Welcome to the Department of Geriatrics

The Health Care of Older People attachment is based at one of Waikato, Rotorua, Auckland, Waitemata or Counties Manukau Campuses. You will be notified of your ward allocations on the first day.

Older Persons’ Health

The Older Persons’ Health area comprises Geriatric Assessment, Treatment and Rehabilitation (i-n-Patient) Services, liaison services to other inpatient department and to emergency units, a variety of community based services for older people, and Mental Health Services for the Older Person.

Attitudes

Care of older patients forms a significant component of general hospital/in-patient practice and, with the ageing of the population, the size of this component will increase. It is therefore important that all doctors are confident and competent when dealing with older people.

Poor staff attitudes to older people can adversely influence the standard of treatment and care they receive. It is important that older people are not considered an imposition or inappropriate admissions: in particular, labels such as “social admissions” and “acopia” should never be used. So called social admissions have a high morbidity and mortality, much of which can be avoided by accurate diagnosis and prompt treatment. Similarly inaccurate terms such as “mechanical failure” are meaningless and deter appropriate diagnosis and management.

It is important to understand that illness in older people may present in atypical and non-specific ways. Presentations such as falls, acute confusion, incontinence, failure to cope and taking to bed are the rule rather than the exception. Older people with such presentations need meticulous history, examination and work-up.

The aim of “Rehabilitation” is to restore to full capacity a person whose abilities are impaired by diseases such as stroke, COPD, cardiovascular disease, arthritis, hip fractures or Parkinson’s disease. Older patients may have a combination of physical or psychiatric illness such as depression or dementia and these may be social deprivation and loneliness. Multiple pathologies is a common feature of illness in old age. However, it is important to recognise that many older people live independently in the community without significant health problems. Illness and disability are not an inevitable consequence of growing older.

Working with Older People

Older patients come into the Unit for treatment of illness, advice and assistance about appropriate levels of care. Rehabilitation assists them to function better in their environment.

If people tire easily and may take longer for activities such as bathing, meals, etc. You may be frustrated by not being able to spend time with your patient because he/she is at occupational therapy, physiotherapy, or having an x-ray. If they are having therapy, go with them and find out what is involved. If they are very tired, come back another time. It may be best to examine one physical system at a time and the whole examination may sometimes take several visits. Spend time getting to know your patients, they will appreciate your efforts.

If you are having difficulty getting access to patients, see the Clinical Nurse Coordinator first to ask for a special time.

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Disclaimer

Although every reasonable effort is made to ensure accuracy, the information in this document is provided as a general guide only for students and is subject to alteration. All students enrolling at the University of Auckland must consult its official document, the current Calendar of the University of Auckland to ensure that they are aware of and comply with all regulations, requirements and policies.

We advise that the University of Auckland is not involved in the employment of completing health professional students and can make no guarantees of employment registration or employment in New Zealand or any other country.

For an updated version please refer to the Department of Medicine on: www.fhs.auckland.ac.nz/germ
Aims:
- Continue to consolidate your skills in history taking,
- examination, problem orientation and management.
- See common problems in geriatric medicine, e.g. stroke, Falls,
- confusion, incontinence, chronic illness and altered presentation.
- Begin to work with the rehabilitation team.
- See the range of domiciliary and institutional services outside the public hospital.
- Gain confidence with, and respect for, older people, i.e. coping with drowsiness, loss of memory, feelings about ageing dying, etc.
- Ensure the University educational learning objectives (detailed on page 7) are completed.

Requirements:
In contrast to most medical runs, there is no miniCEX in geriatrics. During the four week attachment each student will be attached to one ward in the Geriatrics (AT & R) Unit and is expected to complete the following:

A. Rehabilitation Case
General: In general students are required to write up case histories in a very detailed manner (as per the year ‘hand book’) when they are handed to the student to either the registrar or Consultant (admission) into the notes at least once per week.
Thus, as part of the ward assessment, we would expect you to complete a summary at the beginning of the run.

B. Student seminars
For some topics students will lead a seminar, for other topics seminars will be led by Consultants or other Health Professionals.

Problem List
1. List the patient’s problems and diagnoses, with the most serious at the top.
   - Please include dates, as appropriate.
   - A sentence or two may be required to briefly elaborate on the problem.
2. Fill out a MoCA (Montreal Cognitive Assessment) or other cognitive screening instrument and Activities of Daily Living Form (see later in handbook).
3. Comment on what each therapist has contributed to the management of your patient in detail, i.e. Physiotherapy, Occupational Therapy, Speech Therapy, nursing and social work and where appropriate the dietician, cultural support worker and pharmacist contributions.
4. Briefly describe your patient’s social situation, and then take all the foregoing information into account, briefly state your opinion of their prognosis, giving your reasons. This is complex and (often) difficult and you may need to discuss this with the registrar or consultant before committing your thoughts to paper.
5. Explain briefly on how the terms (1) impairment, (2) activity limitation (disability) and (3) participation restriction (handicap) are relevant to your case.

The length of the report will somewhat depend on the complexity of the individual case, but in general should be between 1500 and 2000 words.

B. Student seminars
For some topics students will lead a seminar, for other topics seminars will be led by Consultants or other Health Professionals.

Aims:
- Ensure the principles of management for frailty
- Dementia
- Osteoporosis
- Stroke
- Elder Abuse
- Nutrition
- Pharmacology

Pharmacology
- The presentation should provide the basis for a group discussion, which all students and the Consultants can contribute. Don’t panic! All medical staff need to be reminded about important topics; the issues that arise from patients in the ward are obviously of great relevance to us all. The aim is to provoke discussion, which will help us all learn, rather than test your academic ability. Please check for the topics and the times on your timetable.

Student Seminar Learning Objectives

Ethics
By the end of the seminar, with emphasis on the understanding of patient autonomy, students will be able to:
1. Describe the main issues encompassing adherence to ethical practice principles, and in particular to patient autonomy
2. Describe how to assess a person’s capacity to make decisions
3. Demonstrate understanding of components of the Protection of Personal and Property Rights (PPR) Act (POPA, Personal Orders, Welfare Guardian, Property Manager)
4. Be able to describe what advance directives, advance care plans and DNR orders are
5. Demonstrate understanding of the Health and Disability Commissioner (HDC) Code of Rights, in particular use of right 7.4

Dementia
By the end of the seminar students will be able to:
1. Discuss the differential diagnosis of cognitive impairment
2. Discuss how to make a diagnosis of dementia
3. Name the five common types
4. Outline key aspects of dementia management
5. Describe evidence based falls prevention and management strategies

Faecal Incontinence
By the end of the seminar students will be able to:
1. Name five causes of faecal incontinence
2. Outline some of the consequences of this problem
3. Describe how to assess a patient with faecal incontinence
4. Discuss management for five causes of this problem
5. Describe the principles of management including appropriate referral pathways

C. Clerking a new patient directly into hospital notes
In your clinical years it is vital that you get as much practice as possible in taking histories, performing clinical examinations, and in presenting histories and examination findings to your (usually senior) colleagues. There are essential skills in medical practice, and lack of adequate ability in these areas (in turn usually due to inadequate practice) is not sufficiently a cause of students having problems with end-of-year assessments (e.g. OSCEs).
Thus, as part of the ward assessment, we expect you to complete at least one per week (full history and examination) and present that patient to either the registrar or Consultant on a ward round

Faecal Incontinence
By the end of the seminar students will be able to:
1. List ten common causes of urinary incontinence
2. Describe how to assess a patient with urinary incontinence
3. Name the four types of chronic urinary incontinence
4. Outline management for each of these four types

Osteoporosis
By the end of the seminar students will be able to:
1. Describe the prevalence of elder abuse in New Zealand
2. Describe five forms of elder abuse
3. Describe the risk factors for elder abuse
4. Describe the principles of safe assessment for elder abuse
5. Describe the principles of management including appropriate referral pathways

Elder Abuse
By the end of the seminar students will be able to:
1. Describe the prevalence of elder abuse in New Zealand
2. Describe five forms of elder abuse
3. Describe the risk factors for elder abuse
4. Describe the principles of safe assessment for elder abuse
5. Describe the principles of management including appropriate referral pathways

Pharmacology
By the end of the seminar students will be able to:
1. Describe the two definitions of polypharmacy
2. Describe the factors affecting medication compliance in older adults

Osteoporosis
By the end of the seminar students will be able to:
1. Describe the definition and risk factors associated with osteoporosis
2. Describe when to consider osteoporosis in a patient a) living in the community and b) in the hospital
3. Discuss how to manage osteoporosis and what factors need to be considered when initiating and monitoring therapy

Elder Abuse
By the end of the seminar students will be able to:
1. Discuss the differential diagnosis of cognitive impairment
2. Discuss how to make a diagnosis of dementia
3. Name the five common types
4. Outline key aspects of dementia management

D. Attendance for teaching and assessment sessions
Teaching sessions by Consultants, Registrars and other Department staff as shown on the timetable given. There will be no mini-CEX examinations in the 4th Year geriatrics attachment in 2015.

E. Attendance of other sessions
Attend X-ray conference and Ward Conference or ‘Clinic’ where appropriate, and if necessary, give a brief summary of your patient

F. Home visit
Visiting older people in their own homes is an important part of our service. Home visits are done by Social Workers, Occupational Therapists, Physiotherapists, Community Gerontology Nurse Specialists, Registrars and Consultants.
Visiting an older person in their home is a privilege. It allows an unshod assessment and an opportunity to assess the environment and to talk to relatives and carers. Home visits are particularly useful for people who have cognitive impairment, are subsequent or who are frightened by the unfamiliar environment of a hospital.
You will be expected to participate in at least one home visit. Completion of a home visit represents part of the requirements for this run. Please organize this at the beginning of the run.

G. Allied health experience
In addition to the Home Visit above, attend therapy sessions (e.g. OT, PT, Speech) occupational sessions with your patient.
Recommended text books

General Medicine

Clinical Examination - a systematic guide to physical examination. Talley, N.Z. & GConnor, S.

Medicine

Geriatric Medicine


Being Mortal: Medicine and What Matters in the End
Gawande, A. (2014)

Reference Books


Psychiatry of Old Age:


General reading and novels


Students are encouraged to make their own suggestions for the reading list.

Medical student teaching
Each of the wards has four or five Year Four Medical Students allocated to it for the four week attachment. Each student is expected to see as many patients as possible during this time.

The students are expected to complete one long case during the attachment. They are also expected to complete one Multidisciplinary discussion.

By the conclusion of the run it is hoped that all students will be conversant with history taking and examination of all systems. Planning their cases (to be checked directly into the patient notes under registrar/HO supervision - see page 15) and long case study (to be handed into the supervising consultant by the end of the attachment) should allow this to be achieved.

The responsibilities of the Registrar are:
1. To brief the students so that they feel welcome on the ward
2. To guide the students to patients with interesting symptoms and signs
3. To provide two bedside tutorials of 60 minutes per attachment – each ward has its own time slot for this, one of which is per students from two wards
4. To help them fulfil involved with routine ward activities, students should assist with ward admissions if time is available
5. To notify the co-ordinator for your unit and/or Professor Connolly (martin.connolly@waitematadhb.govt.nz) of any student who may be experiencing difficulties in their clinical work or poor attendance

We know from experience that the Registrar can greatly enhance the students’ ward experience. Remember the House Officer and Trainee Intern are at the bedside of the patient and the Registrar is involved in the management of the patient. Early in the year students occasionally say “We aren’t sure what we are meant to do on the wards.”

The answer is “To see as many patients as possible and to participate fully in ward activities, without disrupting ward routine or patient care”.

The Registrar/HO is the person who should give guidance as to how this can be achieved.

Geriatrics
By the end of the clinical attachment students should be able to:

Domain: Applied Science for Medicine
1. Apply key basic science principles to the evaluation of patients presenting with common conditions in older people.

Domain: Clinical and Communication Skills
2. Evaluate older patients presenting with a range of common conditions and problems.
   - Elicit from patients with multiple medical problems a logical and comprehensive history
   - Assess the environmental and social issues that contribute to the medical issues
   - Undertake a detailed multisystem examination with special emphasis on the cognitive, locomotor and neurological components
   - Demonstrate respect for and confidence with older people and problems they may face

3. Formulate logical problem lists for a range of older patients.
   - Develop a differential diagnosis list that encompasses the multiple medical issues of a patient
   - Determine the most likely working diagnosis
   - Evaluate and select tests that will confirm or alter the working diagnosis
   - Interpret simple laboratory and radiology tests

4. Prepare basic management plans that include medical, rehabilitation and social issues.
   - Apply best available evidence to solve clinical problems
   - Identify issues of multiple medications
   - Identify issues specific to Māori patients
   - Identify and discuss areas of controversy in patient management

5. Explain the multidisciplinary team approach that is used in medical and rehabilitation for the older patient.
   - Summarise the range, together with their respective roles, of domiciliary and institutional services outside the public hospital
   - Explain how and when these services need to be incorporated into a management plan for the elderly patient
   - Outline the needs assessment process used with older patients

Domain: Personal and Professional Skills
6.  Develop respect for patient autonomy and rights of the older patient, by acquisition/clarification of knowledge of legal and ethical aspects of care pertaining to older people
   - Identify the strengths and areas for improvement in both your communication and clinical skills when dealing with Māori patients

Domain: Hauora Māori
7.  Engage in a culturally safe manner with Māori patients, whānau and communities
   - Reflect on own practice and systemic factors in relation to ethnic inequalities
   - Identify strategies to overcome barriers with a view to improving Māori health outcomes, particularly for older Māori

Domain: Population Health
8.  Suggest evidence based public health approaches that would reduce the burden of medical diseases in older people
   - Outline the medical conditions that significantly contribute to morbidity in the New Zealand context
   - Identify the patients’ experienced episodes of care in the wider context of the community and the health system

By the end of the clinical attachment students should be able to:

Older people are diverse yet some have a reduced ability to cope with environmental challenges. This results in a unique set of presentations that can easily be dismissed but which are often remediable. Most of their problems can be help. During this run we would like to give confidence and skills in interviewing and examining older patients. We would like you to learn about common medical problems in older people and how these interact with their environment and social circumstances. You will have an opportunity to see how multiple problems can interact and how difficulties arising from chronic illness can be treated using a multidisciplinary approach.

Above all we would like you to be self motivated and to enjoy the attachment.
Helpful hints to achieve learning objectives

Criteria for pass and potential distinction

Master a neurological examination
Learning experiences: bedside teaching, tutorial on eliciting primitive reflexes, time-tabled opportunities to practise with real patients.

Obtain, collate and document a complete history and examination of an older person
Learning experiences: Feedback from Ward Registrars/Consultants.
Assessment: This includes the patient’s concerns, their significant medical problems, the opinions of others, significant ethical issues, the role of a member of the Multi-Disciplinary Team and documentation of a plan of treatment/care.

See patients in a variety of settings; identify some key learning issues
Learning experiences: Home Visit, accompany Ward staff in routine activities, Geriatrics tutorials/unit teaching/grand round, outpatient clinics.

Master the features of the basic assessment and basic management of an older person with delirium or dementia
Learning experiences: Home Visit, accompany Ward staff in routine activities, outpatient clinics, family meeting(s), Geriatrics tutorials/unit teaching /grand round.
Assessment: Often part of the written case study. Ward assessment by supervising consultant. It is likely that two students will be presenting a seminar on ‘delirium’ and on ‘dementia’

Display appropriate attitudes to older people and colleagues
Learning experiences: Feedback as needed.
Assessment: Collated opinions of staff.

To help you achieve these objectives, you will have the opportunity to participate in or observe the following:
- Ward team meetings
- Family meetings (where appropriate)
- Ward team meetings
- Ward rounds and outpatient clinics
- Family meetings (where appropriate)
- Ward team meetings

You are advised to discuss your assessment with your supervising consultant towards the end of the run.

To pass the run
To pass the run, you must pass all three assessments: ward assessment (including a home visit – see below), case history and seminar presentation.

If you receive a “borderline pass” for one or more assessments you will be awarded a “borderline pass” for the attachment overall. This means that you have passed the attachment as long as similar problems haven’t occurred, or don’t occur, in other attachments this year.

If you receive a “fail” in one or more assessments you may fail the attachment outright.

To achieve potential distinction
It is possible to achieve at “Distinction” level in this run. This decision is made at the end of each run after the results of all work are available and the opinions of all relevant tutors considered.

Distinction is considered for students who have passed all objectives and who have achieved at a distinction level in at least two of the three areas of the assessment, one of which must be the CBT form.

Geriatrics Prize
As of 2016 there will be an annual Geriatrics Prize of $500. The short list for the prize will be generated from nominations from each DHB (two nominations per year for the larger DHBs, and one nomination per year for the smaller DHBs). There will be no additional requirements for students on the short list. The Head of Department of Medicine and the Professor of Geriatric Medicine will judge the prize and will forward their recommendation to the Board of Examiners for a final decision.

Plagiarism
The University of Auckland will not tolerate cheating, or assisting others to cheat, and views cheating in coursework as a serious academic offence.

The work that a student submits for grading must be the student’s own work, reflecting his or her learning. Where work from other sources is used, it must be properly acknowledged and referenced. This requirement applies to work on the world-wide web. A student’s assessed work may be reviewed against electronic source material using computerised detection mechanisms. Upon reasonable request, students may be required to provide an electronic version of their work for computerised testing.

Resources

Look at the seven specific Geriatric Medicine scenarios that are found on the MBChB portal. The following pages contain case histories that are linked into the MBChB portal as noted beside each case history and at the bottom of each page. All these scenarios and case histories will enhance your learning and can be used in seminars and ward discussions with your team.

Drugs – Case history one
ED12
An 84 year old man is admitted to the Assessment, Treatment & Rehabilitation Unit with dizziness for 4 months and increasing difficulty walking for the last 2 months. He has been living alone and is finding it increasingly difficult to look after himself. He has had several falls in the last 3 weeks and his back has been painful after the last fall. He had been on no medication until hypertension was diagnosed 6 months ago.

Medication on Admission: Aspirin 100mg daily Naproxen SR 75 0.5mg mane Aspirin 115mg mane

On examination
He is 84 years old. He appears very polite, drowsy. Pulse is 96/min and regular. BP 90/65 lying and 80/50 standing. He has a raised JVP, ankle oedema and cramps at both lung bases. There is evidence of osteoarthritus in both knees.

On investigation
Serum creatinine raised to twice the upper limit of normal.

Question 1
What are the possible causes of her admission to hospital?

Question 2
How might her medications have contributed to these problems?

Drugs – Case history two
CVS06
An 81 year old woman is admitted to hospital with a dense right hemiplegia, dysphasia and a reduced level of consciousness. This has occurred suddenly 3 hours before. The cardiac rhythm on ECG is atrial fibrillation. Other than a recent chest infection she has been in good health.

Medications
Warfarin according to INR
Roxithromycin 150mg BD for 3 more days [total of 7 days]

Question 1
What are the possible causes or precipitating factors of this woman’s presentation?

Question 2
What investigations would help clarify the cause?

Drugs – Case history three
CVS03, CVS06, GU07
An 86 year old woman is admitted to an acute medical ward with fainting episodes. She also has shortness of breadth and chest pain on exertion, and orthopnoea requiring 4 pillows. She has bilateral painful knees. There is a past history of stable angina.

Medication on admission: Atenolol 100mg daily Naproxen SR 75 0.5mg mane Aspirin 115mg mane

On examination
She appears rather drowsy. Pulse is 45/min and regular. BP 90/50 lying and 80/50 standing. She has a raised JVP, ankle oedema and cramps at both lung bases. There is evidence of osteoarthritus in both knees.

On investigation
Serum creatinine raised to twice the upper limit of normal.

Question 1
What are the possible causes of her admission to hospital?

Question 2
How might her medications have contributed to these problems?

Drugs – Case history four
CVS03, CVS04
An 80 year-old man attends his GP for follow up as requested after a recent hospital admission with congestive heart failure (underlying cause thought to be ischaemic heart disease and hypertension). He brings in his yellow medication card which states his discharge medications as: Furosemide 110mg mane Enalapril 10mg mane Spironolactone 25mg mane Losartan 50mg mane Isonoridine mononaprate 60mg mane Aspirin EC 100mg mane

Question 1
What questions should the GP ask at this stage?

Question 2
What are the important things to examine?

Question 3
What should the GP and the patient be monitoring now and in the future with this condition and this combination of drugs?
Falls

Falls – Case history one CB01, ED12
An 80 year old woman is seen at the Outpatient Clinic for further assessment of her falls. They have been occurring for at least a year. She seems to go down without warning but doesn’t lose consciousness. Usually she is just walking along the street and her legs seem to give way. Once she is down she cannot seem to get up, although if someone helps her up she seems to be OK after standing for a short while. She has a past history of depression and her medications include nortriptyline 50 mg nocte and diazepam 5 mg nocte.
On examination there is evidence of osteoarthritis of both knees.

Question 1
What are the possible causes and contributing factors to her falls?

Question 2
What would be your approach to management of her problems?

Falls – Case history two ED12, CV006
An 82 year old man is seen at the Outpatient Clinic for further evaluation of falls which have been occurring approximately once a week for 3 months. They occur without warning and do not seem to be brought on by anything in particular. He thinks he must lose consciousness as he tends to come to on the floor not knowing what happened. He cut his head last time and had to have it sutured by his GP – this led to the present referral. He has been on no medication.

Question 1
What are the possible causes of these episodes?

Question 2
What further information do you need to try to elucidate the cause and how might you gather it?

Question 3
How would you investigate this problem?

Falls – Case history four ED12, Endo11
A 93 year old woman is referred to Older Persons’ Health for a home assessment. You are triaging the GP’s referral for degree of urgency with which the home visit should take place.
The referral states she is has been having frequent falls over the last five days. She lives with her husband who has difficulty helping her up when she falls. Her previous medical history includes diabetes mellitus with autonomic neuropathy and recurrent urinary tract infections. She has recently been started on a small dose of furosamide for swollen ankles.

Question 1
From the information you have so far, what are the possible causes and contributing factors to her falls?

Question 2
Should this referral be considered urgent enough to visit within 24 hours?

Question 3
What do you consider the most important things to further evaluate when she is seen at home?

Incontinence

Incontinence – Case history one Repro3, NO7
A 79 year old woman living alone presents to the Continence Clinic with urinary incontinence of 3 months duration. It always seems to occur when she is trying to get to the toilet, but her bladder doesn’t seem to give her enough warning to allow her to get there in time. She also thinks she has to pass urine more often than is normal – about every hour during the day and at least 3 times at night. She had a stroke about 10 months ago and the frequency seems to date from that time. She also has osteoarthritis of the hips. She has been having more pain and difficulty walking from this recently.

Question 1
What are the likely cause(s) of the incontinence?

Question 2
What investigations would you consider appropriate?

Question 3
How might you manage her problem?

Incontinence – Case history two GU04, NO9
An 85 year old man comes to live in a rest home. He has Parkinson’s disease and is no longer able to manage in his own home. He can transfer from bed to chair and walk with one assistant. He has had urinary incontinence for several months and before that had difficulty starting to pass urine and rather poor stream for some years. He seems to have no idea of when he is passing urine and at times seems to be constantly dribbling urine. He has recently commenced medication for depression (citalopram).

Question 1
What are the likely cause(s) of the incontinence?

Question 2
What will you check on examination?

Question 3
What suggestions do you have for management of the incontinence?
**Parkinson’s – Case history one**

A 70 year old man has noticed he is physically slowing down. His balance isn't as good as it was – in particular there seems to be a tendency to fall forward when walking. At times it is as if his feet are stuck to the floor. In addition there is a shake in his right hand, although this doesn’t seem to interfere with the function in this hand.

**Question 1**
What 3 of the 4 main features of Parkinsonism are demonstrated here?

**Question 2**
What are other recognised features of Parkinson’s disease that you might ask about or look for?

**Question 3**
If this is Parkinson’s disease, what are appropriate management options to consider for this man at this stage?

**Parkinson’s – Case history two**

A 75 year old woman has a problematic tremor in her right hand that she considers for this man at this stage?

**Question 2**
What is the differential diagnosis?

**Question 3**
What are the management options for the most likely causes?

**Parkinson’s – Case history three**

A 75 year old woman has had Parkinson’s disease for 10 years. She presents with decreased mobility, falls and ‘grimacing and fidgeting’. This is an inability to keep the limbs and head still which only occurs from time to time and is worst about half an hour after taking Sinemet. It is definitely different to her tremor and is noticed more by her husband than the patient herself. However, at these times her mobility is at its best. Later on, when her next tablet is due, she is very stiff and slowed up and it is at these times she is most at risk of falling.

She also has difficulty rolling over in bed at night and her husband has to help her out of bed 2-3 times a night when she gets up to pass urine.

**Medications**

Sinemet (levodopa/carbidopa) 15/150 i QID Benadroxazide 3.5mg mane

**Question 1**
What is the ‘fidgeting and grimacing’ and what is it due to?

**Question 2**
Mow might you alter the medication to minimise this but improve the Parkinsonian features [there are a number of options]?

**Question 3**
Mow might you alter her medication to specifically help her nighttime problems?

**Parkinson’s – Case history four**

A 78 year old man had Parkinson’s disease for 8 years. He complains of becoming increasingly forgetful. His wife confirms this but also reports that he seems to be especially muddled at times and much cleaner thinking at other times.

**Medications**

Madopar (levodopa/benserazide) 155mg 5 times daily

Benzton (Benzotropine) 2mg BD Bromocriptine 5 mg TDS

**Question 1**
What is the differential diagnosis?

**Question 2**
What are the management options for the most likely causes?

**Ethics – Case history one**

An 83 year old man is found to have cancer of the rectum. He has had probable Alzheimer type dementia for three years. He had moderate memory impairment with an MMSE 15/30, occasional urinary and faecal incontinence, he constantly asks repetitive questions of his wife, restlessness, and needs guidance and supervision in most activities of daily living. He is very mobile (occasionally gets lost in town). The doctor feels that the cancer has not metastasised and that it may be curable. A colostomy would, however, be required. The doctor wishes to operate.

**Question 1**
What should you do?

**Question 2**
What factors do you take into account in making your decision?

**Ethics – Case history two**

An 86 year old retired school teacher has been referred to the Unit by a Public Health Nurse. The patient is a recluse who lives in a 110 year old ramshackle villa. She is unkempt and the house is in gross disrepair. There are holes in the floor, two heaters with frayed electrical cords, most windows are broken and there is an outside toilet.

Every room shows considerable amounts of hoarded belongings including newspapers dating back 10 years, old furniture, rusting implements and rotting food in the refrigerator. She is most at risk of falling.

**Ethics – Case history three**

Mrs S has been in a Health Care of the Elderly ward for 3 weeks being “assessed” by all the disciplines. The conclusion by the doctors is that she has moderately advanced Alzheimer’s disease with significant loss of short term memory, impairment of judgment and lack of insight. Medical investigation has not suggested any other cause for her problems and she is otherwise a fit woman of 83 years. The nurses note she needs prompting to remember to do normal activities such as dressing and toiling. She will also put her clothes on in an unusual order if left to her own devices. She has a tendency to wander aimlessly during the day and has on two occasions had to be returned to the ward from the hospital grounds. The Occupational Therapist adds that she needs assistance to shower and did not cope at all well in the kitchen, even with making a cup of tea. She was endangering herself when attempting to use the stove.

Mrs S is adamant she is returning home to live. She cannot see any potential problems with this and will not contemplate a rest home which she sees as a ‘living death’. If any help is required she believes her daughter (long suffering, very worried about her mother and unable to say to her that she cannot help) will provide it.

The OT is adamant she is not safe to return home and should be “persuaded” to go to a rest home by whatever means are available (even legal). The nurses tend to agree about the potential lack of safety but feel her autonomous wishes should be respected.

**Question 1**
Do you agree?

**Question 2**
What are the ethical issues?

**Question 3**
What practical steps would you take towards sorting out the dilemma?

**Ethics – Case history four**

Mrs F – aged 75

She was admitted to hospital in January with increasing angina for six months and postural hypotension such that she was unable to cope at home. Last September, she was admitted with angina and syncope found to be due to intermittent bradycardia. A permanent pacemaker was implanted and she was discharged on anti-anginal medication. Two months later, she presented with symptoms of left ventricular failure requiring diuretic therapy.

On the present admission, she was experiencing 10-12 episodes of angina with minimal exertion and at rest, despite maximal anti-anginal therapy. However, this treatment produced symptomatic postural hypotension. Attempts to reduce the medication resulted in aggravation of her ischaemic symptoms. She had a past history of recurrent vertigo, thought to be due to vertibular-basilar insufficiency as she had been restricted by mild truncal ataxia prior to her current problems.

Her coronary anatomy does not favour stenting.

**Question 1**
Should Mrs F be offered coronary artery bypass surgery to control her symptoms given that the risk of this procedure is likely to be high and there are limitations on health resources?
Returning to Mr Smith, his decision is to return home and not comply with attempting the summit of Mt Everest? malnutrition during the expedition. You also are concerned about the possibility of expedition to climb Mt Everest using equipment from the mid 1950s. You tells you that when he leaves hospital tomorrow he plans to join an slightly confused when very unwell but is now back to normal cognitively. He was warned on the ward and his delirium dramatically resolves over 10 days. During this time you learn from his GP and his estranged son who lives in Australia that Mr Smith is extremely rich but does not like spending money. He has tons of thousands of dollars in bonus bonds and a large bank account. He does not heat his home because of fear of spending money. This has been a life long trait. He does not trust doctors ever since the death of another son at the age of 25 years ago. He therefore does not comply with his diuretics and ACE inhibitors that his GP prescribes. He tends to live on bread and jam and beans on toast again because of a dislike of spending money. He has suffered multiple falls in the last six months and his GP feels that these are due to poor lighting and loose carpets in his home. An occupational therapy assessment confirms that he is safe to mobilise on the wards but a home assessment confirms environmental dangers and overall agrees that he is at risk of further falls. His MMSE conducted 11 days after admission is 29/30. He tells you that he thought it was 27th February in accordance with routine ward policy she is asked her wishes about another fall. Her MMSE on admission is 29/30 (she thought it was 27th February when in fact it was 27th). For some occasions further specialist advice, for example from speech and language therapists, may be required. Preference does not have to be ‘complete and absolute’ and does not have to be global. Just because a person has cognitive impairment or a psychiatric illness does not automatically mean that they are incompetent. In an emergency a physician can treat a patient without gaining formal consent. In all other circumstances consent must be gained but this is very rarely asked. He tells you that he needs to have some reassurance and information exchange between doctors and patient.

Scenario three
An 88 year old woman with a past history of fractured neck of femur (two previously, pneumococcal meningitis (in 82.3 therapy) and controlled hypertension (on an ACE inhibitor) is admitted to an acute medical ward following a fall at her next. She suffered only minor bruising but was unable to summon help in the night and had spent 2-3 hours lying on the floor. Her MMSE on admission was 20/30 (she thought it was 27th February) where in fact it was 27th. For some occasions further specialist advice, for example from speech and language therapists, may be required. Preference does not have to be ‘complete and absolute’ and does not have to be global. Just because a person has cognitive impairment or a psychiatric illness does not automatically mean that they are incompetent. In an emergency a physician can treat a patient without gaining formal consent. In all other circumstances consent must be gained but this is very rarely asked. He tells you that he needs to have some reassurance and information exchange between doctors and patient.

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Stroke: an overview of management

Epidemiology
Stroke is one of the commonest causes of disability in the western world. The incidence of stroke in New Zealand is 1.3 / 1000 persons and increases dramatically with increasing age. Approximately 75% of all strokes occur in the over 65s and 50% in the 75+ age group. The age adjusted incidence of stroke is remaining static in NZ, but with the aging population, the absolute numbers of strokes is expected to increase.

Clinical presentation
Each stroke is different. The effect on an individual depends on their co-morbidity, type of stroke, age, social supports and their pre-existing personality and beliefs.

"Stroke is NOT just a motor illness"
Whilst many present with a classic hemiplegia, or lesser degree of motor weakness, this is not always the case. Indeed the person’s disability (activity limitation), and Handicap (participation restriction), may be more related to their other stroke related deficits, such as hemianopia, visuospatial problems or dysphasia, rather than their motor weakness.
A person with a stroke may present with one or several of the following symptoms / signs - hemiplegia, hemiparesis, hemisensory disturbance, epilepsy, dysphasia (or pneumonia secondary to this), language difficulties, falls, acute confusion, loss of consciousness (uncommon without other focal findings) or difficulty walking.

Definition of Stroke and TIA
The WHO definition of stroke has three key components:
1. Acute onset and focal findings
2. Loss of consciousness (uncommon without other focal findings)
3. The above are consistent with a single vascular territory insult.

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Risk factors for Stroke
These include:
- Increasing age
- Male sex
- Atrial fibrillation (if increasing importance with increasing age)
- Smoking
- Hypertension
- Ischaemic heart disease
- Family history of stroke
- Peripheral vascular disease
- Diabetes mellitus
- Carotid stenosis
- Rheumatic vascular disease
- Obstructive sleep apnoea

The most important treatable risk factors, from a public health perspective, include hypertension, atrial fibrillation and smoking. Carotid stenosis, hyperlipidaemia, oestrogen use and valvular disease may also be important and treatable at an individual level.

Stroke care can be arbitrarily divided into three phases:
1. Acute
2. Rehabilitation
3. Adaptation and adjustment

There is considerable overlap between these phases and in reality, rehabilitation and adaptation/adjustment phases begin on day one. Moreover for teaching purposes, it is useful to artificially separate the phases.

1. Acute Phase
The aims of this phase include at least:
- Accurate diagnosis
- Accurate treatment to reverse (and/or limit) the neurological damage
- Prevention of complications
- Nursing care for dependent patients
- Begin rehabilitation, including provision of information about stroke to patients and their family.

(a) Accurate Diagnosis
A full history and examination is essential for detecting all the stroke related deficits and co-morbid conditions. From the bedside clinical examination, it is usually possible to classify the type of stroke into one of 4 categories (Bamford et al) as in Table 1.

Investigations
Part of the diagnostic workup includes some limited investigations:
1. History (acute onset)
2. Clinical examination (neurological deficits consistent with a vascular territory)
3. Full blood count, ESR.
4. Blood glucose (immediately on arrival to hospital, NOT the following day)
5. Electrolytes and renal function
6. CT or MRI of brain, sometimes required if have a coagulopathy or result is reported to be negative
7. Cardiac investigations
8. Other tests including syphilis serology, antiphospholipid antibodies and coagulation tests may be appropriate, depending on circumstances.

(b) Acute treatment
Acute stroke treatments aim to:
1. Reverse the underlying pathological process and/or
2. For ischaemic strokes, limiting the brain dysfunction by salvaging neurones in the ischaemic “penumbra” zone.

Proven strategies include the following:
- Aspirin: To reduce progression or reverse the arterial occlusion.
- Thrombolytic agents (Tissue plasminogen activator- tPA) To lyse the intra-arterial thrombus and restore cerebral blood flow.

Specific MRI sequences may detect the presence of old bleeding (T2*) brain injury from stroke, but are generally not as readily available. Specific MRI sequences may detect the presence of old bleeding (T2*) brain injury from stroke, but are generally not as readily available.

(c) Complications
Complications (both neurological, and as a result of immobility) need to be anticipated and prevented. This task begins during the acute phase, and continues into rehabilitation and adaptation phases. Some of the complications include:
- Immobility and disconitioning
- Depression (may be aspiration pneumonitis)
- Incontinence

Other tests including syphilis serology, antiphospholipid antibodies and coagulation tests may be appropriate, depending on circumstances.

Table 1: Types of stroke

<table>
<thead>
<tr>
<th>Type</th>
<th>Type in full</th>
<th>Definition</th>
<th>Mortality at 6 months</th>
<th>Functional outcome</th>
<th>Risk of recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>TACI</td>
<td>Total Anterior Circulation Infarct</td>
<td>Hemiparesis (2/3 of face, arm and leg), hemihypesthesia and 1 or 2 other cortical signs</td>
<td>High, 90%</td>
<td>Poor, 15% independent</td>
<td>Lower</td>
</tr>
<tr>
<td>INDO</td>
<td>Partial Anterior Circulation Infarnt and/or lacunar infarct</td>
<td>In between TACI and LACI</td>
<td>1.0%</td>
<td>55% independent</td>
<td>High early</td>
</tr>
<tr>
<td>LACI</td>
<td>Lacunar Infarct</td>
<td>Pure motor, pure sensory, or sensory-motor stroke</td>
<td>7.0%</td>
<td>65% independent</td>
<td>Constant over time</td>
</tr>
<tr>
<td>PSDI</td>
<td>Posterior Circulation Infarct</td>
<td>Brainstem and/or occipital signs</td>
<td>1.4%</td>
<td>65% independent</td>
<td>High and continuously</td>
</tr>
</tbody>
</table>

These categories are helpful for both prognosis and for determining risk of recurrence.

At the bedside, it is not possible to differentiate between cerebral infarction and haemorrhage (80-85% of all strokes are infarcts, 10-15% primary intracerebral haemorrhage, and 5% subarachnoid haemorrhage) – urgent imaging of the brain is required. Standard care would be CT Head within 4 hours as a minimum. CT Head is a mandatory prerequisite for thrombolysis therapy.

Other tests including syphilis serology, antiphospholipid antibodies and coagulation tests may be appropriate, depending on circumstances.
Prognosis for functional recovery (note this may differ from prognosis for mortality) is dependent on the initial severity of the stroke. Some predictive factors in stroke recovery include:

<table>
<thead>
<tr>
<th>Good outcomes</th>
<th>Poor outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lives with partner</td>
<td>Increasing age</td>
</tr>
<tr>
<td>Previously independent</td>
<td>Duration of unconsciousness</td>
</tr>
<tr>
<td>Frequent social contacts</td>
<td>Confusion persisting at two weeks</td>
</tr>
<tr>
<td>Absence of visual field loss at 2 weeks</td>
<td>Congruate gait deviation at 2 weeks</td>
</tr>
<tr>
<td>Normal speech at two weeks</td>
<td>Urinary incontinence at two weeks</td>
</tr>
<tr>
<td>Positive mood at two weeks</td>
<td>Sensory neglect at two weeks</td>
</tr>
<tr>
<td>No perceptual difficulties at two weeks</td>
<td></td>
</tr>
<tr>
<td>Able to perform personal and domestic activities at two weeks</td>
<td></td>
</tr>
<tr>
<td>Presence of isolated limb movements at two weeks</td>
<td></td>
</tr>
<tr>
<td>Normal pressure sensor at two weeks</td>
<td></td>
</tr>
</tbody>
</table>

**WHO Classification of Functioning (previous impairment, disability and handicap) – definitions**

- Impairment refers to the damage or dysfunction of an organ or part of the body e.g. hemiparesis or cognitive heart failure.
- Activity limitation (previously termed disability) refers to the way an impairment (e.g. hemiplegia) affects the function of an individual (difficulty walking is one disability caused by hemiplegia).
- Participation restriction (previously termed Handicap) – refers to the way in which the combinations of impairments and disabilities interfere or impede an individual from carrying on their normal lifestyle (e.g. hemiplegia causes less additional handicap to an already bed bound person with severe arthritis than a previously fit tramper).

The arm of stroke rehabilitation is to get the person back to his/her original level of functioning (or better) if it is not possible, it is to minimise their disabilities. This is done using a multi-approached approach which aims to (1) minimise their impairments (e.g. treat their presentation), (2) maximise activities (e.g. regain normal balance and gait through physiotherapy), and (3) maximise participation (e.g. reduce social isolation from no longer being able to drive a car, by provision of taxi services, or involvement in local bridge club). Minimising their impairments is isolation is not sufficient. Disabilities may be overcome by relaxing to do tasks normally (e.g. physiotherapist helping patient to regain normal walking pattern), the provision of aids or “tools” (e.g. walking with use of walking stick and leg calf-plate) or by adaptive approaches (e.g. minimising the impact of not being able to walk, by use of a self-propelling or electric wheelchair). These approaches to disability will be tried at different stages of rehabilitation, depending on progress to date and the amount of residual disability expected.

The adaptation phase is probably the most important to the patients and their families, but least understood by doctors. Patients have to overcome residual disabilities, and try to live in the world outside the sheltered hospital environment. It takes months or years for people to adapt, both physically and psychologically, to their new level of functioning. Some techniques used in the recovery phase may be at odds with the goals in the adaptation phase (e.g. physio therapeutic) to encourage a normal, symmetrical walking pattern in recovery phase, whereas in the adaptation phase, utilisation of an extended hemiplegic leg enables a functional, but abnormal gait. The technique used will depend on progress made to date, prognostic indicators present and the setting of realistic goals. These goals need to be set by the rehabilitation team in conjunction with the patient and need constant re-evaluation (see Figure 2). The importance of detecting all significant impairments caused by the stroke is not just an end point of full neurological examination (stroke is not just a motor illness) and global assessment of the individual as a whole person are both essential. Failure to detect impairments (e.g. sensory neglect) results in patients having the label of “not trying” or “improvable”.

**Common problems that arise include:**

**Motor defects**

- Impairment to both the degree and pattern of power loss. Weakness after a stroke is not uniform, but tends to be worst in exteriors of the arm and flanks (common in the early stages) and the tendency to develop contractures. Spasticity is not uniform throughout all muscle groups (areas in the antigravity muscles, flanks in arms, extremities in leg) nor it is constant over time. It may be aggravated by factors including pain, anxiety, and poor positioning. Important ways of reducing spastic tone include appropriate positioning of limbs, resolving concomitant medical problems (e.g. constipation, pressure areas, painful should, etc), use of serial splinting, application of either heat or cold to the limb or combination of these techniques. Increased tone (rather than weakness) was previously thought to be one of the major reasons for impaired function, but this is no longer thought to be the case.

- Apraxia (or dyspraxia) is a disorder of sequencing/planning of motor tasks, which seems out of proportion to the degree of weakness etc present. It is defined as “disturbance in the planning and execution of learned, volitional purpose movement” i.e. dyspraxia, dressing dyspraxia and speech dyspraxia are some types of dyspraxia found.

**Sensory deficits**

- Visual and hearing
- Sensory deficits: "blind", "deaf"

- Motor skills are aden and often have co-existing visual and hearing impairment. These need to be detected. One of the commonest reasons for difficulty in hearing following a stroke is that their normal hearing aids was not brought into hospital.

- Visual deficits resulting from the stroke include homonymous hemianopia (or quadrantanopia) and visual inattention. Both can be detected by a standard bedside confrontation test. The latter by using simultaneous bilateral testing. Failure to detect these deficits may result in practical difficulties such as walking into door frames on the affected side, reading difficulties, and major implications for driving a car.

**Proprioception and other sensory impairments**

- Proprioception involves the sense of body position relative to the environment, and the ability to judge the distance and speed of objects relative to the body. It is involved in maintaining balance and therefore cannot interpret what the object is there, but cannot discern (with eyes closed) size, shape and texture and therefore cannot interpret what the object is.

- **Tactile agnosia**: a coin is placed in their hand and person is aware that it is there, but cannot discern (with eyes closed) size, shape and texture and therefore cannot interpret what the object is.

**Neglect**

- The term “neglect” is frequently used by staff, when referring to some of these problems. However patients, families and carers may interpret “neglect” as either (1) staff have been neglecting the patient, (2) the family are being accused of neglecting the patient, each with its negative connotations – be aware of how the term is used and interpreted. The term “attention” is an alternative term to use with patients or families.

**Impairments**

- Impairment is often used to describe what is being done, whereas disability refers to the consequences of these disorders and therefore cannot interpret what the object is.
Detection’ with ‘Detection of post-stroke problems

Some tests that can be used to detect these problems:

Pen and paper tests
Get the person to draw a:
1. Line drawing of a house (visual neglect and constructional abilities)
2. A stick man (tests constructional abilities as well as body image and visual neglect)
3. A clockface (shown to be predictive of outcome after a stroke) – tests cognition as well as spatial functioning.
4. Line Bisection test: 200 mm horizontal line and patient asked to mark the centre point of it. Scored by the distance from the midline.
5. Star Cancellation test: (see example). Patient is asked to cross out all the small stars – this test probably more sensitive as it adds a degree of clutter.

Thumb finding
Patient shown how to grasp thumb on affected hand with other hand. Then, with eyes closed, limb is moved and patient asked to grasp thumb again. This tests proprioception, as well as body image.

Observation in sitting
Much can be gleaned by simple observation of sitting posture (e.g. slumped to one side), position of limbs at rest (e.g. arm dangling over side of chair with no apparent awareness and ability to find the speaker when spoken to from their parietal side).

An orange, an apple, a newspaper and a cardigan are the standard neurological equipment but functional. The orange and apple can be used for visual fields, inattention and neglect as well as L/R discrimination, the newspaper for visual neglect (as well as dysphasia) and the cardigan for dressing problems and body image.

Functional tests
Rehabilitation is about regaining abilities to do normal day to day tasks as well as leisure activities. The most important tests of visuospatial functioning are functional ones and include observation during day to day activities such as dressing, games and leisure activities and in the kitchen, looking for bilateral use of limbs, neglect of one side, inability to complete task due to apraxia and sequencing problems. In reality, it does not matter if they cannot complete pen and paper tests above, but can do their basic and instrumental ADLs.

NB: Always think about driving. It is a very challenging visuospatial task requiring accurate and prompt spatial, velocity (space over time) and distance judgements. It also involves multitasking. Refer to medical practitioners’ nztat.govt.nz website for formal restrictions of driving. “Medical aspects of fitness to drive” (nzta.govt.nz)

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Communication

Dysphasia, Dysarthria and Dysphonia can result from a stroke

Dysphasia is a communication or language disorder (not just speech), resulting from a cortical stroke. It is common (about 30% of strokes), causes considerable frustration for both the patient and the carer. inability to communicate basic needs, social isolation and marital difficulties can result. The dysphasic patient may be inappropriately labelled as “confused”, “dementing” or “not trying”, rather than correctly identified as having a language problem. In simplistic terms dysphasia can be subdivided into disorder of perception and understanding of language (receptive dysphasia) and disorders of production of language (expressive dysphasia). Fluency (and non-fluency), word content and use of jargon are also useful to describe dysphasia. Remember that language not only affects verbal communication, but also written language, pictures, gesture and estimation.

Dysarthria is a disorder of articulation and is a neuromuscular problem resulting in slurred, indistinct speech. Language control is retained and so understanding, writing and reading is intact.

Dysphonia is an abnormality of production of the vocal sounds at the level of the larynx, nose and mouth. It can be difficult to distinguish from dysphasia.

Urinary incontinence

Again is a common sequel of stroke but the aetiology is multifactorial. The following. An elderly lady who has some minor stress and urge incontinence at home but she controls this with regular toileting. She is admitted with an acute hemiplegic stroke and is drowsy on admission. She is given a diuretic to control her heart failure making the urinary urgency worse. Naturally, she becomes incontinent and loses all her dignity. Her incontinence can be tackled at each of the levels above and, in many cases, is avoidable or at least treatable once established.

Emotional changes

1. These are less well documented but several changes can be noted. Stroke is so named because they are “struck down” with devastating consequences to their previous lifestyle. There is a natural grieving process to go through similar to bereavement.
2. Anxiety about their ability to cope alone at home again.
3. “Emotionalism” (or emotional liability) where the patient cries (or laughs) at very slight provocation (threshold for crying is lowered post stroke). The floodgates often open if asked if they have that symptom!
4. Cognitive impairment. Delirium can occur, needs to be recognised and treated, and normally resolves with time. Specific (rather than global) cognitive problems do occur as a result of a single stroke. Profound short term memory loss can occur with some thalamic infarcts, whereas perceptual problems may make a person appear confused.
5. Depression. Occurs in 20–30% of patients. To be distinguished from 1 above. For many some form of treatment (counselling or pharmacological treatment) may be necessary.
6. Apathy. Some patients seem to lose their internal “starter motor” or drive.

Family

“Stroke is a family illness” and it is they who have to bear the brunt of caring for a disabled patient in the long term. The transition period from hospital to home can be particularly difficult. Families also struggle with the transition and then again when the person is discharged from active rehabilitation programmes (outpatient). At this stage formal rehabilitation is completed, the patient is at home and they are left with the feeling that “nothing more can be done”.

However much can be done to lighten the load, by providing ongoing support, attending to ongoing medical problems and linking with appropriate community groups or services.

Specific problems which may develop at home (and need to be anticipated prior to discharge):

- Depression
- Isolation/low social contacts (40-50% have very limited social activities after their stroke, despite a good ‘motor’ recovery)
- Marital discord
- Sexual dysfunction
- Vulnerability to delirium
- Employment

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Some suggested reading

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Swallowing screen for patients with an acute stroke

Able to be completed by trained nursing staff as well as speech language therapists.

Swallowing difficulties are common (30-50%) after an acute unilateral hemispheric stroke. The natural history of these is to resolve over the next 10-14 days.

Most acute and geriatrics’ wards now have a nurse trained to assess swallow to avoid patient staying NBM till SLT review is possible.

Previous strokes, brainstem or bilateral strokes, increase the risk of having swallowing difficulties.

Be aware that some patients aspirate silently.

If swallowing problems are not recognised, then aspiration pneumonia may develop.

- at best, may cause increased morbidity and delay rehabilitation
- at worst, may cause death

Alternative means of maintaining both nutrition and hydration need to be instituted whilst swallowing difficulties persist.

Dysphagia after a stroke usually causes difficulty with both liquids and solids.

How can we detect swallowing difficulties at the bedside?

There is no gold standard, but some clinical findings are helpful. These include:

**History**

- Coughing after thin liquids, or after meals.
- Dysphagia
- Recurrent chest infections

**Examination Findings**

On or more of the following:

- Drooling of saliva
- Dyspnoea
- Dysphagia
- N.B. The gag reflex has very poor predictive value (both positive and negative) for detecting swallowing difficulties. The cough is the protective reflex for the airway.

**Dry Swallow**

- Can they initiate swallowing reflex?
- Is it delayed?
- Is there prompt and complete elevation of larynx (thyroid cartilage moves up)?

Only if the above tests suggest that swallowing is safe, then proceed onto the below

Test swallow with sips of cold water (patient needs careful positioning in the upright position)

- Control of bolus in mouth?
- Initiation of swallow reflex?
- Prompt and complete laryngeal rise?
- If any of the following occur post swallow, they may indicate laryngeal penetration: Coughing, moist phonation, moist sounding respirations?
- Repeat test sip of water several times, with cough in between, as aspiration may be variable dependent.
- Is there any temporary oxygen desaturation after swallowing (patient breathing room air)?

If there are swallowing difficulties after a stroke, or you are in doubt, then you need to:

1. Have an immediate plan for managing hydration. This may include NBM, subcutaneous or intravenous fluids, or nasogastric tube for food and fluids. Other dietary options of thickened fluids, puree should only be decided upon in conjunction with the SLT.
2. Refer to the Speech Language Therapist for help with both assessment and ongoing management.

Delirium (‘Acute Confusional State’, ‘Acute Organic Brain Syndrome’) is one of the oldest conditions known to medicine, yet remains one of the least well understood. The lack of an agreed definition of delirium has been an obstacle to research into this condition. In Diagnostic & Statistical Manual of Mental Disorders, fifth edition, the essential criteria for delirium are disturbance in attention and awareness, change in cognition and development over a short period of time with tendency to fluctuate over course of day. Delirium is an important condition because it is common, causes significant suffering, prolongs and complicates treatment for other conditions, and carries significant morbidity and mortality risks with it. Delirium represents acute brain failure, the cerebral correlate of acute heart failure or acute renal failure. It should be treated with equal respect and concern as these conditions.

Recent studies estimate that about 25% of older adults are delirious on admission and this may rise to about 55% during the course of admission. Older patients post NOF surgery consistently have higher rates of delirium (~ up to 60%) during their admission.

Studies that have examined the level of awareness by medical and surgical staff of delirium in their patients have found that it often goes underdetected or unrecorded. There may be several reasons for this:

- It is difficult to detect a fluctuating condition that is often worse at the end of the day if your main contact with the patient is during a morning ward round.
- It is easy to rationalise cognitive impairment as ‘not the main problem’ or ‘normal for this person’ or ‘older people are often confused’.
- Delirium is often hypoxic and results in slightly drowsy, confused people who are ‘no trouble to anyone’.

**Clinical features**

1. Delirium is characterised by global disturbances of cerebral function. The core features include inattention, disorganized thinking, acute onset, fluctuating course and altered level of consciousness.

These features are part of screening tools such as the confusion assessment method (CAM) and 4A Test (4AT).

Other features can include:

- Distressing emotions, typically fearfulness and irritability
- Disordered perception and perceptive illusions (if not delusions)
- People are more likely to experience shadowy figures with gars rather than familiar gathering flowers
- Disturbed sleep/wake cycle
- Motor features such as tremor, dysarthria or semi-purposeful repetitive movements such as repeatedly plucking at bedsheet or clothing
- Autonomic features such as sweating and tachycardia

2. Delirium nearly always appears acutely and in the context of a precipitating illness or event. However, sometimes the trigger(s) may not be found.

3. Some degree of fluctuation is so characteristic that the diagnosis must be doubted if variability is not observed. Any of the above symptoms may fluctuate.

4. Symptoms are usually most manifest in the evening and night-time. Often referred to as ‘sundowning’.

On mental state examination the most striking features are: fluctuating awareness (‘shifting of consciousness’), disorientation, and perceptual abnormalities (vivid dreams which the patient may have difficulty distinguishing from reality, visual distortions/interpetations, illusions or hallucinations). Other features are reduced registration and short-term recall, withdrawal secondary amnesia or dream-like partial memory for the delirious period, also impaired insight, and agitation. In hospital, the doctor is likely to be called only if the patient is agitated, aggressive or psychotic. It is the quietly confused and perplexed individual sitting in bed plucking at the blankets who is usually missed on a busy ward – the hypoxic type.

**Causes**

The causes of delirium are legion. In older patients attending a medical service the approximate order of frequency of underlying causes are:

1. Infection
2. Toxic (drugs – both in overdose and when prescribed normally)
3. Hypoxia
4. Metabolic disorders
5. Post-stroke or MI
6. Alcohol withdrawal (or intoxication)
7. Virtually any CNS disease, such as Parkinson’s Disease
8. Epilepsy
9. Subdural haematoma

In addition, aggravating factors often found in the older patient are sensory deprivation, unfamiliar environments (re-location confusion), co-existing nosous stimuli such as pain, sleep deprivation and underlying dementia. A complete list of causes can
be found in any comprehensive medical or psychiatric text book. A good way to think about delirium is that any of us could become delirious if our brain physiology was under enough pressure. The very young and the very old are at more risk of delirium. The underlying causes listed above act to lower our threshold for delirium and, together with aggravating factors, can then push us over the threshold so that symptoms occur.

Management

1. Maintain the patient’s physical condition
   - Ensure adequate hydration, nutrition, and physical hygiene. A confused patient will need to be encouraged to eat and drink normally and possibly helped with other activities of daily living.
   - Ensure basic medical observations are stable – pulse, BP, O2 saturation and temperature.

2. Make the environment easy for the patient
   - Maximise visual input – adequate lighting, wearing glasses.
   - Maximise auditory input – wearing hearing aids, reduce competing noise.
   - Avoid changing the environment as much as possible.
   - Try to entice the help of family and keep the number of different staff involved to a minimum to aid familiarity.
   - Use familiar items.
   - Ensure everything in the room and ward is adequately signposted. Aid orientation by providing a bedside clock and calendar.
   - Repeat information regularly.
   - Always reintroduce yourself and your purpose fully.

3. Avoid potential conflict
   - Treat patient appropriately given their culture, age, likes and dislikes.
   - Consider carefully the need for painful or unpleasant interventions. When such intervention is necessary be prepared to repeat explanations.

4. Medications
   - Avoid drugs with known propensity to exacerbate or cause delirium e.g. drugs with central anticholinergic action, drugs that sedate and lower the patient’s ability to think clearly. However, do not suddenly withdraw any chronically used psychotropic drugs unless there is a very good reason to do so as this sudden withdrawal could worsen the delirium if alteration in sleep pattern is prominent.
   - Night time sleep may be promoted with an appropriate dose of a short-acting hypnotic (e.g. Lorazepam 0.5-1mg, Zopiclone 3.75-7.5mg)

5. Minimise risks to patient
   - Falls prevention
     - Pressure areas/ skin tears
     - Violence towards staff, patients or family
     - Wandering
     - Attempts to leave hospital
     - Significant disturbance to other patients
   - Where to refer in liaison psychiatry or mental health services for older adults (MHIQDA):
     - If the diagnosis is difficult to make
     - If the delirium is very severe in terms of symptoms (especially psychosis)
     - If the delirium is very prolonged or otherwise treatment resistant
     - If there are significant risks that are difficult to manage.

6. Worsening of a patient’s delirium may reflect deterioration in the underlying condition or the advent of a new complication and therefore a full clinical review is essential.

Prognosis

This varies as to the underlying pathology, but untreated delirium carries a high mortality, especially in the older patient.

Full recovery of cognitive function may not occur in up to half the cases, leaving the patient more cognitively impaired than they were prior to the delirium.

Delirium in the older patient is a major risk factor for later diagnosis of dementia.

Only use psychotrophic drugs if patient is at risk of harm or is at risk of harming others. Low dose Haloperidol (0.25-1mg/day) is an antipsychotic drug that can be prescribed either as needed (PRN) or regularly for 7 days or less. Alternatively use Risperidone (0.5-1mg/day) or if has Parkinson’s disease then use Quetiapine. Review daily the use of any psychotropics prescribed.

Definition and description

Dementia

The word ‘dementia’ is a descriptive term and refers to an acquired clinical syndrome rather than a specific disease. It is not a normal part of ageing. It can be thought of as the syndrome of “chronic brain failure.” It affects cognitive domains to do with memory, thinking, and behaviour thereby affecting the ability to perform everyday activities.

A complete definition from the WHO is:

Dementia is a syndrome – usually of a chronic or progressive nature – in which there is deterioration in cognitive function (i.e. the ability to process thought) beyond what might be expected from normal ageing. It affects memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgement. Consciousness is not affected. The impairment in cognitive function is commonly accompanied, and occasionally preceded, by deterioration in emotional control, social behaviour, or motivation.

(WHO Fact Sheet No.362, March 2015)

According to DSM-5, dementia has been renamed as major neurocognitive disorder (MND). However, dementia is still an acceptable term to use in clinical practice. According to DSM-5 diagnosis of major NCD requires, evidence of significant cognitive decline from a previous level in one or more cognitive domains that is sufficient to interfere with independence in activities of daily living

(DSM-5)

If a person has cognitive impairment but with no significant impairment in their day to day activities then this is termed ‘Mild Cognitive Impairment’ (MCI). Although MCI is a major risk factor for the development of dementia with about 10% progressing to dementia per year, some people with MCI do not go on to develop a dementia. Interestingly in a community sample 29% of people with MCI returned to normal with no cognitive impairment after 2 years.

(Bradtley M et al. Alzheimer’s & Dementia 2013;5(7):310-317)

Dementia symptoms tend to follow a relatively typical course over on average 8-10 years from onset to death (but wide variation in duration).

Early symptoms

Forgetfulness, difficulty coping with new situations; loss of interest in previous activities; indifference, poor concentration, blunted or depressed affect.

Later symptoms

Greater memory disturbance, disorientation, behaviour muddled, inappropriate or restless; concrete thinking; inability to handle complex ideas; poor judgment, loss of social graces, insight poor.

Advanced symptoms

Total disorientation, little purposeful activity, incoherent speech or mute; double incontinence; neurological signs.

Dementia is one of the major causes of disability and dependency among older people throughout the world.

“The costs of health and social care for people with dementia exceed those for cancer, heart disease and stroke combined”. Prof Steve Effe, University College London, 2014

It has a significant affect not only for the people who have it, but also for their caregivers and families.

Classification

The traditional separation into senile and presenile dementia based on age of onset before or after 65 years has lost some of its importance as the same disease entities are recognised in both age groups. However, it is true that dementia before the age of 55 tends to have a strong genetic component, even to the point of autosomal dominant inheritance.

Another traditional separation has been into cortical versus subcortical dementia based upon where the main site of pathology is. However, this is also too simplistic as it is difficult to define a symptom profile that is purely subcortical or cortical, and even if one could, finding a patient with only those symptoms is even more difficult.

Various attempts have been made to get around these difficulties in classification. The various diagnostic entities are distinguished from one another on a mixture of principles:

· Some are identified by pathology e.g. Alzheimer’s disease

  · Some by atiology e.g. alcoholic dementia

  · Some by clinical picture e.g. fronto-temporal dementia

  · Some by all three e.g. Huntington’s disease

In practice, Alzheimer’s disease, Vascular dementia, Lewy Body dementia, Alcohol-related dementias and Frontal Lobe dementias are the most common. An exhaustive list of the possible causes of dementia (numbering around 80) may be found in any through medical or psychiatric textbook. Sometimes the term “mixed dementia” is used to reflect the overlap in different aetiologies such as in a dementia caused by a combination of Alzheimer’s disease and vascular dementia.

Demography

Prevalence: 11-14/1000 (approximately 1% of all adults).

Approximate overall prevalence

| age 65 | 5% |
| age 80 | 20% |
| age 90 | 30% |

Interestingly age-specific prevalence rates of dementia are falling in high-income countries as seen in recent data particularly from European studies. This possibly reflects improvements in education levels, health care and lifestyle in these countries. However this decline is not enough to offset the overall increase in the prevalence of dementia due to the demographics of the increasing numbers of older adults.

In the developing world both incidence and prevalence of dementia are on the rise.

In NZ in 2014 there were about 50,000 people with dementia and this is predicted to rise to 147,000 in 2050.

85% of people with dementia live at home.

Alzheimer’s Disease (AD)

This is the most common cause of dementia and may contribute to 60-80% of cases in older adults. The diagnosis is based on a history of gradual onset of memory impairment with gradual decline in function, and in the absence of other causes of dementia as detected by...
caused by disease of extra-cerebral vessels.

Dysphasia, dysgraphia, and agrammatism (LNNM) neuroanatomical signs are frequent parts of the dementia. Decline tends to be step-wise.

Strategic infant dementia

A single lesion in a strategically important area such as the thalamus may give rise to a dementia. A large single stroke in cortex can also cause such a “single-infarct dementia.”

Subcortical Ischaemic Vascular dementia

Diffuse white matter ischaemia with demyelination, either adjacent to the ventricles or in deeper white matter may give rise to dementia. This tends to be associated with long-term hypertension and reflects ischaemisation of the penetrating arterioles that supply those brain regions. On CT or MRI these lesions are visible and may be termed “leukoaraiosis” or “white matter disease,” although it should be noted that this descriptive term can be caused by other pathologies as well, such as the spotty demyelination caused by Multiple Sclerosis.

Clinical features consistent with a probable vascular dementia include:

- Early presence of gait disturbance, unsteadiness and falls.
- Early urinary frequency and urgency.
- Pseudobulbar palsy (cerebral cortex paralyses of cortical origin) or other focal LNNM neuroanatomical signs.
- Affective lability, including “catastrophic reactions” or blunted affect.
- Slowing of thought and movement is classically associated with subcortical disease from white matter lesions, as is aphasia.
- Patchy cognitive loss rather than across the board; tissues, sometimes associated with

- Malaise more affected than females (unlike Alzheimer’s), related to higher prevalence of vascular risk factors
- Other vascular disease concurrently
- If strokes are involved, sudden onset and stepwise progression

A vascular dementia is very unlikely if there is early onset memory loss and progressive worsening of other cognitive functions in the absence of both focal neuroanatomical signs and cerebrovascular lesions on CT or MRI. Moreover, as noted previously vascular damage often coexists with other forms of dementia, particularly Alzheimer’s. This raises an important point that, in defiance of “Uck’s Law”, dementia may more commonly be due to mixed pathology than to single lesions. That is why one should always be suspicious of estimates of the percentage of all dementias caused by one disease, and by overdiagnosis.

Lewy Body Dementia (LBD)

Lewy (usually pronounced “Leev”- by German speakers and “Lee” by everyone else) bodies are the pathological entity found in the substantia nigra in Parkinson’s disease. They have an eosin staining halo and a core with ubiquitin and synuclein inclusions. Since 1990 it was realised that some dementias in older patients have prominent Lewy bodies in the brainstem and cortex. It seems as though at least 21% of patients with dementia may be of the Lewy Body type. There may be a spectrum of disorders with classical Parkinson’s disease at one end and pure cortical Lewy Body disease at the other. Lewy bodies are also commonly seen in patients with pathological features of Alzheimer’s disease, so mixed pathology is quite possible. Thus Alzheimer’s and Lewy body dementias may also be extremes on a spectrum.

Clinical features of LBD include:

- Fluctuating cognitive impairment affecting both memory and higher cortical function. The fluctuation is like a delirium, can affect any of the symptoms listed here, and can also affect the level of conscious variation affecting ability to sustain a period. Visual hallucinations are common, often with persecutory delusions and sometimes auditory hallucinations.
- Parkinsonism and a sensitivity to neuroleptic medication side effects.
- Repeated falls.
- Despite clinical features like a delirium, symptoms persist for months.
- The syndrome often progresses relatively rapidly to end-stage dementia.

Frontotemporal Dementia (FTD)

Previously known as “Pick’s disease.” This type of dementia is characterised by symmetrical or asymmetrical atrophy of the frontal and/or temporal lobes without the classical pathology of Alzheimer’s disease. FTD may account for around 2-5% of all dementias. It is a common cause of early onset dementia occurring at a similar frequency to Alzheimer’s disease in patients younger than 65 years. Can be subdivided according to the type of abnormal inclusions seen histopathologically, either tau or ubiquitin proteins.

There are two main variants of FTD, behavioural (inFTD) or language (eg. progressive nonfluent aphasia(PNA), semantic dementia(SD)).

The exact presentation depends in part upon which of the frontal or temporal lobes the disease impacts, but in the main clinical features include:

- Insidious onset, slow progression
- Early loss of social awareness with disinhibition and loss of empathy
- Rigidity and inflexibility, distractability and impulsivity
- Stereotyped and perseverative behaviour
- Hypersensitiveness
- Apathy and emotional uncontrol
- Depression, anxiety and hypochondriasis may be feature
- Preserved abilities of spatial orientation and praxis may have relatively preserved memory.

Patients often score well on standard cognitive testing.

Less common causes of dementia

These include Huntington’s disease, Normal Pressure Hydrocephalus, Hypothyroidism, Neurosurgical, Vitamin B12 and folate deficiency, head trauma, transfusion related dementia (both thiamine (B1) and direct alcohol toxicity), Creutzfeldt Jacob disease, MHD related dementia, and Parkinson’s plus diseases such as Progressive Supranuclear Palsy. You will note that some of these syndromes appear to be potentially reversible. Although reversible dementia is rare, we always check for some of the common reversible causes such as hypothyroism, B12 or, in alcoholics, hypoxanthine B1.

Principles of dementia management

i. Is any specific treatment indicated for the reversible causes?
ii. Are physical problems making the symptoms worse? e.g., deafness, cataracts or other visual impairment, heart failure, anaemia, hypothyrosis.
iii. Are medications making the symptoms worse?
iv. Drugs which can cause or worsen dementia may need to be reduced or withdrawn. Very small doses can be effective. Side effects (for example, falls, loss of function, increased “confusion” or even paradoxic worsening of behaviour) are very common. Management of medicines, if indicated for uncomplicated wandering because success can only be achieved by rendering the path less “attractive.” Other syndromes that respond poorly to drugs are calling out, any infrequent challenging behaviour, apathy and generalised disorientation. Drug treatments need to be reviewed regularly and trial withdrawals attempted.

Do the caregivers need help?

The key to looking after someone with dementia is learning their patterns of care support person. Information, advice, and support, and counselling are available from organisations such as the Alzheimer’s Society. Caregivers need to know the diagnosis, be recognised and heard, have support including breaks, and be informed. However, the possibility of subtle or overt Elder Abuse must be kept in mind.

vii. Hospitalisation (home, rest home, hospital) suitable?

The objectives is to maintain maximal independence and quality of life (not necessarily the same thing) in the least restrictive environment for as long as possible. Support services may need to be arranged, e.g. home help, meals on wheels, district nurse, laundry service incontinence aids, day care, respite care, or others. Encouraging Powers of Attorney must be arranged to protect the patient’s interests and to enable a reliable person to assist them to manage their affairs.

vii. General principles of communicating with people with dementia (see table below)

<table>
<thead>
<tr>
<th>Seven “S”s</th>
<th>Desirable messages</th>
<th>Inappropriate methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign posting</td>
<td>Orientating, identifying</td>
<td>Abrupt, impersonal</td>
</tr>
<tr>
<td>Soothing</td>
<td>Reassuring, calming</td>
<td>Critical, arguing</td>
</tr>
<tr>
<td>Sociable</td>
<td>Respectful, polite</td>
<td>Patronising, ordering</td>
</tr>
<tr>
<td>Simple</td>
<td>One message</td>
<td>Complex sentences</td>
</tr>
<tr>
<td>Slowly</td>
<td>Clear &amp; repeated</td>
<td>Hurrying, rushing</td>
</tr>
<tr>
<td>Showing</td>
<td>Demonstrate, indicate</td>
<td>Unclear abstract concepts</td>
</tr>
<tr>
<td>Scheduling</td>
<td>Explaining coming events</td>
<td>Unannounced happenings</td>
</tr>
</tbody>
</table>

Alzheimer’s disease is an excellent source of support for all dementias and we encourage you to refer patient and relatives to this organisation.
Cognitive screening instruments

There are a variety of cognitive screening tools that have been and are employed to help assess cognitive function or dysfunction (acute or long term). Previously one of the most commonly used tools was the Mini Mental State Examination (MMSE). This however is now the subject of copyright disagreements, and consequently is not being used. Tools in current clinical use are listed below:

- **Abbreviated mental test Score (AMT)**: in which the patient is asked 10 questions (1 mark for each correct answer):
  1. Age
  2. Time (to nearest hour)
  3. Address for recall at end of test – this should be repeated by the patient to ensure it has been heard correctly; 42 West St
  4. Year
  5. Name of hospital
  6. Recognition of two persons (doctor, nurse etc.)
  7. Date of birth
  8. Year of 2nd World War
  9. Name of present monarch
  10. Count backwards 20-1

  A score below 7 would give cause for concern. Low scores do not help differentiate delirium from dementia.

Other tests include:
- The 4A Test (4AT): screening instrument for cognitive impairment and delirium
- Confusion assessment Method (CAM)
- IQCODE
- Montreal Cognitive Assessment (MoCA)
- Addenbrooks Cognitive Examination (ACE-III)
- Rowland Universal Dementia Assessment Scale (RUDAS) – considered to be unaffected by gender and language

Note: Different DHBs and hospitals may have a preference or policy for the use of different questionnaires so you should be guided by your ward policy and by advice from your clinical team. Copies of the tests used locally will be found on your ward.

A few cautions and limitations of the any cognitive test

Cognitive tests are only screening instruments and should not be used alone for the diagnosis of dementia or delirium. Neither can they be reliably employed to differentiate dementia from delirium.

Frontal lobe dementia or cognitive problems can be missed with such screening.

Patients with language difficulties (e.g. aphasia, dysphasia) may falsely underscore and be considered to have dementia and contrary to it they may have normal cognition with a speech deficit.

Those with disabilities or visual impairment and who cannot write may be cognitively intact and need caution in the interpretation.

Those who may speak different languages will need to be assessed in their own languages. RUDAS translates well and no copyright.

Educational level is important in the screening as those with lower educational level should not be considered cognitively impaired and need to be tested appropriately.

Modified Barthel Index of self-care

<table>
<thead>
<tr>
<th>Test</th>
<th>Score (0 = totally dependent</th>
<th>20 = fully independent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeding and Drinking</td>
<td>2 = Independent in all actions</td>
<td>1 = Needs help (e.g. cutting)</td>
</tr>
<tr>
<td>2. Grooming</td>
<td>1 = Independent in all four activities</td>
<td>0 = Needs help in any of the four</td>
</tr>
<tr>
<td>3. Dressing</td>
<td>2 = Independent (inch buttons, zips, laces)</td>
<td>1 = Needs help but does half</td>
</tr>
<tr>
<td>4. Bathing</td>
<td>1 = Independent</td>
<td>0 = Needs help</td>
</tr>
<tr>
<td>5. Urinary control</td>
<td>2 = Continent</td>
<td>1 = Occasional incontinence (not daily)</td>
</tr>
<tr>
<td>6. Bowel control</td>
<td>2 = Continent</td>
<td>1 = Occasional incontinence (not daily)</td>
</tr>
<tr>
<td>7. In and Out of Chair</td>
<td>3 = Independent</td>
<td>2 = Supervision/min hands-on help</td>
</tr>
<tr>
<td>8. On and off Toilet</td>
<td>2 = Independent</td>
<td>1 = Needs help</td>
</tr>
<tr>
<td>9. Walking 10 Metres</td>
<td>3 = Independent (may use Aid)</td>
<td>2 = Needs help</td>
</tr>
<tr>
<td>10. Up and down Steps</td>
<td>2 = Independent</td>
<td>1 = Needs help</td>
</tr>
</tbody>
</table>

Score (0 = totally dependent – 10 = fully independent)
Guidelines for using the Barthel Index

General
- The index should record what a patient does, not what he or she might, could or should achieve.
- The prime aim is to establish a degree of independence from any help, physical or mental, however minor. Therefore any need for supervision automatically renders the patient NOT independent.
- An individual’s performance should be established from the best available sources, such as nurses and relatives, as well as from the patient and using observations made throughout the interview.
- The record should refer to the patient’s performance over the preceding 4 hours, although longer periods may need to be taken into account.
- Unconscious patients should be scored zero throughout, even if not incontinent.
- Middle categories in general imply that the patient provides 50 percent of the effort needed.
- Patient using aids may be categorised as independent provided they do not need help from another person.
- Check patient does any buttons, zips, bras, shoes etc.

Walking
- Must be able to negotiate corners unaided
- Minor help: one person giving supervision/support for safety
- Major help: needs two people, or one strong/skilled person

Transfer (from bed to chair and back)
- Able to sit in chair to eat, providing the food is cut up
- Needs to be able to sit up un-supervised and wash self

Feeding
- Ability to help when being transferred from bed to chair
- Ability to sit in chair to eat, providing the food is cut up
- Ability to help when being transferred from bed to chair
- Return independence in personal care – teeth, face, hair etc
- Returns independence in personal care – teeth, face, hair etc
- To sit up un-supervised and wash self
- Complete independence

Table above shows the observed frequency of various disabilities in surviving patients seen within seven days of their stroke, at three weeks and at six months. It seems likely that lost functions are recovered in a systematic order. (Wade & Langman et al, 1987; Ebrahim et al 1985) Specifically the order appears to be:
- Control over bowels regained
- Ability to sit in chair to eat, providing the food is cut up
- Control over bladder regained
- Ability to help when being transferred from bed to chair
- Return independence in personal care – teeth, face, hair etc
- Start to walk with someone giving support
- Starts to give help when being dressed
- Begins independence getting out of bed and walking
- Learns to cut up food unaided
- Goes up stairs with help
- Learns to dress unaided
- Manages stairs without help
- Able to bathe without help

Obviously some patients may transpose the order with only 5 percent being very different (Wade & Langman et al, 1987).

Following stroke the speed of recovery is fastest over the first few weeks and then slows down. It is difficult to quantify the speed of recovery in individual patients, but in groups of patients about half the progress seen over the first three months occurs in the first two weeks.

Demography and Epidemiology of Ageing in New Zealand

Terminology and definitions
- The age of 65 years has long been regarded as the cut-off considered as “older age” for reporting health status, health service provision and utilisation. While a cut-off of 65 years may seem arbitrary, it does enable standardised international comparisons and descriptions of trends, and is used in this chapter unless otherwise stated. For some purposes other age thresholds are preferred.

Ageing population
- Older population
   It is well known that in New Zealand and most other countries, the population is ageing. That is, the proportion of the population that is older is increasing, a trend that will continue for several more decades yet. Because of their greater use of health services (demonstrated later in this chapter), in future years, older people will dominate medical practice – in primary care, specialist practices and hospitals.
- Population ageing is caused not by “baby boomers” (the large cohort born 1950 – early 1970’s), but by the reducing ratios of both births and deaths. Those arise from the combined impact of people having fewer children (the use of the contraceptive pill & women delaying childbearing), women living longer (success in population health and health care) unless radical unanticipated societal change occurs, the proportion aged 65+ will remain high even after the baby boomers have moved through.

Official estimates for the New Zealand population in 2011 are shown in Table 1. Numbers of older people are increasing faster than any other age group. Those aged 65+ reached 511,400 in 2006, and 696,000 in 2013, and are projected to reach over 1,010,300 by 2027. That corresponds to 19% of the total population in 2006, 14% in 2013, and 19% in 2027. Over the same period, numbers 85+ grew from 58,100 in 2006 to 74,700 in 2013, and are projected to reach 125,300 by 2027.

Data source: Statistics New Zealand 2011, NZ.Stat, as at 30 June 2013

Table 1. Estimated NZ older population by age and gender, 2013

<table>
<thead>
<tr>
<th>Age group</th>
<th>By gender</th>
<th>N</th>
<th>% of all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65-69</td>
<td>205,800</td>
<td></td>
<td>4.6</td>
</tr>
<tr>
<td>70-74</td>
<td>154,000</td>
<td></td>
<td>3.5</td>
</tr>
<tr>
<td>75-79</td>
<td>109,300</td>
<td></td>
<td>2.5</td>
</tr>
<tr>
<td>80-84</td>
<td>82,100</td>
<td></td>
<td>1.8</td>
</tr>
<tr>
<td>85-89</td>
<td>49,800</td>
<td></td>
<td>1.1</td>
</tr>
<tr>
<td>90-100</td>
<td>9,400</td>
<td></td>
<td>0.6</td>
</tr>
<tr>
<td>Total 65+</td>
<td>626,000</td>
<td></td>
<td>14.1</td>
</tr>
<tr>
<td>Total 85+</td>
<td>74,700</td>
<td></td>
<td>1.7</td>
</tr>
<tr>
<td>Total, all ages</td>
<td>4,442,100</td>
<td></td>
<td>100.0</td>
</tr>
</tbody>
</table>

As age increases, the ratio of women to men increases (Figure 1), driven by higher mortality among men in all age groups.

Table 2. Estimated NZ older population by ethnicity, 2013

<table>
<thead>
<tr>
<th>By ethnicity</th>
<th>N 65+</th>
<th>% of those aged 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>European, NZ or Other</td>
<td>552,600</td>
<td>88.3</td>
</tr>
<tr>
<td>Maori</td>
<td>36,500</td>
<td>5.8</td>
</tr>
<tr>
<td>Asian</td>
<td>32,000</td>
<td>5.1</td>
</tr>
<tr>
<td>Pacific peoples</td>
<td>16,300</td>
<td>2.6</td>
</tr>
<tr>
<td>Middle Eastern, Latin American, Italian</td>
<td>1,800</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Figure 1. NZ’s older population, by sex

<table>
<thead>
<tr>
<th>N 65+</th>
<th>% of those aged 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>65-69</td>
<td>70-74</td>
</tr>
</tbody>
</table>

Data source: Statistics New Zealand 2012, NZ.Stat, as at 30 June 2013

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Demographic projections

Figure 2 shows NZ’s population growth by age group, showing the rapidly increasing 65-84 age group until about 2030, followed by rapid growth in the 85+ group. In the 40 years from 2006, the number of people aged 85+ years is expected to rise over five-fold, from 58,100 to 296,700.

Life expectancy

In NZ, lower life longer than 107 years. The oldest confirmed recorded age for any human is 122 years, so this is regarded as maximum life span. Life expectancy is a statistical estimate of the average length of life remaining at a given age. As in almost all countries, life expectancy in NZ has increased over many decades and is expected to continue over the coming decade at least.

Shorter life expectancy is seen among men and Māori people. At the age of 65 years, women have on average a life expectancy of 20.6 years, and men 18.0 years. At the age of 85 years, life expectancy for women is 6.6 years, and men almost 5.6 years. Figure 3 shows how this has changed since the 1950s, and also the lower life expectancy of Māori.

Longer lives are lived with varied levels of dependency, and there is much debate about compression or expansion of morbidity. The NZ Health Survey suggests that longer lives are on average being lived with greater periods of dependency, rather than with improved physical function and presumably better quality of life (Figure 4).

Social trends

NZ’s older population is changing and becoming more diverse:
- by the mid-2000s, 30 per cent of people aged 65 or over are projected to choose to continue to be in paid work, compared to 20 per cent in 2010
- older consumers are projected to spend over $60 billion in 2015, vs. around $13.5 billion in 2011
- home ownership rates for people aged 65+ are declining and probably this will continue
- a greater proportion of older people will live alone
- by 2050 the number of older people with a disability is expected to grow by 60 per cent
- the older population will be more ethnically diverse with an increasing proportion of Māori, Pacific and Asian people

Deaths

During the past decade, on average about 60,000 babies were born and 33,000 to 30,000 people died each year. 80% of deaths were of those aged over 65 years. Numbers of deaths each year are now increasing after being relatively stable for the past 25 years. They are projected to increase from 2012 until at least 2015 when 95% of all deaths will be of those aged 65+ (Figure 5).

Place of death

Place of residence in later life is not routinely published, however place of death data for 2004-2007 show that in those dying aged over 65 years, 34% of deaths occur in residential aged care, 34% in public (acute) hospital care, and 5% in hospices. These proportions vary with age, so that of deaths in people aged over 85 years, more than half (55%) occur in residential aged care and 29% in public (acute) hospital care. With population ageing, demand for residential aged care will likely increase markedly, but perhaps not as much as age-specific rates might suggest. It has been shown that use of residential aged care is associated more with time to death than with age.

Cause of death

The Ministry of Health assembles information each year from death certificates. They liaise with Ministry of Social Development who manage superannuation and benefit payments, the Ministry of Transport, the Water Safety Council, driver’s licence and passport offices to update records. The ICD coding system is used internationally to code hospital diagnoses and also causes of death. Data extracts of death certifications are summarised and published annually.

Across deaths in all age groups in 2012, the greatest cause of death recorded for both men and women was ischaemic heart disease, followed by respiratory diseases, and then neoplasms (cancer and respiratory organs). Respiratory diseases accounted for 5%, and stroke for 10%. All cancers together accounted for 19% of deaths. Other causes of death included accidents and mental and nervous system conditions.

Hospital utilisation

Admissions and discharges

During 2009, 99% of all admissions to public hospital were of people aged over 65 years. Six percent were aged over 85 years, and this age group had the highest rate of publicly funded hospitalisations in 2009/10 of any age group. Numbers of hospital discharges, with age-specific rates per 100 people, are shown in Figure 8. After the age of 60, each 5-year age group has similar numbers of admissions although rates rise markedly with age; men have higher rates of admission than women.

A further 5,500 discharges from private hospitals were publicly funded but are not included in the figure. Older people are more likely to have adverse events while in hospital, and these are more likely to be avoidable than those which occur in patients of younger age.
Residential aged care utilisation

Residential aged care (RAC) facilities fill an important role in New Zealand, providing care for older people whose health and functional needs mean they can no longer live at home, even with support. Facilities come under the Health and Disability Services (Safety) Act, 2001, and are certified and audited by QIBs. Facilities are categorised by the care provided – rest home care for those who need 24-hour care but not 24-hour nursing care, and private hospital care for those who need nursing care round the clock. These are private geriatric hospitals, distinct from private surgical hospitals. Dementia care is a form of secure rest home care for those whose behaviour offends.

Emergency Department Presentations

Emergency department admissions data show that 22% of all presentations were for those aged 65+ years in 2009/2010 (Figure 9). Again, at older ages men have higher rates of emergency presentation than do women.

Primary care service utilisation

The National Primary Medical Care survey (NatMedCa) in 2001/02 reported a representative sample of GP consultations in private practice (not including Accident & Emergency clinics) expressed as a ratio relative to the population average. A ratio of 2.0 therefore indicates the consultation rate is twice the average in the whole population. A plot of these results is shown in Figure 10, showing again increasing likelihood with age, and higher use of primary care among adult women vs. men.

Figure 7. Leading 11 causes of death in those aged over 65 years in NZ, 2012

This analysis shows that 41% of all deaths are due to heart disease, 3% are due to pneumonia, and 3% are due to cancer. A higher proportion of deaths in men are due to heart disease than in women, but a higher proportion of deaths in women are due to cancer. In both men and women, the proportion of deaths due to heart disease decreases with age, while the proportion due to cancer increases.

Figure 8. Publicly funded hospital discharges in New Zealand 2009/10

Figure 9. Public hospital emergency department presentations, 2009/10

Figure 10. Rate ratio of primary care consultations in NZ, 2001/02

Figure 11. Rate of use of residential aged care in Auckland, 1993 and 2008

Source: Auckland Long Term Care Studies 1993 & 2008

Dependency levels of RAC residents have increased markedly over the same period, partly because the proportion of the population living in residential aged care has fallen over recent decades, particularly in non-home (lower) level of care. It is believed that use of residential aged care has reduced due to higher levels of provision of home-based care services, compulsory assessment before entry to residential aged care and the growth in housing more suited to older people, such as in retirement villages. The private hospital (higher level of care) has reduced less, but bed provision for this higher level of care and for dementia care is a growth area.

National statistics are somewhat variable because of their reliance on administrative (subsidy payments) data that miss those who pay privately for their care. Figure 11 therefore uses data from the Auckland Long Term Care Studies to show rates in care in the Auckland region. Retirement villages are not part of residential aged care, but are purpose-built housing for older people living independently. Usually they have shared central social and activity spaces, or to prevent wandering. Psychogeriatric care is a specialist form of private hospital care. RAC facilities may also provide short-term respite care, rehabilitation, and/or palliative care.
One of the five principles underlying development of the New Zealand Health Strategy is an acknowledgement of the special relationship between Māori and the Crown (Minister of Health 2010).

This principle recognizes the Treaty of Waitangi as New Zealand’s founding document, and the Government's commitment to fulfilling its obligations as a Treaty partner. In the health and disability sectors, this relationship has been based on three key principles:

- Partnership in service delivery
- Participation at all levels of the health sector
- Protection and improvement of Māori health status and safeguarding Māori cultural concepts, values and practices

These principles have guided development of the Health of Older People Strategy. Key elements of this are recognising and responding appropriately to the holistic view of health held by many Māori, and the unique position of older Māori and kaumatua in New Zealand. Ministry of Health advice to the government on issues for people under 65 who have health and disability support needs similar to those more commonly experienced in older age will include specific advice on issues for Māori.

Health of older people strategy – Health sector action to 2010 to support positive ageing

Objective 4

The health and disability support needs of older Māori and their whānau will be met by appropriate, integrated health care and disability support services.

Easily accessible primary, community and hospital-based health care that meets the needs of older Māori is a priority for the Ministry of Health and for DHBs.

Source: Ministry of Health.

References, information sources and further reading

The source of official population data for New Zealand is Statistics New Zealand, a government department that assembles and makes available information about the population. Much of their information is available on their website, www.stats.govt.nz. However, some of the reports and projections presented here were obtained on request.

Information about hospitalisations and deaths is managed by the Ministry of Health, and routinely placed on their internet at www.moh.govt.nz together with numerous publications. For example, information about hospital-related quality of life, disabilities, healthy life expectancy and health service use are available in the publication Older People's Health Chart Book 2006. Wellington: Ministry of Health, 2006.


Information about residential aged care is available from various Auckland LTC study papers including:


The context and challenges of ageing in NZ, together with the social and other supports available, are described in: Ministry of Social Development. Older New Zealanders: Healthy, independent, connected and respected. Wellington: Ministry of Social Development, 2010.

Implications of Treaty of Waitangi towards Māori Health – Te Tiriti o Waitangi

There is general consensus in health care that the Treaty of Waitangi is to be operational at all levels in order to achieve appropriate outcomes for Māori.

Article 1 – Ko te tuahau

The treaty outlines the crown’s obligations to provide a good government and therefore adequate services to all citizens.

Article 2 – Ko te tuara

The treaty also has significance for health. It guarantees to the Māori the control and enjoyment of those resources and taonga that is their wish to retain. Some authors have considered that the necessary elements of Crown policy to recognise rangatiratanga would include:
- The preservation of a resource base which includes natural resources for food, recreation, and rongoa.
- The restoration of self-management (which includes health programmes).
- The active protection of taonga, both material and cultural.

Article 3 – Ko te tuatoru

The treaty constitutes a guarantee of equity between Māori and other citizens of New Zealand. This principle also implies that Māori should experience equity in the enjoyment of all of the benefits of New Zealand citizenship, including health. The government has acknowledged that there are still major discrepancies between the health status of Māori and non-Māori that cannot be ignored. Furthermore, the crown also acknowledges that part of the problem has been the inflexibility of the health system which has been unable, or unwilling, to respond to specific Māori needs.

Implicit within the treaty are concepts of equity, partnership, and economic and cultural security, all of which contributed importantly to hauora (spirit of life/health). Poor standards of Māori health may therefore be regarded in part as non-fulfilment of these Treaty concepts and obligations.

Māori perspective of health – the “Whare Tapa Wha model”

Dr Mason Durie first presented this model in 1982 to describe the Māori perspective of health. It uses the illustration of the four walls of a house as necessary to provide symmetry and strength, representative of good health. Each side represents a different dimension. Dr Durie explains this as being:
- The spiritual wellbeing of a person.
- It determines one’s identity.
- It provides a direct link with one’s tapuata and whakau group and
- Strengthens the taonga and tikanga values of one’s cultural system.

Taha Wairua

This looks at the capacity for faith and wider communion and is related to health that is unseen and of unspoken energies. The spiritual requirement is considered an essential part of health for a Māori. It takes into account the human situation and the environment. The Māori consider without a spiritual awareness and a maori individual cannot be healthy and is more prone to illness or misfortune. Belief in god is a reflection of the spiritual concept, but also considers the respect with the environment. The natural environment is also considered integral to identity and fundamental to a sense of well-being. This is reflected in the land claims and its effect on health.

Spirituality extends into death and is significant. A Māori body is sacred. Rapid retrieval of the deceased relative from the hospital is felt as a matter of urgency. Retrieval of the body is considered critical to hold the mana of the deceased. The Tohunga suppression act of 1907 led to traditional Māori healing not being practised. There is general consensus that health treatment should include the concept of whakupatu, which looks at the capacity to be alive and to communicate during a clinical examination.

Taha Whānau

It looks at the importance of the extended family, where there is a capacity to belong, care and share. Individuals are a part of a wide social system. Accepting the concept of extended family for the wellbeing of Māori is almost completely ignored in most hospitals and community services. Family involvement at times of illness is a very traditional and culturally necessary attitude, which is not recognised in hospitals.

Taha Hinengaro

It looks at the capacity:
- To communicate, think, feel.
- Related to the mind and body is inseparable.

Māori do not have this sharp distinction between spoken words and emotion as in the west. Face to face verbal encounter can be unacceptable and emotional communication can be more meaningful than words for a Māori. At death, tears, rather than words are communicated as grief. In a doctor-patient relationship face to face encounters can be considered intimidating. Dr Tipene-Leach has written on aspects of doctor-patient relationship, describing a number of sensitivities and behaviours relevant to communication during a clinical examination.

Traditional Māori healing

The Tohunga suppression act of 1907 led to loss of Māori methodology, in health science and loss of Māori leadership in health. Renewed Māori interest in traditional healing is evident with current Māori interest towards:
- Repeal of the Tohunga Suppression act (1907).
- Māori claims over cultural property and intellectual knowledge in traditional practices.
- Loss of confidence in western approaches to health.
- Poor access to primary health care.
- A belief in the relevance of spirituality to health.
- All health care takes place within a cultural context.

Taha tinena

It looks at the capacity for physical growth and development and this in turn leads to good physical health necessary for optimal development. Respect to the body and body parts are a very important concept for Māori. Various parts of the body have special significance to the Māori. Those concepts regarding the physical body and respect given to cultural norms are poorly known and should be considered in practice with equality.

Dr Durie in his book 'Whakara' considers the concepts of tapu and the perception of illness as an infringement against tapu are central to much of the anxiety and depression which surround the Māori patient while in hospital. The gradual introduction of Māori concepts were not entirely welcomed in the 1960s and 70s but by the mid 1970s there was some recognition that ethnicity and culture had implications for health. Māori views, though not always understood, were often taken at face value.

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