Mental Health Emergencies

Patients with emergencies related to mental health may present in a diverse number of ways and pose a major challenge to clinicians with respect to diagnosis and management. Patients may present with symptoms typically associated with mental health such as auditory hallucinations or delusions associated with a thought disorder or with marked disturbance to their mood and/or sleep pattern. In some cases, however, the underlying mental health disorder may be overshadowed by serious medical or surgical disease that requires critical care or surgical intervention or severe behavioural disturbance that places the patient and others at risk and needs the administration of sedation limiting further assessment in the ED. Trauma is a common presenting symptom and may result from assault, self-inflicted injury or occur as the consequence of risk taking behaviour. Drug related presentations are also common and may result from the use of illicit drugs or alcohol or the effects of drug withdrawal or from a suicidal overdose.

The assessment and management of these patients often requires considerable skill and experience due to the presence of disordered thinking and/or severely disturbed behaviour, illicit drug or alcohol use or associated medical or surgical disease. Instead of the usual approach to the emergency patient that focuses on identifying a single diagnosis, the assessment of patients presenting with acute mental illness generally requires a broader and more dynamic approach that aims to in the first instance ensure the safety of the patient (and others) and takes into consideration a range of possible diagnoses. A considerable skill set is therefore required to confidently (and competently) manage many of the patients presenting with emergencies related to mental health.

It is not surprising that clinicians often report feeling a degree of uncertainty and in some cases discomfort with assessing and managing patients with mental health emergencies. For this reason, the following chapters provide a detailed introduction to this topic aiming to provide clinicians with the core knowledge and clinical tools required for approaching and responding to the patient presenting with a suspected mental health emergency.

On-line Resources @ www.learnem.com.au

Clinical case studies, e-tutorials, procedural videos and clinical resources relevant to each of the 10 sections in the ABCDs of Emergency Medicine may be found on the LearnEM website and listed under headings of "Crit Care", "Emerg Med 1", "Emerg Med 2" and "Prim Care" in the top nav bar.

The LearnEM Course relevant to the topic of Mental Health Emergencies is :

- ABCDs of the Acute Behavioural Emergencies

Chapter 32

Mental Health : Primary Assessment

Key Points

1. **Patients presenting with mental health emergencies are triaged using the Australasian Triage Scale**
2. **The highest triage category is given to the patient who presents with behaviour indicating a very high risk of danger to themselves or others.**
3. **Initial management of the patient with psychiatric symptoms involves performing a Mental Health Primary Survey.**
4. **The mental health primary survey Assesses risk, initiates Behaviour stabilisation, Clears immediate medical illness and assesses whether Detention is indicated to protect the patient and others from harm and Explains to the patient what is happening to alleviate anxiety.**
5. **After the patient is stabilised a secondary survey is undertaken using the clinical tools of history, mental status examination and medical clearance.**

Triage

Patients presenting with mental health emergencies are triaged using the Australasian Triage Scale. This assigns patients into one of five categories ranging from category one (immediate intervention required) to category five (a stable patient with a non-urgent presenting problem).

The purpose of the triage process is to determine the medical urgency of presenting complaint with patients at highest risk for immediately life threatening disease receiving the highest category and allocated to receive immediate medical intervention. The table below summarises the triage categories in relation to the mental health patient.

Mental Health Emergencies – Triage Priorities

Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
Serious danger to self / others	**Significant danger to self / others**	**Suicidal Ideation**	**Anxiety, Depression No suicidal ideation**	**No behavioural disturbances**
Clinical features	*Clinical features*	*Clinical features*	*Clinical features*	*Clinical features*
Violent behaviour	Attempted self harm	Psychotic symptoms	Provides coherent history	No acute distress
Possession of a weapon	Severe behavioural disturbances	Suicidal ideation	+ /- Irritable but not aggressive	Requests script
Self destruction	Requiring restraint			Financial or social situation

The highest priority is given to the mental health patient who presents with behaviour indicating a very high risk of danger to themselves or others. Patients with attempted self-harm or severe behavioural disturbance receive a category two priority whilst patients with suicidal ideation or psychotic symptoms are triaged as category three.

Although the scale attempts to provide a standardised tool for assigning risk, factors such as the experience of the triage nurse, individual interpretation of the guidelines and local practice will influence the assignment of the triage category. This however is only a minor limitation and the Australasian Triage Scale provides a valuable clinical tool for identifying patients requiring urgent intervention.

Immediate Priorities in Mental Health Emergencies

Mental Health Primary Survey

In the patient presenting with suspected mental illness the priority is to identify immediate threats to the patient and initiate interventions to minimise morbidity or the risk of death. This begins with an initial risk assessment and initiatives to stabilise the patient's behaviour where required. Once the patient is safe to approach a formal assessment is undertaken to identify (and treat) serious medical (organic) disease. Consideration should also be given to whether detention will be required in the at-risk patient. These steps are summarised below in the mnemonic of "ABCDE" and referred to as the *Mental Health Primary Survey.*

The *Mental Health Primary Survey* provides a practical structure for assessing the priorities in the patient with a presenting with suspected mental illness. These steps are explored in detail in the following chapters and summarised in the table below.

(Mental Health) Primary Survey - Stabilise the situation / patient

A = **Assess Risk** : Assess the patient for risk of self-harm and for harm to others

B = **Behavioural Stabilisation** : Assess the need for Sedation, Restraint or Close Observation

C = **Clearance of Medical Causes** : Check vital organ functions (ABCDs), Vital signs and BGL

D = **Detention** : Is an inpatient treatment order (ITO) indicated to ensure safety of the patient ?

E = **Explain** : Explain to the patient the present situation to alleviate anxiety and uncertainty

The ABCDE mnemonic reminds the clinician to begin management by **A**ssessing risk (of self harm and /or violence) that guide our approach to **B**ehavioural stabilisation and in the process to always remember to **C**lear the patient of serious medical causes. It prompts the clinician to consider at an early stage in the assessment whether **D**etention (ie placement of an inpatient treatment order) will be required as a measure to ensure the patient's safety and as a final step in the process it reminds us to always provide an **E**xplanation to the patient of what is happening.

Mental Health Secondary Survey

Once the mental health primary survey has been completed and the patient stabilised, a comprehensive assessment of the patient is commenced. This is termed the secondary survey and includes history, physical examination and mental status examination.

Secondary Survey – Comprehensive evaluation of the patient

This involves the following three steps

- Psychiatric Assessment : Documentation of the History and Mental State Examination
- Medical Clearance : Checking Vital Signs and identifying Risk factors, Focused Physical Examination
- Deciding on Disposition

The *Mental State Examination (MSE)* is central to secondary survey and is undertaken concurrent to history taking requiring careful observation of the patient's behaviour and targeted questioning of the patient.

The MSE examination comprises an assessment of the patient's **A**ppearance, **B**ehaviour, **C**onversation, **A**ffect, **P**erception and **C**ognition (summarised by the mnemonic ABC/APC). In addition, an assessment should be made of the patient's thinking, insight, judgement, rapport, suicidal and homicidal ideation and access to guns.

The Secondary Survey and the MSE are discussed in detail in the chapter entitled "Mental health : Secondary Assessment"

Chapter 33
Mental Health : Risk Assessment

Key Points

1. **Risk assessment is required in patients who are identified or suspected to be at risk of self-harm or violence.**
2. **A risk assessment tool is presented and classifies patients into four levels.**

   Level 1 : High risk of injury to other persons (including staff)

   Level 2 : High risk for self-harm

   Level 3 : Moderate risk for self-harm

   Level 4 : Low risk for self-harm
3. **Risk assessment is commenced during triage and regularly reviewed.**
4. **Risk Level may be used to determine the nursing or security requirements for patient.**

One of the immediate priorities in a patient who presents with suicidal or homicidal ideation, altered behaviour or disturbed thought process is to establish their level of risk of self-harm or violence. The purpose of the risk assessment is to determine the level of risk of the patient harming other persons (including patients, relatives and staff) and/or of harming themselves.

Where the patient is at high risk of harm (toward others or themselves) immediate measures will be required to prevent self-harm or violence. In the patient at high risk this may include patient restraint such as the presence of security staff, use of a seclusion room and in severe instances the application of shackles.

Most "at risk" patients will not require restraint and the decision to restrain a patient needs to be carefully considered and regularly reviewed. Where restraint is required careful documentation of the reasons for restraint must be made in the case notes and the use of restraint must follow established protocols.

Risk Assessment Procedure

A risk assessment should be routinely performed on all patients who are identified or suspected to be at risk of self-harm or violence.

The risk assessment can be used to determine the requirement for frequent or continued patient observation, presence of security staff and patient restraint.

Structured Assessment of Risk

There are a variety of risk tools used for structured risk assessment. Many are too complex or detailed for routine use in an emergency department or by staff unfamiliar with risk assessment. Local protocols may determine the risk tool used in clinical practice.

The "ED Risk Assessment Tool" (shown on the next page) will be used as an example of how a risk tool may be applied in clinical practice and used to determine patient management.

The ED Risk Assessment Tool has been shown to be easily learned and applied to clinical care by all levels of medical and nursing staff in the emergency department and has the benefit of providing a common language with which to describe patient risk. The tool is described in detail because it provides a useful way to think about how to classify risk and how to decide on the appropriate level of care that is likely to be required to manage the patient.

"ED Risk Assessment Tool"

The Risk Tool categorises patients into one of the four levels of risk :

- Level 1 : High risk of injury to other persons (including staff)
- Level 2 : High risk for self-harm
- Level 3 : Moderate risk for self-harm
- Level 4 : Low risk for self-harm

Risk assessment is commenced when the patient first presents (eg at the triage desk in an emergency department). It should be reviewed during medical assessment and then regularly as part of the routine patient observation. The results of the risk assessment should be discussed with staff involved in the immediate care of the patient (eg nursing staff, other medical staff, mental health clinicians) and a joint management plan determined with respect to the use / non-use of restraint.

Assessment of the level of risk must consider the presentation, previous behaviour of the patient, environment (eg availability of security staff) and level of experience of the clinician. One of the major secondary benefits of using a structured risk assessment procedure is that it provides a useful way to standardise patient care in relation to the resources allocated to managing patients at risk.

Assigning Risk Level : The clinical indicators for the four levels should be treated as guidelines to determining risk level. Really what we are attempting to do is to match the patient's pattern of behaviour (aided by our clinical intuition) with one of the risk levels eg we do not need to wait until the patient verbally or physically threatens staff if their behaviour indicates that they are strongly antagonist toward staff and very likely to threaten staff (or others) - we can assess the patient as a level one risk and put in measures to protect the patient and staff before the situation escalates and poses a serious risk for others.

Level 1 : High risk of injury to other persons (including staff)

A high risk of injury to other persons is indicated by any of the following

- Verbal Threats of violence toward another person/s (including staff)
- Heated verbal encounters with staff
- Attempts to inflict physical injury on another person/s (including staff)
- Past history of physical assault / violence toward staff
- Alert in the notes related to acts or threats of physical violence to ward staff

Management : Measures to ensure staff / others safety will be required. This will generally involve the use of a security guard (or police). It is critical that the patient's condition and risk assessment is regularly reviewed to assess whether a continued security presence is required. The administration of sedation will be required to reduce patient agitation and reduce the risk for violence. The use of shackles is reserved for patients unable to be managed with lesser degrees of restraint and should be used for as brief a period as possible.

Level 2 : High risk for self-harm

One or more of the following indicates a high risk for self-harm

- High lethality / high intention suicide attempt (eg hanging, carbon monoxide poisoning)
- Symptoms of a severe depressive illness and well planned suicidal intent
- Altered cognitive state with repeated suicidal ideation
- Well formed and highly lethal plan and capacity to enact the plan (eg access to a shot gun)
- Very psychotic disorganised person whose behaviour places themselves or others at risk

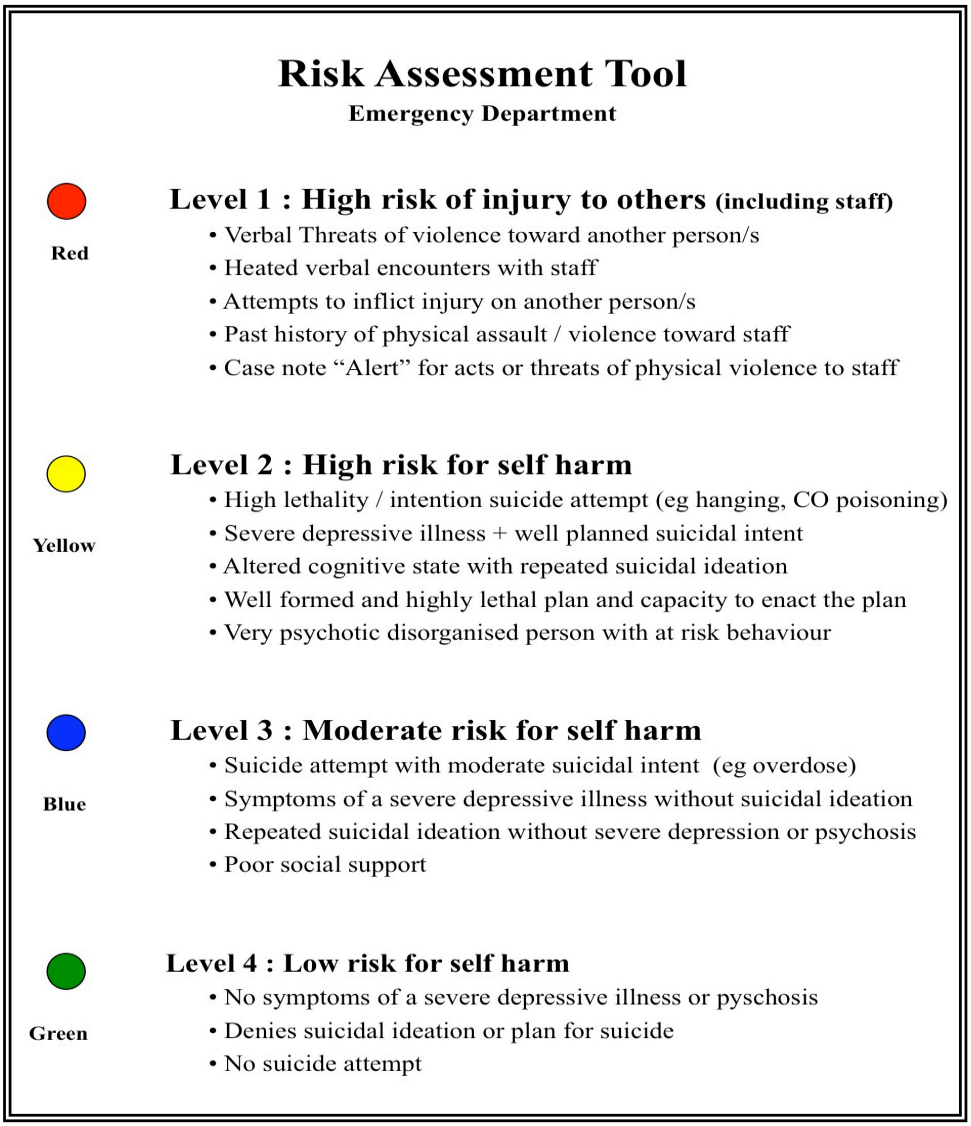
Management : Measures to ensure patient safety will be required. This will generally involve the use of a one to one nurse or security guard. Regular medical review of the patient's condition and risk assessment must be undertaken. The administration of sedatives should be considered to reduce agitation. A violence response call will be required if the patient attempts to leave.

Level 3 : Moderate risk for self-harm

One or more of the following indicates a moderate risk for self-harm

- Presents as a result of a suicide attempt with moderate suicidal intent (eg overdose)
- Symptoms of a severe depressive illness without a plan or repeated suicidal ideation
- Repeated suicidal ideation without clinical features of severe depression or psychosis
- Poor social support

Management : Measures to ensure patient safety will be required. This will generally involve placing the patient in an area adjacent to the nursing station where they can be clearly observed. More frequent nursing review will be required. If the patient is detained and absconds from hospital the Police should be notified.



Level 4 : Low risk for self-harm

The presence of the following indicates a low risk for self-harm

- No suicide attempt,
- Denies suicidal ideation or plan for suicide
- No symptoms of a severe depressive illness

Management : The patient may be placed in an assessment area where the patient can be easily observed and routine nursing observations are performed.

Chapter 34
Management of Severe Agitation

Key Points

1. **Organic disease and severe agitation are linked and the management should always include assessment to identify or exclude underlying disease.**
2. **The management of the severely agitated or violent patient embraces psychological, physical and pharmacological approaches.**
3. **Psychological methods focus on controlling the environment through the establishment of communication and trust.**
4. **Physical measures include a show of force and physical restraint. Physical restraint should always be followed by pharmacological sedation.**
5. **Commonly used agents for sedation include Oral Lorazepam, Oral/IM Olanzapine, IM/IV Midazolam and IM/IV Droperidol**
6. **If restraint is used ensure appropriate procedures for documentation, observations and mental health review are followed.**

Dealing with a severely agitated or violent patient is an essential skill for clinicians working in the ED or in rural practice. Knowing how to recognise and anticipate the potential for violence is as important as having the knowledge of how to manage violence. Issues to consider when dealing with a violent patient include :

- Protection or yourself, staff and other patients from injury
- An approach that rapidly controls the situation and reduces the risk to the patient
- Identification of underlying organic disease causing or contributing to the violence

A rapid and well-coordinated approach is required in response to the threat of violence. It relies on both teamwork and the implementation of specific protocols formulated in advance to manage the violence. Too aggressive or too passive a response can result in significant complications for the patient or staff. The response must be proportional and appropriate to the threatened or actual violence.

Identifying the Potentially Violent Patient

There are number of features which assist in anticipating violence. Most are intuitive and include :

Historical features

- Past history of impulsive behaviour
- Verbalisation about future planned violence
- Alcohol and / or drug abuse
- Psychotic illness : Paranoid delusions, Suicidal ideation
- Past history of personality disorder: Antisocial, Borderline, Paranoid

Features on examination

- Loud, Aggressive, Insistent speech
- Tense posture
- Apparent suspiciousness
- Restlessness, Agitation

Medical Conditions associated with Violence

Always view agitation and violence as a symptom of possible underlying medical illness. In a study examining the causes of callout for a violence management team in a major hospital in Australia, organic brain syndrome was responsible for 75% of the calls while psychiatric illness (including affective disorders and psychosis) was responsible for only 10%. Personality disorders accounted for the remaining 15%. In the study the most common causes for organic brain syndrome were hypoxia, alcohol intoxication, CNS related (epilepsy, meningitis), alcohol withdrawal and substance abuse. Organic disease and violence are linked and the management should always focus on identifying or excluding underlying disease.

Organic diseases that need consideration in the setting of violence include :

- Infection (eg CNS, Sepsis)
- Metabolic diseases (eg Hypoglycaemia, Liver failure, Renal failure, Hyperthyroidism)
- Structural CNS Lesions (eg Intracerebral bleed, Trauma, Subarachnoid Haemorrhage)
- Drug related (Overdose, Intoxication, Withdrawal)
- Seizure / Postictal causes

Important psychiatric causes for violence include psychosis, schizophrenia, affective disorders and personality disorders including antisocial, borderline and paranoid personality disorder.

Differentiating Organic from Psychiatric Disease

Clinical features that signal the presence of underlying organic disease in a patient with violent behaviour include :

- Clouding of Consciousness (Drowsy, Difficult to rouse)
- Altered Cognition (Disorientation, Memory disturbances, Poor Serial 7's)
- Abnormal Vital signs
- Abrupt onset of symptoms

A patient with any one of these features should be assumed to have an organic cause and investigated further. Patients with a past or concurrent psychiatric illness should not be assumed to have a psychiatric cause for their altered behaviour until an organic cause is ruled out.

Other clues from the history and examination that suggest a medical (organic) aetiology include : the presence of visual or tactile hallucinations, a recent history of surgery or hospitalisation, illicit drug use and age > 40 years with no past history of psychiatric disease.

Management of Severe agitation / Violence

The management of the severely agitated or violent patient embraces psychological, physical and pharmacological approaches. Psychological methods focus on controlling the environment through the establishment of communication and trust. Physical measures involve a show of force and physical restraint. Pharmacological methods use strong sedatives to control behaviour. Where a patient requires restraining, an Inpatient Treatment Order (ie involuntary detention) is required.

Psychological approach

The psychological approach is suitable only if there is no immediate danger to the patient or to others. It begins with speaking to the patient using open ended questions (becoming more specific as trust is established) while carefully observing the patient's behaviour and providing an explanation of what is happening and why. An attempt should be made to diffuse the patient's anger by acknowledging and exploring their concerns and emotions. It is important to emphasise to the patient your concern for their safety and well-being and explain this in the context of the need to perform an examination and investigations (eg "I would like to examine you to make sure you are safe from serious disease"). An offer of food or drink is often useful.

It is crucial that you consider your personal safety at all times and arrange to have physical assistance nearby. Ensure the patient does not come between you and the exit and that you stay a safe distance (at least two arms length) at all times. Avoid eye contact and maintain a submissive posture.

Physical Approach

Physical restraint is required when an interview destabilises or if violence is threatened or likely. It is used to ensure the safety of patients who are at high risk of suicidal or homicidal ideation or have an underlying organic brain syndrome with altered cognitive state such as head injury, meningitis or severe drug intoxication.

Methods include a show of force (ie overwhelming numbers of security staff / orderlies) combined with a reasoned explanation of why it is in the interests of the patient to cooperate. If the patient responds to the show of force and is cooperative, oral sedation should be offered with an explanation that it will assist to calm them.

Where the patient does not respond to a show of force the next step is to restrain the patient and apply shackles. First explain to the patient what will happen (eg "we will need to restrain you to protect you from injury") and then with at least 4 orderlies or security staff approach from 4 directions and secure a limb. Shackle all four limbs to the bed (or physically hold each limb) and do not remove the restraint until it is clear that control is achieved and violence is no longer a threat. Take care to document the reason for the restraint and any verbal threats made by the patient.

Once the patient is physically restrained proceed to pharmacological restraint. Do not leave the patient physically restrained without proceeding immediately to chemically restrain the patient.

Pharmacological restraint

Pharmacological restraint refers to the use of tranquillising drugs to relax and sedate the patient. This is essential to protect the patient from self-harm as a result of their extreme agitation and allows the clinician to perform an assessment to exclude life-threatening illness.

The indications for pharmacological restraint are identical to those outlined for physical restraint and include severe agitation, delusions / hallucinations with bizarre speech or behaviour. If a patient can be talked into taking medications without the use of restraint this is the preferred option. If this is not possible physical restraint is used to temporarily control the situation and permit administration of pharmacological agents.

The intravenous or intramuscular route may be used. A single agent should be used in the first instance. It is important that where medication is administered, post medication monitoring and management is commenced.

Commonly used drugs for sedation in the acutely Agitated Patient

Benzodiazepines

- IV / IM Midazolam
- IV Diazepam

Antipsychotic Agents

- IV / IM Droperidol
- IM Olanzapine

Benzodiazepines

Benzodiazepines are commonly used for the management of severe agitation / acute behavioural disturbance. They are the preferred agent in behavioural emergencies resulting from suspected drug withdrawal or stimulant intoxication. Benzodiazepines act by potentiating the inhibitory effects of GABA throughout the CNS, resulting in anxiolytic, sedative, hypnotic, muscle relaxant and antiepileptic effects.

Benzodiazepines may be used safely in most patients however they are contraindicated in patients with myasthenia gravis, pre-existing respiratory failure and in patients with severe liver impairment (especially hepatic encephalopathy). In the patient with severe renal impairment reduced doses should be used.

The most common major complication associated with the administration of benzodiazepines is CNS and respiratory depression which may result in severe hypoxia from airway obstruction and hypoventilation. Other CNS side effects include confusion and ataxia (with a risk of falls in the elderly) and paradoxical excitation, an uncommon but troublesome adverse effect. Cardiac effects are uncommon with the elderly most at risk. They are generally limited to mild hypotension.

Benzodiazepines may be administered orally (eg Lorazepam, Diazepam) or parenterally (eg Midazolam, Diazepam, Clonazepam).

Oral Lorazepam

Lorazepam is well absorbed and has a duration of action varying from 2 to 10 hours. Apart from respiratory depression in high doses it is relatively free of adverse effects. It is administered in a dose of 1 – 2.5 mg orally to a maximum of 10 mg / 24 hours. In the elderly begin with 0.5 - 1 mg orally.

Alternative oral agents are **Diazepam** 5 - 10 mg (1 - 2 mg orally in the elderly) and **Clonazepam** 2 mg orally (0.5 - 1 mg orally in the elderly).

Intravenous Diazepam and Midazolam

The major side effect with the use of IV benzodiazepines is respiratory depression and careful titration of the dose is required together with close observation of the patient's airway and breathing.

Administer Diazepam or Midazalom in aliquots of 2.5 - 5 mg IV repeated every 3 - 4 mins titrated to clinical response. If adequate control is not achieved after 30 mg has been administered alternative agents (eg Droperidol) will need to be considered.

Midazolam may be administered via the intramuscular route. Like the IV route, IM administration of Midazolam may be associated with profound respiratory and CNS depression but has the advantage of not requiring placement of an IV cannula in a severely agitated patient.

Clonazepam is an alternative parenteral benzodiazepine and like the other agents above has a rapid onset of action (with clinical effects evident within 10 - 15 minutes). It may be administered IM or IV and is characterised by a prolonged duration of action of 2 to 24 hours.

Caution with the use of Benzodiazepines

The risk of serious adverse effects resulting from CNS and Respiratory depression may be increased with the concomitant use of other sedatives (such as alcohol) and anti-psychotic agents (such as Olanzapine). Caution is required in administering benzodiazepines to patients who are intoxicated or suspected to have taken other CNS depressants. In these situations, lower doses of benzodiazepines should be used initially followed by careful titration of the dose to clinical effect, aiming to avoid profound CNS and/or respiratory depression.

Recent reports have highlighted the risk for profound respiratory depression when parenteral benzodiazepines are administered together with IM Olanzapine. Authorities advise that the **simultaneous** administration of parenteral benzodiapezines with short-acting IM Olanzapine should be avoided as it places the patient at significant risk of severe cardiorespiratory depression, excessive sedation and death.

The Australian Medicines Handbook recommends that if concurrent use is indicated

- Wait at least 1 hour after IM Olanzapine before giving a parenteral benzodiazepine
- Carefully consider use of IM Olanzapine after using a parenteral benzodiazepine and monitor cardiorespiratory status and sedative effect

Antipsychotic Agents

Antipsychotics agents are commonly used to manage severe agitation especially in the context of suspected psychosis. In addition to their sedation and tranquillising effects they provide control of symptoms such as hallucinations, delusions, abnormal behaviour and thought disorder. Although highly effective in the short term management of patients with severe agitation, when compared to benzodiazepines they are associated with a wider range of adverse effects. Important adverse effects include :

- *Anticholinergic side effects* (tachycardia, dry mouth, blurred vision, urinary retention, confusion) and *Orthostatic hypotension* (from blockade of the α1 adrenergic receptors). The elderly are especially at risk and mandate the use of lower doses of these agents to reduce the risk of hypotension.

- *Airway obstruction* (due to severe obtundation) and *Respiratory depression* with the risk of severe hypoxia. These occur most often when antipsychotic agents are given concomitantly with other drugs associated with CNS and /or respiratory depression such as alcohol and benzodiazepines.

- *Extrapyramidal side effects* are more common with the older class of antipsychotic agents (eg haloperidol, droperidol). Extrapyramidal side effects associated with acute use of antipsychotic agents include dystonic reactions (eg oculogyric crisis, trismus or opisthotonus) and Akathisia (a feeling of motor restlessness).

The risk of adverse effects varies between the different agents with the atypical agents such as Olanzapine and Risperidone associated with a lower risk for the anticholinergic, cardiac and extrapyramidal side effects.

Antipsychotic agents commonly used for sedation in the acutely agitated patient include Olanzapine, Risperidone, Droperidol and Haloperidol. Other agents occasionally used (and generally reserved for circumstances where maximal doses of standard medications have not achieved desired effect) include Quetiapine (50 - 100 mg PO) or Chlorpromazine (50 - 100 mg PO).

Droperidol

Droperidol belongs to the same chemical group as Haloperidol, the Butyrophenones. Administration is associated with marked tranquillisation and sedation. It is a useful antiemetic and may cause hypotension secondary to vasodilation due to mild α1 adrenergic receptor blockade.

Droperidol may be administered IV or IM with an onset of action of 3 - 10 minutes however full effects may not be apparent for up to 30 minutes. The duration of effective sedation following IV or IM administration is between 2 - 4 hours. In general Droperidol[1] is preferred over haloperidol for behavioural emergencies because it is more sedating, has a quicker onset of action, a shorter half-life and is less cardiotoxic than Haloperidol

Droperidol is administered in an IM dose of 5 mg (repeated after 10 mins if required to a maximum of 20 mg). Using the IV route the drug is administered in a dose of 2.5 - 5 mg IV and titrated with repeat IV doses every 3 - 4 minutes to maximum of 20 mg.

Olanzapine

Olanzapine is an atypical antipsychotic with low cardiotoxicity and little risk of causing extrapyramidal reactions. It may be administered orally and parenterally.

Oral administration uses a wafer preparation as it dissolves on the tongue reducing the chance of the patient spitting out the medication or hiding it in the buccal mucosa. The onset of clinical action is rapid with effects seen within 5 to 15 minutes and a duration of effect between 4 to 24 hours. Olanzapine is administered in an initial dose of 5 - 10 mg sublingually which may be repeated to a max of 30 mg / 24 hours. In the elderly begin with a SL dose of 2.5 mg. An alternative agent is Respiridone Quicklets 0.25 mg – 0.5 mg orally.

Olanzapine may be administered via the intramuscular (IM) route. It has a rapid onset of action with clinical effect noted within 5 - 10 mins and maximal effect achieved between 15 - 45 minutes. In contrast to Droperidol it has a longer duration of action with its useful clinical effect generally exceeding 12 hours. Begin with an initial IM dose of 5 - 10 mg which may be repeated 2 hourly to a maximum of 30 mg / 24 hours. Olanzapine may also be safely administered via the IV route but has not yet been approved for intravenous use in Australia[2].

Intravenous or Intramuscular route ?

The intravenous route is often advocated for administration of sedative agents in the patient with severe agitation as it provides the opportunity to titrate the dose of tranquillising agents to achieve rapid control of symptoms and decrease the risk for oversedation with the risk of airway obstruction and respiratory depression.

Obtaining IV access is not always feasible and at times may place staff at risk in the severely agitated patient. A recent Australian study[3] comparing the intramuscular and intravenous routes for the acute management of the severely agitated patient in the ED identified that the IM route was associated with more rapid control of the symptoms (20 mins versus 30 minutes $p = 0.03$), lower risk for adverse effects (10% versus 14% P = NS) and decreased the requirement for additional sedation (47% versus 88% $P < 0.05$).

The study concluded that the IM route, when compared with the IV route for sedation of the severely agitated patient, provides a simple, effective and safe alternative with the advantage that IV access was not required.

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[1] Although subject to FDA Black Box warnings 15 years ago recent research has overwhelming confirmed the safety of Droperidol in the setting of behavioural emergencies and the drug is being increasingly used for this purpose in clinical practice.

[2] Cole JB et al. A prospective observational study of patients receiving intravenous and intramuscular olanzapine in the emergency department. Ann Emerg Med 2016: Nov 4; (e-pub).

[3] Calver L et al The impact of a standardised intramuscular sedation protocol for acute behavioural disturbance in the emergency department. BMC Emergency Medicine 2010, 10:14)

Clinical Guideline for Managing Acute Agitation

There are a wide range of protocols for the pharmacological sedation. A suggested approach is outlined below. The individual drugs have been chosen based on their clinical reliability and favourable side effect profiles. Differing clinical circumstances may mandate an alternative approach. It is important however that whichever agent is chosen, the clinician should be familiar with the agent and know the appropriate doses.

Guiding Principles to Sedation

- Use lower doses in the elderly patient
- Titrate the drug slowly to achieve effect
- Closely observe the patient's airway, breathing and blood pressure throughout the procedure and after sedation has been achieved
- Consider using benzodiazepines as the first line agents in behavioural emergencies due to drug withdrawal or stimulant intoxication
- Consider using antipsychotics as the first line agents in patients with acute psychosis.
- In severe agitation two agents may be sometimes be required however this increases the risk for respiratory depression and careful monitoring of the patient's airway and respiration is essential to avoid hypoxia developing.

Oral Sedation Guideline

A common approach to oral sedation is to administer SL Olanzapine (wafer) +/- Oral Lorazepam.

Olanzapine

- Administer 5 - 10 mg sublingually (SL) to a max of 30 mg / 24 hours
- In the elderly begin with a dose of 2.5 mg administered sublingually
- Olanzapine is a non-neuroleptic antipsychotic with low cardiotoxicity and little risk of causing extrapyramidal reactions. The wafer preparation dissolves on the tongue and improves compliance.
- Onset of clinical action is within 5 to 30 minutes and duration of effect is between 4 to 24 hours.

Lorazepam

- Administered in a dose of 1 – 2.5 mg orally to a maximum of 10 mg / 24 hours
- In the elderly begin with 0.5 - 1 mg orally
- Lorazepam is well absorbed and has a duration of action varying from 2 to 10 hours. Apart from respiratory depression in high doses it is relatively free of adverse effects.
- Alternative oral agents include **Risperidone** Quicklets (0.25 mg – 0.5 mg orally) or **Clonazepam** 2 mg orally (0.5 - 1 mg orally in the elderly).

Parenteral Sedation Guideline

The IV or IM route may be used. Agents include Droperidol, Olanzapine, Midazolam and Diazepam.

Midazolam

- Administer 2.5 - 5 mg IV or 5 mg IM
- Titrate with further doses to achieve clinical response
- If adequate control is not achieved after 30 mg have been administered, consider adding a small dose of Droperidol or Olanzapine
- The major side effect is respiratory depression and close observation of the patient is essential
- IV Diazepam (2.5 - 5 mg IV) and IM Clonazepam (0.5 - 2 mg IM) are longer acting alternatives to Midazolam.

Droperidol

- Begin with 2.5 - 5 mg IV or 5 mg IM
- Titrate with further doses to achieve clinical response
- Avoid doses exceeding 20 mg (due to the risk of cardiac arrhythmias)
- Droperidol is preferred over haloperidol for behavioural emergencies because it is more sedating, has a quicker onset of action, a shorter half-life and is less cardiotoxic than haloperidol

Olanzapine

- IM administration is an option in a dose of 10 mg (to a maximum of 30 mg / 24 hours)
- Olanzapine may be safely administered via the IV route (using the IM preparation) however it is not currently approved for intravenous use in Australia. Begin with 5 mg IV, repeated very 5 minutes to maximum of 20 mg.
- Olanzapine has the same onset of action as Droperidol, but it is longer acting so there may be less need for re-sedation. Olanzapine is more readily available in some countries than Droperidol and is more likely to be used orally or intramuscularly in the post–acute care setting.

When to use two drugs ?

An antipsychotic agent (such as Droperidol or Olanzapine) can be used in combination with a Benzodiazepine such as Diazepam or Midazolam) in circumstances where a benzodiazepine administered as a single agent and used in therapeutic doses has not controlled the agitation. This may occur for example in patients who are tolerant of benzodiazepines or are very resistant to the sedative effect of benzodiazepines.

It is important to begin with a small dose of Droperidol or Olanzapine as profound respiratory depression and CNS depression (placing the airway at risk) may occur. Close observation of the airway and breathing are critical with combined use of these agents.

Ketamine

There are a small group of patients with severe agitation in whom standard therapy is not effective in controlling the behaviour. Ketamine has recently been suggested as an option in this situation and may be administered using the IV or IM routes. Prior to administration it is important to assess for contraindications[4] and to have resuscitation equipment immediately available and monitoring attached as soon as practical. Although complications are rarely encountered, the clinician must be prepared to manage apnoea, laryngospasm and cardiac arrhythmias.

A recent (Australian) paper examined the use of Ketamine in the management of 18 patients (including 16 with a primary diagnosis of exacerbation of schizophrenia) who had severe agitation unresponsive to supradosing with standard therapy[5]. The study found that Ketamine provided effective sedation in all cases with no significant adverse events noted during retrieval or during the subsequent follow up period of 72 hours.

Intravenous Route

In the patient with severe agitation unresponsive to standard therapy, Ketamine may be administered IV beginning with a dose of 0.5 - 1.5 mg/kg. Onset of action (glazed eyes and nystagmus) occurs within one minute and lasts 15 minutes with full recovery over about 60 minutes. Additional doses may be required to control symptoms titrating the dose to achieve the desired clinical effect. Where continuing sedation is required an infusion of 0.5 - 1.5 mg/kg/ hour may be commenced.

Intramuscular Route

In patients where IV access is not available Ketamine may also be administered IM beginning with an initial dose of 4 mg/kg. Lean body weight should be used for the dose calculation. The patient will rapidly develop the dissociative state within about 5 minutes of the injection. If no change is noted by 10 minutes a second dose (2 mg/kg) may be administered. The dissociative state lasts for approximately 20 - 30 minutes after an initial IM injection. Supplemental doses of 2 mg/kg may be administered if required.

[4] Contraindications to Ketamine include upper airway obstruction, previous adverse reaction to Ketamine, severe cardiovascular disease (angina, heart failure, malignant hypertension), hyperthyroidism or thyroid medication use and porphyria. A detailed discussion of Ketamine may be found in the chapter on "Procedural Sedation and Analgesia".

[5] Le Cong M et al. Ketamine sedation for patients with acute agitation and psychiatric illness requiring aeromedical retrieval. doi: 10.1136/emj.2010.107946 published online May 12, 2011

Managing the Restrained Patient

Where a patient is restrained it is essential that the incident is well documented and appropriate procedures with respect to the management of restrained patients are followed by medical and nursing staff. All staff should be familiar with these procedures.

Principles of restraint

A restrained patient should not be left to thrash about in an uncontrolled manner. Poor management of the restrained patient increases the risk of complications from the procedure including :

- Rhabdomyolysis
- Soft tissue injury / Fracture
- Airway obstruction
- Cardiac arrhythmias / Cardiac arrest.

Once physical restraint has been performed, sedation will be required to control behaviour and reduce the risk to the patient from injury.

All patients that are restrained should be observed regularly with special attention to identifying respiratory depression (secondary to sedation), asphyxia, pressure sores, vascular impairment to extremities and unrecognised underlying organic disease. The risk to the patient from restraint should never be underestimated. Restraint is associated a significant risk of morbidity and in some cases mortality.

Procedure for restraint

Where a patient has been restrained local procedures and policies in relation to documentation, observation and mental health review should carefully followed. In general, these will cover the following clinical areas in relation to restraint.

Documentation

The medical officer should document all episodes of restraint on the clinical record. In particular the medical record indicate :

- Clinical issue requiring restraint
- Person responsible for initiating restraint
- Reason for instituting restraint rather than another intervention (eg open therapy)
- Date, time and location that restraint commenced
- Specific type of restraint implemented
- Anticipated and actual duration of restraint
- Status of the patient under the mental health act or guardianship act
- Whether the next of kin/family/guardian was notified

Observation

All restrained patients should have documented evidence of :

- Regular Observation (15 minutely is the standard)
- Frequent clinical assessment (hourly if feasible)
- Removal of restraint to all the limbs for 10 minutes every hour (performed by removing one limb at a time for 10 minutes and then reapplying the restraint and removing another limb for 10 minutes)

Mental Health Review

Arrangements for mental health review will be required in the case of a patient who has been restrained as a result of mental illness.

Involuntary Detention (Inpatient Treatment Order)

In the at-risk patient (including the patient with severe agitation) it is essential to consider question of involuntary detention. Within Australia there is no one legislative framework that applies to the use of involuntary restraint and detention. Each State and Territory in Australia has a Mental Health Act.

While the process, documentation, terms used in reference to involuntary detention and the procedure for "detention" vary from state to state, the legislative principles and core aims of the Mental Health Acts for the states are similar. In general, there are 5 criteria that should be met before a patient may be Involuntarily Referred, Involuntarily Detained or have an Inpatient Treatment Order placed :

- The person has a mental illness which needs treatment
- There is a significant risk to the health, safety or welfare of the person or safety of another person (s)
- Because of the nature of the mental illness the person does not have the capacity for informed consent or the person has unreasonably refused treatment
- Because of the nature of the illness treatment in the community is not reasonably able to be provided
- The person is unable to be adequately provided with treatment in a way that is less restrictive

Clinicians should be familiar with their local legislation with respect to the grounds for involuntary restraint / detention, legal procedure for initiating detention of a patient and the forms and documentation required under law for involuntary detention of a patient.