

Models of Care for Mental Health in ED

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Executive Summary

Background

The Innovation and Improvement team in collaboration with the Mental Health and Emergency Programs at Monash Health requested the Centre for Clinical Effectiveness identify available evidence to inform a model of care for mental health patients presenting to the Emergency Department.

Objective

To identify models of care for mental health patients presenting to the Emergency Department.

Of specific interest to the reviewers:

- Is a Mental Health 'precinct' (for adult and/or paediatric patients) in Emergency Departments effective for monitoring and de-escalation of care?

Methods

Medline, all evidence based medicine (EBM) databases, CINAHL, and PsychInfo were searched. A search of Google and websites known by the author to contain Quality Improvement reports were also searched. Search terms and dates are provided in Appendix 1.

Results

Summary of findings

The review of the evidence identified 17 papers relevant to models of care for mental health patients presenting to ED.

These papers covered overall service models for mental health patients in ED both specific to adults and paediatric populations. The models described services that were mostly integrated within the medical ED environment. Several papers evaluated specific interventions including a Psychiatric liaison nurse/team in ED, Telepsychiatry in ED and Education for ED staff on how to assess, triage and treat mental health patients presenting to ED. These intervention studies found improvements in reduction of waiting time, reduction in overall length of stay, improved user satisfaction, and effective access to specialist care. It is important to note that these studies were not appraised for quality and may present high risk of bias in their study designs.

The review also identified some examples of services for mental health patients that sit outside of the ED: "The living room" and the "Alameda Model of care: a separate psychiatric ED". Although not a feasible option of care for Monash Health, elements of these services may provide useful information.

Two papers were identified that described key elements of an optimal environment for mental health care in the ED. Design considerations for both the model of care and built environment are provided. These papers suggest that optimal ED environments help to reduce additional stress and anxiety for the patient.

Conclusions

This review of the evidence identified papers that were relevant to models of care for mental health patients presenting to the Emergency Department. Most of the evidence identified was for specialist mental health teams assessing patients within medical EDs. The review also identified specific models for paediatric (adolescent and young adult) mental health care in ED but did not identify evidence to suggest whether or not paediatric and adult mental health patients should be assessed in separate environments/areas of the ED.

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Search strategy

Medline, all evidence based medicine (EBM) databases, CINAHL, and PsychInfo were searched. A search of Google and websites known by the author to contain Quality Improvement reports were also searched. Search terms and dates are provided in Appendix 1.

Document Selection

Titles and abstracts identified were exported to EndNote X7 (Thompson, Reuters, Carlsbad, California, USA). Documents identified were screened using inclusion criteria established *a priori*. Searches of health databases, google and websites were screened by two (MG, AM) reviewers. Documents were included based on the criteria outlined in Table 1. Based on search results a decision was made a posteriori to only include documents published after 2013.

Data collection process

Data was extracted by one reviewer (MG). A summary of papers identified is included in Appendix 2 - Table 3.

Inclusion Criteria

Table 1. Study eligibility criteria

Patient	Inclusion: Adult and Paediatric patients presenting to the Emergency Department who are suspected of needing assessment by a Mental Health team Exclusion: All other ED patients		
Intervention/indicator	Inclusion: Mental Health Unit embedded within the Emergency Department or Mental Health Service working in partnership with the Emergency Department, strategies and interventions to assess and manage mental health patients presenting to emergency departments, Models of Care for Mental Health patients in ED		
Outcomes	Inclusion: Any outcome		
Study type	Systematic reviews and all comparable study designs, Quality Improvement reports, Service Re-Design reports	Publication Date	2012 onwards
		Language	English

Results

A total of 17 papers¹⁻¹⁷ are included in this report. Searching identified one Health Technology Assessment (HTA)¹, three Government papers²⁻⁴, one evidence review⁵, nine peer reviewed studies⁶⁻¹⁴ and two grey literature reports¹⁶⁻¹⁷.

The database searches identified 348 citations. Nine additional records were identified through google and website searches.

When a screening decision could not be made based on title and abstract alone, full text was retrieved. Twenty-four full text documents identified through database searches were retrieved and a total of 17 papers are included in the review (Figure 1).

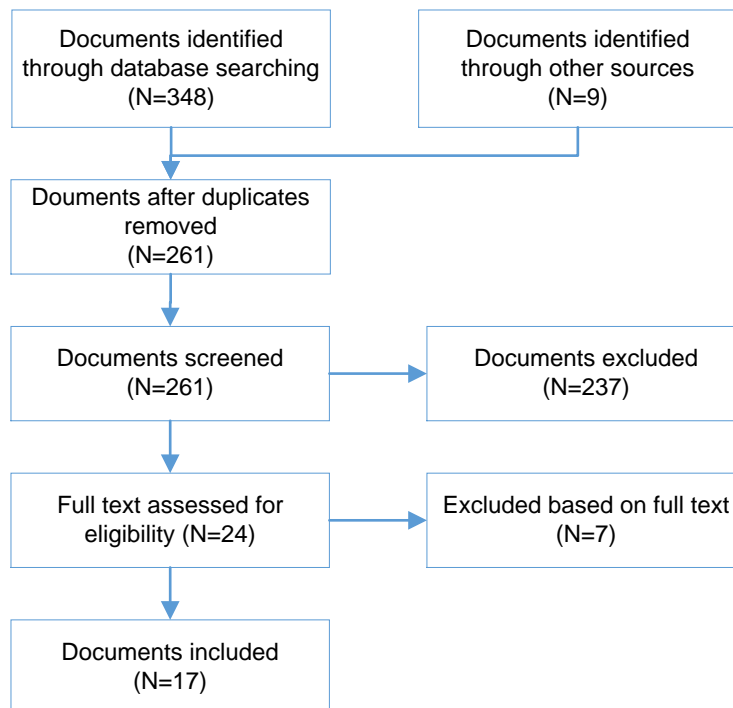


Figure 1. Search results and screening process used in the review

Quality of identified documents

The quality of the documents outlined in Appendix 2, Table 3 have not been formally appraised.

Summary of findings

Overall Service Models for Mental Health patients in ED

Six papers^{2-4, 7, 11, 15} referred to overall service models for mental health patients presenting to ED. The table below outlines the type of service, whether the service is integrated into the emergency department, and if it is specific for adults or Paediatrics.

Table 2: Service Model Summary

Ref	Service model	Location	Population
7	Liaison Psychiatry Model – A fast tracked service to reduce wait times for patients presenting with mental illness.	Co-located within ED	Adults
15	Liaison Psychiatry Service – recommends different levels of this service	Within ED	Adults
3	Overall Mental Health in ED Service guide – includes triage, initial assessment, common symptoms and presentations, special populations, ongoing care and management in ED, transfer of care to the community.	With ED	Adults
2	Whole Service guidance for a Psychiatric Emergency Carer Centre – includes guidance for collaborative care, inpatient admission, service components, staffing and discharge planning and transfer of care.	Collaborative process between ED and Mental Health	Adults with consideration for special populations eg CAMHS
4	CAMHS Assertive Outreach Teams Program & Zero Tolerance Program	With ED	Adolescents and Young Adults
11	Family-Based Crisis Intervention for suicidal adolescents	Within ED	Adolescents

Evaluated Interventions

Psychiatric Liaison Nurse/Team in ED

This review of evidence identified five papers that synthesised evidence¹ for psychiatric liaison nurses in ED or evaluated^{7-9, 14} this intervention in the ED setting.

A Health Technology Assessment conducted by Paton et al (2016) evaluated the clinical and cost effectiveness of the models of care for improving outcomes for people experiencing a mental health crisis. A total of nine studies were conducted on improving access to crisis care and service user outcomes in ED. These studies evaluated liaison psychiatry models in which a liaison psychiatry team, a psychiatrist or psychiatric nurse was located in the ED providing assessment, triage and treatment. The Rapid Assessment Interface and Discharge model (RAID) found large reduction in risk of readmission, potentially leading to savings in bed-days. Psychiatric liaison models mostly led to reductions in waiting times and improved service user satisfaction.¹

A pre-post intervention study conducted by Sheridan et al (2016) evaluated the effect of a new paediatric mental health liaison program. It concluded that the use of a dedicated child psychiatrist and mental health social worker to the Paediatric ED resulted in significantly decreased length of stay and need for admission without any change in the return visit rate.⁶

Wand et al (2015 & 2016) evaluated the implementation of an extended hours nurse practitioner led mental health liaison nurse service in Sydney Australia. They found that the service provided prompt and effective access to specialised healthcare, removed additional workload from nursing and medical staff⁹, had approval of staff⁸, and provided therapeutic benefit and enhanced communication between staff in ED⁸. The study in 2015 noted that embedding the service within an ED structure was pivotal to the success and sustainability of the model.⁹

Another study conducted in a German ED by Burian et al (2014) found that introducing a nurse based psychiatric consultation liaison service increased satisfaction and skills of staff with regards to the management of psychiatrically ill patients.¹⁴

Telepsychiatry in ED

Two papers^{5, 10} identified describes telepsychiatry as an intervention for mental health patients presenting to ED. Suggested as an evidence-based strategy to assure rapid assessment and intervention when a psychiatrist consult is not available, Letvak and Rhew (2015) found mostly no difference between face to face and telepsych in the ED for mental health patients in terms for disposition recommendations, strength of these recommendations or diagnosis. Another study in the Letvak and Rhew (2015) review found that telepsych reduced length of stay, decreased recidivism rates and involuntary commitments.⁵

Narasimhan et al (2015) found that telepsychiatry increased access to outpatient follow-up while reducing overall hospital based service use through improved triage and mental health treatment.¹⁰

ED staff Education

Letvak and Rhew (2015) describe evidence based initiatives to improve lack of knowledge and provider bias of ED staff toward mental health patients. Their review of evidence showed that clinicians had less confidence in: effective assessment in those with high risk behaviours, providing continuity of care, dealing with dual diagnosis, prescribing medications and managing child and adolescent mental health. Another study suggested that to improve provider bias education programs should include: contact based education/personal testimony, emphasise and demonstrate recovery, multiple medium contacts, teach practical skills, dispel myths and employ enthusiastic facilitators.⁵

Evidence for External Precincts

Two papers^{12, 13} were identified that described a service for mental health patients that sits outside of a health service emergency department. Shattell et al (2014) provide a description of a "living room" concept which is a recovery oriented alternative crisis intervention environment. This paper suggested that a non-clinical care setting is perceived as helpful and positive for persons in emotional distress.¹²

A paper by Zellar et al (2014) describes and evaluate the Alameda County Model in California. This is a dedicated psychiatric emergency service. The Alameda Model is a stand-alone ED specifically for psychiatric patients and is usually associated with an adjacent medical ED. The results of the evaluation indicate that the Alameda Model of transferring patients from general hospital EDs to a regional psychiatric emergency service reduced the length of boarding times for patients awaiting psychiatric care by over 80%. Additionally, the psychiatric emergency service can provide assessment and treatment that may stabilise over 75% of the crisis mental health population at this level of care, thus dramatically alleviating the demand for inpatient psychiatric beds.¹³

Design concepts to consider for Mental Health Service delivery in ED

This review also identified two papers^{16, 17} that discussed the physical environments for mental health service delivery specifically in the emergency setting. Hernandez (2014) describes consideration for process and design considerations, staffing models and technology needs and explains that the design of the ED can decrease the stress and anxiety for behavioural health patients while increasing the efficiency of their care.¹⁶

The Australian College for Emergency Medicine (2014) provide guidelines for emergency department design. Included are patient models of care: medical led triage, medical led triage and nursing assessment teams, rapid assessment teams

and dedicated assessment areas. It also provides guidance on built environments: general considerations and specific rooms and functional requirements.¹⁷

Conclusions

This review of the evidence identified papers that were relevant to models of care for mental health patients presenting to the Emergency Department. Most of the evidence identified was for specialist mental health teams assessing patients within medical EDs. The review also identified specific models for paediatric (adolescent and young adult) mental health care in ED but did not identify evidence to suggest whether or not paediatric and adult mental health patients should be assessed in separate environments/areas of the ED.

References

1. Paton F, Wright K, Ayre N, Dare C, Johnson S, Lloyd-Evans B, et al. [Improving outcomes for people in mental health crisis: a rapid synthesis of the evidence for available models of care.](#) Health Technol Assess **2016**;20(3).
2. NSW Health. **2015.** [Psychiatric Emergency Care Centre Model of Care Guideline.](#) Mental Health and Drug and Alcohol Office. NSW Government.
3. Mental Health and Drug and Alcohol Office, [Mental Health for Emergency Departments – A Reference Guide.](#) NSW Ministry of Health. Amended March **2015.**
4. Jenkins B and Katz I. [Adolescents' and young adults' use of Emergency Departments:](#) an Evidence Check rapid review brokered by the Sax Institute (www.saxinstitute.org.au) for the NSW Kids and Families, May **2015.**
5. Letvak S & Rhew D. **2015.** [Assuring Quality Health Care in the Emergency Department.](#) Healthcare 2015, 3, 726-732; doi:10.3390/healthcare3030726.
6. Sheridan, D. C., et al. **2016.** ["The Effect of a Dedicated Psychiatric Team to Pediatric Emergency Mental Health Care."](#) The Journal of emergency medicine 50(3): e121-128.
7. Okafor, M., et al. **2016.** ["Improving quality of emergency care through integration of mental health."](#) Community Mental Health Journal 52(3): 332-342.
8. Wand T et al. **2016.** [Evaluating a new model of nurse-led emergency department mental health care in Australia: perspectives of key informants.](#) International Emergency Nursing 24:16–21.
9. Wand T et al. **2015.** [Evaluation of a nurse practitioner-led extended hours mental health liaison nurse service based in the emergency department.](#) Australian Health Review, 39, 1–8.
10. Narasimhan, M., et al. **2015.** ["Impact of a Telepsychiatry Program at Emergency Departments Statewide on the Quality, Utilization, and Costs of Mental Health Services."](#) Psychiatric services (Washington, D.C.) 66(11): 1167-1172.
11. Ginnis, K., et al. **2015.** ["Family-Based Crisis Intervention in the Emergency Department: A New Model of Care."](#) Journal of Child & Family Studies 24(1): 172-179.
12. Shattell, M. M., et al. **2014.** ["A Recovery-Oriented Alternative to Hospital Emergency Departments for Persons in Emotional Distress: 'The Living Room'."](#) Issues in mental health nursing 35(1): 4-12.
13. Zeller, S., et al. **2014.** ["Effects of a dedicated regional psychiatric emergency service on boarding of psychiatric patients in area emergency departments."](#) The western journal of emergency medicine 15(1): 1-6.
14. Burian, R., et al. **2014.** ["Establishing a nurse-based psychiatric CL service in the accident and emergency department of a general hospital in Germany."](#) Der Nervenarzt 85(9): 1217-1224.
15. **2014.** [Developing Models for Liaison Psychiatry Services – Guidance.](#) Strategic Clinical Network for Mental Health, Dementia and Neurological Conditions South West
16. Hernandez M. **2014.** [The New Psych ED.](#)
17. Australasian College for Emergency Medicine. **2014.** [Emergency department design guidelines.](#)

Appendix 1

Search Strategy

Medical Databases

Information sources	Date of search
All EBM (Ovid) * - 5	28/03/2017
Medline (Ovid) - 171 Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) and Ovid OLDMEDLINE(R) 1950 to Present	28/03/2017
CINAHL - 121	28/03/2017
Psych Info - 51	28/03/2017

*(includes The Cochrane Database of Systematic Reviews, DARE, CENTRAL and ACP Journal Club)

Search terms

Search Terms in Medline*	
#	Terms
1	Emergency Services, Psychiatric/
2	Crisis Intervention/
3	Mental Disorders/
4	Mental Health Services/
5	Mental Health/
6	1 or 2 or 3 or 4 or 5
7	Emergency Service, Hospital/
8	Emergency Department.mp.
9	7 or 8
10	exp delivery of health care/ and exp models, theoretical/
11	((multidisciplinary or multi disciplinary) adj2 (care or team*)).mp.
12	((model* or System* or organisation*) and care).mp.
13	exp Models, Organizational/
14	10 or 11 or 12 or 13
15	6 and 9 and 14
16	limit 15 to (english language and humans and yr="2012 -Current")

*(Similar terms (appropriately translated) were used in other databases.)

Google search terms

Models of care, mental health, emergency

Websites known to the author

Cochrane Library	The Health Foundation
Sax Institute	Agency for Clinical Innovation
Kings Fund	Deeble institute
McMaster Health Forum	Health Evidence Canada

Appendix 2 – Included Papers Summary

Table 3: Included papers

Reference	Document Type	Population	Model of Care/intervention described
1. Paton F, Wright K, Ayre N, Dare C, Johnson S, Lloyd-Evans B, et al. Improving outcomes for people in mental health crisis: a rapid synthesis of the evidence for available models of care. Health Technol Assess 2016 ;20(3).	HTA	Adults	<ul style="list-style-type: none"> HTA aimed to synthesis clinical and cost effectiveness of models of care in the areas of access to support before crisis, urgent and emergency access to crisis care, quality treatment and care in crisis, and promoting recovery/preventing future crisis. Specific to the question of this review the HTA reports on liaison psychiatry teams and training programs for staff in ED
2. NSW Health. 2015 . Psychiatric Emergency Care Centre Model of Care Guideline. Mental Health and Drug and Alcohol Office. NSW Government.	Guideline	Adults/ Paediatric	<ul style="list-style-type: none"> Psychiatric Emergency Care Centre Model of care guideline providing high level guiding principles and basic components to develop and monitor detailed operating procedures and governance processes. Includes collaborative care, mental health assessment, inpatient admission, service components, staffing and discharge planning and transfer of care.
3. Mental Health and Drug and Alcohol Office, Mental Health for Emergency Departments – A Reference Guide. NSW Ministry of Health. Amended March 2015 .	Reference Guide	Adults/ Paediatric	<ul style="list-style-type: none"> A practical guide in the initial clinical assessment and management of mental health presentations. Includes triage, initial assessment, common symptoms and presentations, special populations, ongoing care and management in ED, transfer of care to the community.
4. Jenkins B and Katz I. Adolescents' and young adults' use of Emergency Departments: an Evidence Check rapid review brokered by the Sax Institute (www.saxinstitute.org.au) for the NSW Kids and Families, May 2015 .	Evidence Check	Adolescents and Young Adults	<ul style="list-style-type: none"> Reviews environmental and systematic strategies implemented to improve service responses to adolescents and young adults in particular strategies implemented by EDs and the health service system that have resulted in improvements in outcomes. Includes ED specific initiatives: the NSW Health Youth Mental health initiative, CAMHS, Paediatric and assessment units (co-located in ED), and Kids Acute liaison in Mental Health project (westmead) – pathway for mental health presentations to ED.
5. L etvak S & Rhew D. 2015 . Assuring Quality Health Care in the Emergency Department. Healthcare 2015, 3, 726-732; doi:10.3390/healthcare3030726.	Review of evidence	Adults	<ul style="list-style-type: none"> Describes evidence-based initiatives for improving the quality of care of mental health patients in the emergency department. Specifically, the use of telepsychiatry and lack of knowledge and reducing provider biases.
6. Sheridan, D. C., et al. 2016 . " The Effect of a Dedicated Psychiatric Team to Pediatric Emergency Mental Health Care. " The Journal of emergency medicine 50(3): e121-128.	Pre and post intervention retrospective study	Paediatrics	<ul style="list-style-type: none"> The objective of this study was to evaluate the effect of a new paediatric mental health liaison program. Concluded that the use of a dedicated child psychiatrist and mental health social worker to the PED results in significantly decreased LOS and need for admission without any change in return visit rate.
7. Okafor, M., et al. 2016 . " Improving quality of emergency care through integration of mental health. " Community Mental Health Journal 52(3): 332-342.	Pilot project	Adults	<ul style="list-style-type: none"> Describes a Psychiatric Fast Tracked Service to reduce wait time of patients presenting with mental illness Presents a model for co-location and integration of emergency and psychiatric emergency services Suggests that implementation of the emergency care integration initiative was effective in achieving some of its objectives

Reference	Document Type	Population	Model of Care/intervention described
8. Wand T et al. 2016 . Evaluating a new model of nurse-led emergency department mental health care in Australia: perspectives of key informants . International Emergency Nursing 24:16–21.	Evaluation	Adults	<ul style="list-style-type: none"> Provides an evaluation of an extended hours nurse practitioner-led mental health liaison nurse (MHLN) service in Sydney Australia from the perspective of the staff Found that a nurse practitioner-led extended hours MHLN service embedded within the ED team structure provides prompt and effective access to specialised mental health care for people with 'undifferentiated health problems' and removes a significant workload from nursing and medical staff.
9. Wand T et al. 2015 . Evaluation of a nurse practitioner-led extended hours mental health liaison nurse service based in the emergency department . Australian Health Review, 39, 1–8.	Evaluation	Adults	<ul style="list-style-type: none"> Provides an evaluation of a nurse practitioner (NP)-led extended hours mental health liaison nurse (MHLN) service based in the emergency department (ED) of an inner city teaching hospital in Sydney and to explicate a model of care that is transferable across a broad range of ED settings, both in metropolitan and rural contexts. Found that the NP-led MHLN service within the ED structure was pivotal to the success and sustainability of this model of care.
10. Narasimhan, M., et al. 2015 . " Impact of a Telepsychiatry Program at Emergency Departments Statewide on the Quality, Utilization, and Costs of Mental Health Services ." Psychiatric services (Washington, D.C.) 66(11): 1167-1172.	Evaluation	Adults	<ul style="list-style-type: none"> Provides results of an evaluation of the impact of the South Carolina Department of Mental Health telepsychiatry intervention. Purpose of the intervention was to increase access to outpatient follow-up care while reducing overall hospital-based service use through improved triage and mental health treatment.
11. Ginnis, K., et al. 2015 . " Family-Based Crisis Intervention in the Emergency Department: A New Model of Care ." Journal of Child & Family Studies 24(1): 172-179.	Descriptive paper	Adolescents	<ul style="list-style-type: none"> Presents a framework for Family-Based Crisis Intervention in the ED for suicidal adolescents Framework includes Psych evaluation, Adolescent and Family intervention (CBT skills building, psychoeducation, treatment planning, therapeutic readiness, safety planning), Family meeting to develop a joint narrative and Disposition.
12. Shattell, M. M., et al. 2014 . " A Recovery-Oriented Alternative to Hospital Emergency Departments for Persons in Emotional Distress: 'The Living Room' ." Issues in mental health nursing 35(1): 4-12.	Qualitative descriptive study	Adults	<ul style="list-style-type: none"> Provides a description of "The Living Room", a recovery oriented alternative crisis intervention environment Provides finding of how non-clinical care settings are perceived as helpful and positive for persons in emotional distress.
13. Zeller, S., et al. 2014 . " Effects of a dedicated regional psychiatric emergency service on boarding of psychiatric patients in area emergency departments ." The western journal of emergency medicine 15(1): 1-6.	Descriptive study	Adults	<ul style="list-style-type: none"> Evaluation of the Alameda County Model in California a dedicated psychiatric emergency service Stand-alone ED specifically for psychiatric patients, most are associated with an adjacent medical ED The results of this study indicate that the Alameda Model of transferring patients from general hospital EDs to a regional psychiatric emergency service reduced the length of boarding times for patients awaiting psychiatric care by over 80% versus comparable state ED averages. Additionally, the psychiatric emergency service can provide assessment and treatment that may stabilize over 75% of the crisis mental health population at this level of care, thus dramatically alleviating the demand for inpatient psychiatric beds. The improved, timely access to care, along with the savings from reduced boarding times and hospitalization costs, may well justify the costs of a regional psychiatric emergency service in appropriate systems
14. Burian, R., et al. 2014 . " Establishing a nurse-	Single site observationa	Adults	<ul style="list-style-type: none"> Describes the establishment of a nurse based psychiatric

Reference	Document Type	Population	Model of Care/intervention described
based psychiatric CL service in the accident and emergency department of a general hospital in Germany. " Der Nervenarzt 85(9): 1217-1224.	I study		<p>consultation liaison service for an ED in Germany</p> <ul style="list-style-type: none"> The evaluation of the service showed benefits with respect to satisfaction and skills of staff with regard to the management of psychiatrically ill patients
15. 2014. Developing Models for Liaison Psychiatry Services – Guidance. Strategic Clinical Network for Mental Health, Dementia and Neurological Conditions South West	Guidance Document	Adults	<ul style="list-style-type: none"> Provides a description of recommended liaison psychiatry service models for hospitals
16. Hernandez M. 2014. The New Psych ED.	Grey Literature report	ED Design	<ul style="list-style-type: none"> Provides an explanation of how ED design can decrease the stress and anxiety for behavioural health patients while increasing the efficiency of their care.
17. Australasian College for Emergency Medicine. 2014. Emergency department design guidelines.	Grey literature report	ED Design	<ul style="list-style-type: none"> Provides guidance on patient models of care: medical led triage, medical led triage and nursing assessment team, rapid assessment team, dedicated assessment areas Provides guidance on built environment: general considerations and specific rooms and functional requirements