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HEALTH AGEING

E-Ageing

Welcome to E-Ageing

We provide education about the ageing process and associated diseases for both medical and paramedical professionals.

Our aim is to foster positive attitudes towards older people.

This site is optimised for viewing in Mozilla Firefox. Mozilla provides open source software for public benefit. Download Firefox for free. The site is also compatible with recent versions of Internet Explorer (7 and 8). You can download Internet Explorer 8 for free.

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Delirium Home

Welcome to the Delirium module. This case study focuses on the recognition of delirium in an older Aboriginal person in the acute hospital setting, including the causes, treatment and evaluation to discharge of that person.

As the Australian population ages, there will be increasing demand for utilisation of health care resources by frail older people. Indigenous Australians have a high burden of illness and a life expectancy at birth that is 15-20 years less than non-indigenous Australians.

Delirium is an acute and fluctuating confusional state, with reduced ability to focus, maintain and shift attention. It is a common clinical syndrome that increases with age.

Objectives

Pre-Module Test

Resources

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Objectives

In this interactive case study, you will learn to:

- Recognise and differentiate delirium
- Identify possible predisposing and precipitating causes for delirium
- Apply appropriate tests and assessment skills.
- Treat the symptoms of delirium and its precipitating causes.
- Develop a discharge plan with the patient and family/carer – and its multicultural application.
- Consider utility of multi cultural communication and assessment tools.

Readings and References

Campbell M. Communication with Aboriginal patients in the pre-hospital environment. Australian Journal of Emergency Care 1995;2(2):24-27.

McGrath P, Patton MS., Holewa HG and Rayner RD. The importance of the 'family meeting' in health care communication with Indigenous people: findings from an Australian study. Australian Journal of Primary Health 2006; 12(1):56-64

Presentations

Delirium_-_a_guide_for_nurses_-_Dr_Massarotto.ppt
Dementia___Delirium_in_Surgical_Patients_-_Dr_Harding_02.08.ppt

Module Format

This case study on delirium is presented in a series of stages, each of which covers a particular segment in the care of a simulated patient. You will be required to assemble appropriate information by:

- taking a history
- performing a physical examination,
- requesting appropriate investigations, and
- consulting with specialists and other practitioners,

in order to make decisions about the patient's care.

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Interactive Case Study

Mr Thomas is a 69 year old indigenous man who has been transferred to Royal Perth Hospital in respiratory distress.

Review Mr Thomas' History through the links below, before progressing to his assessment.


History of Present Complaint


Medical History


Medication History


Social History


Assessments

Assessments

Detection of Altered Mental State

Mr Thomas arrived at the hospital overnight, was triaged in the ED and immediately admitted to the respiratory ward. IV ceftriaxone and merepenum were continued.

Admission staff noted that Mr Thomas appeared agitated and restless. He also had reduced attention span and trouble following conversations. Mr Thomas was repeatedly asking where he was. His speech was slow and at times, incoherent.

Since admission, he has been frequently pulling out the intravenous line.

Before you assess Mr Thomas, read the patient's transfer letter from the remote area nurse.

Assessments

Kalumburu WA 6740
PMB 12, Wyndham WA 6740
Phone 08 9161 4335
Fax 08 9161 4356

Government of Western Australia
Department of Health
WA Country Health Service

2/9/07

Dear Admitting Dr

Thanks for admitting and treating Mr Gary Thomas, DOB 7/4/38. with ? pneumonia.

Hx Diabetes
Cataracts - removed
Poor vision

Meds Metformin 850mg tds. NKA

His wife is coming with him

Respected Elder - NO ETOH.
Call if any questions.
Thanks, Tish Hathaway - RN.

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History Taking

Delirium is frequently misdiagnosed as depression or dementia. Delirium is a clinical diagnosis, based on history and observation of the patient at the bedside.

It is important to recognise delirium because it can be difficult for patients to reliably report their symptoms, even to those who know them well. If the patient is an indigenous person, it might also be appropriate to request the assistance of the Aboriginal Health Worker (AHW), if available.

Tips on effective communication

1. Approach the person slowly, calmly and from the front; respect personal space; address the person by name and introduce yourself; use eye contact; and speak clearly and simply.
2. When used appropriately, gentle touch and gestures as well as auditory, pictorial and visual cues may assist with communication.
3. Promote understanding by allowing time for the patient to process the information, paraphrase and/or repeat if nescessary.

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Patient Interview

In order to assess Mr Thomas' condition, you will need to ask him a series of questions.

Please see the questions and answers below. Feedback will also be given in relation to the rationale for asking the question.

Mr Thomas is it alright if I talk to you and your wife?

Mr Thomas does not answer or make any eye contact.

Begin by seeking permission to gather the history.

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Patient Interview Part 2

Mr Thomas, I'd like to find out why you've had to come to Perth.

Mr Thomas does not answer or make any eye contact.

It is appropriate to commence with general questions and also to determine the person's level of alertness and engagement.

Although Mr Thomas is unweel, requiring supplemental oxygen, it does seem odd that he wlil not speak with you at all. Is this just cultural? Although ideally we would seek Mr Thomas' permission before speaking to a relative, this may not be possible in the current situation. It is reasonable to attempt to gather collateral history from Mrs Thomas to try to understand the cause of his current mental state.

In order to assess Mr Thomas' condition, you will need to ask his wife a few questions as Mr Thomas himself was unresponsive.

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Interview - Mrs Thomas

Please see the questions and Mrs Thomas's answers below. Feedback will also be given in relation to the rationale for asking the question.

Mrs Thomas, can I ask you what problems has your husband been having?

He been coughin' a lot....green stuff ....hard for him to breathe.

Good start!
Use general, open ended questions.

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Interview - Mrs Thomas

How long has he been experiencing problems?

Few months now I reckon, but it got worse in the last week.

This question helps you assess progression and severity of medical condition.

Has he changed since leaving Kalumbaru?

Yeah, him talkin' OK, then he thinks him at home and now he shut up.

Fluctuation is a key feature of delirium.

Is it normal for your husband not to talk?

No. Him talkin' normal before.

An acute change in cognitive function is a key feature of delirium.

When did your husband stop talking to people?

Just recently.

To diagnose and distinguish between delirium and dementia it is critical whether condition is acute or chronic.

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Interview - Mrs Thomas

Has this happened to him before?

No. This is the first time he been like this.

Previous history is a risk factor for delirium.

Is your husband still good at remembering everything - like when pension day is, what season it is?

Yes, he have no problem with that.

Does he ever get lost or do things the "wrong way"?

No, he always know where he's goin'.

This question may eliminate the possibility of a coexisting dementia.

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Interview - Systems

Continue to interview Mrs Thomas...

Has your husband started taking any pills or medicine bought from the chemist or shops?

Only those pills when he has pain - you know - paracetamol.

Medication side effects and interactions are one of the most common causes of delirium.

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Interview - Systems

Has your husband been taking his diabetes medicine properly?

Yes.

Medication side effects and interactions are one of the most common causes of delirium.

Has your husband fallen ill recently?

No.

Falls and head injury may precipitate delirium, although sepsis seems likely in this case.

Has your husband had any fits?

No.

Seizures may point to a precipitating cause of delirium.

Is your husband hearing or seeing things that aren't there?

No. I don't think so.

Hallucinations may point toward delirium.

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Interview - Systems 2

Continue to interview Mrs Thomas...

Has your husband had weakness in his body?

I don't think so.

A prior history of stroke may produce diminished cognitive reserve. However acute stroke is usually the sudden onset of FOCAL neurologic deficit.

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Interview - Systems 2

Has your husband been feeling unhappy lately?

No.

Dysthymia may indicate depression rather than delirium.

Has your husband had trouble sleeping at all?

Well, he usually sleep like a log, but a few nights this week, like last night, he was all confused and worked up and couldn't rest. Then during the day, when he should be awake, he's sleepin'.

Disturbed sleep/wake cycle and increased confusion at night are key indicators of delirium.

Do you know if your husband is still going to the toilet (peeing) OK?

He's fine with that.

Good thought, urinary incontinence may be a precipitating cause of delirium, and UTI and retention are common in older people. However these seem unlikely in Mr Thomas' case given the prominent chest symptoms.

Physical Assessment

Physical assessment of Mr Thomas may be difficult depending on his level of agitation, although attention at the bedside to the following factors is often helpful:

- Level of consciousness
- Hydration
- Observations – temperature, oxygen saturations, urine dipstick
- Search for infection: lungs, urine, abdomen, skin
- Evidence of alcohol abuse or withdrawal (eg tremor)
- Cognitive function using a standardised screening tool
- Neurological examination (including assessment of speech) - note comprehensive examination may not be possible due to compliance.
- Rectal examination – if impaction suspected (may not be possible due to compliance.)
- Residual urine by bladder scan

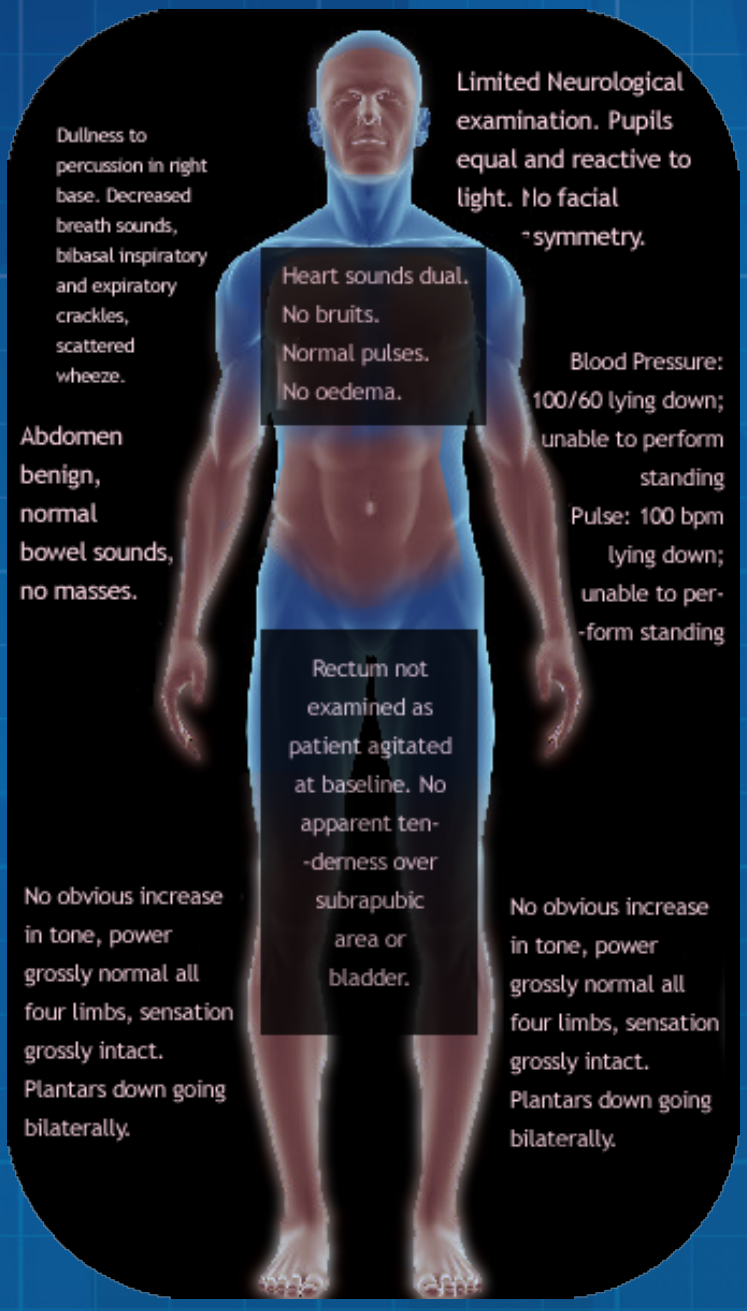
Physical Assessment

Physical examination should be thorough as precipitants for delirium might be relatively minor if a patient has numerous risk factors. Important considerations include:

- Pupillary response
- Respiratory examination
- Cardiovascular examination
- Abdominal examination
- Suprapubic tenderness or palpable bladder
- Hip tenderness (in case of neck of femur fracture which can be overlooked in frail elderly people)
- Neurological findings

Physical Assessment

Please move your cursor over Mr Thomas as if you were examining him. You must complete the examination before you go on.



General Appearance:

Mr Thomas is sweating and looks short of breath. His legs are constantly moving and he appears confused and agitated. His skin is moist and tribal scarring is noted on left and right upper arms, midline of chest and left and right thighs. His eyes are wandering and he appears to have trouble maintaining attention, although this does fluctuate. Admission staff report that his speech was slow and at times, incoherent. Mr Thomas also exhibited impaired orientation. His wife reports that he had trouble sleeping last night.

Height: 168cms
Weight: 75kgs
Temperature: 36.7
Respirations: 28 shallow

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Cognitive Assessment

Before progressing to the result of Mr Thomas' cognitive screen, take a moment to consider which screening tools are most appropriate and answer the following questions:

Screening Tools

You may have heard of tools used to assess cognition, or seen them used in your placements. Select the screening tool(s) most commonly used to screen for, and monitor, changes in cognitive function?

a) Confusion Assessment Method
b) Abbreviated Mental Test or Mini Mental State Examination
c) Rowland Universal Dementia Assessment Scale
d) Kimberley Indigenous Cognitive Assessment

See next page for answer.

Culturally Appropriate Screening Tools

Which screening tool may be particularly appropriate for Mr Thomas?

a) Confusion Assessment Method
b) Abbreviated Mental Test or Mini Mental State Examination
c) Rowland Universal Dementia Assessment Scale
d) Kimberley Indigenous Cognitive Assessment

See next page for answer.

Types of Delirium

Use of screening tools is recommended as changes in cognitive function are easily missed. What 2 major types of delirium do you always need to consider?

a) Hyperactive
b) Vascular
c) Hypoactive
d) Depression
e) Frontotemporal

See next page for answer.

Cognitive Assessment

Screening Tools

You may have heard of tools used to assess cognition, or seen them used in your placements. Select the screening tool(s) most commonly used to screen for, and monitor, changes in cognitive function?

Answer: b - The Folstein Mini Mental Sate Examination (MMSE) is the most widely used cognitive screening tool in Australia. A score of less than 24 out of 30 indicates cognitive impairment. Its usefulness is limited in multi-cultural populations and people with little formal education. The Abbreviated Mental Test Score Appendix (AMTS) is a shorter 10-item screen for cognitive impairment. A score of less than seven indicates cognitive impairment. It is also culturally biased.

Culturally Appropriate Screening Tools

Which screening tool may be particularly appropriate for Mr Thomas?

Answer: d - The KICA is recommended for use with rural and remote Indigenous Australians aged 45 years and above for whom other dementia assessments are not suitable. http://www.wacha.org.au/kica.html In other multicultural populations the RUDAS may be a better test. The Rowland Universal Dementia Scale (RUDAS) is designed to overcome the limitations of the MMSE. It performs at least as well as the MMSE, but with the added advantage of being simpler to use in a multicultural population. It is less commonly used in remote WA Indigenous populations.

Types of Delirium

Use of screening tools is recommended as changes in cognitive function are easily missed. What 2 major types of delirium do you always need to consider?

Answer: a & c - Hyperactive and hypoactive delirium are the two major presentations of delirium to consider. Hyperactive patients may be loud, resistive or hyper-vigilant (and are thus not missed!). Hypoactive delirium is commonly overlooked: the patient may lie passively in bed, often with mouth open. Mixed, fluctuating presentations are common. Frontotemporal or vascular dementia, and depression, are common differential diagnoses.

Cognitive Assessment

Why suspect delirium?

Based on your assessment of Mr Thomas and the information obtained in your discussion with his wife, it seems likely that Mr Thomas's has pneumonia and concurrent delirium. What are the reasons for suspecting delirium rather than dementia or depression?

a) Mr Thomas had an acute onset of altered conscious state
b) Mr Thomas has a disrupted sleep/wake cycle and is very sleepy during the day, but awake at night
c) Mr Thomas is not usually moody, withdrawn, sleepy and sad
d) Mr Thomas' altered conscious state occurred over a period of time
e) Mr Thomas' conscious state and ability to maintain attention fluctuate
f) When Mr Thomas is alert, his speech is slow and sometimes incoherent
g) Mr Thomas has previously displayed signs of cognitive impairment, such as forgetfulness
h) Mr Thomas has been moody, withdrawn, sleepy and sad for some time
i) Mr Thomas shows signs of functional impairment

See next page for answer

Mr Thomas' Delirium

What type of delirium is Mr Thomas experiencing?

a) Hyperactive
b) Hypoactive
c) Mixed

See next page for answer

Cognitive Assessment

Why suspect delirium?

Answers
a, b, c , e, f

Mr Thomas' Delirium

Answer: c - Mr Thomas appears to have HYPOACTIVE delirium as he is withdrawn and apathetic, has a reduced level of responsiveness, fluctuating level of consciousness, disrupted sleep/wake cycle and impaired orientation. Removal of the IV line and night time agitation might be considered symptoms of HYPERACTIVE dementia. Thus Mr Thomas is suffering a MIXED delirium.

Causes of Delirium

Case Update

Mr Thomas is an independent, previously cognitively intact 69-year-old Indigenous man transferred to RPH via RFDS and admitted with respiratory distress.

Following his admission, Mr Thomas' condition was noted to be complicated by acute confusion and he was diagnosed with delirium. He is receiving IV antibiotics but has been frequently pulling out his intravenous line.

You have established that Mr Thomas has an altered mental state and should now proceed to investigate Mr Thomas' physical and mental state further, to determine the cause of delirium.

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Predisposing and Precipitating Factors in Delirium

Delirium is caused by an interplay between predisposing (risk) factors and precipitating (causative) factors. The more risk factors an individual has the more vulnerable the brain is to an insult that can precipitate a delirium. Relevant insults may appear minor, such as a new drug or constipation.

In principle, anyone can experience a delirium, just as anyone's brain can have a seizure - the less vulnerable the person, the higher the insult required.

The most common risk factor for delirium is dementia. Others include advanced age, visual impairment and depression.

Common precipitators of delirium include:

Infection
Cardiac (e.g. myocardial infarction, heart failure)
Dehydration (e.g. hyponatraemia, hypercalaemia)
Endocrine & metabolic (e.g. thiamine deficiency, thyroid dysfunction, renal, hepatic failure)
Drugs (particularly: those with anti-cholinergic side effects, sedatives, opiates, antiparkinsonian drugs, analgesics, steroids) and alcohol withdrawal
Urinary retention
Faecal impaction
Severe pain
Neurological (e.g. subdural haematoma, epilepsy, encephalitis)
Multiple contributing causes

Investigations

Given the vast differential of delirium, investigations should be guided by history and physical examination findings.

Based on Mr Thomas' history and physical examination findings, the following tests are ordered.

FBC
Hb (Haemoglobin) 160
White cell count (WCC) 26
Platelets (Plt) 349
Infection is a possible cause of delirium. Mr Thomas is "dry" hence the high Hb

C Reactive Protein
CRP 96
Monitoring CRP can be useful in setting of acute sepsis

Urea and Electrolytes
Na 152
K+4.6
Cr 180
Mr Thomas is dehydrated and probably has substantial renal dysfunction which has not been recorded up until now. This was worth checking!

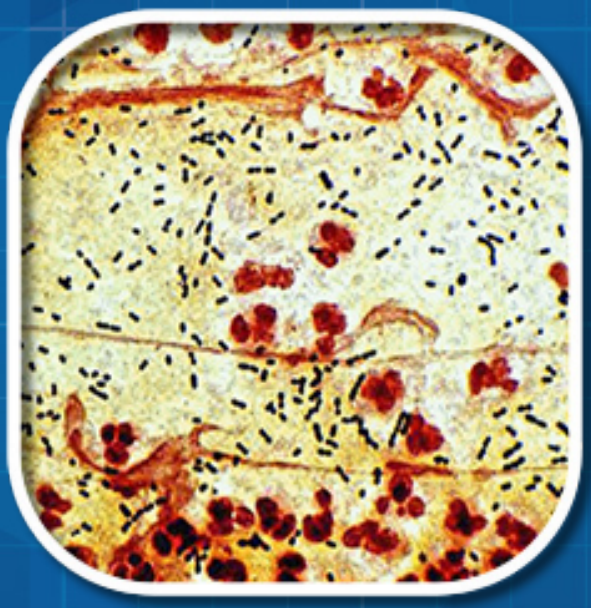
Calcium
Ca++ = 2.33
Hyper and hypo calcium should be excluded as a cause of delirium

Liver Function Test
Albumin 32
ALT 42
GGT 51
ALP 68
Bilirubin 24
Hepatic encephalopathy is important to rule out. In patients with pneumonia it is also important to check for other organ failure as this increases the risk of mortality.

Investigations

Glucose
14.5
Exclude very high or low blood glucose in all confused older people.

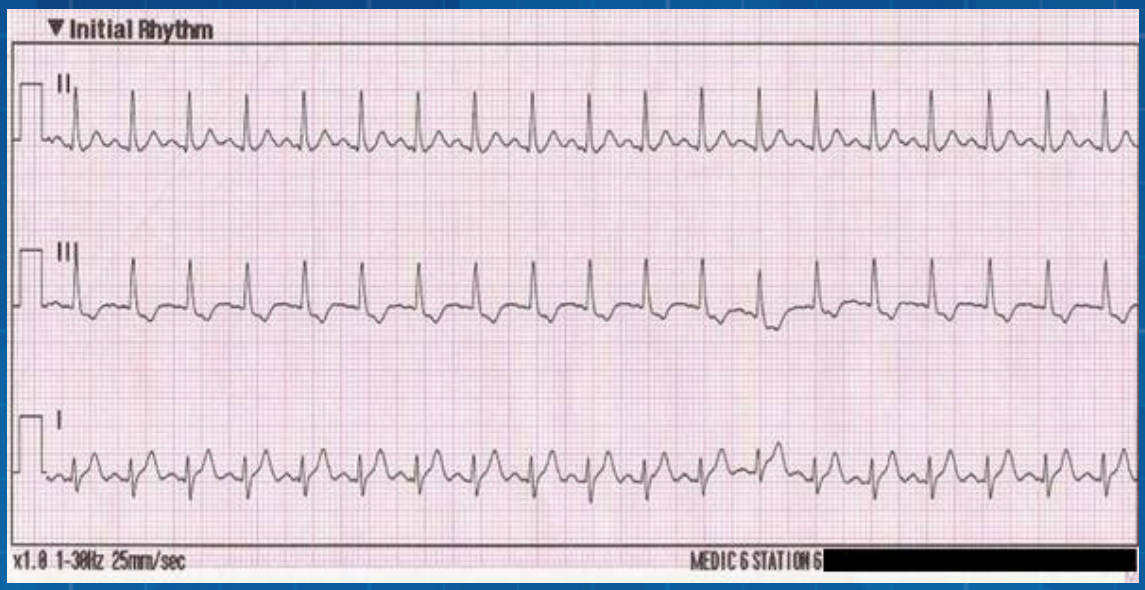
Blood cultures
Growth of gram positive coccus (subsequently identified as S Pneumoniae).
Blood cultures confirm Mr Thomas has septicaemia, probably related to a bacterial pneumonia



Urinalysis - Dipstick
2+ glucose
1+protein
To exclude urine infection.

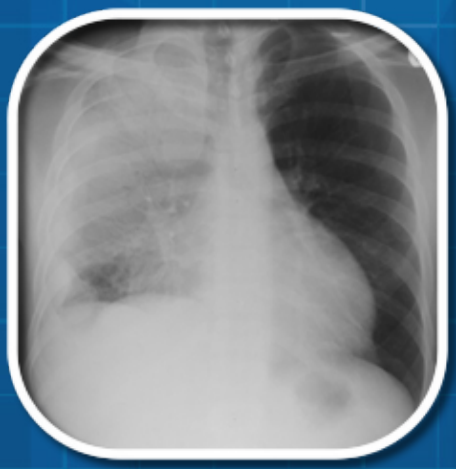
ECG ± Troponin
Sinus Tachycardia, no evidence of ischaemic change.
Given Mr Thomas' heart rate and presentation with shortness of breath, an ECG is important part of the initial investigations. See next page for image.

Investigations



Pulse oximetry
O2 saturation 91% on room air. Test used to include or exclude hypoxia.

Chest X-ray
Posterior-anterior and lateral films show right lower lobe consolidation consistent with pneumonia. Infection is a possible cause of delirium.



Treatment Decisions

Based on the results of the investigations, what treatment decisions are indicated in the management of Mr Thomas' medical condition?

Remember that you need to take into account any pharmacologic interventions that may exacerbate Mr Thomas' delirium. Mr Thomas removes his IV line so alternative methods of drug and fluid administration need to be considered.

a) Continue antibiotic therapy for the pneumonia and septicaemia administered via a "push", with the intravenous line only reconnected when administering the drug. (Administration of a small volume of drug over a short period directly into an intravenous access device)
b) Consider subcutaneous fluids and offer frequent water by mouth.
c) Continue supplemental oxygen until Mr Thomas' breathing difficulties subside.
d) Change to oral antibiotics.
e) Arrange for Mr Thomas to share a room with an aboriginal lady from the Kimberley so he feels more at home.
f) Use "mitten" restraints to stop Mr Thomas pulling out his IV.
g) Use a medicine to calm Mr Thomas down.

Answer on next page

Treatment Decisions

Answers

a, b, c - Broad spectrum antibiotics and supportive care are indicated at this stage. Trying to restrain or sedate Mr Thomas may do more harm than good.

Other Investigations

Other investigations may be indicated according to the findings from the history and examination. These can include:

CT Head

CT has been shown to be unhelpful on a routine basis in identifying a cause for delirium and should be reserved for those with

- Focal neurological signs
- Confusion developing after head injury
- Confusion developing after a fall
- Evidence of raised intracranial pressure
- Those on antocoagulants

EEG

Although the EEG is frequently abnormal in those with delirium, showing diffuse slowing, its routine use as a diagnostic tool has not been fully evaluated. EEG may be useful where there is difficulty in the following situations:

- Differentiating delirium from dementia
- Differentiating delirium from non-convulsive status epilepticus and temporal lobe epilepsy
- Identifying those patients in whom the delirium is due to a focal intracranial lesion, rather than a global abnormality

B12 and folate
Arterial blood gases
Specific cultures e.g. sputum, wound swabs

Other Investigations

Lumbar puncture
Although various abnormalities have been seen in the CSF of patients with delirium, routine LP is not helpful in identifying an underlying cause for the delirium. It should therefore be reserved where there is reason to suspect a cause such as meningitis. This might include patients with the following features:

- Meningism
- Headache and fever
- AXR for faecal loading

In the absence of definitive historical and physical examination findings, investigations usually include the following:

- FBC
- Urea and Electrolytes
- Urinalysis
- Chest x-ray
- Drug levels (if relevant)
- ECG
- Arterial blood gas
- CT and/or MRI, lumbar puncture and EEG may be considered only if no aetiology is identified from preliminary tests

Causes of Delirium - Summary

Review what you have learned regarding Mr Thomas' predisposing and precipitating factors for delirium by answering the questions below.

Mr Thomas' predisposing factors

What is/are Mr Thomas' known predisposing factor/s for delirium?

a) Advancing age
b) Other chronic medical conditions
c) Visual impairment
d) Depression
e) Lives in a remote location

Answer on next page

Mr Thomas' precipitating factors

What is/are Mr Thomas' known precipitating factor/s for delirium?

a) Dehydration (e.g. hyponatraemia, hypercalcaemia)
b) Urinary retention
c) Drugs (particularly: those with anticholinergic side effects, sedatives, opiates, antiparkinsonian drugs, analgesics, steroids) and alcohol withdrawal
d) Endocrine & metabolic (e.g. thiamine deficiency, thyroid dysfunction, renal, hepatic failure)
e) Infection
f) Faecal impaction
e) Neurological (e.g. stroke, subdural haematoma, epilepsy, encephalitis)
f) Severe pain
g) Cardiac (e.g. myocardial infarction, heart failure)
h) Respiratory (e.g. chest infection, hypoxia)
i) Multiple contributing causes

Answer on next page

Causes of Delirium - Summary

Mr Thomas' predisposing factors

Answers: a, b, c

Mr Thomas' precipitating factors

Answers: e, h

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Treatment of Delirium

Case Update

Mr Thomas was recently admitted with community acquired pneumonia.

Following admission, his condition deteriorated and he became acutely confused.

Mr Thomas was reviewed and diagnosed with delirium.

Mr Thomas has been prescribed antibiotics, fluids and supplemental oxygen to treat his pneumonia and septicaemia.

As his condition begins to improve it is likely that his delirium will resolve. Supportive care should be provided in the meantime to ensure his safety and comfort.

Consider how this might be achieved in Mr Thomas' case.

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Treatment of Delirium

Identifying appropriate strategies to manage delirium

Care for a person with delirium is complex and needs to consider many factors.

It is important to work with Mr Thomas' family, with the aid of the AHW if necessary, in order to engage them and encourage them to help implement care interventions.

Mr Thomas' wife has not heard of delirium and wants to know more about it so that she can understand her husband's condition.

Make some time to sit with Mrs Thomas in a quiet and comfortable environment and explain in simple terms what delirium is and answer any other questions she might have.

Mrs Thomas, as you know, your husband has been diagnosed with a bad chest infection, which has caused a condition called 'delirium'.

Delirium is a state of confusion that can happen if you become medically unwell.
It often starts suddenly, but usually goes away when the condition causing it gets better.
It can be frightening - not only for the person who is unwell, but also for those around him or her.
It usually improves when people get better from the acute illness and in most people there is no lasting effect.

Mrs Thomas wants to know what it is like for her husband to experience delirium. You tell her that patients with delirium may:

Appear confused and forgetful.
Be unsure about the time of day or where they are.
Be different to what they are normally like.
Be unable to pay attention or to speak clearly.
Be either very agitated or quiet and withdrawn.
Be sleepy during the day but wake up at night.
Be more confused at some times than at others - often in the evening or at night.
Feel fearful, upset, irritable or angry and have moods that change quickly.
See or hear things that are not there, although they seem very real to them.
Sometimes wander about or display potentially dangerous behaviours.
Sometimes have vivid and/or frightening dreams.

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Treatment of Delirium

Mrs Thomas would like to know how she can help. You advise her that it will be important to:

Stay calm.
Talk to him in short, simple sentences.
Reassure him often.
Remind him of where he is, what is happening and how he is doing.
Remind him of the time and date.
Try to make sure that someone he knows is with him, especially in the evening, when confusion often gets worse.
Make sure he has his glasses and/or hearing aid.
Help him to eat and drink.
Let the staff know of any personal information that may help calm and orientate Mr Thomas, such as names of family and friends, hobbies, etc.

Ward, nursing, allied health and medical staff should also implement these measures and also:

Have a light on at night so he can see where he is if he wakes up.
Make sure the area is free from hazards, especially if he is agitated or wandering about.

How long does it take to get better?

Delirium gets better when the cause is treated. It usually only lasts for a few days, but in rare cases, it can go on for weeks. This is unlikely in Mr Thomas' case.

Will it happen again?

Once a person has experienced delirium, they have a higher risk of having delirium again. Mr Thomas' health will need to be closely monitored. If he gets sick again, it is important to see a nurse quickly, as early treatment can prevent the delirium from coming back.

Providing written information (such as the brochure recently developed at RPH) is often useful. You give Mrs Thomas a copy and tell her that you are happy for her to contact you if she has any questions, or if she would prefer to talk with you again instead of reading the brochure.

Treatment Options

Treatment for delirium includes pharmacological and non-pharmacological interventions, although pharmacological interventions should not be considered as first line treatment.

Mr Thomas' symptoms should be reviewed in order to decide upon appropriate treatment.

Re-examination

On re-examination, Mr Thomas appears more lucid, but is still quiet and withdrawn.

He displays occasional episodes of irritability, but no wandering or other potentially dangerous behaviours have been reported by Mrs Thomas or care staff. He is eating small amounts of food and taking liquids orally with assistance, to supplement the sub-cutaneous fluids. He is less agitated now that the IV line is not constantly connected.

As Mr Thomas is more responsive at this examination, you decide to administer the cognitive screening tests.

He scores: 20/39 on KICA and 17/30 on MMSE, indicating a severely impaired cognitive state.

Strategies

Based on your observations, and reports from Mrs Thomas and care staff, which of the following delirium treatment strategies are most appropriate for Mr Thomas?

a) Encourage Mr Thomas to move about on his own
b) Optimise sensory function by ensuring that Mr Thomas has his spectacles
c) Create a safe and quiet environment
d) Prescribe anticholinergic drugs
e) Where possible, create a familiar and routine environment
f) Provide frequent supervised mobilisation
g) Encourage napping during the day if Mr Thomas is sleepy
h) Allow Mrs Thomas to sit with her husband for as long as possible (including over night)
i) Employ validation and reality orientation techniques
j) Provide regular analgesia (paracetomol) if required, but keep drug treatment to a minimum
k) Provide gentle restraints to keep Mr Thomas safe
l) Discourage napping during daytime

Answer on next page

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Strategies

Answers: b, c, e, f, h, i, j, l

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Re-examination

As part of Mr Thomas' medical care, his wife was encouraged to stay with him, especially in the evening or overnight when he was most agitated. Environmental stimulation was minimised and a comforting environment was established by eliminating unexpected and irritating noises where possible. The environment was also modified to minimise risk of injury.

All care staff, including Mrs Thomas, provided meaningful orienting stimuli.

A range of observation/surveillance measures including more frequent nursing observation and prevention strategies were undertaken.

Restraints should be minimised or avoided as highly agitated patients often fight against them, resulting in injury and sometimes death.

Pharmacologic Therapy

Drug therapy is sometimes indicated in patients with delirium despite employing a complete range of non-pharmacologic interventions. Drug therapy may be used in order to:

- relieve distress in a highly agitated or hallucinating patient
- carry out essential investigations or treatment
- prevent the patient endangering themselves or others

Is drug treatment appropriate for Mr Thomas at this stage?
a) Yes b) No

Answer on next page

Pharmacologic Therapy

Answer: No, as he is not highly agitated, hallucinating or a danger to himself or others.

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Pharmacologic Management of Delirium

Even though pharmacological management was not indicated in Mr Thomas' case, it is important to know not only when drug intervention is warranted, but also the preferred medications and corresponding appropriate dosages.

See the next page to review the RPH Pharmacological flow chart that details the acute pharmacological management guidelines for older inpatients.

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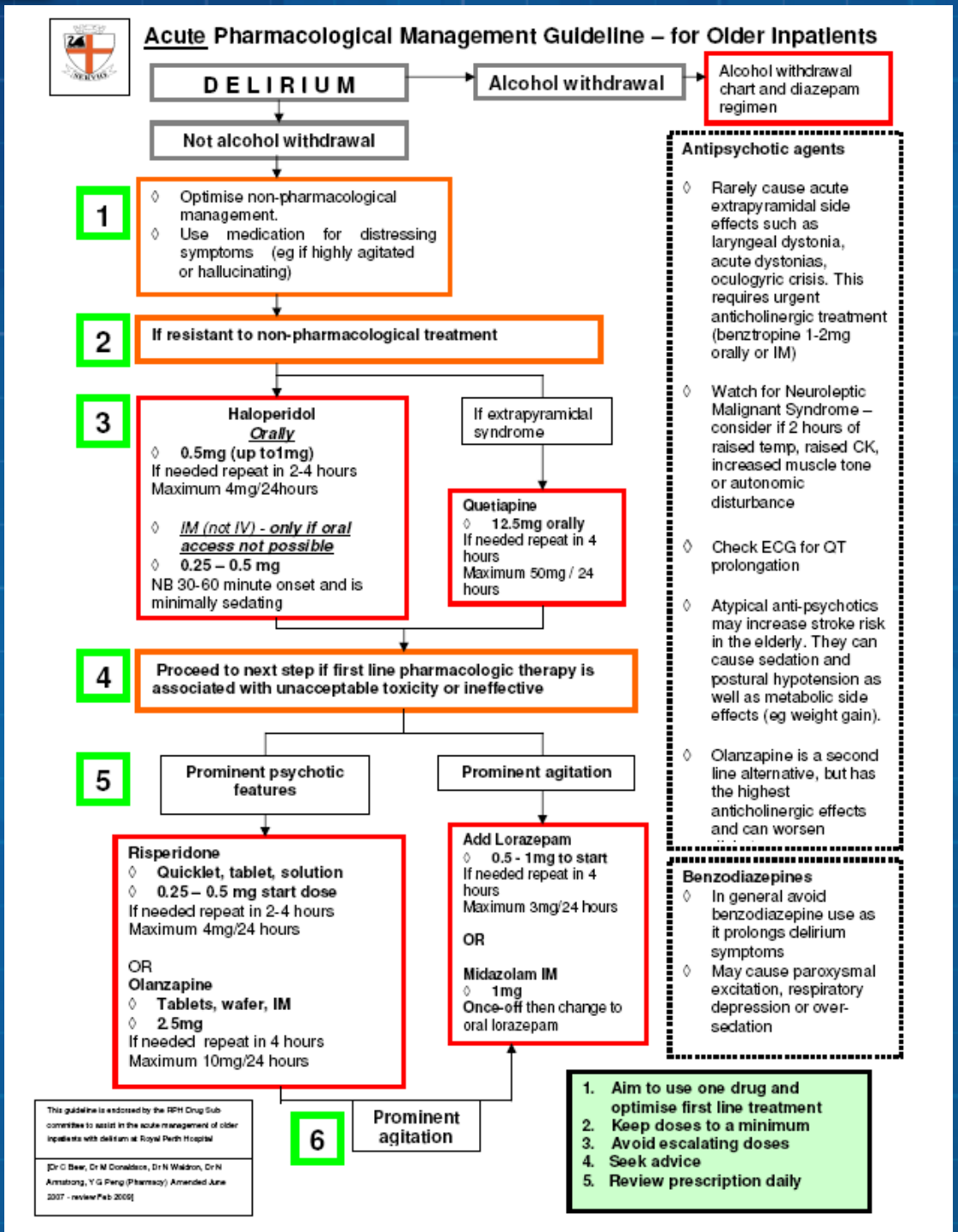
Pharmacologic Management of Delirium



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Multidisciplinary Care

Physical Therapy

The physiotherapist has been asked to see Mr Thomas regarding his respiratory secretions. They also spoke to Mrs Thomas to assess Mr Thomas' level of physical activity before he got sick. Prior to his illness Mr Thomas was an active member of his household and community and would walk most places as he did not trust his eyesight to drive.

Since the onset of his current illness he has not been able to maintain his normal level of activity.

At present he is not agitated and a treatment plan is drawn up to include:

- Getting out of bed and into a chair
- Progress to walking short distances with supervision
- Progress to longer distances with supervision
- Progress to walk increasing distances without supervision
- Chest physiotherapy

It is noted that compliance may be an issue if he becomes agitated again.

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Multidisciplinary Care

Speech and Language; Dietetics

The speech pathologist assessed this patient's speech and ability to swallow along-side the dietician, who assessed his usual dietary pattern.
Mr Thomas' swallow was intact and his speech is slow and sometimes incoherent. However, this is likely to improve once delirium abates. The speech pathologist will continue to monitor Mr Thomas during his admission.

The dietitian spoke with Mrs Thomas and confirmed that Mr Thomas' usual diet is appropriate for his diabetes. They generally eat a very natural, traditional diet with very few processed foods or refined foods. However, Mr Thomas' future health risks could be reduced with weight loss and the dietitian will speak to Mr Thomas about how this might be achieved prior to discharge.

A treatment plan is drawn up to include:

- Daily mouth washes
- Ensure teeth are brushed after each meal
- Start patient eating light but high caloric diet (diabetes appropriate)
- Progress to full meal – solids
- Encourage drinking – juice and/or water
- Maintain record of bowel and bladder movements and volume

Medical

The medical team will work with nursing staff to support physiologic homeostasis (symptomatic management of fever, hypoxaemia and rehydration) monitor appropriate antibiotic therapy, and try to anticipate any complications while the infection resolves.

- Encourage drinking – juice and/or water
- Maintain record of bowel and bladder movements and volume

Psychiatry

Should not be required in Mr Thomas' case, although people with complex differential diagnoses, co-morbid psychiatric problems or very difficult behaviours may warrant psychiatric review.

Planning Ongoing Care

Case Update

After 72 hours of hydration, oxygen, and antibiotic therapy, Mr Thomas' respiratory distress has begun to improve. He is more consistently responding to questions, conversing with his wife, sleeping better and appears more oriented. There are no signs of agitation. Mr Thomas is now taking his antibiotics orally.

A family meeting with Mr Thomas, his wife, the AHW, social worker, discharge nurse, clinical nurse specialist, physiotherapist and attending physician will be held to discuss Mr Thomas' discharge plan.

Discharge Plan Considerations

The following components of Mr Thomas' discharge plan need to be considered as part of the family meeting:

1. Ensure that he is fit for discharge/transfer
2. Ensure that he and his wife understand what has happened
3. Discuss the possibility for recurrence of the delirium and what can be done to pre vent it.
4. Ensure follow up with the remote area nurse.
5. Finalise any prescriptions and confirm that Mr Thomas is aware of how to take his medications correctly. Reinforce the importance of completing the full course of antibiotics, even if he starts to feel better.

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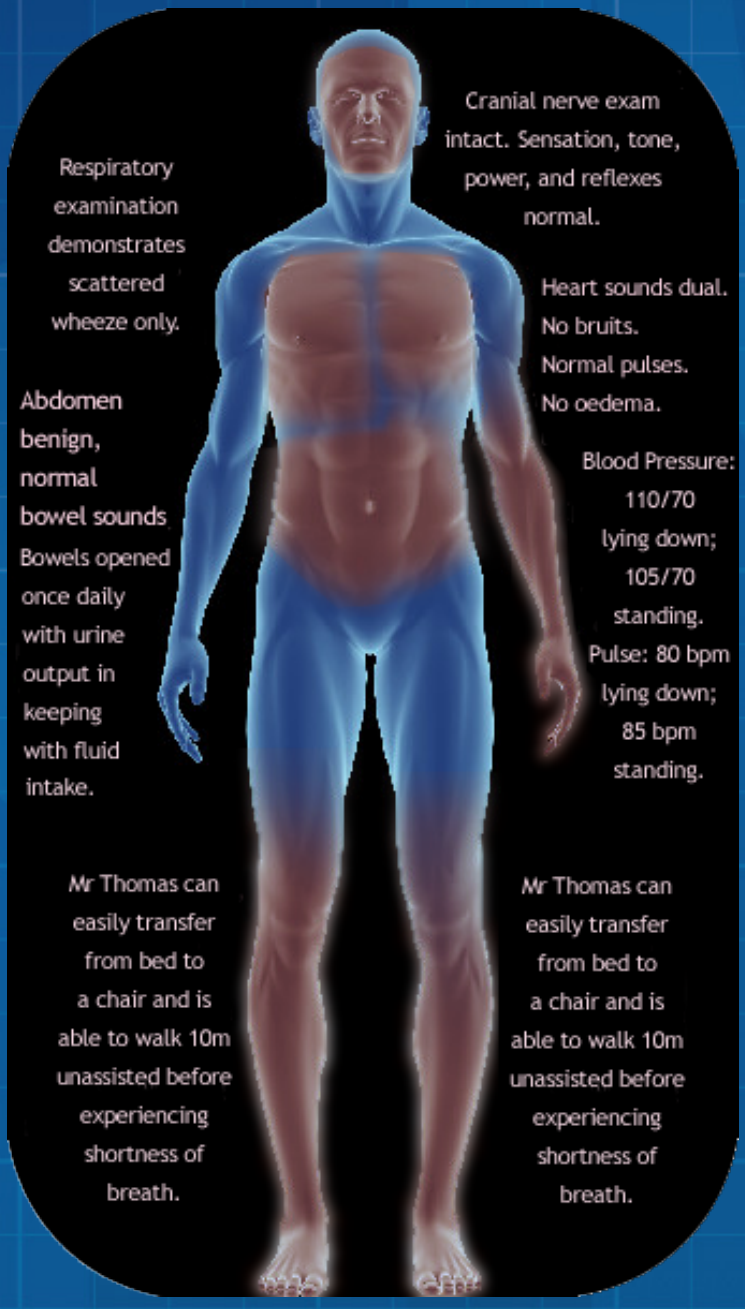
Discharge Assessment

It is essential to re-evaluate Mr Thomas' physical health and cognitive function to ensure that he is returning to baseline. Mrs Thomas, and nursing staff who have had frequent contact, are in a good position to monitor Mr Thomas' recovery.

They report that Mr Thomas is now experiencing no breathing difficulties and is interacting much more normally. He isn't agitated and is oriented to time and place. He is desperate to return closer to home, as he finds Perth cold, and doesn't feel comfortable amongst so many people.

Physical Assessment



General Appearance:

Patient answered greeting when approached. He is sitting in a chair with no evidence of agitation or distress. Mr Thomas is now eating a full diet, opens bowels daily and urine output is in keeping with fluid intake. His mouth is moist and mucosa intact. The IV access is removed.

Height: 168cms
Weight: 75kgs
Temperature: 36.7
Respirations: 18 even

Cognitive Testing

MMSE – 25/30 – may indicate resolution of delirium
KICA – 35/39 –Improvement in KICA score supports diagnosis of delirium. Mrs Thomas does not think Mr Thomas is quite back to baseline, but is improving day by day.

Investigations

Basic Laboratory
FBC, Electrolytes, Renal Function Test, Glucose, CRP: all normal

These results have all normalised.
It is reasonable to document improvement

Imaging

Chest X-ray was not repeated at this stage.

The patient has experienced significant clinical improvement and radiological changes usually lag behind. A repeat CXR at six weeks would be reasonable. You make a note to check where Mr Thomas could get a follow up chest x-ray.

Pulse Oximetry

O2 saturation 97% on room air

In the absence of respiratory distress, the test may not be required.

Recommendation for Ongoing Care

Mr Thomas' delirium appears to have resolved but he will require ongoing antibiotic therapy and inpatient physiotherapy before he can return to Kalumburu community. He has expressed a wish to be closer to home and transfer to Derby hospital will therefore be arranged.

It is important to remember that not all deliriums will resolve in the acute setting (especially if the patient has a pre-existing cognitive impairment), but confusion may resolve once they return to a familiar environment.

Family Meeting

Acknowledging Aboriginal peoples' relationship rules demonstrates respect for Indigenous cultural processes of information sharing. Sometimes there is a need to "share the story" broadly with appropriate people in the extended family and community network through family meetings.

In Mr Thomas' case, this may be organised through the community health nurse at Kalumburu, as only his wife is present with him in Perth.

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Family Meeting at RPH

The primary goals of the family meeting held at RPH will be to:

1. Review Mr Thomas' medical condition and ensure that he and Mrs Thomas understand what has happened. One way to do this is to ask opened ended questions, such as 'tell us about your understanding of what has made you unwell recently
2. The discharge team should respond to Mr and Mrs Thomas' concerns and questions. Provide additional education as necessary.
3. Organise follow-up care (transport, support, medications, therapy, food, information/education, follow-up visit)
4. Organise transfer letter, scripts and referrals.

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Family Meeting Summary

Following Mr Thomas' hospital stay during which he received IV antibiotics, subcutaneous fluids and oxygen, his breathing improved, the infection is responding well to treatment, and the delirium abated. Mr Thomas was prepared for transfer by holding a Family Meeting.

Information for Mr and Mrs Thomas

Mr and Mrs Thomas received information on delirium. Their understanding of the conditions and its implications were clarified. They were also given realistic information regarding recovery and what can be done to prevent recurrence.

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Family Meeting Summary

Follow-up Physiotherapy

Recommendations for follow up physiotherapy at Derby hospital were given. The physiotherapist case notes and referral letter will be faxed directly to Derby hospital. Mr Thomas will need on-going inpatient physiotherapy, to aid in his functional recovery. Here's what the physio recommends...

Recommended In-Hospital Plan

Mr Thomas has been working with exercises to regain his strength and endurance. He is currently able to walk for short distances without assistance.

On discharge it is recommended that he be able to walk no less than 50 m without assistance and without shortness of breath. He currently can only walk for 10m.

Physiotherapy is especially crucial when the patient has suffered functional impairment due to the delirium/illness and/or the hospitalisation.

Consult with social worker and AHCW

The social worker and AHCW talked with Mr and Mrs Thomas about their experience, organised support services and arranged their transport to Derby Hospital. Further assistance in transport and support services will be given when they are ready to return to Kalumburu and other care needs will be assessed at that time by the AHCW at Derby Hospital. A follow up appointment will be made with the Remote Area Nurse from Kalumburu upon discharge from Derby Hospital.

The AHCW also arranges for the PATS forms to be completed, finalises the accommodation for Mrs Thomas in Perth and arranges further accommodation for her in Derby.

More information about the Aboriginal Hospital Liaison Unit is at:
http://www.wacountry.health.wa.gov.au/uploaddocs/080215%20meet%20and%20assist%2010501%20final%20.pdf

Transfer to Derby Hospital

Mr Thomas is likely to spend another 3-4 days in Derby hospital, so that antibiotic therapy can be administered and his medical condition monitored. He will require a repeat chest x-ray in 6 weeks to ensure that the pneumonia has resolved. Given the difficulties in obtaining a remote medical review and organisation of a chest x-ray, the team arrange for Mr Thomas to have an overnight admission to Derby Hospital in 6 weeks time. The x-ray will be taken and reviewed by a medical officer (likely RFDS) at that time. The 1 hour flight will be paid for by PATS.

Module Summary

An episode of delirium indicates that a patient is in a high-risk population and needs special attention. Many patients have persistent cognitive or functional deficits subsequent to an episode of delirium, and are at a higher risk of occurrence. An appropriate treatment plan, prompt follow-up, screening for underlying dementia, and a focus on family education are essential components of patient care following the acute delirium episode.

Understanding the cultural barriers that may be experienced when caring for the Aboriginal patient is important.

These include:

- Medication adherence – instruction and access to supply.
- Discomfort and embarrassment when accessing mainstream health services.
- Traditional healing remedies – bush medicine.
- Literacy and the ability to understand instructions.
- When faced with medical terminology and complex language, the aboriginal patient may feel embarrassed or uncomfortable asking for clarification.
- Answers such as – 'yes' and 'no' while looking straight ahead may not mean an understanding of what they have just been asked or told.