GERIATRICS: End of Life Care in Older Australians

5 TIPS

1. Spot the dying patient
2. Basic drugs and renal failure can tolerate for a few doses
3. Mouth bladder bowel and spiritual care
4. Right paperwork in place
5. Communication patient, family and staff

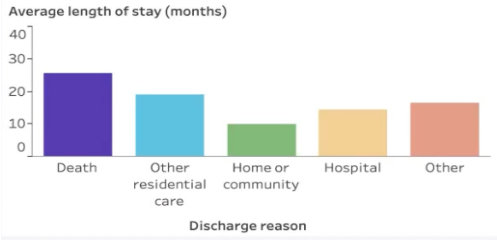
1. Plan for future for all
2. Look for trends
3. Anticipatory prescribing
4. Avoid morphine in renal failure if possible
5. RACF NP/TNP support team

Age group (years)	1st	2nd	3rd	4th	5th
Under 1	Perinatal and congenital conditions	Other ill-defined causes	SIDS	Accidental threats to breathing	Influenza and pneumonia
1–14	Land transport accidents	Perinatal and congenital conditions	Brain cancer	Accidental drowning and submersion	Leukaemia
15–24	Suicide	Land transport accidents	Accidental poisoning	Assault	Other ill-defined causes
25–44	Suicide	Accidental poisoning	Land transport accidents	Coronary heart disease	Breast cancer
45–64	Coronary heart disease	Lung cancer	Colorectal cancer	Suicide	Breast cancer
65–74	Lung cancer	Coronary heart disease	COPD	Colorectal cancer	Cerebrovascular disease
75–84	Coronary heart disease	Dementia and Alzheimer disease	Cerebrovascular disease	Lung cancer	COPD
85 and over	Coronary heart disease	Dementia and Alzheimer disease	Cerebrovascular disease	COPD	Heart failure

Epidemiology of deaths

- High risk behaviour→ MVA
- Increased rates of dementia in older age group (increased diagnosis and rising population)
- Where do deaths occur? – although most like to die at home:
  - 54% of deaths in hospitals
  - 32% in residential aged care
- After CPR → reduced poor level of function and QoL

Average length of stay for permanent residential care, by sex (Males) and discharge reason, 2018–19

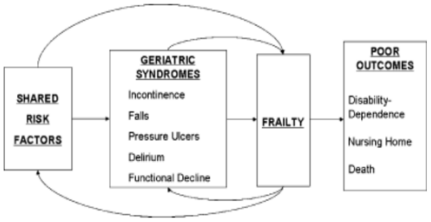


Ethics of dying patient: why should we resuscitate an older patient?

FOR	AGAINST	
1) Social justice and equity	1. Violent act	CPR is a traumatic, undignified and usually unsuccessful in patients of all ages
2) May be the one who succeeds May be that (0.6%) that survives in residential aged care and possibly the even smaller % who maintains same QoL (how would you know if you don't try)	2. Futile treatment and QoL	Act of maleficence - why would we do harm?
3) Previously functioning well with limited morbidity	3. Prolonging the inevitable	Is it terminable cancer and that pneumonia or ACS a blessing rather than curse?
4) Because we can	4. Resource cost	Funding and staff required May need ICU- post-CPR – taking bed space away from the younger population who need it
5) Right to life	5. Patient refuses (DNR)	Right to be free from inhuman or degrading treatment e.g. "a good natural death"
6) Because patient wants us to		

Frailty

- Syndrome of increased vulnerability to stressors due to multisystem impairments
- Increases in prevalence with advanced ageing
- **NOT part of normal ageing**



Frailty measurement

Rockwood frailty scale (good predictor of DEATH)

1. *Fit*
2. *Well (no disease)*
3. *Well (stable co-morbidity)*
4. *Vulnerable (symptomatic)*
5. *Mildly frail (minimal dependence)*
6. *Mod. Frail (need help with ADL)* ➔ ***high risk of immobility, falls, death, post-op complications***
7. *Severely frail (complete dependence)*

Fried scale (1 or 2 features = frailty)

- *UWL (>10 pounds/year)*
- *Sense of constant exhaustion*
- *Poor grip strength*
- *Slow walking speed*
- *Poor PA*

What are our (doctor's) rights?

Health practitioners are **NOT** obligated to provide treatments that are futile (i.e. Rx is unreasonable and offers minimal benefit to patient's medical condition)

- Inappropriate requests may include:
  - *Tests that will NOT assist w/ patient's goal or Mx*
  - *Patient will deteriorate even with optimal therapeutic interventions*
  - *Rx will not be successful in producing clinical effect*
  - *Where Rx may produce clinically successful effect but still FAIL to serve important pt goals (e.g. independence from life-support devices, survival to leave hospital or improve from permanent unconsciousness)*

Consultation is imperative with the family – adequate discussions necessary as to why Rx is not necessary

- Always offer alternative doctor for second opinions

Delivering Palliative Care:

"Palliative care = an approach that improves the QoL of patients and their families facing the problems associated with life-threatening illness by identifying early and treating assoc. pain/distress and physical and psychosocial problems"

- Requires MDT inc. bereavement counselling
- Affirms life and regards death as a normal process
- Intends neither to hasten or postpone death
- Is applicable early in the course of illness in conjunction with other active therapies that are intended to prolong life

Indication for PC referral

- Death within 12 mths
- Recurrent hospitalisation
- Progressive illness despite therapy
- Recent decline in physical function
- Care exceeds health professional and carer scope

Patients

1. **METS**
2. **end-stage organ failure** (CCF, CKD, COPD)
3. **Neurodegenerative** (PD, dementia, MND)
4. **Terminal diseases**

*CAD (leading cause of death in males)

People involved

- **PC physician** = *symptom control & GP/oncologist liaison*
- **PC nurse** = *coordinates with MDT + prescribe meds*
- **PC social worker** = *counselling, coping strategies and referral to meal and respite care*
- **PC physiotherapist** = *keep pt moving, manage SOB, energy*
- **PC OT** = *manage physical aspects of daily living (e.g. mobility aids, maintain independence)*
- **PC pastoral care** = *spiritual support & organise prayers/ rituals*
- **Other Allied Health may include:**
  - Dietitian, Speech pathology, Pharmacy, Clinical psychologists, ATSI Workers, **Volunteer Services**

Where delivered

1. Acute hospitals
2. Palliative Care Units/hospitals
3. Home
4. Residential aged care facilities

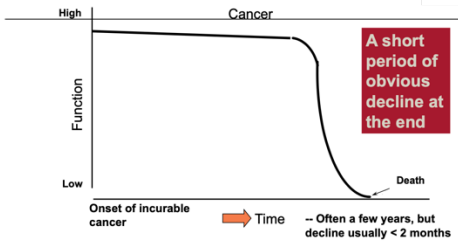
Advanced care planning

- Clarify goals of care for patients → ensures EOL wishes more likely achieved aligning w/ patient's values
- **Paperwork** (ACD, power of attorney (legally appointed guardian), decision competency)
- **Appointed Guardian** > **spouse/partner** > **UNPAID care** > **relative/friend** (any supportive individual w/ no conflict interest)

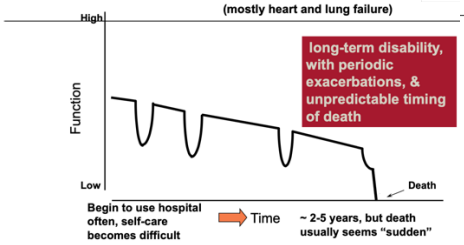
Advanced care directive

- Written advance care plan signed by the patient → should share w/ GP
- Contains instructions that consent to, or refuse medical Rx in future
- Becomes effective when person incompetent to make decisions

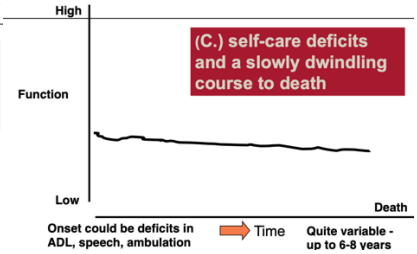
A: "Cancer" Trajectory (diagnosis to death)



B: Organ System Failure Trajectory



C: Dementia/Frailty Trajectory



Identify Dying Signs:

- **DYING QUESTION** = Am I surprised if this patient will die in the next 12 months?
- **Assess SPICT tool**
  - identify people with deteriorating health due to advanced conditions or a serious illness, and prompts holistic assessment and future care planning.
  - Ensure that patient is not depressed or have
- **Identify trends and signs**
  - Increased frowning, agitation,
  - ↑RR and have meds ready to go
  - Bedridden

- Palliative Prognostic score
  - Cancer/non-cancer
- Palliative Performance Scale
  - Cancer/ non cancer
- Prognosis in Palliative Care Study (PiPS-A)
  - Advanced cancer
- PiPS-B
- CRP/Alb ratio
  - Multiple cancers
- LN size
  - IPF imaging
- MELD score
  - Liver disease

Mx in final days – Sx management

Deliver care w/ kindness and compassionate:

"I don't have a crystal ball for a day or time, but what I can tell you is that if there are changes and we will do everything we can to make them comfortable"

- **STOP**: Non-essential meds (e.g. Abs, Anti-Coags, statins), devices (ICD) & cannulas, **stop BP checks**
- **CONVERT**: oral **to SC route,** hospital to home or RACF (location of death)
- **Educate** family about symptoms of EOL and meds:
  - ***Nutrition/hydration*** → may cause discomfort and does **NOT** prolong survival
  - ***Mouth care*** = maintain comfort more than IV/SC hydration
  - Spiritual needs or Love of sport, pets, family

SYMPTOMS	ANTICIPATORY MEDICATIONS
1. **Pain & SOB**	• **oral doses of** *morphine (gold standard)* **OR** • **Renal issue** → *HYDROmorphine (Jurnista) PO/SC– 16mg daily o r fentanyl (TD), buprenorphine (TD), methadone, oxycodone*
2. **Nausea**	• **Metoclopramide (SC), Haloperidol** (SC) • *avoid in SBO, Parkinson's, lewy body dementia ➔ cyclizine, ondansetron
3. **Agitation** /restless	• **Benzodiazepines** *- lorazepam (SL), Midozalam (SC), Clonazepam (drops, tblt, SC)*
4. **Secretions**	• Reassurance + reposition to encourage postural drainage **Glycopyrrolate** or hyoscine (suction if tolerated)
5. Retention	• IDC, bladder scans

Other considerations (SPIKES)

- Single room
- Pressure area and eye care
- Family/carer support
- Cultural considerations (e.g. language, ATSI, religious faith)
- **Verifying death:**
  - Be respectful to family
  - No palpable carotid
  - No heart or breath sounds (>2 mins)
  - Fixed mydriasis (non-reactive)
  - No motor response/ grimace to central pain stimuli
  - Unaffected by drugs/EtOH, hypothermia. BP>100
  - Date and time of death

Care after death:

- Death certification – notify ALL relevant people
  - *registrars, relatives,*
  - *in-charge RN, social worker,*
  - *GP discharge summary*
  - *ward clerk → upload to medical records*
- IT IS **ILLEGAL** TO PUT PERSON IN MORTUARY FRIDGY **WITHOUT** VERIFICATION OF DEATH (WRITTEN IN NOTES exactly as below)

When declaring a patient dead clearly document the patient name, DOB, MRN and state 'is deceased on date at time'

Mr John Smith, DOB 1/1/1922, MRN 12345 is deceased on 2/8/2019 at 14:20hr

- MEDICAL/CREMATION CERTIFICATE OF CAUSE OF DEATH SIGNED **BEFORE** dead patient leaves hospital. Can be done after mortuary
- ***Social implications*** → this data is used to inform appropriate fund/resource allocation for surveillance studies, research investment to address rising burden of particular diseases
- ***Bereavement support – social worker***

NEUROCOGNITIVE DISORDERS: Dementia & Others

History taking

- **History – esp. collateral hx -** often 12-18 months or 2-3 years (what is baseline)
  - Socialising?
  - Orientation to space/time
  - Drive to places on time?
- **Progression & pace**
  - **Gradual** (Alzheimer's)
  - **Stepwise** (vascular)
  - **Rapid (**Lewy body**)**
- **Positive Sx** = *tremor, rigidity, abnormal movements, palsy*
- **Negative Sx** = *sensation loss, loss of awareness*
- ***Higher fn Sx*** = *altered mental state, seizures, syncope imbalance, vertigo, headache, CN palsy*
- **Nature of difficulties** → ADL, orientation, socialization, family support
- **Risk factors**:
  - Vascular = AF, HTN, HC, Anti-Coags
  - Social = smoking + alcohol + poor diet (Korsakoff)

Exam

- **Appearance**: Lean, Well-groomed but loose attire?
- **Behaviour**: Eye contact, expression, movements, speech (fragmented?, stoccato?)
  - **paraphrasic errors** (dementia)
  - **Hypophonia (extrapyramidal)**
- **Mood**: rapport, mood/apathy and affective stability
- **Movement AND Cranial Movements**
  - *Myoclonic jerks*
  - *Tremor* (resting, intention, action) – ***PD, cerebellar***
  - *Hypokinetic* (bradykinesia, rigidity, paratonia/spastic)
  - *Involuntary* (dystonia, dyskinesia)
  - *Restricted ocular movement – not beyond midline(**PSP**)*
  - *Fasciculations or muscle wasting (**FTT, early MND**)*
- **Swallowing**:
  - Gag reflex, asymmetric, dysphonia
- **Psychosis**:
  - Hallucinations *(e.g. eu de passage or presence)*
  - Delusions *(paranoia, fixation of tasks/objects)*
  - Nocturnal Illusions (e.g. drip stand = person)
- **Skin**: *colour, scratch marks, RT tattoos*

DDx – mimics:

- **Delirium** (fluctuating inattention)– *infection, metabolic, environment, pain, retention, polypharmacy, hypoxia*
- **Depression (low mood – anhedonic)**
- Post-ictal
- Hypoglycaemia
- **Consider excess FIO2 = hypercapnia (loss of hypoxic drive)**
- **CO poisoning (gas heater at home left on?)**

Typical investigations

Bedside – cognitive tests:

- **CDIR questionnaire**
- **MMSE (/30)** = 9 (severe) → 20 (mod) → 24 (mild**)**
  - **Orientation, memory, attention, recall, naming, repetition, follow commands, sentence, copying**
- **RUDAS** = non-English speaking background
- **Addenbrooke cognitive exam - ACEIII** (best) exc. depression, delirium & differentiates FTT vs Alzheimer's**)** **(*attention, memory, fluency, language, visuo-spatial)***
- **MoCA (**determine progress e.g. correct EUC or stop opioids**) → CANNOT discriminate delirium vs dementia**

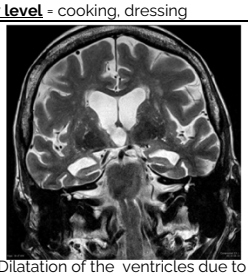
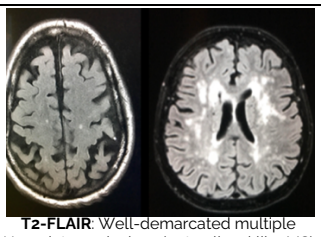
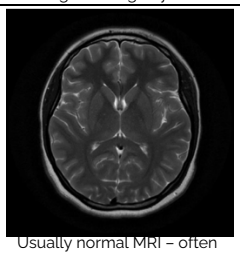
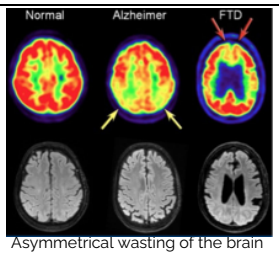
Bloods – IDENTIFY POTENTIALLY REVERSIBLE DEMENTIA

- **FBC (***infection?***). EUC/CMP (***HyperNa, hypoCa***),**
- **LFTs (***hepatic enceph – check for hepatic flap***)**
- **Glucose/Hba1C -** *hypoglycaemia*
- **TFTs –** *hyperthyroid?*
- **Fe studies** (exc. hemochromatosis)
- **Cu /ceruloplasmin** (Wilson)
- **B1 and B12/Folate (**Wernicke's vs PN)
- **CK /prolactin** (exc. seizure and long-lie falls)
- **Ubiquitin levels** *(+++ in PD + dementia***)**
- *Rare*: **syphilis, heavy metals (e.g.Hg), HIV**

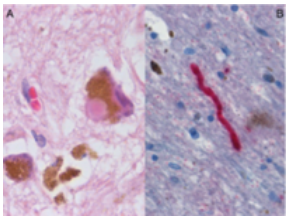
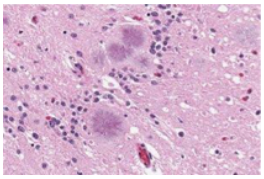
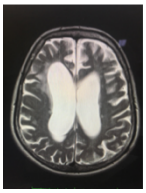
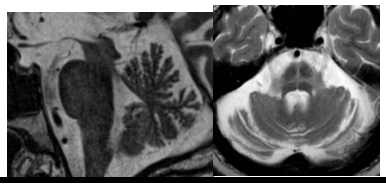
- **EEG (exc. seizure, slowing or encephalopathic waves)**
- **Non-contrast CT brain** = *rule out SoL, stroke, bleed, Normal pressure hydrocephalus*
- **MRI brain -** MRA (exc. vasopasms, cortical atrophy)
- **PET-CT**

Diagnostic criteria for dementia:

1. **Cognitive decline** = memory loss + language, praxis, gnosis + executive function (i.e. *judgement + planning*)
2. **Deficit causes sig. impairment + decline of social + occupational fn**
   a. Instrumental ADLs 1st affected = medication, finances, work
   b. Basic ADLs 2nd = cooking, bathing, wearing clothes
3. **NOT due to substance** (EtOH), CNS disease, tumours and psych disorder

	Alzheimer's Dementia (most common)	Vascular Dementia (2nd common)	Lewy Body Dementia	Fronto-temporal (FTT) dementia
Onset	• Insidious (years)	Acute – STEPWISE	Progressive rapid fluctuating decline	• Rapidly progressive decline
RF	• Older age • Chronic alcohol usage • ApoE4 genotype on Chr 19	Vascular RF • HTN, IHD, HC, DM, Smoker, older age • Hx of stroke, ACS	• Car dings/damages **Usually No HTN, smoking or diabetes*	• Overlaps with MND • M > F (55-65 yo) → **younger onset than AD**
Sx	**1) Storage Issue – memory loss** • **Short-term** (1st) – *losing things, repetitive questioning,* • **Medium** – whose married to who, whose had children • **Long-term** = DOB, recognise family and names, childhood autobiography **2) Language – word finding difficulty (DDx: migraine)** ➢ **paraphrasic errors** ➢ **difficulty describing things** **3) Apraxia – affects function** • **Sleep/wake reversal→ sleep AM, wake PM]** • **High-level decline** = cannot use computers, • **ow level** = cooking, dressing	**1) Retrieval Issue** • Can still remember but need prompting • Needs prompting on MMSE **2) Focal neurological deficits** Depends on where stroke is (FND) • Apathy/mood changes • Gait ataxia = small steps • Hyperreflexia • Aphasia • Hemiparesis • incontinence	*Unlike PD – hallucinations more prominent first before motor Sx* *Psychological* • **Hallucinations + delusions** • **Suicidal ideation "***Robin Williams"* • **REM sleep behaviour disorder → *irritable,*** • ***Fluctuations in emotions*** ***PD features*** • +/- R>L upper limb EPSE • bradykinesia - *Eu de passage (slower moving)* • cogwheel rigidity	• **Apathy + disinhibition** *(frontal lobe = no filter)* • **Poor judgment and planning** (frontal lobe) • **Non-fluent Aphasia** (temporal lobe) • **Issues with naming objects** • **Hyperphagia and sweet** preference • **OCD**
Image	 **T2-MRI** Dilatation of the ventricles due to cortical atrophy (Esp. hippocampus & basalis of Meynert) **[CORTICAL DAMAGE]**	 **T2-FLAIR**: Well-demarcated multiple Hyperintense lesions (not collosal like MS) = periventricular changes **[SUBCORTICAL DAMAGE]**	 Usually normal MRI – often overlaps with vascular dementia **[SUBCORTICAL DAMAGE]**	 Asymmetrical wasting of the brain **[CORTICAL DAMAGE]**
Histo	**Cortical atrophy AFTER:** • Neurofibrillary tangles • B-amyloid deposition = plaques • Usu. temporal-parietal lobes	**Sub-cortical lesion on MRI** ➢ Chronic small vessel ischemia (size does not equate to severity)	**Sub-cortical neurons** • Alpha-synucleinopathy = lewy bodies	• **Cortical** = FRONTAL region lost first compared to AD • Deposit of Tau protein in white/grey matter
Rx	• MDT = SW, OT, PT, Dietician, Psych, Dr, Family **Non-pharm Rx:** • orientate, social and cognitive support, • adequate protein diet, exercise, • Organise ACD and enduring guardianship **Pharm Rx:** • Donepezil (ACHEi) = V/D/incontinence • Memantine (NMDA antag) • SSRI/ Anti-psych (irritable, anxiety neuro-epileptic syndrome) • Valproate (for young) /lamotrigine (mood stabiliser) • Try to avoid benzos (high risk of falls)	Reduce vascular risk factors ➢ Use same meds as Alzheimer's	**quetiapine (cholinergic)** – less EPSE then risperidone (i.e. less stiffness)	• ***Avoid*** benzodiazepines • Be careful with anti-psychotics (esp. if added with alcohol) → begin with lowest dosage • anti-depressants

OTHER DEMENTIA MIMICS

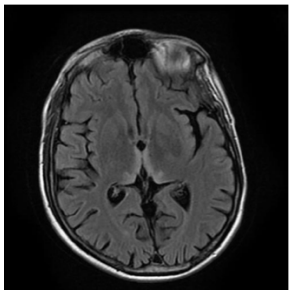
Parkinson's disease dementia (PDD)	Creutzfeldt-Jakob disease (CJD)	Normopressure hydrocephalus (NPH)	Parkinson's Plus disorders
• ≈ 70% PD patients get dementia • Resting tremor • **R>L upper limb extrapyramidal** (bradykinesia and cogwheel rigidity)	• Global • Sporadic = Myoclonus + spasticity • Variant CJD = young age _ cognitive decline	1. Dementia 2. Gait Ataxia, 3. Urinary incontinence,	All have: • **Falls, postural instability**, • Evolving extrapyramidal signs, speech and swallowing dyspraxia, • Preserved higher cortical function • More rapid dementias 1-3 years (not > 6)
Alpha-synucleinopathy (SCNA gene) 	• Prion - infectious? Autoimmune? • Kuru - the laughing sickness = sardonic smile (cannibalism) 	• MRI = ventricular dilatation • CSF tap test → taking 20mL of CSF out to see any improvement 	• **Progressive supranuclear palsy (PSP)** = midbrain atrophy + vertical gaze palsy [**rapid dementia**] → *postural instability* (PSP = hummingbird on MRI) • **Multiple system atrophy** = *postural HypoTN* (MSA = hot cross bun on MRI) • **Corticobasal syndrome** = tauopathy 

Alcohol Related cognitive impairment

- Need to drink alcohol chronically for at least 10 years to trigger alcohol-induced dementia
- Check risk factors:
  - Uncontrolled diabetes (i.e. HbA1C >> 7%)
  - Poorly controlled HTN,
  - Substance abuse
  - History of addiction

4 main syndromes

1. **Cerebellar features [DANISH]**
2. **Wernicke's syndrome** – AEIOU (*ataxia, encephalopathic, irritable, ophthalmoplegic, unwell)*
3. **Korsakoff's syndrome** – amnesia & confabulation (B1 deficiency) ➔ check damage at mamillary bodies
4. **Alcohol and starvation** (e.g. "tea & toast" diet, recent bariatric surgery, GI malignancy, chronic dialysis)



Issues with alcohol related dementia:

- Global impairment, amnesia
- Global atrophy
- High relapse
- Potential, often mild, improvement

Management of alcohol dementias:

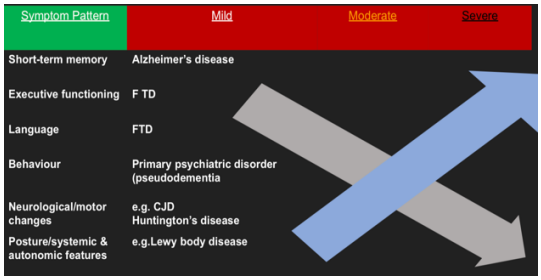
1. Reassurance
2. B1/Thiamine STAT → PO 100mg tds for 1 to 2 weeks
3. PO diazepam if withdrawal (SA and long half life)
4. MDT rehab – family, psych, GP
5. Monitor VITALS and Sx of agitation, confusion, tremor and hallucinations
6. Exclude seizure (MRI, EEG)

Goals of treatment

- ➢ Control acute confusional state
- ➢ Prevent further deterioration
- ➢ Prevent WE
- ➢ Provide safe environment to prevent innjury

OTHER CAUSES OF AMNESIA

	Cortical
TRANSIENT GLOBAL AMNESIA	➢ Transient amnesia ➢ 30-60 yo ➢ Repeat words ➢ ?amnestic seizures
Functional	Conversion – invol. Factitious – seeking attention Malingering – getting out of work
Encephalitis	**YOUNG pt with headache, altered behaviour +/- amnesia** ➢ Autoimmune ➢ Infective
Amyloid angiopathy	Amyloid deposition



Dementia mimics (DDx) & delirium

Seizures:

- Rapid discharge of grey matter – tonic-clonic + slow recovery + urinary issue
- Check EUC, BSL and WCC

Stroke

- Sudden onset
- CT and MRI (DWI) to confirm

Meningitis

- Fever & Confused
- Unwell → neck stiffness, photophobia

Intracranial:

- SoL = ICH, tumour, infarct
- Vascular = infarct, aneurysm

Delirium = organic brain syndrome assoc. with metabolic dysfn or infection

Sx:	• Acute onset • Agitated + hallucination (see people, textures in their central vision) + (**hypervigilance/suspicious of you** OR **withdrawn, sleepy**) • Variable awareness, attention (mainly) → **cannot break through to get attention**		
Bloods	• ++ **culture (blood, urine, sputum**) • **EUC** – hypoNa (< 20), Hyper Ca OR renal failure • **LFT** – hepatic failure • **Malnutrition** – B1, B12	**Imaging**	• **CT/MRI** = unremarkable • **EEG** = slow + dysrhythmic
Drug screen	• ***Opioids (or lyrica)***, sedatives • Antidepressants (*mirtazapine, amitriptyline*) • BB • Alcohol/heavy metals		

Symptom Mx: Cancer + Palliative Care

SOB

Define

- Subjective breathing discomfort (air hunger VS +WoB)
- **Hyperventilation**
- **Resp. distress**

Causes

- **Resp** = Mets, PE, effusion, pneumothorax, , pneumonia, COPD, ILD
- **CV** = SVCO, CVD, tamponade, chronic HF
- **Other** = Anaemia of chronic disease, fatigue, abdo pain, anxiety

Non-medical mx

- Position
- Reassurance
- **Battery operated fans**
- **Pulm. Rehab (PT, OT) + breathing retaining** (Chest wall vibration)
- **Mobility aids (OT)**

Medical Mx

Oxygen therapy

- Supplemental FiO2

Corticosteroids →

- reduce inflammation around cancer or X-COPD

Opiates

- **(5-10mg MS contin bd)** → reduce pain & resp. depression and decrease sensation of hypoxia

"**Hydromorph IR** (dilaudid) – for renal failure eGFR < 30"

Benzodiazepines →

- reduce anxiety (need to self-titrate – provide control back to pt)

Treat reversible causes:

- **PE** = anti-coagulants
- **Pneumonia** = ABx, anti-virals
- **Effusion** = drain
- **Endobronchial disease** = lasers, stents, RT, steroids

Pain

Causes

- **Post-chemo, post-op, post RT**
- **Chronic cancer pain (e.g. bone related)**
- **Inflammation**
- **Infection**
- **Anxiety**

Non-medical mx

- Bath
- Heat packs
- Massage / acupuncture
- Physio, OT, CBT

Medical Mx

- **Non-opioids** (*Panadol, NSAIDs)*
- **Opioids** *(SA vs LA)* **– hydromorph + endone Norspan patches SA morphine 1/6th of total 24 hr (breakthrough)**
- **Anti-convulsant – gabapentin, pregabalin** (for neuropathic pain)
- **Anti-depressant (SSRI, TCA)**
- **Denosumab (anti-RANKL) –** assist w/ bone related pain **for prostate mets**
- **Dexamethasone (high-dose)** → need PPI
- **Nerve blocks or intrathecal infusion pumps**

Adverse effects:

- **Constipation**
- **Pruritis (switch opioid)**
- **Urinary retention**
- **Toxicity –** *miosis, resp. depression, delirium, confusion*
- **Renal impairment –** *reduce 24hr regular opioid dosage*
- **Anti-chol effects (anti-sludge)**
- **↔BSL, psychosis, gastritis, sleep issue (if steroids)**
- **No addition w/ opioids**

Nausea

Causes

What is it?

- *Dizzy?*
- *Retching?*
- *Vomiting?*
- *Heartburn?*

- **GI upset** (e.g. SBO/LBO, constipation, delayed gastric emptying)
- **Chemical** (*smell of alcohol rub, sight of food)*
- **Hypercalcemia**
- **Raised ICP** (AM nausea)
- **Vestibular** (*positional)*
- **Anxiety**
- Infections
- Drug-induced nausea (e.g. chemo)

Non-medical mx

- Acknowledge
- Address the underlying cause
- **Check compliance** (dose, route and timing of ingestion)
  - Oral drugs (15-30mins to take effect) → are they vomiting before this? → vomits out pill
  - Take Maxolon 30mins prior to meals

Medical Mx

Drug	Metoclopramide (Maxolon)	Ondansetron	Cyclizine	Dex
MoA	• Prokinetic • D2 antag • 5-HT3 antag	5-HT3 antag (central + peripheral)	H1 antag	Steroid
Dose	10mg tds ORAL	25-50mg ORAL/SC	25-50mg	4-8 mg
Use	• Drug • Metabolic • Chemical • Gastric stasis	• Post RT • Post chemo • Pregnant	• **Vertigo** • +ICP • SBO/LBO	• +ICP • Early BO • Post-chemo
A/E	• Dystonia • Avoid SBO/LBO	Constipation - Avoid SBO/LBO	• SAS • Anti-chol (anti-sludge)	Steroid A/E
Other	**Haloperidol (D2 antag – 0.5mg) = 2nd line**		**Stemetil** *(D2 antag – 10mg tds) = 2nd line for vertigo*	

BEWARE → cannabis usage → cannot drive (should take before bed)

Treat reversible causes:

- Constipation (no SBO/LBO) ➔ Metoclopramide 10mg tds
- CNS ➔ 0.5-1mg haloperidol oral/SC bd OR Metoclopramide 10mg tds
- Raised ICP ➔ 4-8mg dex oral/SC daily
- Vertigo ➔ prochloperazine (5-10mg oral) → 2nd line = promethazine
- Anxiety ➔ 1mg lorazepam oral/SL bd or qid
- Chemo/RT induced ➔ 4-8mg ondansetron oral bd (for 5 days) + 4mg dex

Constipation

Bristol stool chart:

- Straining
- lumpy vs hard
- incomplete evacuation sensation
- self-splinting (manual evacuation)
- <3 BM per week

Complications

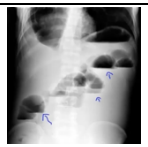
- **Overflow diarrhoea** - liquid component passes around impacted stool
- **Bowel obstruction (surgical vs non-surgical)**

Causes

- ***Drugs*** *(opioids, anti-chol,, anti-emetic)*
- ***Mechanical obstruction*** *(e.g. CRC)*
- ***Older age***
- ***Low fibre diet / dehydration***
- ***Inactivity***
- ***Pain***
- ***Metabolic (****hyperCa)*

Appropriate Ix

- *PR exam*
- *FBC – check neutrophils*
- *AXR*



Non-medical mx

Treat reversible cause

- ***Fibre – prunes, psyllium husk, nuts, wholemeal bread***
- ***↑ Fluid***
- ***Increased mobility***
- ***Position = Potty-squatty (foot-stool)***
- ***Anticipatory Mx when prescribing opioids***

Medical Mx

Drug	Bulk Agents (1st line if healthy)	Osmotic (1st line)	Prokinetics / stimulants (2nd line)	Stool softeners (adjunct)	Last resort
E.g.	• **Methyl-cellulose** • **Psyllium** • **Bran**	• **Lactulose** • **Movicol** (*macrogol 3350 - PEG)*	• Senna + coloxyl • Metoclopramide • Dulcolax suppository (bisacodyl)	• Docusate (Colace)	• **Glycerol Suppositories** • **Enema** • **Manual evacuation**
MoA	**↓intra-luminal pressure + ↑peristalsis**	Sugars draw in water from colon =↑peristalsis	↑peristalsis	Softens stools for easier transit	↑rectal emptying
Onset	**24 hrs**	2-3 days (take PM!)	6-12 hrs (take PM to poo AM)	1-3 days	5-30 mins
Dose	**Per packet**	1-3 sachet daily	1-2 tab = senna 10mg PR dulcolax	2x 120mg oral daily	1 enema OD
Use		Chronic Constip.	Poor colonic motility	• Poor colonic motility	• +ICP • Early BO Post-chemo
A/E	**Bloating, flatulence**	Bad taste Dehydration	Cramps Loss of bowel motility	• Fat-sol. vit mal-absorption	•
CI	**Immobile Adv. cancer**		Avoid SBO/LBO		

CI for enemas:

- Neutropenia (*infection risk – translocation of bacteria)* or thrombocytopenia
- Paralytic ileus or obstruction * Toxic megacolon
- Recent bowel or gynae surgery
- Recent anal/rectal trauma,
- Recent RT

Diarrhoea

- +++ frequency and change in consistency
- >6x episodes/ diarrhoea

Fluid status - tachycardia, dry MM, reduced skin turgor, sunken eyes, low Na, low K → arrythmias

Causes

- ***XS laxatives***
- ***Immunotherapy (CTLA4, PD-1)***
- ***Chemotherapy***
- ***Radiotherapy***
- ***Electrolytes / Metabolic (***
- ***Drugs (e.g.*** *NSAIDs, colchicine, Abx, SSRIs,* ***Metformin, PPI)***

Non-medical mx

Treat reversible cause

- ***Hydration***
- ***NBM - Bowel rest***
- ***Stool culture M/C/S – infective colitis***
- ***Discontinue laxatives, PPI, NSAIDs***

Medical Mx

Treat reversible cause

- **1st line = atropine (pre-med esp. for pro-cholinergics such as irinotecan)**
- **Immune-mediated colitis → infliximab then tapering prednisone**
- **Surgical resection → cholestyramine**
- **Carcinoid syndrome → octreotide**
- **Steatorrhea / fat malabsorption → Creon + PPI**
- **Abx usage → stool M/C/S (C. difficile) → metro or vanco**
- **Faecal impaction → laxatives**

For uncontrolled (late) diarrhoea:

1. **Loperamide** (2mg after each stool) → opioid agonst → slow GI motility
2. **Codeine 30mg qid**
3. *ABx if neutropenic or symptoms persist*
4. **Combination**
5. **Specialist advice**

NOTES	• Supplemental O2 provides NO symptomatic relief if not hypoxic • SOB action plan	**DO NOT use:** ***Morphine (CKD stage 4/5)** ****Carbamazepine (interferes w/ chemo)**	**PPI needed with steroids to prevent gastritis**	**Non-surgical bowel obstruction** **Surgical abdomen**	➢ *Analgesia → morphine, buscopan, dex 4mg bd* ➢ *Vomiting (**haloperidol ONLY**, cyclizine)* ➢ *NGT decompression (unless vomiting)* **GI consult**	

Symptom Mx: Geriatric Giants – altered LOC #2

	1. Delirium	2. Dementia	3. Incontinence	4. Falls	5. Other
Define	1. Fluctuating state of: 2. inattention, 3. Abnormal behaviour ***Hyperactive*** *– agitated, restless, hallucinations* ***Hypoactive*** *– sleepy, slow-moving, apathy* 4. Chaotic cognition / disorganised 5. Distorted reality /perception **6. Worse at PM and waking** **ELDERLY PT MAY PRESENT ASYMPTOMATIC!**	***Insidious irreversible unprovoked*** *progressive* ***decline*** *and must have a* ***LOSS in basic or working function!!!*** ➢ **1) executive fn –** *judgment, planning* ➢ **2) language –** *word findings, fluency* ➢ **3) memory – free or cue recall (somatic vs autobiographical) –** *short, vs medium vs long* ➢ **4) Visuo-spatial –** *drawing and perception* ➢ **5) attention –** *distracted* ➢ **6) social cognition –** *insight, theory of mind*	➢ *Inability to voluntarily control excretion of urine* ➢ *Any leakage, odour, dribbling* ➢ *>7x in waking hrs* ➢ *>2x at night (↑ADH @ NIGHT)* *RF:* ➢ *++ multi-grav, obesity, abdo surg.* ➢ *DM, stroke, dementia, depression,* ➢ *Vaginal delivery, episotomy or estrogen depletion*	• **Common elderly issue 1/3rd >65 yo** • **Mainly women** • **Mechanism of injury critical** • **RF** – advanced age, ADL limitations, history of falls, stroke, PD, psychoactive medication use, polypharmacy (esp. balance centres), impaired cognition *Intrinsic factors (Drugs – Age – Med – Environ)* • **Age-related** – low vitamin D, XS carotid sinus massage (+ vagal tone), malnourished, chronic foot pain • ***MSK conditions*** *(e.g. OP, knee OA pain, foot deformities, fractures)* • ***Neuro / LOC*** *→ Postural hypoTN, stroke, altered gait, hypoglycaemia, vasovagal* • ***Vision or hearing impairment*** *(cataracts, bifocal glasses, hearing loss)* • ***Chronic disease –*** *Parkinson's, T2DM, CCF, T2DM, arrythmias (Heart block, MI)* • ***Dysequilibrium –*** *Extrinsic factors:* • ***Drugs/EtOH / polypharmacy*** *– central-acting meds affecting balance centres* • ***Unstable footwear or assistive devices*** • ***Environmental hazards*** *(e.g. stairs, cracked sidewalk)* • ***Inappropriate assistive devices***	**Polypharmacy:** *Time-critical meds* ○ **Diabetic meds** (prevent hypos and hypers) ○ **Parkinson meds** ○ **Diuretics** (early AM – avoid in afternoon to avoid nocturia) – LaSIX– lasts six hours ○ **Antibiotics** (prior to theatre) ○ **Bisphos** (once a week and pre-breakfast upright to prevent GI upsets) **Rx: - MDT approach + discussion** ➢ Symptom control ➢ Prognostic benefit? Indication? ➢ **Nonadherence** (cost, side effects, poor understanding, pill load, arthritis for puffer) ➢ **Unintentional non-adherence** (forgetfulness)
Causes	• **Drugs/Polypharmacy/EtOH withdrawal** ***N's*** *= narcotics, NSAIDs* ***Antis*** *= psych, depressants, convulsant, anxiolytics (**arecept**) and benzos (e.g. alprazolam)* • **PAIN!!!!,** • **Dehydration or blood loss ,** • **Retention** – urine, faecal • **Post op** *(esp. ED, spinal, vascular hip #)* • **Infection** (UTI, meningitis, cellulitis, pneumonia, sepsis) • **Neuro** (TIA, Stroke, MS) • **Metabolic** (thyroid, BSL, ureamia, electrolyte (Na, K), severe anaemia, **T2DM – peripheral neuropathy (proprioception)** • **CVS – arrythmias, STEMI or postural HypoTN** • **Environmental changes** -	• **Mild cognitive decline – amnesic/non-amnesic but still able to function properly** *10% with MCI develop Alzheimers* • **Alzheimer (1 in 2 over 80yo) –** *plaque and tangles, progressive cognitive decline in:* **cannot use computer, finances → severe = cannot cook, clean or clothes** ***Less common types*** • **Vascular –** *ischaemic* vascular risk factors and step wise decline, but still quite sharp • **Lewy body -***alpha-synucleinopathy* parkinsonian Sx + hallucinations • **Fronto-temporal -** *Tau protein disinhibition and younger onset*	• **Stress** (++intra-abdo pressure) *Multigrav, post-meno (↓E2), chronic cough, constipation* • **Urge** (need to go) *UTI, Overactive bladder syndrome, stroke, MS, SCI injury, irritation from atrophic vaginitis* • **Overflow** (underactive bladder) *Cauda equina, PN, post-UTI, urethral stricture, BPH, prolapse* • **Mixed vs Functional** • **Medication –** *furosemide (urge),* ***Diuretics, anti****-psych, anti-HTN (CaB, ACEi, a-blocker) , caffeine in tea, coffee irritates ureteric tract*		
Ix	• **Vitals – HR, RR ,BP, Temp, Sats** • **Fluid status** • **Collateral Hx – from family → 4AT or delirium risk assessment tool (DRAT)** • **FBC** *+ anaemia, infection* • **EUC/CMP (*ureamia)*** • **LFT (***hepatic encephalopathy – check for hepatic flap* • **BSL, Hba1C** • **Fe studies -, B12, TSH** • **Troponin, BNP** • **Rapid PCR (**viral multiplex) • **Culture – bloods, urine, swabs, sputum** • **ABG –** *ventilation issue (resp. acid?)* • **UA (M/C/S) –** *UTI,* • **Bladder scan** • **ECG –** *ACS, arrythmia* • **CXR -** pneumonia • **CT brain –** *stroke, bleed, SoL, meningitis*	• Delirium investigations *PLUS* ○ MRI or EEG Neuropsychological Screening : NOT DIAGNOSTIC – EVERYONE DIFFERENT AFFECTED BY EDUCATION LEVEL • **MMSE (/30) = dementia** 9 (severe) → 20 (mod) → 24 (mild**)** *Orientation, memory, attention, recall, naming, repetition, follow commands, sentence, copying* • **ACEIII (Best)** = exc. depression, deliriuma + ddx FFT vs alzheimers • **RUDAS (/30)** = account for socially and culturally diverse • **MoCA (/30)** = assess cognitive impairment progress (e.g. after stopping opioids, or correct EUC) • **Addenbrooke (**impaired vs non-impaired pts**)**	*Bedside:* • DRE and PV exam (?prolapse) • UA M/C/S– exc. UTI • KUB USS – retention, abnormality • PSA - ?BPH • BSL, HbA1C *Special* • Pre vs post void vol. diary • Q-tip (overactive bladder) • Uroflowmetry **Stress** (surgical) • *CBT, kegel (pelvic floor exercise)* • *Treat cough, constipation* • *Reduce weight* • *A-blockers (e.g. Flomax)* • *TVT sling* **Urge** *(medical)* • *Treat UTI* • *Reduce weight* • *Bladder retraining (timed void + reduce fluid intake before bed)* • *Wear more pads* • *AM diuretics* • *Anti-chol (oxybutynin)* • *B3 adrenergic (miragabron)* • *Botox → neurostimulation* **Overflow** • Timed void • Local E2 (post-meno atrophy) • Self-catheterise (IDC) **Mixed -** Prioritise **main** concern of pt ➢ Bowel and sexual dysfn (if pudendal nerve affected) ➢ UTI (candidia), cellulitis, pressure ulcers	• **Vitals – HR, RR ,BP, Temp, Sats** • **DR ABCD** • **Fluid status** • **Bladder scan** **Bloods:** • **FBC + Fe studies -** *anaemia, infection* • **EUC/CMP (*ureamia)*** • **LFT (***hepatic encephalopathy)* • **BSL, Hba1C** • **CK – elevated →myoglobin build up and cause AKI** **Imaging:** • **X-ray relevant sites – CXR, PXR** • **MRI - ?***spinal canal stenosis, cauda equina, lumbar/sacral disc herniation* • **DEXA Scan** • **FRAX assessment (***sex, age,# after 50, no. of falls past year, T-score)*	**Insomnia -** *not enough sleep causing impaired daytime function and mood disturbances"* **Cause:** • **Pain → insomnia → pain (e.g. Fibromyalgia)** • **Drugs (***Steroids, Stimulants, Anti-HTN (BB), SSRI/SNRI, EtOH* • **ALS, PD, OSA, Cancer** **Rx:** • **Rx cause** = e.g. analgesia • **Sleep hygiene** (exercise) → sleep log review → • NO coffee/energy drinks, EtOH, smoking, • **No daytime napping OR** bluelight before bed • **CBT or hypnosis (1st line)** • **Remove disturba**nce (*light, noise, co-sleeper, temp)* • **Non-benzos (PBS)** – 3.75-7.5mg **zopiclone** PM ○ **Melatonin 2mg (2hrs before sleep)** • **Benzos –** 10-20mg **temazepam** PM
Non-PHARMmx	Treat reversible cause → **MDT approach** • ERAS - Early **mobilisation** • **Orientate** – place and time (w/ photos, family members) → transfer to quiet room (keep lights on) • Switch to **single lens, hearing aids** • **Detailed cardiac, geriatrician, OT/PT/SW assessment** • Improve **sleep** patterns *analgesia* • ***Fluid restriction + EUC, sats, RR and sedation monitoring***	• Good nutrition and hydration • Social support • Advanced care directive • Polypharmacy review • OT – home safety evaluation		1. **Permissible HTN and polypharmacy r/v** to prevent postural hypotension and baroreceptor insensitivity 2. **Provide physical, OT and educatio**n → gait, wt bearing and balance retraining, ambulatory aids, fitted shoes 3. **Medication review –** STOP CNS meds + optimise Vit D intake, blood thinners 4. **Improve home environment** → e.g. good lighting, safe furniture, guard rails, remove obstacles 5. **Sensory –** singles lens, hearing aids, falls alarm	**Anorexia** **Cause:** ➢ **Pain** ➢ **Cancer (metabolic changes)** ➢ **Abdo –** *appendicitis, SBO/LBO* ➢ **Drugs** ➢ **Low mood** **Rx:** ➢ *Encourage* small regular portions (avoid strong smells) ➢ **Nutritional supplements** ➢ **2-4mg dex** oral once daily (5-7 day corticosteroid) ➢ **Prokinetics** if gastroparesis (10mg metoclopramide tds 30 mins before meals) ➢ **Anti-depressants** (15-45mg mirtazapine)
Medical Mx	• **FiO2 or mechanical ventilation** • **IV thiamine** • **Non-opioid analgesics (Panadol)** • **Anti-psychotics (haloperidol or risperidone)** → for acute delirium • **Notify GP of any medication changes** ***Nb:** anti-psychotics **DON'T** ↓ survival rate, severity or duration*	• **Donepezil** → ACHEi – (ANTI-SLUDGE) • **Memantine** → NMDA antag • **Anti-psych → agitation** • Benzo → agitation *AVOID Anti-chol drugs* (worsens dementia and CNS side effects)			**Low mood** **Cause:** • **Chronic Pain** • **A/E of Drugs (***Steroids, Stimulants, Anti-HTN (BB), SSRI/SNRI, EtOH* • *Poor sleep* • ***Metabolic*** *(low K, high Na/BSL, anaemia)* • *Renal / liver/heart failure, cancer, chronic infection* **Rx:** • Reversible causes • Sleep hygiene • Planned Exercise (PT/OT) + nutrition (dietician) • 2-4mg **Dex** AM (stop if not effective after 1 week)
Comp	• **Longer hospital stay** • **++Asp. pneumonia + line infection →** *CNC, home nursing* • **++ falls →** PT/OT, *pharmacy review* • **++ Pressure ulcers →** *air mattress*	• **L brain** = verbal (can't retain dictation info) • **R brain** = visuo-spatial (can't recall parking) • **Agnosia** – can't recognise object or sound • **Apraxia** - no skilled movement		• Loss of independence • Fracture risk → BMD/DEXA scan (hip fracture is most serious consequence) • Bleeds – if on blood thinners	