

The Pupil's P's: An Alliterative Tool and Practical Framework for Managing Older Patients

Milton Louca,¹  Peter Gonski,² 

Introduction

Geriatrics is founded on the wisdom of its practitioners, patients and pupils. In patients over 65, 23% of global disease burden is attributable to them,¹ and 50% have 1 or more 'geriatric conditions' – referring to the collective signs and symptoms common in elderly patients.²⁻³ To address complex geriatric conditions, compounded by time, geriatrics mandates a multi-factorial, hypothesis-driven approach. Thus, optimizing aged care must coordinate numerous, major issues. In 1965, 'Isaac's I's'^{3,4} – instability, immobility, incontinence, and impaired intellect or memory – were coined to encapsulate elderly-patient ailments. In 2017, Mary's M's,⁵ – mind, mobility, medications, multi-morbidity, and matters most – sought to encompass more features of aged care. Due to the complexity of geriatric patients, medical students are deterred from the aged care specialty.⁶ Globally, there are gaps in geriatric education of medical students which require meaningful and broad curricula proportionate to ageing population demographics.⁷ With these shifting demographics, prioritizing medical education for aged care will improve healthcare for all.⁸ Mnemonics offer a powerful method to reshape brain networks, improve memory performance, increase motivation to study, and are reportedly more enjoyable than rote rehearsal.^{9,10} Accordingly, through our experience, we attempt to reconcile aged care principles to provide our own alliterative device for medical students. This tool enhances existing mnemonics in aged care by incorporating these ideas into a larger framework which educates students to optimize the care of older people. Here, we cannot be exhaustive of each issue. Rather, we aim to introduce each issue for students to contemplate on their rounds. Together with the insight and contribution by an accomplished geriatrician, this instrument was distilled by the experiences and reflections of a resident from medical school into employment. For posterity and students of aged care, who will inevitably be at the coalface taking care of an ageing population, we deliver these portable, alliterative learnings: *The Pupil's P's*.

1. Peculiar Presentations

For these prevalent 'geriatric conditions', we stand upon the

shoulders of 'Isaac's Geriatric Giants': instability (6-22%), incontinence (9-27%), immobility, iatrogenesis and impaired intellect or memory (3-31%).³ More have been proposed: frailty, sarcopenia, and anorexia of ageing (1.3-12%).^{2,4} From medical school, we suggest students consider such hallmark precipitants for presentations. Otherwise, an unclear, confused historian or unremarkable examination make it difficult to generate reasoning and management. Collateral history and family involvement are indispensable. A common presentation in older people is a fall with neck of femur fracture. Here, there is a necessary cause of their fall and fracture. For example, delirium causing confusion (impaired intellect), secondary to urinary tract infection or overflow constipation (incontinence) compounded by gait imbalance (instability), and complicated by osteoporosis (immobility).

2. Psychiatric and Psychological Perturbations

Given the brain's importance in aged care, cognition testing must not be overlooked. On rounds, delirium, depression, and dementia can be screened for swiftly. The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) provides the elements for each neurocognitive disorder.¹¹ By utilising the 4 'A's Test (4AT) – that is, a widely-used, efficient screening tool incorporating Abbreviated Mental Test-4 for orientation, Alertness, Attention and Acute fluctuations – students can consider delirium and these conditions alongside possible causes.¹² Alternatively, the Mini Mental State Examination (MMSE)^{13,14} and Confusion Assessment Method (CAM)¹⁵ are validated, widely-used screening tools. Often, causes of delirium include: pain, infection, nutrition, constipation, hydration, endocrine and electrolytes disturbances, stroke, medications and alcohol. Hypoactive delirium – characterised by reduced motor activity, lethargy, withdrawal – is under-recognized and its causes should be evaluated and managed accordingly.¹⁶ Fundamentally, the key features of delirium differentiating it from dementia are: decreased attentiveness/awareness, and a fluctuating course in cognition. For example, patients may be mentating appropriately in the morning and behaviorally difficult in the evening. Behavioral and sleep charts are extremely helpful. When

¹ BSc/LLB(Hons), MD. St George Hospital/The Sutherland Hospital/UNSW, Sydney, Australia.

² MBBS. St George Hospital/The Sutherland Hospital/UNSW, Sydney, Australia.

About the Author: Dr Milton Louca is a Clinical Doctor (The University of Sydney, Sydney, Australia) and Conjoint Associate Lecturer (University of New South Wales, Sydney, Australia).

Correspondence:

Milton Louca.

Address: High Street, Kensington, NSW 2052, Australia.

Email: milton.louca@gmail.com

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assessing mentation, it is also an appropriate time to establish capacity for medical decision-making and advanced care directives.

3. Peristaltic Products

In geriatrics, the 'p-words' denoting products of bowels and bladders are crucial. When seeing older patients, students should anticipate incontinence, constipation and urinary tract infections (UTI) (12.7%),² given this population is disproportionately afflicted by these issues. Brief, non-pharmacological strategies a student could suggest on rounds to manage urinary incontinence are: implementing a scheduled toileting program, diarizing fluid balance, physical therapy for pelvic floor exercises, and for constipation: stool diary, bowel training (optimizing the gastrocolic reflex), adequate fibre intake and hydration and regular exercise.¹⁷ Students should be informed of common practices which provide little value to hospitalized patients, like the prescribing of docusate which has significant associated costs – estimated to exceed \$US 100 million – and multiple trials failing to show any benefit or proven clinical effectiveness.¹⁸ For prolonged admissions and prior to discharge, cystitis symptoms – suprapubic discomfort/pain, dysuria, haematuria, malodorous/cloudy urine, increased frequency, hesitancy or intermittency – should be screened for and a urine mid-stream culture requested to treat empirically and appropriately. Such proactivity could prevent re-admission for sepsis, delirium and/or fall precipitated by a UTI.

4. Profound Pain

In aged care, students should attempt to identify and classify pain – for example, acute, sub-acute or chronic and somatic, visceral and neuropathic. Students should recognize that pain is a biopsychosocial phenomenon.¹⁹ Therefore, its experience should be validated and addressed with active and passive approaches. This permits appropriate decision-making. Non-pharmacological interventions – heat and cold packs, quiet spaces, mobilization and exercise – are always first-line. Given its regular prescribing in a hospital setting, simple analgesia should be used at a reduced frequency and duration. For example, paracetamol 1g three-times-daily provides a buffer in older people who are malnourished, underweight (generally <50kg) and likely to have decreased hepatic mass.²⁰ For a 50-kilogram patient, the 1g three-times daily of paracetamol equates to approximately 15 mg/kg every four-to-six hours, or 60mg/kg/day (not exceeding 3g daily). Also, students should be cognizant of non-steroidal anti-inflammatory contraindications found in older patients such as asthma, gastrointestinal ulcers, blood dyscrasias, and renal disease/injury.¹

5. Polypharmacy

Polypharmacy is using five or more medications, including prescription, over-the-counter and complementary medicines.²¹ Iatrogenic presentations and symptoms are common (45–52%).^{2,21} Age affects pharmacodynamics – that is, what the body does to a drug. This occurs through loss of reserves, reduction in

lean body mass, reduction in mobility and interaction with the cytochrome p450 system. Commonly, antidepressants, anticholinergics, antibiotics and diuretics have unintended consequences in older people. Medical students should consider the updated Beers²² and STOPP/START²³ criteria which highlight potentially inappropriate medications in older patients for the purposes of prescribing and deprescribing. In both the hospital and community setting, involving pharmacists is vital.

6. Pressure Injuries

Pressure injuries are localized skin damage resulting from pressure, shear or friction. Typically occurring over bony prominences, these are associated with acute illness, medical devices including prostheses and dressings.² Pressure injuries are frequent, painful, costly and, mostly, preventable. For immobile or post-operative elderly patients, students must consider pressure injury development. The National Pressure Injury Advisory Panel (NPIAP) Staging System classifies pressure injuries into five stages – (1) intact skin with non-blanchable erythema, (2) partial-thickness skin loss involving epidermis/dermis, (3) full-thickness skin loss, but not crossing fascia, (4) full-thickness skin loss crossing fascia and (5) unstageable because eschar/slough obscures extent of tissue damage.²⁴ For prevention, assess for erythema, blanching, temperature, edema, induration and skin-breakdown. Medical students can liaise with nursing staff to utilise regular re-positioning and pressure-relieving devices to avoid pressure injuries.

7. Physiological Deconditioning

In geriatric medicine, acute hospital care has its own perils. Prolonged inpatient care can accelerate patient deterioration; begetting reduced mobility, cachexia and malnutrition. Students should be aware that even ten days of immobilization and bed rest in healthy older adults results in a one kilogram loss of lean muscle mass.^{25,26} Rockwood's definition of 'frailty' encapsulates the interaction of medical and social factors resulting in a decreased capacity to deal with stressors.²⁷ Students should be aware of the 'Hallmarks of Aging' to foster an appreciation of chronic disease progression, multimorbidity, and translate this into a clinical frailty index or scales.^{27,28} As part of management, students should seek to modify the hospital environment by de-emphasizing bed rest with patients, remove high rails and bed heights, and suggest early and active mobilization with physiotherapy and socialization.²⁹

8. Poor Perception

Students must consider age-related perceptual deficits concerning vision (presbyopia, glaucoma, cataracts, macular degeneration), hearing (presbycusis), balance and dentition (dentures, false teeth). Older patients are affected disproportionately (4.6–22.8%) and may have available impairment aids. On rounds, students could screen for deficits in visual acuity utilising a digital Snellen chart, or an Amsler Grid which can detect metamorphopsia in age-related macular degeneration. If there is sufficient clinical suspicion for hearing

loss, a referral for audiometry should be made. If not considered, these impairments create poorer prognosis, delirium, and poor quality-of-life and communication.

Table 1. The Pupil's P's – Summary and Management Strategies/Learnings for Medical Students.

'P'	Management Strategy/Learning
Peculiar Presentations	• Note <i>Issac's I's</i> and <i>Mary's M's</i> – <i>The Geriatric Giants</i> • Gain collateral history • Involve patient's family early
Psychological Perturbations	• Screen cognition and depression – 4AT, MMSE or CAM • Evaluate causes and manage accordingly • Establish decision-making capacity
Peristaltic Products	• Anticipate incontinence, constipation, UTI • Employ non-pharmacological strategies first-line • Be proactive in identifying and treating UTIs
Profound Pain	• Recognise and classify as biopsychosocial phenomenon • Employ non-pharmacological strategies first-line • Dose-adjust simple analgesia on weight or renal function
Polypharmacy	• Assess prescriptions where >5 medications • Consider Beers and/or STOPP/START criteria • Involve inpatient/community pharmacy
Pressure Injuries	• Consider in all unwell, geriatric patients • Stage pressure based on NPIAP system • Suggest regular re-positioning/pressure sore devices
Physiological Deconditioning	• Acknowledge hospital-induced deconditioning • Note patient's Frailty Score • De-emphasize bed-rest & begin early mobilization
Poor Perception	• Inquire for vision, hearing, balance and dentition • Ensure patient aids are available • Screen with Snellen chart, Amsler grid, audiometry
Partner Practitioners	• Early activation of multidisciplinary care • Discuss and observe allied health assessments • Shadow peri-operative Orthogeriatrics admission
Post-Hospital Plan	• Discharge planning begins once medically stable • Learn about discharge destinations early in rotation • Attend family meetings
Palliative Care	• Palliative care prioritises dignity and comfort • Aimed at quality of life and symptomatic relief • Survival period is secondary objective
Parsimony	• Do no more than necessary to patients • Goals of care phases direct management • Treat the patient; not the problem(s)

9. Partner Practitioners

Students must foster collegiality in multidisciplinary care. This benefits diagnosis and management of patients. Medical practitioners – including general practitioners and specialists –

are only one facet of multidisciplinary teams. The role of geriatric medicine remains diagnosis and management to guide and galvanize these professions. For example, physiotherapists have intimate knowledge of surface anatomy and locomotion. Speech pathologists assess swallowing to prevent aspiration, occupational therapists ensure a safe, functional home environment, social workers champion crisis relief or orchestrate legal hearings to appoint surrogate decision-makers, and nurses – specialist and generally-trained – afford comprehensive, patient-centered care. Students could attend, discuss and observe the assessments and documentation conducted by these various allied health specialties to grasp their purview. For example, the peri-operative management of an orthogeriatric patient would necessitate the activation and co-ordination of a multi-disciplinary team. It would provide a fantastic experience for medical students to appreciate the value in an integrated model of healthcare.

10. Post-Hospital Plan

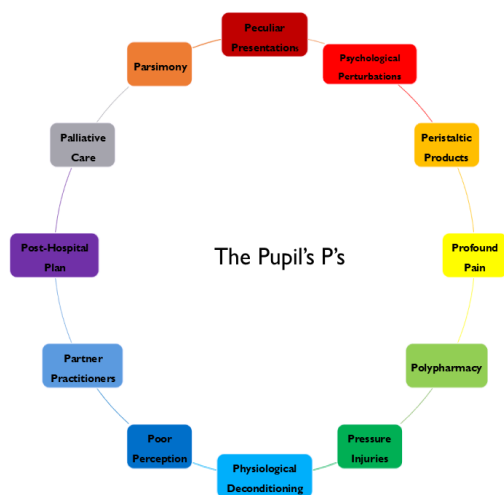
Discharge planning is an interdisciplinary approach to ensure continuity of care. Early and inclusive discharge planning cannot be understated. Thus, medical students should learn about discharge destinations and home care services as soon as practicable on their aged care rotation. A sound comprehension would be highly useful for clinical practice. Often, discharge planning is the rate-limiting-step to transition an older patient from hospital to home. Use of an intermediary rehabilitation facility can bridge those requiring specialist support. Students must understand a person's social factors, finances and decline, and explore carer stress to formulate and effective, long-term management plan. By attending family meetings, students can appreciate the logistical and ethical issues – non-maleficence, beneficence, autonomy and justice – in accomplishing safe, effective patient discharge.

11. Palliative Care

Palliative care represents a specific, all-inclusive process by which to honor a patient's right to dignity and comfort. In some instances, supportive care might be a more appropriate term than palliative care where life expectancy progresses to months. Foremost, students should be aware that advanced care directives must be established. Using collateral history from family and hospital notes, and considering the relevant local law, students should assess the appropriate decision maker in each case. These include the patient, next of kin, friend, non-paid carer and/or neighbor. If appropriate, establishing end-of-life care by involving family and palliative care colleagues is vital. Depending on the circumstances of each case, students should observe these discussions to identify, from the patient's desires, restorative versus supportive goals. For example, in palliative care, the survival period is not the singular determinant of treatment; life prolongation is a secondary objective to quality of life and symptomatic relief. Important questions revolve around the patient's wishes. Ensuring there has been some discourse on the topic of cardiopulmonary resuscitation, intubation and intensive

care helps to determine the desired clinical outcomes. Fundamentally, to deliver holistic care, geriatrics mandates interdisciplinary medical, psychosocial, cultural and spiritual considerations.

Figure 1. The Pupil's P's – a Conceptual Framework and Educational Tool for Comprehensive Geriatric Assessment.



12. Parsimony

Parsimony – that is, doing no more than is necessary – is paramount in caring for elderly patients (Figure 1). Too often, practitioners sustain momentum bias in diagnosis and management. This produces unnecessary medical intervention(s).

Oddly, William of Ockham's Razor – 'plurality must not be posited without necessity' – is the Principle of Parsimony. In geriatrics, students should appreciate Ockham's Razor is antithetical to diagnosis because, as we have emphasized, co-morbidities warrant the generation of multiple differential diagnoses.³⁰ A 'goals of care' clinical framework which entails a three-phase model can classify a patient's care as either curative, palliative, or terminal according to an assessment of likely treatment outcomes for the specific patient. This method allows students to practice avoiding overdiagnosis and overtreatment whilst guaranteeing comprehensive patient-centered care.³¹ In this complex management of older patients, we must always treat the patient before us; not the problem(s) we uncover.

Conclusion

As in life, gerontology is a rite of passage in medical school and healthcare. By experiencing aged care, we have come to appreciate its medical and social sophistication. Despite many attempts, honing this fount of knowledge is near impossible. For the aged care pupils, we have provided an alliterative introduction and tool to manage elderly patients on the ward or in the community. It is our hope that this piece orientates the aged care student and serves as a reference on ward rounds to learn about and manage older people. Using this platform, we encourage students to integrate these principles into clinical practice. Regardless of their chosen specialty, we urge students to reflect on their experiences in geriatrics for their medical careers. To students, we offer *The Pupil's P's* for the comprehensive care of older people – forever treating the patient; not the problem.

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