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**Paramedics' clinical judgment and mental health assessments in emergency contexts:
Research, practice, and tools of the trade**

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Abstract

Mental health and illness are global health priorities. International reforms of mental health care systems repeatedly call for increased participation of a wide range of health, welfare, and disability professionals and organisations in providing services to people with mental disorders.¹ There are increasing needs to improve mental health skills of all health-care professionals, improve coordination of services provided to consumers of mental health services and their and carers, and foster greater community interest and involvement in mental health issues.¹

Despite this, the roles of paramedics and contributions they can make to the care of the mentally ill in the wider continuum of health care have not been fully recognised. Traditionally, the work of paramedics has been limited to managing specific conditions such as suicide. The reasons for this are many and varied, but one consequence of it is that research into paramedic judgment and decision-making of mental illness is rare. This paper will present a review of key research examining mental health assessments in the emergency care context, with a specific focus on paramedics. It will examine the use of mental assessment tools or instruments by ambulance and emergency medical personnel and highlight the needs for future research into this important area of health-care. Central to global mental health reforms is the preparedness of health care professionals, including paramedics, to recognise, assess, and manage mental illness in everyday practice and the sufficiency of education and training programs, clinical standards, policy, and legislation to ensure quality and accountability in the care of the mentally ill.

Mental Illness – The Great Pandemic of the 21st Century

Mental illness is a global health crisis. It results in significant morbidity and is a major factor influencing the social determinants of health of individuals, families and communities. Approximately 450 million people worldwide are affected by mental, neurological, or behavioural problems at any time.² This group of illnesses account for 12 percent of the global burden of disease – a burden that far exceeds other diseases such as cancer; heart

disease; or AIDS, tuberculosis, and malaria combined.³ Approximately 873,000 people die by suicide every year. The mentally ill are systematically subjected to social isolation, have a poor quality of life, and have increased mortality, all of which have staggering economic and social consequences.² Many cases of mental illness go unreported, unmanaged, or are concealed for a variety of social, political, and economic reasons.

Globally, reform of mental health care systems advocate for increased participation of a wide range of health, welfare, and disability professionals and organisations in providing services to people with mental disorders.¹ Health-care professionals across all disciplines require increased skills to better equip them to recognise and manage mental illness, along with improved coordination of consumer of mental health services, and increased community interest and involvement in mental health issues.¹

Paramedics are one group of health-care professionals facing increasing challenges in the care of the mentally ill.⁴ The decentralisation of mental health services has resulted in increased attendance at Emergency Departments (EDs) and to emergency medical services by patients with mental health problems, something well documented in Australia and around the world.⁵ Some facilities have reported a ten-fold increase of the number of patients presenting to the ED with mental health problems in 10 years.⁶⁻¹⁰ How paramedics have dealt with such events, and how they are able to contribute, or otherwise, to the care of the mentally ill in the emergency primary health context, has not been the subject of sustained systematic research or inquiry.

It is of no surprise that research into clinical judgment and decision-making of mental illness is centred in medicine, psychiatry, psychology, nursing, and, interestingly, police and the law. While much research has been undertaken to investigate mental health assessment practices in these domains, research into practices in the ambulance or paramedic setting is limited. In fact, research into paramedic judgment and decision-making of mental illness is rare. The warrant for such research and its importance in informing quality practice and clinical care have been established elsewhere.^{1,4,11-14}

A search of the published electronic literature available on the electronic databases CINAHL[®], MEDLINE[®] and PsychINFO[®] using key words (ambulance, paramedic, mental illness, emergency medical technician, psychiatric, assessment) was undertaken. Manual searches of journals, manuscripts, literature, policies, and procedures were undertaken, encompassing review of the national literature of the home country of the author, including analysis of clinical policies and procedures of across all Australian and New Zealand ambulance authorities. International literature was sourced, including information from world-leading authorities such as the World Health Organisation and the World Federation of Mental Health.

Research – Paramedic Clinical Judgment and Decision-making

Paramedic clinical judgment and decision-making, when compared with other health care professionals, has attracted little research attention. A recent study by Wyatt¹⁵ examined the relationship between knowledge and judgment in paramedics using novice-expert theoretical frameworks. Wyatt sought to explore how experienced paramedics use tacit knowledge by applying professional judgment—and indeed exercise what is referred to as ‘professional judgment’ when faced with unique challenges—and how such judgment(s) relates to participant knowledge. Using case observation techniques and interviews, the study used major themes and characteristics of knowledge and judgment in the literature as categories for the purpose of data analysis. Wyatt found that the role of experience was a major

contributor to their knowledge base and their ability to make clinical decisions. The study suggested that the observed inability of or difficulty on behalf of the participant in explicating judgment and knowledge processes adequately, or to explicate captured knowledge, is an indicator of classic, tacit expert judgments. Wyatt reported that participants were able to recognise the difference in thought processes of novices and expert practitioners. The study by Wyatt suggests that paramedic knowledge constructs and judgment practices are governed by a rich interplay of factors contributing to the expert practitioner's capabilities.

Emerman, Shade and Kubincanek¹⁶ compared clinical judgments of emergency medical technicians (EMTs) relating to mortality for 1,502 trauma patients against three scoring systems: the triage-revised Trauma Score, the Pre-hospital Index, and the CRAMS Scale (trauma score). These and other instruments have been devised to aid in triage of trauma patients, although little research has been conducted to assess their suitability or efficiency in relation to the judgment of paramedics. Paramedics were asked to complete their usual patient care records as well as the three trauma scales for each trauma patient they managed. This study reported that paramedics could predict the mortality and severity of trauma as well as all three tools, although limitations do exist. First, the sample paramedics themselves completed the trauma tools from which scores were made rather than an independent panel of experts, which is the common standard in medicine and health.¹⁷ In this context, the tools themselves are in fact being examined to see if they predict mortality as accurately as the paramedics rather than the other way around. Second, the study failed to disclose the number of paramedics who completed tools, and the study reports the results to be generalised to the population from which the assessments were made. Third, the study assumes that in order for decision tools and scores such as CRAMS to be introduced into practice, the tools and scores must be reported and found to be better at decision-making than paramedics to be of any value. This notion has been strongly criticised in the literature.^{17,18}

A similar study was conducted by Fries et al.¹⁹ The study examined 653 trauma patients and the accuracy of paramedic identification of requirement for trauma centre care and use of Trauma Triage Rule (TTR). The study reported a TTR sensitivity of 88% and specificity of 86%, with paramedic judgment sensitivity of 91% and specificity of 60%. A combination of both paramedic judgment and TTR measurement was found to achieve sensitivity of 100% and specificity of 75%. The authors suggest that a combination of paramedic judgment and the decision support of TTR gave the greatest predictive value for identification of seriously ill patients, a notion growing in support in the literature^{17,18}. Qazi et al²⁰ conducted a similar study in assessing the sensitivity of paramedic judgment for Trauma Team Activation for paediatric blunt trauma patients (n=192) and reported that paramedic judgment alone is not sensitive enough to be of clinical use.

Wassenberger²¹ sought to examine and describe deviations from protocol or clinical algorithms for 5,944 paramedic cases. In this study, cases of a physical injury or illness (including cardiac arrest, bronchospasm, chest pain, trauma, seizures, hypotension, and altered consciousness) were selected for review. The cases, reviewed by a panel of specialist emergency physicians, reported a protocol compliance rate of 94 % and a rate of standard medical care compliance of 97%. The article reports that the most common error in deviation was administration of a drug for chest pain and failure to apply C-Spine Collar. Of the sample, it was determined that 50% of paramedics who deviated from protocols made an error in standard medical care. The study did not include any cases involving mental illness, psychiatric emergency or mental health assessment.

Kilner²² evaluated theoretical triage decision-making among 100 doctors, 59 nurses, and 74 paramedics using a multi-casualty paper exercise. A paper-based scenario containing 20

patients requiring prioritisation, triage, and treatment was given to the sample group, with responses scored using a triage sieve algorithm. No significant difference between doctors and nurses was found ($p < 0.05$), but paramedics did significantly worse than both doctors and nurses ($p < 0.05$). The study found that all professional groups tended to over-triage the patient group as a whole, but all groups did significantly under-triage many of the patients. The study recognises the limitation of the findings of this study insofar as that the validity of the triage sieve methodology had not been determined.

Hauswald²³ assessed paramedic decisions to transport to ED care for 236 patients and reported that paramedics in that study could not safely determine which patients do not need transport to an ED. The prospective, blinded sequential study was conducted with 236 cases, and asked paramedics two closed 'yes/no' questions: (1) 'Could this patient have been safely transported by a non-medical service?' and (2) 'Could this patient have been safely transported to a clinic or urgent care centre?'. Critically, the study did not ask whether or not the patient 'should be' transported by or 'requires' transport by non-medical service or to a clinic or urgent care centre, and yet the author reports the results of this study in that context. Furthermore, the definition of 'non-medical service', 'clinic', and 'urgent care centre' are not provided and could easily have been interpreted in a variety of ways—for example, a 'clinic' is not an 'emergency department'. This study not only fails to provide any credible normative data on the judgment practices of the sample, but also disregards the impacting ecology, context, environment, and interactions. The sample size is insufficient to demonstrate suitable power to provide for adequate reliability.

Johnson and Maggiore²⁴ surveyed the non-traumatic arrest decision-making practices (start or withhold resuscitation) of 310 paramedics. Of that sample, 211 reported withholding resuscitation with a physician's medical order, of which 85 reported they were 'troubled' by the incident and 'experienced significant difficulty' in making that decision. The authors recommend that paramedic judgments and decisions involving cardiac arrest should be ultimately determined by medical on-line control.

In another study, Simmons and colleagues²⁵ compared information in standard out-of-hospital trauma triage criteria and standard criteria plus advanced EMT injury severity perception for determination of patient need for trauma centre evaluation. The authors examined 1,063 trauma-related patients (using logistic regression analysis, tree-based models, and receiver operating curves) and determined that advanced EMTs recognise significant abnormal physiologic findings and certain injury mechanism warranting trauma centre evaluation. However, the study also suggests that the nature of relative weighting EMTs gave to the specific predictors of the need for further assessment were not established, and that further research was required in this (trauma) and other injury domains. Similarly, Wright²⁶ suggested that attending paramedics, based on their clinical experience, are more capable than an artificially created trauma score of identifying patients requiring trauma centre care, in the absence of any research findings or evidence to substantiate his claim.

Research – Paramedic Clinical Judgment and Decision-making of Mental Illness

There are few published works that examine mental health care provided by paramedics or emergency medical service (EMS) personnel. Spooen et al.,²⁷ using case study analysis, undertook a study of patients with a 'psychiatric emergency' transported by an ambulance in an urban region of Belgium. A cross-sectional design was used to compare the patients brought in by an ambulance with all other psychiatric emergency referrals, with a view to build profiles of patients presenting with mental illness in order to see if ambulances are more frequently used in situations of acute danger to risk of life threatening conditions. Patients

presenting to three public hospitals over a 12-month period were examined, yielding 1,729 emergency psychiatric referrals, of which 630 (36.45%) were brought in by ambulance. The socio-demographic characteristics of the ambulance and non-ambulance groups compared favourably, with the exception that ambulance patients were more likely to be women. Fewer people were brought in by ambulance during office hours. Patients who were intoxicated, considered para-suicidal, had a concomitant life-threatening illness, or demonstrated need for medical intervention were between three and four times more likely to be brought in by ambulance. Importantly, recognition of mental illness by paramedics was not examined in this study. The source of referral of patients transported by ambulance was not gathered, and could include patients diagnosed by community mental health professionals in the first instance as acutely ill and warranting ambulance transportation. Generally, patients brought in by ambulance require greater medical interventions than those self-presenting, including high-risk referrals such as the suicidal, intoxicated, and those with major trauma.

It is interesting to note, however, that Spooren and colleagues²⁷ found that the presence of a major psychiatric disorder did not induce or result in frequent ambulance use. In this study, patients with serious mental disorders such as psychosis or depression usually found their way to emergency without professional assistance. Often such patients are accompanied by friends or relatives, or have had previous experience with psychiatric hospitalisation. The clinical outcome for these patients cited was not addressed in this study, and interpretation of such findings is cautioned given the degree or severity of mental illness in these patients is not described. The fact that patients with major psychiatric illnesses were not attended to by paramedics does not suggest that their attendance was not indicated. Indeed, the question of why paramedics had not attended to these patients is a major one, and is at present unanswered in the current research. The study by Spooren et al.,²⁷ while giving valuable insight into the epidemiology of the use of ambulance services in emergency psychiatric referrals, did not provide any aetiological factors that describe mental health assessment processes of paramedics. No clinical practice parameters relating to recognition of mental illness by paramedics are made or examined, with the focus of the study being on the characteristics of patients who are transported by ambulance to definitive medical care, not how or why they came to be attended to or transported by paramedics.

Pajonk and colleagues²⁸ examined the incidence, treatment, and evaluation of psychiatric emergencies in pre-clinical psychiatric emergency situations (PES) in a German emergency medical system. The aim of the study was to investigate the relevance of PES in pre-clinical EMS and its appraisal by emergency physicians and paramedics. Protocols filled in by EMS physicians on duty in a German district were evaluated concerning PES. In addition to this, the emergency physicians and paramedics were asked to complete a questionnaire concerning their own understanding of PES and relative interest in PES training programs. PES was ranked as the third most frequently requested type of assistance. The most frequent case was substance abuse disorder (70%), followed by suicide attempts or ideation (33%). Emergency physicians and paramedics estimated the importance of knowledge about PES as high, but rated their own knowledge as poor. Assessing five typical psychiatric emergencies, emergency physicians gave the correct diagnosis in 71% of cases and paramedic responses were correct in 39% of cases. Correct treatment and management of the five conditions was found in 32% of emergency physicians and only 14% of paramedics. The interest in training programs for mental illness was high, with participants reporting correct recognition and management of psychiatric conditions being hampered by limited knowledge and assessment techniques.

An earlier study by Mestitz²⁹ examined patients brought in by ambulance who reported a high prevalence of psychiatric problems but only a limited number were referred for psychiatric

consultation. In this study, Mestitz used case series analysis to examine the diagnosis of 1,817 patients who were transported to a large metropolitan hospital by ambulance. This study does not provide details regarding clinical practice of paramedics, nor does it examine how, in the cases selected, paramedics came to recognise any mental illness presenting. This study, conducted in Britain, describes an EMS whereby paramedics do not undertake judgment-based practice, requiring the paramedics to exercise clinical judgment regarding the decision to provide medical care and/or transport the patient to definitive medical care. All patients attended to by ambulance services throughout the United Kingdom in the 1960s, 1970s, 1980s, and largely today follow clinical procedures that necessitate the transport of patients to definitive care without any requirement to perform provisional examinations or assessments of patients across all categories of illness and injury. This study merely described the result of the investigation of the transport of 1,817 patients to a casualty department of a large hospital by ambulance without paramedic intervention, judgment, or treatment. While it provides an interesting backdrop to the prevalence of mental illness presenting at a British hospital by ambulance transport, it has no relevance to this particular study. Further, the determination of mental illness has undergone major revision since 1957 - to such an extent that any epidemiological or clinical comparison of conditions would be considerably unreliable and invalid.

Doyle and Vissers³⁰ outline an approach to the psychiatric patient by EMS, providing general information about principles of management of psychiatric patients. Tracey's³¹ paper outlining the provision of emotional medical services by paramedics. Both articles describe mental health disorders and conditions in biomedical concepts rather than presentation, and do not provide strategies for managing conditions. Both articles fail to provide any definitive tool or assessment strategy to recognise mental illness. The articles appeared in a non-peer-reviewed journal, and failed to cite any credible research to substantiate their findings and recommendations.

A number of other articles examine the provision of ambulance services, many of which report the use of ambulance services for altered mental states in patients. A study by Richards and Ferrall³² examined the inappropriate use of EMS transport, comparing the perspectives of the provider and patient. In this study, patients with altered mental status were the second most common reason for transportation by EMS. Although this may seem high, other studies report under-triage of mental and psychiatric illness. In a major study, Schmidt et al.³³ evaluated EMTs' ability to safely apply protocols to assign transport options using hospital outcomes. Protocols were developed that categorised patients as: (1) needs ambulance; (2) may go to the emergency department by alternative means; (3) contact primary care provider (e.g. family doctor); or (4) treat and release. The examination of 1,300 patients who received ambulance treatment guided by these protocols indicated that the use of protocols led to the under-triage of 9% of patients. Patients with psychiatric complaints or dementia were at the highest risk of under-triage. Nearly half the patients who were under-triaged had a psychiatric complaint or dementia. Protocols used in this study did not specifically address the identification of mental illness to any warrantable level. Schmidt et al.³³ recommend the redevelopment of protocols that address mental illness and behavioural disorders, and further education about assessment of this high-risk group.

Interestingly, the provision of mental health care in the ambulance setting has not always been restricted using ambulance officers and paramedics. A search of the international literature revealed two articles that discuss the provision of psychiatric ambulance services in the former USSR and Soviet Union. An article by Torrey³⁴ describes a specialised ambulance psychiatric service in which specialist emergency psychiatrists are routinely sent out in psychiatric ambulances dating back to as early as 1965. In 1965, psychiatrists in the Soviet

Union began to experiment with emergency psychiatric ambulance services. The system, which is still in practice in today, sees psychiatrists dispatched to psychiatric emergencies in ambulances accompanied by two ambulance assistants. Immediate definitive treatment can be provided, with patients being transferred to hospital under the care of the psychiatrist, rather than police. Patients undergo full psychiatric assessment by qualified psychiatrists. This system of emergency psychiatric care was further described in a paper by Pevzner.³⁵ Mental health care in the former Soviet Union is under direct medical control, as is the provision of most health care services.

Tools of the Trade – Assisting Clinical Judgment of Mental Illness

The use of routine mental status exams or mental health assessments by psychiatrists, physicians, and nurses is well-documented.³⁶ Routine mental status and neuropsychiatric assessments are, however, too lengthy and complicated, and therefore not traditionally suitable for use in emergency situations.³⁷ In an American study published in 1995, Kaufman and Zun³⁸ examined the use of a quantifiable, brief mental status examination for emergency patients. The objective of this study was to determine in what circumstances a quantified Brief Mental Status Examination (BMSE) could usefully serve as such a tool. A six-item BMSE was administered to 100 ED patients for whom an assessment of their mental status was warranted. The attending physician provided a standard assessment of the patient's mental status (normal, mildly impaired, or severely impaired) and competence to refuse emergency care. The physicians and nurses administering the BMSE rated its usefulness and ease of administration of. The study found that the BSME scores correlated significantly with the physician's assessments of patient's mental status and competence to refuse care. Using physician assessment as a standard, the BSME has a sensitivity of 72% and specificity of 95% in identifying severely impaired individuals. Examiners' ratings of the ease of administration were closely related to the degree of impairment found. Finally, examiners rated the BMSE as useful in 98% of cases. The study concluded from its preliminary findings that the BMSE, upon further testing, may prove to be a valid and useful tool for assessing the mental status of the emergency patients in both pre-hospital and ED settings.

There are, however, a number of limitations on the use of the BSME piloted in this study. The BMSE did not cover all of the points included on a formal mental status examination. It was developed by choosing key elements from more formal tests to provide a method of quickly obtaining a structured assessment of mental status. Some of the components that the BMSE did not cover include: (a) thought content (delusions, hallucinations, depression, and suicidal ideation); (b) abstraction; (c) reasoning ability and judgement; (d) affect and appropriateness of affect; (e) calculations; (f) drawing, writing and construction; and (g) remote memory and knowledge. While the BSME used in this study attempts to identify impairment and competency in patients, it fails to adequately address key neuropsychiatric parameters listed in (a) to (d). Fontaine and Fletcher³⁹ consider the assessment of thought content for delusions, hallucinations, depression and suicidal ideation, abstraction, reasoning ability, judgement, affect, and appropriateness of affect central to any neuropsychiatric assessment of patients.

Another key study conducted by Green⁴⁰ in 1999 examined psychiatric assessments by medical officers to see if the outcomes of assessments matched priorities in care in the United Kingdom. In this study, Green examined three broad areas of mental service provision: (a) treating severe mental illness; (b) reducing suicide; and (c) obviating risk to the wider community. The study examined the records of emergency assessments at a mental health trust in England over a three-month period, to see if patients presenting with these characteristics were likely to be offered admission or treatment. It found that patients

presenting with psychosis are more likely to be offered admission than those assessed as non-psychotic; that those assessed as a suicide risk are also significantly more likely to be offered admission; and that those assessed as presenting as a risk to the public at large are no more likely to be admitted than those presenting no such risk.

There are studies that report the mental health assessments of patients that lack rigour and integration with broad medical assessments. A notable article published in the *American Journal of Emergency Medicine* by Reeves et al⁴¹ analysed 64 patient records of patients who were admitted to a psychiatric unit and required medical consultation within several hours. All patients were transferred to medical units within 24 hours. This study reported that physicians missed more than 20 medical conditions—the most common being intoxication with alcohol and drugs, drug or alcohol withdrawal and prescription drug overdose. The most common incorrect diagnoses assigned to the patients were schizophrenia, psychotic disorders, depression, and bipolar disorder. The authors note that the single most important error was the failure to perform an appropriate and effective mental status examination. In none of the 64 cases was an adequate mental status examination performed. The results of this study illustrate that failure to conduct a mental status examination occurs at all levels, even by attending physicians in EDs. Similar results were reported in a survey conducted by Zun and Gold⁴² in 1986 of 120 American emergency physician's perceptions of the need for the introduction of a short standardised mental status examination, which reports overwhelming support for the use of standardised assessments.

A significant recent study by Lynch et al.⁴³ examined the levels of knowledge of accident and emergency doctors, senior nurses, and police constables of the powers and provisions of section 136 of the *Mental Health Act 1983* in the United Kingdom, which empowers police to detain those suspected of being mentally ill in certain places and convey them to a place of safety. In practice, accident and emergency (A&E) departments are often used as a 'place of safety'. Using survey research, the authors asked doctors and senior nurses in a region of Yorkshire to complete a multiple choice box-type questionnaire, as were police constables from the Humberside Police Force, located in the same area. Of the 179 surveys returned, almost a quarter of A&E staff and a little over 10% of police failed to recognise mental illness requiring involuntary admission as governed by the legislation. Of the sample: 40.2% of police did not know that the relevant section of the legislation was a police power; 55.2% of A&E staff and 14.1% of police incorrectly thought that a person could be detained under section 136 in their own home; 43.75% of consultants and 50% of senior nurses did not consider A&E departments to be a place of safety; and only 10.3% of A&E staff and 22.8% of police had received any formal training in the use of the relevant legislation. The knowledge among A&E staff and police of the legislation governing their practice in the care of individuals with acute mental illness was poor and requires action through formal education and training. The study not only reflects the poor levels of knowledge within the groups, but may also reflect the different perceptions of each group as to their roles and duties under the legislation.

Similar results are documented in other studies. A study by Lieberman and Baker⁴⁴ compared the diagnoses made for 50 patients in an ED with those made during a subsequent inpatient hospitalisation. They found an acceptable level of reliability for broad diagnostic categories such as psychosis, depression, and alcoholism. The authors of the study propose that this diagnostic reliability is sufficient for emergency assessment and triage. However, the diagnosis of more specific subtypes of mental illness, such as schizophrenia and bipolar disorder, were not made reliably in the ED. These results were mirrored in a study by Tse et al.⁴⁵ that examined how accurate A&E doctors were in the evaluation of psychiatric patients in Hong Kong. A retrospective analysis was conducted on 225 cases referred to the

psychiatric team by A&E doctors. Agreement between psychiatrists and ED doctors in diagnosis and treatment was 61.4% and 89.5% respectively. The study concluded that ED doctors were deficient in the diagnosis of psychiatric conditions, especially in the less common diagnostics.

It is important to consider that there exists a fundamental difference between what is considered 'psychiatric emergencies' warranting immediate medical intervention, and the other 'non-emergency' mental illnesses such as depression, anxiety, and mood disorders that are far more common and prevalent within the community. Paramedics are routinely required and expected to manage patients with mental illness, albeit an emergency or otherwise, yet there appears to be a lack suitable, structured, and validated tools to use in the pre-hospital and emergency context. The routine use of mental status exams or neuropsychiatric assessments by psychiatrists, physicians, and nurses for non-emergency situations is well documented. Routine mental status and neuropsychiatric assessments are, however, too lengthy and complicated, and therefore not traditionally suitable for use in emergency situations.³⁷ Paramedics require skills in mental health assessments that allow them to recognise and manage mental illness in ways that collaboratively and seamlessly value-add to patient care. Such skills require recognition of the complexity of care in the pre-hospital setting.

The Future

There is a paucity of published research that examines paramedic clinical judgment and decision-making practices of mental illness in the emergency primary health context, suggesting the value of these skills are perhaps not yet fully appreciated in the field of pre-hospital care.^{11,13,46} The few studies that have been conducted have sought to examine judgment and decision-making as it relates to specific instances or cases, particularly cardiac arrest or trauma, and have worked within one particular theoretical paradigm. The dearth of research exists in many jurisdictions internationally, such as Australia. The interpretation and applicability of the studies discussed here to these and other jurisdictions are limited largely due to study design and geographic and cultural contextual differences. There is little research that examines paramedic clinical judgment and decision-making of mental illness and their involvement in the mental health reform agenda, despite a growing warrant for this research. The absence of such research has meant that the impact of significant reform to mental health service provision to the emergency care and paramedic settings have occurred unexamined. The complexity of clinical situations faced by paramedics where, for example, multiple contexts exists with significant levels of uncertainty, risk, and time criticality, most of which make clinical judgment process difficult, has not been examined. The identification of strategies from research to support a more effective paramedic clinical judgment practices has not, in the context of paramedic practice, been attempted. Additional exploratory research is needed.

In Australia, the National Institute of Clinical Studies (NICS) has undertaken a novel project to improve care for people with mental health problems presenting to emergency departments. Commissioned by the Victorian Department of Human Services through the Emergency Care Community of Practice, NICS undertook a six-month project to implement the Victorian Emergency Department Mental Health Triage tool across 14 metropolitan and 5 regional hospitals in Victoria. The tool used was based on the South East Sydney Area Health Service (SESAHS) triage tool developed in 1999, and is regarded as best practice for ED Mental Health Triage by both the New Zealand Guideline Group and the NHS National Institute for Clinical Excellence (NICE).⁴⁷ This project sought to close the evidence-practice gap in mental health care in emergency departments, and is one that paramedics and the

ambulance professional could benefit from greatly in the emergency primary health care context.

Comprehensive education and research opportunities with particular focus on the clinical judgment and management of mental illness in contemporary paramedic emergency care settings are important activities that contribute to mental health care systems. The role or potential roles of paramedics, and the impact of any such roles in the wider mental health agenda, require examination in national and international contexts. Such work would make significant contributions to improving the preparedness of all health care professionals, including paramedics, to recognise, assess, and manage mental illness in everyday practice and the sufficiency of education and training programs, clinical standards, policy, and legislation for ensuring quality and accountability of the care of the mentally ill.

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