of cognitive symptoms in the setting of age-associated diseases. These healthy lifestyle factors may include physical activity, mental stimulation, avoiding excessive exposure to neurotoxins (eg, alcohol), treating depression and managing stress, and controlling common medical conditions such as hypertension, diabetes, and obstructive sleep apnoea.[25]

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[18] RL Rovit, "To Everything There Is a Season and a Time to Every Purpose: Retirement and the Neurosurgeon" (2004) 100 *Journal of Neurosurgery* 112.

[19] Rovit, n 18.

[20] LJ Greenfield and MC Proctor, "When Should a Surgeon Retire?" (1999) 32 *Advances in Surgery* 385; Rovit, n 18; DD Trunkey and R Botney, "Assessing Competency: A Tale of Two Professions" (2001) 192 *Journal of the American College of Surgeons* 385.

[21] K Keller and M Engelhardt, "Strength and Muscle Mass Loss with Aging Process. Age and Strength Loss" (2014) 3(4) *Muscles Ligaments and Tendons Journal* 346.

[22] SA Willis and JA Margrett, "Aging and Education" in NJ Smelser and PB Baltes (eds), *International Encyclopedia of the Social & Behavioral Sciences* (Pergamon, 2001) 299–304; JL Horn and SM Hofer, "Major Abilities and Development in the Adult Period" in RJ Sternberg and CA Berg (eds), *Intellectual Development* (CUP, 1992) 44–99.

[23] RB Cattell, "Theory of Fluid and Crystallized Intelligence: A Critical Experiment" (1963) 54 *Journal of Educational Psychology* 1.

[24] TA Salthouse, "What and When of Cognitive Aging" (2004) 13(4) *Current Directions in Psychological Science* 140.

[25] DL Murman, "The Impact of Age on Cognition" (2015) 36(3) *Seminars in Hearing* 111.

The Default Mode Network (DMN) is a network of brain regions including the frontoparietal region of the brain which plays a crucial role in self-referential thoughts, memory retrieval, and planning for the future. The DMN is so named because those regions show increased activity during rest and introspective thought, as opposed to being engaged in specific tasks or external stimuli. In ageing proceduralists, the DMN may have a negative effect on cognitive function and decision-making abilities. This decline may affect an ageing surgeon's ability to perform complex surgical procedures effectively and efficiently. Additionally, the DMN has been linked to emotional regulation and self-awareness. As surgeons age, they may experience increased stress, anxiety, and emotional fatigue, which can impact upon their performance in the operating room. Changes in the DMN may also adversely affect a surgeon's ability to reflect on their own performance and adjust by improving their skills and decision-making abilities. Overall, the DMN can influence ageing surgeons by impacting cognitive function, emotional regulation, and self-awareness, all of which are crucial factors in maintaining surgical proficiency and ensuring patient safety. It is essential for ageing surgeons to be aware of these potential influences and take steps to mitigate any negative effects on their performance.

Some authors differentiate the cognitive changes associated with "healthy ageing" from those of early degenerative neurological disease such as Parkinson's disease, Alzheimer's disease, vascular dementia & ischaemic heart disease. Morris,[26] for example, has asserted that there is no evidence to suggest that healthy ageing doctors have sufficient cognitive impairment to affect patient care.[27] Arguably however there may be a special case to be made for surgeons where those at the closing years of their practice may not be able to meet the physical and rapid decision-making skills demanded of surgery.

Requirements for Competent Surgical Performance

For surgeons, performance includes a knowledge base incorporating modern standards of care[28] combined with an ability to execute a surgical task accurately and expeditiously. A surgeon must have innate ability in manipulative skills, visuospatial and psychomotor abilities.[29] The surgeon's ability to perform each individual step of a procedure is crucial.[30] However, the success of a surgical procedure also depends on the surgeon's clinical judgement[31] such as the choice of sound indications for the surgery proposed. It also depends on the surgeon's aptitude for error detection, forward planning and team leadership.

Surgeons are required to meet demands which are both physical and mental with a need for strong concentration and the ability to react and adapt to quick, unexpected changes.[32] Surgeons need physical endurance and fitness, especially for long surgical operations.[33]

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[26] P Morris, *The Inappropriateness of Mandatory Cognitive Testing of All Doctors Aged 70* (2023); Studies have shown that older physicians perform as well as younger physicians on various measures, including patient mortality rates, adherence to guidelines, diagnostic accuracy, and patient outcomes. Medical indemnity insurers also do not impose age-related increases in premiums, indicating that age alone is not considered a significant risk factor for medical practice <https://www.drphilipmorris.com/cognitive-testing-of-older-doctors-a-balanced-approach/>.

[27] After adjustment for characteristics of patients and physicians and hospital fixed effects (effectively comparing physicians within the same hospital), patients' adjusted 30-day mortality rates were 10.8% for physicians aged <40 (95% confidence interval 10.7%–10.9%), 11.1% for physicians aged 40–49 (11.0%–11.3%), 11.3% for physicians aged 50–59 (11.1%–11.5%), and 12.1% for physicians aged ≥60 (11.6%–12.5%); Y Tsugawa et al, "Physician Age and Outcomes in Elderly Patients in Hospital in the US: Observational Study" (2017) 16 *British Medical Journal* 357.

[28] NK Choudhry et al, "Systematic Review: The Relationship between Clinical Experience and Quality of Health Care" (2005) 142 *Annals of Internal Medicine* 260.

[29] El Boghdady and BM Ewalds-Kvist, "The Innate Aptitude's Effect on the Surgical Task Performance: A Systematic Review (2021) 73(6) *Updates in Surgery* 2079.

[30] JA Kohls-Gatzoulis et al, "Teaching Cognitive Skills Improves Learning in Surgical Skills Courses: A Blinded, Prospective, Randomized Study" (2004) 47(4) *Canadian Journal of Surgery* 277.

[31] K Moorthy et al, "Objective Assessment of Technical Skills in Surgery" (2003) 327(7422) *British Medical Journal* 1032.

[32] E Howie et al, "Protocol for a Scoping Review on 'Surgical Sabermetrics': Technology-Enhanced Measurement of Operative Non-Technical Skills" (2023)13 *British Medical Journal Open* e064196 <https://bmjopen.bmj.com/content/13/2/e064196>.

[33] T Tejirian, "Surgery Is a Contact Sport: A Guide on Injury Prevention for Surgeons", *General Surgical News*, 13September 2021 <https://www.generalsurgerynews.com/Opinion/Article/09-21/Surgery-Is-a-Contact-Sport/64653>.

Safe and effective surgery is affected by several factors relating to interlinking technical and non-technical skills, including the surgeon, the surgical team, equipment and technology, the OR, the surgery and the patient themselves.[34] A low workload volume as well as failure to maintain currency of practice with modern standards may negatively influence complication rates. Additionally, surgeons are humans, who are fallible and subject to influence from external and internal forces, including: the busy healthcare environment, fatigue, burnout, noise, stress at home and the need to focus on outpatients, inpatients, and the current operation concurrently.[35]

The Influence of Ageing on Surgical Competency

It is widely agreed that most surgeons reach their peak of overall performance around the second half of the fifth decade (45–50 years of age).[36] Yet physical skills begin declining from age 28 years followed by cognitive skills. It appears that increasing surgical experience in the fourth and fifth decade of life more than compensates for these declines.[37]

Potential warning signs of age-related decline in late career surgeons may include forgetfulness, unusual tardiness, evidence of poor clinical judgment, changes in referral patterns, unexplained absences, confusion, change in personality, disruptiveness, noticeable change in appearance and unusually late and incoherent documentation.[38]

The Royal Australasian College of Surgeons documented surgical competence and performance in 2020 and provided a framework for the assessment of practising surgeons.[39] This included components of judgement and decision making; medical expertise, technical expertise, professionalism as well as leadership and management skills. Among the examples of poor behaviours listed the RACS included:

(1) Denies the impact of ageing, extended leave from practice, physical or cognitive impairments on manual dexterity or technical skills;
(2) inadequate consideration of non-surgical options;
(3) exceeding their scope of practice which are beyond their level of training;
(4) choosing inappropriate procedures;
(5) failing to treat tissue or surgical instruments with respect;
(6) failing to justify any decisions;
(7) unwilling to alter decisions if additional information becomes available;
(8) inflexibility when evidence mounts that an alternative course of action is indicated;
(9) failing to learn from poor outcomes and blames others or the surgical equipment rather than reflecting on their own practice;
(10) schedules inappropriately long operating lists;
(11) continues to practice when unwell overtired or severely fatigued without recognising the impact on surgical performance; and
(12) fails to participate in team meetings or MDT ward rounds.

[34] RH Flin et al, *Enhancing Surgical Performance: A Primer in Non-Technical Skills* (Boca Raton, 2016); R Aggarwal, "Intraoperative Surgical Performance Measurement and Outcomes: Choose Your Tools Carefully" (2017) 152 *JAMA Surgery* 995; JS Cha and D Yu, "Objective Measures of Surgeon Non-Technical Skills in Surgery: A Scoping Review" (2022) 64 *Human Factors: The Journal of the Human Factors and Ergonomics Society* 42 <https://pubmed.ncbi.nlm.nih.gov/33682476/>.

[35] Howie et al, n 32.

[36] RB Blasier, "The Problem of the Aging Surgeon: When Surgeon Age Becomes a Surgical Risk Factor" (2009) 467(2) *Clinical Orthopaedics & Related Research* 402.

[37] Blasier, n 36.

[38] T Rosengart et al, "Sustaining Lifelong Competency of Surgeons: Multimodality Empowerment Personal and Institutional Strategy" (2024) 239(2) *Journal of the American College of Surgeons* 187.

[39] RACS, *Surgical Competence and Performance* (3rd ed, 2020) <https://www.surgeons.org/-/media/Project/RACS/surgeons-org/files/reports-guidelines-publications/manuals-guidelines/surgical-competence-and-performance-framework_final.pdf>.

Assessment of surgical technical skills has been attempted using simulation models with some success.[40] Thomas[41] has opined that "the aim of good, sound, surgical teaching and competency assessment should be to eradicate the mavericks, to emulate the geniuses and thus move the whole bell curve to the right by the spreading of good practice".

In most surgical specialties there are established standards of good care.[42] For example, for urologists the standards applied for transurethral resection of benign prostatic disease include the average time of the surgery, the average length of stay, the rate of blood transfusion (normally 3.6%), and the rate of unplanned admissions within 28 days. For general surgeons performing laparoscopic cholecystectomy the rate of inadvertent bile duct injury (normally 0.3%) is used as an indicium of surgical competency.

In the following segment we discuss the proposals to limit medical and surgical errors caused by declining age-related skills. We also consider the impact of anti-discrimination laws on those initiatives.

Initiatives to Introduce Cognitive Testing, Compulsory Health Checks and Vision Tests after Age 70 Years

Cognition

Cognitive tests such as MicroCog™ measure visuospatial reasoning and reaction times which would have relevance to surgical performance but scores on such tests have not been linked to surgical outcomes.[43] While several United States hospitals such as Stanford, Mt Sinai and the University of Virginia have introduced specific regulated testing for surgeons based on age,[44] validated tools for assessing the performance of ageing doctors are lacking.[45] In 2019, the American College of Surgeons (ACS) recommended age-based evaluations, starting at age 65–70 years, suggesting that surgeons "voluntarily assess their neurocognitive function using online tools", and self-report findings.[46] Sixty seven percent of the American Society of Surgical Chairs advocated mandatory cognitive and psychomotor testing of surgeons by at least 65 years.[47]

In a subsequent *Statement on Sustaining the Lifelong Competency of Surgeons*, the ACS in April 2024[48] recommended against an age-based trigger for competence testing in favour of a whole-of-career testing strategy. The ACS emphasises the importance of enabling colleagues and staff to "bring forward and freely express legitimate concerns about a surgeon's performance … without fear of retribution". However, the ACS still maintains that whole-of-career testing should involve quantitative and qualitative clinical performance metrics with physical and mental assessments including standardised evaluations of neurocognitive function.[49]

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[40] WEG Thomas, "Core Skills, Courses, and Competency" (2000) 82 *Annals of The Royal College of Surgeons of England Supplement* 218; JD Beard et al, "Developing Assessments of Surgical Skills for the GMC Performance Procedures" (2005) 87 *Annals of The Royal College of Surgeons of England* 242; JD Beard et al, "Assessing the Technical Skills of Surgical Trainees" (2005) 92 *British Journal of Surgery* 778.

[41] WE Thomas, "Teaching and Assessing Surgical Competence" (2006) 88(5) *Annals of The Royal College of Surgeons of England* 429.

[42] Australian Council on Hospital Standards Determining the Potential to Improve the Quality of Care 2015–2022 <https://www.achsi.org/news/acir2022>.

[43] Blasier, n 36; PJ Schenarts and S Cemaj, "The Aging Surgeon: Implications for the Workforce, the Surgeon, and the Patient" (2016) 96(1) *Surgical Clinics of North America* 129.

[44] A Frazer and M Tanzer, "Hanging up the Surgical Cap: Assessing the Competence of Aging Surgeons" (2021) 12(4) *World Journal of Orthopedics* 234.

[45] Schenarts and Cemaj, n 43; S Lillis and E Milligan, "Ageing Doctors" (2017) 36 *Australasian Journal on Ageing* 14.

[46] E Dellinger et al, "The Aging Physician and the Medical Profession – A Review" (2107) 152 *JAMA Surgery* 967.

[47] T Rosengart et al, "Transition Planning for the Senior Surgeon: Guidance and Recommendation from the Society of Surgical Chairs" (2019) 1159 *JAMA Surgery* E1.

[48] TK Rosengart et al, "Sustaining Lifelong Competency of Surgeons: Multimodality Empowerment Personal and Institutional Strategy" (2024) 239(2) *Journal of the American College of Surgeons* 187.

[49] Rosengart et al, n 48.

Cognitive testing of other high-risk professions is in doubt. The European Union Aviation Safety Agency in 2023 argued against cognitive testing for late career pilots[50] claiming that there are currently no useful neuropsychological or cognitive tests available to predict a pilot's flight performance and there is no neuropsychological test that enables a decision to be taken on whether the cognitive capacities of an asymptomatic individual have diminished to such an extent that he/she should no longer be allowed to fly. It was claimed that it is not possible to decide solely on the basis of the score achieved in a psychological test. The Agency recommended that assessments of pilot safety be based on the aeromedical assessment including a history and physical examination. The Agency did accept that neuropsychological or cognitive testing of pilots is useful when there is a known condition affecting cognition, such as brain disease, or when questions regarding cognitive integrity arise.[51]

Physical Health

Regular annual physical assessments with the surgeon's general practitioner (GP) would enable detection of hypertension, coronary heart disease, diabetes, and other conditions which might be relevant for surgeons experiencing higher stress levels or who have specific health risks due to their profession including needle stick injuries. A GP can detect signs of burnout, anxiety, or depression, which are crucial for both personal well-being and patient safety. GPs can assess and manage issues related to substance use, including alcohol and drug use, which can significantly affect a surgeon's ability to perform safely. In addition, GPs can provide guidance on lifestyle factors, such as diet, exercise, and sleep, which can have an impact upon a surgeon's performance and overall health. Regular check-ups can ensure that surgeons are up-to-date on vaccinations and preventive care, which is particularly important in a clinical setting to prevent the spread of infections. For surgeons who may be on medications for various health issues, annual checkups allow for evaluations of medication efficacy and adjustments as needed. GPs can help co-ordinate care with other specialists, ensuring that all aspects of a surgeon's health are being addressed, which is vital for optimal performance in their surgical practice. GPs can evaluate potential work-related risks specific to the surgical field, such as musculoskeletal issues acquired from long hours in the OP. The Doctors Health Advisory Service strongly advocates that medical practitioners retain their own GP. A retired GP responding to the MBA proposal[52] noted that:

> these measured responses are excellent, putting emphasis on encouraging every doctor to have established relationships with a GP who supports them with their health care decisions. Longitudinal clinical relationships both establish trust and detect any changes early. Much better a doctor has the opportunity to plan for possible retirement, feeling they retain some autonomy rather than feeling they are being disempowered, or worse punished, for aging.

Australian Regulation of Professional Impairment

Under s 39 of the *Health Practitioner Regulation National Law 2009* (Qld) Australian health practitioners already have an obligation to report impairments which may affect their own ability to practice safely.

The MBA first proposed testing for late career medical practitioners in 2017 and this resurfaced in August 2024.[53] The options are threefold: regular health checks with a practitioner's GP; more detailed cognitive testing by an occupational health physician; or, thirdly, to maintain the status quo. For surgeons the second proposal might involve assessments of dexterity, sight and the ability to give clinical instructions.[54] The potential for these proposals to contravene the *Age Discrimination Act 2004* (Cth) (*ADA*) has yet to be tested

[50] European Union Aviation Safety Agency, *Literature Review regarding Extending Age Limits of HEMS Pilots to 65 Years: Mental Health and Cognitive Screening Considerations and Recommendations* (12 June 2023).

[51] European Union Aviation Safety Agency, n 50.

[52] <https://www.facebook.com/DoctorsHealthNSW/>.

[53] T Peregrin, "ACS Provides Guidance for Senior Surgeons Facing an Age-Old Question" (Bulletin of American College of Surgeons, 8 May 2024).

[54] C Rudge, "How Old's Too Old to Be a Doctor?", *The Conversation*, 8 August 2024 <https://www.sydney.edu.au/news-opinion/news/2024/08/08/how-old-s-too-old-to-be-a-doctor-.html>.

but s 18(4) of the *ADA* includes an exemption to allow "qualifying bodies" such as the MBA to discriminate against older professionals who are "unable to carry out the inherent requirements of the profession, trade or occupation because of his or her age".[55] The Australian Government's *Office of Impact Analysis* has ruled that such the current MBA proposals are compliant with current anti-discrimination legislation.[56] *ADA* prohibits discrimination on the basis of age in employment but there are already exceptions such as for judicial officers in the s 49ZX of the *Anti-Discrimination Act 1977* (NSW). Older drivers in New South Wales are legally required to undergo annual health checks including visual acuity from the age of 75 years to keep their unrestricted driver (class C) or rider (class R) licence. And from 85 years of age this includes a practical test of driving skills.[57] This is an exception to the s 49ZYV of the *Anti-Discrimination Act 1977* (NSW). Australian airline pilots and air traffic controllers have obligations to undergo regular health checks and hold a current medical certificate to exercise the privileges of their licence.[58]

As part of hospital oversight of clinical care, the following measurements are included:

(1) Mortality rates;
(2) unplanned returns to theatre;
(3) readmissions;
(4) unplanned admissions to Intensive Care Unit; and
(5) serious morbidity.

However individual surgical mortality rates are blunt criteria for poor surgical performance[59] as they depend on the volume of surgery performed.[60] A surgeon with a mortality rate equal to that of the national mean or median has a 2.5% chance of falling above the 95% control limit for acceptable performance by sampling error alone.[61] Surgeons with mortality rates in excess of that expected are highly unlikely to be detected. Performance within an expected mortality rate range cannot therefore be considered reliable evidence of adequate performance.[62] Although good surgical technique is paramount in reducing adverse outcomes, the final result is multifactorial, including the physiological state of the patient, the operative severity, and quality and availability of peri-operative support services.[63]

One means of limiting surgical errors in ageing surgeons would be for individual hospitals to reassess late career surgeons regularly and adjust their credentialling for complex procedures downwardly when it becomes obvious that such surgeons are showing evidence of physical /and or cognitive decline. At a State or Federal level, a more nuanced approach to medical registration of older surgeons could be introduced where those showing signs of impairment are restricted to perform in non-surgical roles.

The following segment discusses alternate options for late career doctors.

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[55] Rudge, n 54.

[56] Australian Government, Department of the Prime Minister and Cabinet, *Health Checks for Late Career Doctors' Registration Standard* (7 August 2024) <https://oia.pmc.gov.au/published-impact-analyses-and-reports/health-checks-late-career-doctors-registration-standard>.

[57] NSW Government, Service NSW, *Older Drivers, Riders, and Road Users* (4 December 2024) <https://www.service.nsw.gov.au/guide/older-drivers-riders-and-road-users>.

[58] Australian Government, Civil Aviation Safety Authority, *Classes of Medical Certificate* (2 February 2024) <https://www.casa.gov.au/licences-and-certificates/aviation-medicals-and-certificates/classes-medical-certificate#Class1medicalcertificate>.

[59] A Heeney et al, "Surgical Mortality – An Analysis of All Deaths within a General Surgical Department" (2014) 12(3) *Surgeon* 121;BL Hall et al, "Profiling Individual Surgeon Performance Using Information From a High-Quality Clinical Registry: Opportunities and Limitations" (2015) 221 *Journal of the American College of Surgeons* 901; MD Hatfield et al, "Surgeon-Specific Reports in General Surgery: Establishing Benchmarks for Peer Comparison Within a Single Hospital" (2016) 222(2) *Journal of the American College of Surgeons* 113.

[60] K Walker et al, "Public Reporting of Surgeon Outcomes: Low Numbers of Procedures Lead to False Complacency" (2013) 382 *Lancet* 1674.

[61] EM Harrison et al "Individual Surgeon Mortality Rates: Can Outliers Be Detected? A National Utility Analysis" (2016) 6(10) *British Medical Journal Open* e012471 <https://pmc.ncbi.nlm.nih.gov/articles/PMC5093625/>.

[62] Harrison et al, n 61.

[63] DR Prytherch et al, "POSSUM and Portsmouth POSSUM for Predicting Mortality. Physiological and Operative Severity Score for the Enumeration of Mortality and Morbidity" (1998) 85(9) *British Journal of Surgery* 1217.

Transition From Active Clinical Practice to Alternate Roles as Surgeons Age

As doctors age, they may choose to transition into other career paths that allow them to continue utilising their skills and expertise while potentially reducing the physical and cognitive demands of clinical practice. Institutions should encourage succession planning and facilitate transitions. Some alternative pathways for ageing doctors may include medical education: tutoring medical students, residents, or fellows; research: pursuing a career in medical research, conducting studies, publishing papers, and contributing to advancements in the field of medicine; consulting: providing consulting services to healthcare organisations, pharmaceutical companies, or government agencies on medical issues, policy development; or healthcare management healthcare administration: such as hospital or clinic management, quality improvement, or healthcare policy development. medical writing: authoring medical articles, textbooks, or patient education materials to share medical knowledge and expertise with a wider audience. health advocacy: advocating for healthcare policy changes, patient rights, or public health initiatives to improve healthcare outcomes for individuals and communities.

Regulatory Examples Regarding Ageing Physicians and Surgeons

Notwithstanding the concerns in relation to older practitioners, there are no clear examples of civil litigation where the age of the surgeon featured in the decision, and only a small number of published regulatory decisions.

Medical Board of Australia v Conron [2023] VCAT 15

This case involved an 81-year-old GP who was held to have been self-prescribing and self-investigating, treating a close family member, failing to keep abreast of recent medical developments and keeping inadequate medical records. In one instance he advised a pregnant woman to avoid whooping cough vaccine in her third trimester. In another he failed to request a repeat Duplex Doppler study on a patient presenting with serious symptoms of a deep vein thrombosis. A third patient was prescribed narcotics without the appropriate authority. In recommending a reprimand for unprofessional conduct, the Board noted the difficulties which older medical practitioners can encounter in continuing to practise competently, and in continuously adapting and up-skilling in order to keep abreast with expected professional standards, regulatory requirements, and changing technology. The VCAT decision highlights the need for such practitioners, and those around them, thoughtfully and insightfully, to consider the question of when to retire from active medical practice.

Health Care Complaints Commission v Howe [2014] NSWCATOD 30

This plastic surgeon aged 81 years was held to have physical and mental impairments and conditions, namely Parkinson's disease with mild cognitive impairment, hearing loss and monocular vision that detrimentally affected or was likely to detrimentally affect the practitioner's capacity to practise the profession. Dr Howe was ordered to undergo performance assessment to be conducted by delegates of the Medical Council of New South Wales in order to assess his capacity to conduct surgery safely as principal surgeon. The surgery performed by Dr Howe for the purpose of the performance assessment, was to be performed under the supervision of a qualified plastic surgeon. The extent of Dr Howe's surgical practice was ordered to be guided by his health status, the advice of his treating practitioners and Council-appointed practitioners. Dr Howe was not to work more than five hours a day for a maximum of three days per week.

Bradfield et al[64] have concluded that Australian courts and tribunals prioritise deterrence above rehabilitation of impaired doctors.

[64] OM Bradfield, et al, "Regulation in Need of Therapy? Analysis of Regulatory Decisions Relating to Impaired Doctors from 2010 to 2020" (2022) 29(4) JLM 1090.

Conclusion

Surgeons have additional requirements which can tax their strength, dexterity, rapid judgement, and endurance. The MBA has yet to publish its 2024–2025 decision for health checks and possibly cognitive testing for septuagenarian doctors (the consultation period closed on 4 October 2024) and there is resistance from some quarters including the Royal Australian College of General Practitioners[65] arguing such a restriction would be "ageist and lacks evidence that these measures would reduce patient harm. Others argue that these proposals fail to distinguish between healthy ageing and the older unwell doctors.[66] The Australian Law Reform Commission favours a more sophisticated approach than universal compulsory retirement based on the capacity of individual doctors to perform to a required standard.[67] That might still involve compulsory testing of doctors reaching 70 years of age as a condition of ongoing medical registration. Whether surgeons should undergo more rigorous tests of vision, cognitive skills, physical strength & dexterity in the operating room remains to be determined. Certainly, that appears to be a developing trend in the United States, but it needs to be validated. The ability to measure a surgeon's clinical judgement would be far more challenging.

A requirement for a regular health check-up by the surgeon's GP would be a responsible compromise and appears to be the MBA's favoured option. It would conform with other occupational areas considered important to protect public safety such as drivers of motor vehicles, airline pilots and air traffic controllers.

Perhaps the best peers to recognise an ageing surgeon's decline in performance would be the surgeon's colleagues – the anaesthetist, the OP nurse, or those called upon to assist with adverse outcomes. The anaesthetist might be conflicted because of the potential to remove an income stream however the OP nurse may have less conflict. Under the Vanderbilt University scheme of Speaking Up for Patient Safety the OP nurse would receive the protection of anonymity and should be able to raise concerns with hospital management without fear of retribution. Many organisations have commenced speaking-up programs which use codified language and graded assertiveness as an alert of concern for the listener and directing immediate actions during patient care. Review of these programs indicates that they are effective in increasing staff confidence and assertiveness in speaking up particularly in the setting of imminent or clear harm or breach.[68] If OP nurses, anaesthetists and other colleagues were obliged to report concerns regarding the performance of their surgeons to hospital administration that would be a useful adjunct to patient safety. The *Health Practitioner Regulation National Law* already compels registered health practitioners to report colleagues who, among other things, are demonstrating significant impairment or significant departure from accepted professional standards. Increased oversight by hospital administration on surgeons with low volume surgical procedures could facilitate alterations in credentialling The overriding obligation of regulators is the ensure public safety.[69] Fortunately, there appear to be relatively infrequent examples where ageing doctors require the regulator to intervene.

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[65] P Smith, "Lacking Evidence and Probably Ageist: RACGP Hits Out at medical board's Mandatory Health Checks for Older Doctors", *Australian Doctor*, 17 October 2024 <https://www.ausdoc.com.au/news/lacking-evidence-and-probably-ageist-racgp-hits-out-at-medical-boards-mandatory-health-checks-for-older-doctors/>.

[66] P Morris, *The Inappropriateness of Mandatory Cognitive Testing of All Doctors Aged 70* (2023): Studies have shown that older physicians perform as well as younger physicians on various measures, including patient mortality rates, adherence to guidelines, diagnostic accuracy, and patient outcomes. Medical indemnity insurers also do not impose age-related increases in premiums, indicating that age alone is not considered a significant risk factor for medical practice <https://www.drphilipmorris.com/cognitive-testing-of-older-doctors-a-balanced-approach/>.

[67] Australian Law Reform Commission, *Compulsory Retirement* (8 April 2013) <https://www.alrc.gov.au/publication/access-all-ages-older-workers-and-commonwealth-laws-alrc-report-120/4-recruitment-and-employment/compulsory-retirement-2/>.

[68] J Hanson et al, "Speaking up for Safety: A Graded Assertiveness Intervention for First Year Nursing Students in Preparation for Clinical Placement: Thematic Analysis" (2020) 84 *Nurse Education Today* 104252 <https://pubmed.ncbi.nlm.nih.gov/31698289/>; E Lee et al, 'Effectiveness of Speak-Up Training Programs for Clinical Nurses: A Scoping Review" (2022) 136 *International Journal of Nursing Studies* 104375; YR Lin et al, "Evaluation of an Assertiveness Training Program on Nursing and Medical Students' Assertiveness, Self-Esteem, and Interpersonal Communication Satisfaction"(2004) 24(8) *Nurse Education Today* 656.

[69] C Stewart, "Health Practitioner Regulation in Australia: A View from the Antipodes" (2019) 19 *Revista de Direito Sanitário* 205.