

Recognising and responding to deterioration in mental state

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Executive Summary

Background

The Deteriorating Patient Committee at Monash Health are working to achieve the Australian Commission on Safety and Quality Health Care Standard for recognising deterioration in a person's mental state. Specifically, this committee is working to establish effective processes for recognising and responding to deterioration in a person's mental state.

As part of this planned work, an up to date review of the available literature about tools to assist in the recognition of deterioration in a person's mental state including delirium, changes in behaviour (risk of violence and/or aggression), cognitive function perception, physical function or emotional state is needed and the Centre for Clinical Effectiveness was asked to provide this literature report.

Review Question

What validated tools exist to assist in the recognition of deterioration in a person's mental state? (Including but not limited to delirium, changes in behaviour (violence/aggression), cognitive function perception, physical function or emotional state)

Identifying evidence

The search strategy for this review was adapted from Gaskin & Dagley et al (2018) who undertook an updated systematic review to identify tools for assessment of mental health deterioration as well as undertaking research to identify consensus on a set of signs specifically for the purpose of monitoring deterioration in a person's overall mental state [1].

Google, Medical databases (Medline, Psych Info, CINAHL Plus) and the TRIP Medical Database were searched using a combination of relevant search terms (Appendix 1) for peer reviewed and grey literature published from 2017 onwards (the end search date of the Gaskin & Dagley review).

Results

The systematic review undertaken by Gaskin and Dagley (2018) is the most comprehensive, high quality and recent review of the literature on the assessment of a person's mental state deterioration.

Of the tools identified in the review by Gaskin & Dagley (2018), the Mental State Examination Scale (MSES) provides the most comprehensive coverage of possible signs of deterioration [1]. Although the initial work on the feasibility of the MSES is promising and the scale appears sensitive to change (at least, over a few days), more developmental work needs to occur before this instrument could be used with confidence for identifying and tracking signs of deterioration in a person's mental state [1].

Further research by Gaskin & Dagley (2018) with key stakeholders led to the development of a proposed checklist. The authors propose an approach in which 28 clusters of signs are arranged into five indicators of deterioration in a person's mental state:

1. Reported change
2. Distress
3. Loss of touch with reality or consequence of behaviours
4. Loss of function
5. Elevated risk to self, others or property.

These five indicators provide an overarching framework for arranging the agreed signs for the purpose of monitoring deterioration in a person's mental state. The approach emphasises the importance of the person's self-report and input from families and carers. A proposed updated definition of mental state deterioration, indicators and clusters of signs is provided.

Additional work is needed to determine how baseline information is collected and recorded, methods to operationalise the checklist, and determine the validity of the indicators and clusters.

Conclusion

Although there are a number of validated tools available to assess a patient's mental health diagnosis, distress, risk of violence and aggression and suicidality and self-harm this review of the literature has confirmed that there is no tool as yet that can confidently assess the deterioration of a person's mental state in the inpatient hospital setting. The research conducted by Gaskin & Dagley (2018) has proposed a checklist specifically for the identification of mental state deterioration however this requires further consultation and validity studies.

Gaskin and Dagley (2018) conclude that the implementation of the ideal instrument would include:

- Individualised assessments
- Incorporate a broad set of behaviours
- Enable repeat assessment over time
- Draw on multiple sources of information (clinical observations, reports of people experiencing deterioration and those who know them well) [1] with observations relating to any one of the five indicators proposed being enough or sufficient to prompt an escalation of care.

Proposed updated definition of mental state deterioration, indicators and clusters of signs

Mental State Deterioration	
<p>Updated definition: A change for the worse in a person's mental state, compared with the most recent information available for that person, which may indicate a need for additional care.</p>	
<p>Assessing Change</p> <p>Identifying and tracking change relies on the availability of individual baseline information to which a person's current mental state can be compared.</p> <p style="text-align: center;"> Baseline information ← → Current mental state </p>	
Signs of Deterioration	
Indicators of deterioration	Clusters of signs of deterioration
<p>Reported change A person, or someone who knows the person well, reports that her or his mental state is changing for the worse.</p>	<ul style="list-style-type: none"> • Self-initiated requests for assistance • Requests for treatment from healthcare professionals or those close to the person • Self-reported negative or inflated sense of self • Self-reported uncontrollable thought processes • Self-reported negative emotions
<p>Distress A person, or someone involved in her or his care, shows signs of distress, which are evident through observation and conversation.</p>	<ul style="list-style-type: none"> • Uncharacteristic facial expressions • Physiological/medical deterioration • Negative themes in conversations • Apparent distress of self or others
<p>Loss of touch with reality or consequence of behaviours A person is losing touch with reality or the consequences of her or his behaviour.</p>	<ul style="list-style-type: none"> • Indications of experiencing delusions • Indications of experiencing hallucinations • Unusual self-presentation • Unusual ways of behaving • Appearing confused during conversations
<p>Loss of function A person is losing her or his ability to think clearly, communicate, or engage in regular activities.</p>	<ul style="list-style-type: none"> • Unusual movement patterns • Loss of skills • Poor daily self-care • Reduction in regular activities • Difficulty participating in conversations • Unusual speech during conversations • Seemingly impaired memory • Apparent difficulty with thinking about things in different ways
<p>Elevated risk to self, others or property A person's actions indicate an increased risk to self, others, or property.</p>	<ul style="list-style-type: none"> • Increases in the use of restrictive practices • Reduced safety of self • Reduced safety of others • Reduced safety of property • Disengaging from treatment • Unresponsiveness to treatment

Background

The Deteriorating Patient Committee at Monash Health are working to achieve the Australian Commission on Safety and Quality Health Care Standard for recognising deterioration in a person's mental state. Specifically, this committee is working to establish effective processes for recognising and responding to deterioration in a person's mental state.

As part of this planned work, an up to date review of the available literature about tools to assist in the recognition of deterioration in a person's mental state including delirium, changes in behaviour (risk of violence and/or aggression), cognitive function perception, physical function or emotional state is needed and the Centre for Clinical Effectiveness was asked to provide this literature report.

Review Question

What validated tools exist to assist in the recognition of deterioration in a person's mental state? (Including but not limited to delirium, changes in behaviour (violence/aggression), cognitive function perception, physical function or emotional state)

Identifying evidence

Search strategy

The search strategy for this review was adapted from Gaskin & Dagley et al (2018) who undertook an updated systematic review to identify tools for assessment of mental health deterioration as well as undertaking research to identify consensus on a set of signs specifically for the purpose of monitoring deterioration in a person's overall mental state [1].

Google, Medical databases (Medline, Psych Info, CINAHL Plus) and the TRIP Medical Database were searched using a combination of relevant search terms (Appendix 1) for peer reviewed and grey literature published from 2017 onwards (the end search date of the Gaskin & Dagley review).

Inclusion criteria

Population	Adult and Paediatric population
Concept	Tools to assess, monitor, screen for early signs of deterioration in mental state
Context	Any Inpatient ward, Emergency Departments, ICU
Types of information	Peer reviewed literature, grey literature
Timeframe	2017 – current

Results

The systematic review undertaken by Gaskin and Dagley (2018) is the most comprehensive, high quality and recent review of the literature on the assessment of a person's mental state deterioration. The updated search identified an additional four resources that provide useful information on tools and methods specific to violence and aggression [2, 3], paediatric setting [4] and cancer patients [5].

To assist the Monash Health Deteriorating Patient Governance Committee in progressing work to achieve the requirements for demonstrated work towards the establishment of effective processes for recognising and responding to deterioration in a person's mental state, we have provided a summary of the Gaskin and Dagley [1] review and included additional information from newly identified papers where relevant.

Tools for assessment of mental health deterioration

The process of recognising the signs of deterioration in a person's mental state, being able to track these in a dynamic fashion and communicate changes in shared language, in order to initiate an effective therapeutic response is the foundation of the Commissions Consensus Statement included in Standard 8 [1].

The Commission acknowledge that the signs of deterioration in mental state are not measureable in a comparable manner to physical observations however a systematic approach to monitoring change in a person's mental state will support shared decision making to prevent further deterioration and prevent adverse events [1].

A previous scoping review [6] found that there was no tool currently used in clinical practice to monitor changes in a person's mental state. This finding was echoed in Gaskin & Dagley's review [1] and in this search conducted by the Centre for Clinical Effectiveness.

What is known is that there are tools that describe signs that indicate alterations in a person's mental state, and these are used for different purposes. These include tools to support comprehensive assessment of a person's mental state for the purpose of diagnosis (the mental state examination), or to make triage decisions (the Mental Health Triage Tool). There are tools to support prediction of particular outcomes (HCR 20, Broset for prediction of violence). There are tools to systematically monitor changes in aspects of a person's mental state, including self-reported mood (the DI5) and agitation (agitation scales). However none of these tools are currently adapted for the purpose of monitoring deterioration in a person's overall mental state [1].

Of the tools identified in the review by Gaskin & Dagley (2018) the Mental State Examination scale (MSES) provides the most comprehensive coverage of possible signs of deterioration [1]. Although the initial work on the feasibility of the MSES is promising and the scale appears sensitive to change (at least, over a few days), more developmental work needs to occur before this instrument could be used with confidence for identifying and tracking signs of deterioration in a person's mental state [1].

Table 1. Assessment and Diagnosis tools currently in use

Tool	Description	Reference
Mental State Examination scale (MSES) (RCH Version)	<ul style="list-style-type: none"> • May have the most potential for identifying and tracking possible signs of deterioration. • This instrument is early in development, designed to be used in clinical practice for the measurement of mental state across diagnostic groups • Feasibility of the scale showed that the MSES can be used for assessing the initial mental state of a person exhibiting psychosis and mania, tracking the process of recovery, and facilitating timely treatment decisions. • Twice weekly administration 	[1, 4]
Five Item Daily Symptom Index (DI-5)	<ul style="list-style-type: none"> • The DI-5 is a self-report measure of affective psychological distress designed for daily administration with people who are depressed or anxious 	[1]
Imminent Risk Rating Scale (IRRS)	<ul style="list-style-type: none"> • The IRRS is a clinical measure of a person's imminent risk of violence against others. • Twice weekly administration 	[1]
Dynamic Appraisal of Situational Aggression (DASA)	<ul style="list-style-type: none"> • Designed to assess the risk of imminent aggression in people receiving psychiatric inpatient care • Administered daily or twice-daily 	[1, 3]
Brøset Violence Checklist (BVC)	<ul style="list-style-type: none"> • Designed for predicting aggression and violence. • Administered daily or twice-daily 	[1-3]
Life-Death Implicit Association Test (IAT)	<ul style="list-style-type: none"> • Shown considerable potential for the assessment of suicidality and risk of self-harm. • Twice weekly administration 	[1]
The Alert System	<ul style="list-style-type: none"> • Used to assess patient risk of Work Place Violence initiating a flag for immediate intervention 	[2]
Violence Screening Checklist – Revised (VSC-R)	<ul style="list-style-type: none"> • Violence screening tool for inpatient psychiatry units 	[3]
Fordham Risk Screening Tool (FRST)	<ul style="list-style-type: none"> • Violence screening tool for inpatient psychiatry units 	[3]
Standardised Mini Mental State Examination (SMMSE)	<ul style="list-style-type: none"> • Face to face and telephone versions for clinical diagnosis 	[7]
NCCN Distress Thermometer for Patients	<ul style="list-style-type: none"> • Screening tool for measuring distress – Self Assessment 	[5]

Key:

Suicidality & Self-harm	Clinical Diagnosis	Distress	Violence & Aggression
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Highlighted themes to consider for implementation of tools

Individualised assessment approaches:

- Mental health treatment, care and support should be tailored to meet the specific needs of the individual consumer

Measurement using multiple behaviours:

- In identifying deterioration in a person's mental state, it may be likely that clusters of behaviours – potentially unique to individuals, time, and environment – are stronger indicators of the need for additional care than single behaviours alone

Prediction with one-off versus multiple assessments over time:

- Research on several instruments (MSES, DASA, DI-5) has highlighted the value of assessing risk regularly over time.
- To be able to perform regular assessments, instruments must be well suited for that purpose.

Multiple possible sources of information:

- Focusing on signs of deterioration elevates the importance of clinical observation.
- Instruments rely on clinician observations and assessments conducted in partnership with people receiving care
- Assessments would ideally draw on information from consumers, as well as from family and friends
- Useful information can be obtained from people receiving care, either through self-report or implicit association testing
- In recognising and responding to deterioration in a person's mental state, there would seem to be value in drawing more heavily on information from those experiencing deterioration, as well as seeking information from carers. Doing so would give people providing care a deeper understanding of the person experiencing deterioration and place them in a better position to respond.

Generation and Review of Signs of Mental State Deterioration

With the lack of validated, specific tools available the Commission identified that there was a need to develop consensus on a set of signs specifically for the purpose of monitoring deterioration in a person's mental state. Gaskin & Dagley (2018) undertook a series of interviews with stakeholders (consumers, carers and clinicians) to generate a list of signs indicating deterioration in a person's mental state, a set of sequential surveys (Delphi Process) to build consensus on the signs and two workshops to organise the signs into a set of provisional indicators.

Figure 1 provides a proposed outline of the definition of mental state deterioration, the indicators for assessment and the cluster signs for deterioration.

Gaskin & Dagley (2018) recommend that further work is now needed to determine the following:

- How baseline information can be more effectively obtained, communicated, and retained in healthcare settings (including strategies and practices that support consumers and carers with reporting baseline information);
 - The use of a checklist is one way of facilitating the recording of baseline information. The design of such a checklist should enable information to be recorded objectively, capture information that is meaningful, be appropriately sensitive to the circumstances, and accommodate the skills of the end users. A tool designed for non-mental health clinicians might be particularly useful.
- How the five indicators can be operationalised to enable the identification and tracking of signs of deterioration in a person's mental state;
- Whether the five indicators facilitate the identification of deterioration at a sufficiently early stage to prevent significant further deterioration
- The validity of the indicators and clusters of signs for diverse populations, such as people from CALD backgrounds, Aboriginal and Torres Strait Islander peoples, and people who may communicate differently to others due to disability (for example, people with intellectual disability); and
- How any solution for identifying and tracking deterioration in a person's mental state may best be translated into practice?

Figure 1. Proposed updated definition of mental state deterioration, indicators and clusters of signs

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Conclusions

Although there are a number of validated tools available to assess a patient's mental health diagnosis, distress, risk of violence and aggression and suicidality and self-harm this review of the literature has confirmed that there is no tool as yet that can confidently assess the deterioration of a person's mental state in the inpatient hospital setting. The research conducted by Gaskin & Dagley (2018) has proposed a checklist specifically for the identification of mental state deterioration however this requires further consultation and validity studies.

Issues around operationalising tools to enable both identification and tracking of mental state deterioration needs to be solved, being aware of duplication of information already being collected and the administrative burden weighed against practical outcomes associated with changes in practice all need to be considered.

Gaskin and Dagley (2018) conclude that the ideal instrument would facilitate individualised assessments, incorporate a broad set of behaviours, enable repeat assessment over time and draw on multiple sources of information (clinical observations, reports of people experiencing deterioration and those who know them well) [1] with observations relating to any one of the five indicators proposed being enough or sufficient to prompt an escalation of care.

References

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6. Craze L, et al., *Recognising and Responding to Deterioration in Mental State: A Scoping Review*. 2014, ACSQHC: Sydney.
7. Molloy DW. *Standardised Mini-Mental State Examination (SMMSE)*. 2019; Available from: <https://www.ihpa.gov.au/sites/default/files/publications/smmse-tool-v2.pdf>.

Appendix 1

Google search	
Search terms	Results
"Screening for early mental state deterioration in hospital"	100
Deterioration and "mental state" and assessment	123
early signs mental state deterioration in patients	166
mental state examination scale	168
mental state examination scale for violence and aggression	134

TRIP Medical Database – www.tripdatabase.com	
Search terms	Results
"mental state deterioration"	478

Medical Databases (Medline, Psych Info, CINAHL)		
Search terms		
1. psychiatric	8. adverse event	
2. mental health	9. adverse outcome	
3. inpatient	10. patient safety	
4. mental state	11. 1 or 2	
5. deteriorat*	12. 4 or 5 or 6 or 7 or 8 or 9 or 10	
6. risk assessment	13. 3 and 11 and 12	
7. risk management	14. Limit 2017 – Current, English Language, Humans	
Results		
Medline – 53	PsychInfo – 84	CINAHL – 19