health

Nursing practice – working with people prescribed and undergoing electroconvulsive therapy

A review of literature and policy and a survey of current practice



Department of Health

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Contents

Introduction	1
Background to the project	1
Project objectives	1
Method	2
Literature review	2
Review of policies and procedures	3
Survey of nurses involved with ECT	3
Findings	4
Literature review	4
Review of policies and procedures	17
Survey of nurses involved with ECT	26
Summary	28
Appendix: Recommendations regarding ECT and specific health conditions	29
References	33

Introduction

Background to the project

Electroconvulsive therapy (ECT) is a psychiatric procedure, principally for the treatment of major depression, mania and schizophrenia (The Royal Australian and New Zealand College of Psychiatrists [RANZCP] 2007). The treatment involves placing a person under a general anaesthetic, administering muscle relaxants and passing an electrical current through the brain to induce a seizure (van Daalen-Smith & Gallagher 2011). The strongest evidence of the efficacy of ECT comes from studies of people with depression, for whom the effects appear stronger in the short term than those of pharmacological treatments (The UK ECT Review Group 2003). The treatment is not without controversy, however. Some reviewers of the literature have concluded that there is minimal support for the effectiveness of ECT beyond the completion of treatment (for example, Read & Bentall 2010; Ross 2006), and there are consistent findings that many people report persistent memory loss following treatment (Rose et al. 2003).

Nurses have been involved in the administration of ECT since its earliest use (Gass 2008). In contemporary ECT, nurses are typically at the forefront of providing care before, during and after the administration of ECT (Finch 2005; Heffern 2000; Kavanagh & McLoughlin 2009). Despite this longstanding involvement with ECT, there has been minimal research on the role and responsibilities of nurses during treatment. With reference to professional guidelines and recommendations, some experts have offered suggestions about what the nursing role in ECT should entail (Finch 2005; Irvin 1997; Kavanagh & McLoughlin 2009). This literature comes from the United Kingdom and the United States, however, and may need to be adapted to local conditions in Victoria.

Project objectives

Given the lack of national standards or guidance for the practice of nursing with persons undergoing ECT, the Department of Health Mental Health, Drugs and Regions Division undertook to examine the roles and responsibilities of ECT nurses, both internationally and locally. The specific objectives of this project were to understand the nursing role in ECT through:

- a review of the published literature
- a review of current ECT policies and procedures within Victorian healthcare services
- a survey of Victorian ECT nurses.

Method

The method for this project involved:

- a literature review of best practice regarding nursing care of people undergoing ECT
- a review of the ECT policies and procedures of Victorian healthcare services
- a survey of nurses involved in ECT in Victoria.

Literature review

An initial search of the electronic databases Medline and CINAHL was conducted using the search terms 'electroconvulsive therapy' and 'nurs*'. The search was limited to the 15 years between 1996 and 2011 and identified 101 articles. The abstract of each article was read to determine its relevance to the topic of the literature review. When it was not clear from the abstract whether an article was relevant to this review, the full article was obtained and read. Using this process, 16 articles were judged to have relevance to the review (see Figure 1). The most common topics covered in the papers retained from the search were the nursing role in ECT and nurse attitudes towards, and knowledge of, ECT. The main reasons for discarding articles were that they were entries in professional magazines (for example, news, opinion pieces, quizzes, continuing education), unrelated to the topic (for example, studies on mental health conditions) or did not have a nursing focus (for example, general reviews of ECT literature).

Following this search of the literature, additional papers were obtained to add depth to the topics that were raised in the initial search.





Review of policies and procedures

The Department of Health invited Victorian healthcare services that provide ECT to submit policy and procedure documents to assist in understanding the roles of nurses in the care of people undergoing ECT. The services that provided policy and procedure documents included: Albert Road Clinic, Ballarat Health Services, Barwon Health, Eastern Health, Mercy Health, Northpark Private Hospital, Southern Health, South West Healthcare and St Vincent's Hospital (Normanby Unit). The tasks allocated to nurses during ECT as described within these documents were extracted and then synthesised by comparing and contrasting them with the ECT nursing tasks highlighted in the literature.

Survey of nurses involved with ECT

An additional perspective of the current roles and responsibilities of ECT nurses was obtained through a survey of current practice in Victoria. The aim of the survey was to ascertain how nursing care of people receiving ECT is being applied in Victorian services and the level of training and education of ECT nurses, and to elicit nurses' views on standards of care. Participation in this survey was voluntary, with the dataset being analysed using descriptive statistics.

Findings

Literature review

Despite nurses being involved in the administration of ECT from the delivery of its earliest treatments (Gass 2008), research on nursing aspects of the care of people undergoing ECT is rather scant. Although ECT appears to be a popular topic in nursing magazines (for example, Flint 2005; Keen & Parsons 2000; Rother 2003) this interest does not seem to have provided an impetus for nursing research. Furthermore, several of the papers that do appear in the nursing literature provide expert opinion (Irvin 1997; Kavanagh & McLoughlin 2009; Wallace 1996) or literature reviews (Gaylord 2003; van Daalen-Smith & Gallagher 2011) rather than describing primary research.

Aside from the research literature, information on nurses and ECT can be found in various guidelines and recommendations (for example, RANZCP 2007; Victorian Department of Health 2009). Although references are made to nurses in such documents, there seems to be some ambiguity regarding the nursing role in ECT – that is, some ECT tasks are described without suggestions about who in the ECT team should carry them out.

This review is structured around four broad areas:

- nursing research and ECT
- · pre-treatment considerations for nurses involved in ECT
- · in-treatment considerations for nurses involved in ECT
- post-treatment considerations for nurses involved in ECT.

In the section entitled 'Nursing research and ECT' some of the major topics identified in the initial literature search are discussed. In the next three sections, the literature pertaining to caring for people undergoing ECT is presented.

Nursing research and ECT

Minimal research has been undertaken on nursing practice with regard to ECT. The focus of the majority of the studies conducted has been on nurses' attitudes towards and knowledge of ECT (for example, Byrne et al. 2006; Gass 1998; James et al. 2010). Some research has also looked at the effects of ECT training on nurses' knowledge and confidence. There have also been a small number of studies on the role of nurses in ECT (Gass 2008; Lamont et al. 2011), and these will be reviewed in the next section entitled 'The nursing role in ECT'.

Nurses' attitudes towards, and knowledge of, ECT

Most of the work within this area has been undertaken to understand whether the attitudes of nurses towards ECT are associated with their knowledge of this treatment (Byrne et al. 2006; Gass 1998; James et al. 2010) and whether knowledge and attitudes differ among disciplines (Byrne et al. 2006; Lutchman et al. 2001). Staff mental health nurses had greater knowledge of ECT and more favourable attitudes towards this treatment than student mental health nurses (Gass 1998; James et al. 2010). Further, nurses with greater knowledge may be those with more years of experience (Gass 1998). Across the mental health disciplines, psychiatrists have been shown to have the greatest knowledge and most favourable attitudes towards ECT, followed by nurses, psychologists and social workers (Lutchman et al. 2001). In a practical sense poor knowledge of, and negative attitudes towards, ECT could adversely affect the process of educating people and their families about this treatment, and of obtaining informed consent.

Attitudes towards ECT are also reflected in professional accounts of those administering the procedure (Stevens & Harper 2007). During interviews with mental health professionals (some of whom were nurses) various themes emerged such as regarding the person as severely ill, perceiving that urgent action was required, attributing a person's distress to biological origins and discounting the value of

other, non-physical, treatments. The research participants handled concerns about ECT in several ways including: arguing that, as a medical procedure, it had inherent risks and benefits, minimising the validity of claims about the limited clarity in the evidence base for ECT and undermining criticisms made of the treatment.

Effectiveness of nurse training on ECT

In one study, the effects of a two-day workshop on ECT for nurses working in the area were investigated (Munday et al. 2003). Using a pre-test – post-test design, the authors demonstrated that the participating nurses' knowledge of ECT and their confidence levels in using ECT had increased by the conclusion of the workshop. Although this finding augurs well for the value of this workshop, longer term evaluation is required to ascertain whether nursing practices had changed and if such changes benefited people undergoing ECT or the organisations in which they worked.

The nursing role in ECT

There is a limited amount of research literature on the nursing role in ECT (for example, Finch 2005; Heffern 2000; Kavanagh & McLoughlin 2009). Those researchers who have studied what ECT nurses do in practice have done so as a part of studies designed to answer broader questions (Gass 2008; Lamont et al. 2011). For example, in an evaluation of an ECT service in New South Wales, Australia, the authors reported that the ECT coordinator engaged in multiple tasks including providing people with education and emotional support and ensuring continuity of care. More details about what the ECT coordinator role entails were not presented, however, because this position was not part of the formal evaluation (Lamont et al. 2011). A lack of clarity about the nurse's role in ECT was one of the main themes of another study in this area (Gass 2008). In this grounded theory study, nursing tasks could be grouped into two themes: relational roles (for example, providing education and emotional support) and treatment roles (for example, supporting medical staff). In performing these tasks two dilemmas were present for nurses. First, they were uncertain about what their roles were, especially after the person entered the treatment room. Second, they expressed discomfort with having to both support and, at times, coerce people. Although these studies have provided some insight into nursing and ECT, the main conclusion to be drawn is that it is unclear what the role of the ECT nurse is in practice.

In the absence of a strong empirical base to draw upon, some authors have presented their expert opinions – largely supported with references to professional guidelines and recommendations – about what the nursing role in ECT should entail (Finch 2005; Irvin 1997; Kavanagh & McLoughlin 2009). The information in this and subsequent sections of this literature review is based on the work of these authors. Just as they have used professional guidelines and recommendations from the United Kingdom in developing their articles, professional and government documents relevant to the practice of ECT in Victoria, Australia are used extensively in this literature review.

Nurses are commonly involved in caring for people before, during and after the administration of ECT (Finch 2005; Gomez 2004; Kavanagh & McLoughlin 2009). The care can involve nurses with different positions including the ward nurse, ECT coordinator, anaesthetist's assistant and recovery nurse (Kavanagh & McLoughlin 2009). One of the main nursing positions is that of ECT coordinator. In Victoria, the Chief Psychiatrist requires each licensed facility to appoint a senior registered nurse as ECT coordinator (Victorian Department of Health 2009). Nurses appointed to this position must be senior clinical nurses who have completed approved courses in ECT and cardiopulmonary resuscitation (CPR). They are responsible for managing ECT suites, which includes:

- providing and coordinating nursing care in the ECT suite during treatment sessions
- · developing, implementing and evaluating nursing standards, policy, practices and procedures for ECT
- · coordinating and training nursing staff including student nurses
- liaising with anaesthetic services
- ensuring that appropriate staffing, equipment and supplies are available
- establishing regular checking, cleaning, sterilising and maintenance routines for the care of equipment

- ensuring that the recording and reporting requirements for ECT are met
- · coordinating appropriate quality improvement activities
- maintaining a CPR, emergency and recovery room training register (Victorian Department of Health 2009, p. 12).

The tasks that the Victorian Chief Psychiatrist has identified are broadly consistent with those that nurses undertake in the United Kingdom (Kavanagh & McLoughlin 2009) and the United States (Gomez 2004).

Although the ECT suite may be the focus of the ECT coordinator, nursing care extends to preparing people for treatment and assisting them in their recovery after ECT (Kavanagh & McLoughlin 2009). The following sections present information about the broader nursing role in ECT, rather than focusing on the tasks that ECT coordinators undertake. In particular, this review will focus on managing the ECT suite and the provision of care before, during and after treatment sessions.

Managing the ECT suite

As in the United Kingdom (Kavanagh & McLoughlin 2009), nurses in Australia are responsible for managing ECT suites (RANZCP 2007; Victorian Department of Health 2009). Key aspects of this role include attending to licensing issues, ensuring resources and equipment meet prescribed standards and updating local protocols so that they remain consistent with best-practice guidelines on the environment, equipment and medication used.

In Victoria the *Mental Health Act 1986* regulates the licensing of ECT facilities. The Secretary of the Department of Health is responsible for approving licensing applications and the imposition of any conditions, limitations and restrictions on these licenses. In practice, the Victorian Chief Psychiatrist has been delegated the performance of these duties. Part of the process of licensing ECT facilities involves the Chief Psychiatrist, or their representative, inspecting the proposed site (Victorian Department of Health 2009). Along with the clinical director ECT, the ECT coordinator must be present at this inspection. During the inspection, the premises, resources and equipment, quality processes and clinical policies and procedures are reviewed. The outcome of this process will be the approval or refusal of a licence application. Licences need to be renewed once every five years at a minimum.

The Victorian Chief Psychiatrist has outlined minimum standards for the resourcing and equipping of ECT suites (Victorian Department of Health 2009). Where applicable, this document makes reference to the guidelines and recommendations of the Australian and New Zealand College of Anaesthetists (ANZCA), Standards Australia and Standards New Zealand and the Victorian Department of Human Services (Table 1).

Updating local protocols so that they remain consistent with best-practice guidelines requires ECT coordinators to be aware of the latest guidelines and to adapt local protocols accordingly. Best-practice guidelines are available from multiple sources including government departments (for example, Victorian Department of Human Services 2004) and professional bodies (for example, ANZCA 2010; RANZCP 2007).

Providing pre-treatment care

Pre-treatment nursing care begins shortly after people are prescribed ECT (Finch 2005). One of the main nursing tasks during this time is to provide educational and emotional support to people and their carers. To inform their care, nurses require a sound understanding of each person's current mental state, legal status and medical status (Kavanagh & McLoughlin 2009).

Understanding the person's current mental state, legal status and medical conditions

Psychiatrists prescribing, and medical practitioners administering, ECT have the responsibility for determining whether people have conditions for which ECT is indicated (RANZCP 2007; Victorian Department of Health 2009). Nurses are not typically involved in this decision making, but the determinations that physicians make will inform the development of nursing care plans (Kavanagh & McLoughlin 2009). Although guidelines on what conditions are indications for ECT differ among countries (National Institute for Clinical Excellence 2003; RANZCP 2007), this review will focus on guidelines used in Australian settings. The RANZCP states that the indications for ECT are as follows:

- major depression
 - especially with catatonic, melancholic or psychotic features, with or without suicidal risk or failure to drink or eat adequately
 - when the response to antidepressant medication has been inadequate
- mania
- schizophrenia with acute features.

The RANZCP suggests that ECT may also be useful in the treatment of other conditions such as Parkinson's disease and neuroleptic malignant syndrome.

Area of focus	Guidelines and recommendations
Design of ECT suites	 Design guidelines for hospitals and day procedure centres (Victorian Department of Human Services 2004) Cleaning, disinfecting and sterilizing reusable medical and surgical instruments and equipment, and maintenance of associated environments in health care facilities (Standards Australia and Standards New Zealand 2003) Planning for emergencies – health care facilities (Standards Australia 2010) Recommendations on monitoring during anaesthesia (ANZCA 2008b)
Equipment	 Cleaning, disinfecting and sterilizing reusable medical and surgical instruments and equipment, and maintenance of associated environments in health care facilities (Standards Australia and Standards New Zealand 2003) Recommendations on minimum facilities for safe administration of anaesthesia in operating suites and other anaesthetising locations (ANZCA 2008) Recommendations for the post-anaesthesia recovery room (ANZCA 2006a) Recommendations for the perioperative care of patients selected for day care surgery (ANZCA 2010) Recommendations on monitoring during anaesthesia (ANZCA 2008b) Guidelines on infection control in anaesthesia (ANZCA 2005)
ECT administration	Statement on credentialing and defining the scope of clinical practice in anaesthesia (ANZCA 2006b)
Nursing	 National competency standards for the registered nurse (ANMAC 2006) Code of professional conduct for nurses in Australia (ANMAC 2008) The ICN code of ethics for nurses (ICN 2006) Code of ethics for nurses in Australia (ANMAC 2008) Current registration with the Australian Health Practitioner Regulation Agency

Table 1: Guidelines and recommendations relevant to the management of treatment suites

Note: These guidelines and recommendations should be read in conjunction with the Victorian Chief Psychiatrist's *Electroconvulsive therapy manual: licensing, legal requirements and clinical guidelines* (Victorian Department of Health 2009), which places the relevance of these documents in the context of providing ECT services in Victoria.

People due to undergo ECT and their carers may have guestions about the efficacy of ECT (Finch 2005). For this reason, it is useful for nurses to have some background knowledge about the research upon which this treatment is based. Empirical evidence on the efficacy of ECT is equivocal. For depressive disorders, ECT can have short-term benefits (that is, at the conclusion of a course of treatment), and these outcomes are probably greater than what could be achieved with medications (Kho et al. 2003; The UK ECT Review Group 2003). There is minimal evidence, however, that the effects of ECT are maintained over a longer period of time. Further, some people report impaired cognitive functioning (for example, anterograde and retrograde amnesia) as a side effect of treatment (Read & Bentall 2010; The UK ECT Review Group 2003). No evidence exists for a direct link between ECT and suicide prevention (Read & Bentall 2010; The UK ECT Review Group 2003). There is insufficient evidence for conclusions to be drawn on the efficacy of ECT for treating acute mania (Fountoulakis & Vieta 2008). Further, no studies with adequate methodology have been conducted on the treatment of bipolar disorder with ECT (Versiani et al. 2011). In the treatment of schizophrenia, evidence suggests that ECT has short-term benefits (Matheson et al. 2010; Tharyan & Adams 2005). There is no evidence, however, that ECT has long-term therapeutic value for people with schizophrenia and minimal evidence indicating that people experience adverse effects from the treatment.

Nurses often need to be aware of people's legal status (Kavanagh & McLoughlin 2009). In Victoria, any person who causes ECT to be performed or permits it to be conducted on any person who has not given informed consent is guilty of an offence under the Mental Health Act unless:

- the person is incapable of giving informed consent in which case the authorised psychiatrist may
 prescribe ECT. All reasonable efforts must have been taken to notify the person's primary carer or
 guardian about the planned treatment
- ECT is urgently needed due to the nature of the person's mental disorder (see Section 73 of the Act).

In addition, a person's inability or refusal to give consent – as well as the refusal to consent by the person's guardian, person responsible, agent or the Mental Health Review Board – is irrelevant in the following circumstances:

- if the person meets the criteria for involuntary treatment (see Section 8 of the Act) in which case a
 registered medical practitioner can authorise interim treatment at any time before the person is
 examined by an authorised psychologist (Section 12AB of the Act), and an authorised psychiatrist
 may provide consent for treatment to be given to involuntary patients (see Section 12AD of the Act)
- if the person is a security patient (see Section 16B of the Act) or a forensic patient (see Section 17A of the Act) in which case an authorised psychiatrist may provide consent for the patient's treatment.

It is the responsibility of the authorised psychiatrist to ensure that the requirements of the Mental Health Act with regard to informed consent are met. Furthermore, physicians administering ECT are responsible for reviewing the legal status of the person (Victorian Department of Health 2009).

Nurses need to be aware of people's medical conditions when developing their treatment plans. In Victoria, it is the primary responsibility of the prescribing psychiatrist to take medical histories, undertake appropriate physical examinations and investigate physical illnesses that could compromise the treatment (Victorian Department of Health 2009). ECT is considered to be a safe procedure with no absolute contraindications (Tess & Smetana 2009). Several pre-existing conditions may predispose people to greater risk of possible complications, however, and these conditions may need to be managed (Tess & Smetana 2009; RANZCP 2007). The Appendix provides a list of pre-existing conditions that may warrant attention during ECT and recommendations on how they may be managed.

Providing education and emotional support for people undergoing ECT and their carers

The provision of education and emotional support usually marks the beginning of nursing care for people undergoing ECT (Finch 2005). In Victoria, it is also the responsibility of the prescribing psychiatrist to provide people with sufficient information about ECT to enable their informed consent (Victorian Department of Health 2009). This provision of information includes giving people a copy of the booklet *Electroconvulsive therapy: about your rights*, which is available at

<www.health.vic.gov.au/mentalhealth/patientrights/downloads/ect> and has been translated into several languages. Although the responsibility of informing people about ECT rests with the prescribing psychiatrist, nurses are commonly asked further questions and are called upon to provide emotional support to people undergoing ECT and their carers. In addition to this booklet, nurses may wish to consider using the video recording *ECT: information for patients and families* (Grampians Psychiatric Service 2001) in their education of people undergoing ECT and their carers.

People undergoing ECT and their carers sometimes express concerns about ECT, for example, fear of pain, dying from electrocution or memory loss (Finch 2005). Nurses should provide ample opportunity for these fears to be expressed and for misconceptions to be addressed. Asking open-ended questions about previous exposure to ECT (for example, discussions with friends, reading about it, from movies) can be useful in identifying misconceptions, which can then be rectified by explaining what ECT actually is and does. Nurses should be prepared to answer questions as they arise during the course of treatment.

Preparing people for treatment

Nurses are involved in preparing people for treatment on the day during which ECT is to occur (Finch 2005; Gomez 2004; Victorian Department of Health 2009). Although the Victorian Chief Psychiatrist makes reference to nurses being involved in the care of people prior to treatment, the *Electroconvulsive therapy manual* does not describe what tasks nurses should perform (Victorian Department of Health 2009). Suggested nursing tasks during this period are detailed in literature from the United Kingdom (Finch 2005; Kavanagh & McLoughlin 2009; Table 2). To ensure these tasks are completed, consideration should be given to developing checklists within services.

Providing care during treatment sessions

Nurses are commonly involved in the provision of care during treatment sessions (Finch 2005; Gomez 2004; Victorian Department of Health 2009). In Victoria, ECT coordinators are involved in the provision and management of nursing care in ECT suites during treatment sessions (Victorian Department of Health 2009). The guidelines from the Victorian Chief Psychiatrist, however, provide minimal detail on what tasks nurses may be expected to perform during treatment sessions. Literature from the United Kingdom, too, is not prescriptive about what tasks nurses should perform during ECT (Finch 2005; Kavanagh & McLoughlin 2009). The tasks that nurses perform depend on what other staff are present in the treatment room and may differ among ECT suites. Tasks that need to be completed during treatment sessions are detailed in Table 3.

Caring for the unconscious person

Because ECT is provided under general anaesthesia, nurses are required to be competent in caring for people who are unconscious. The ANZCA (2008c) has recommended that the presence of a trained assistant for the anaesthetist is essential for the safe and efficient conduct of anaesthesia:

- during preparation for and induction of anaesthesia. The assistant must remain under the immediate direction of the anaesthetist until instructed that this level of assistance is no longer required
- at short notice if required during the maintenance of anaesthesia
- at the conclusion of anaesthesia (p. 1).

The ANZCA (2008c) does not provide recommendations on what duties an assistant to the anaesthetist should perform, stating that the tasks of the assistant should be outlined in job descriptions at each service provider. The ANZCA's recommendations on the content of training courses for the assistant to the anaesthetist provide a sound indication of the tasks they may be expected to perform. These recommendations are outlined in Table 4.

Information about caring for people who are unconscious can also be found in the information on the role of the anaesthetic nurse as described in the standards of the Australian College of Operating Room Nurses (ACORN 2010).

Table 2: Nursing considerations in the preparation of people for ECT

Action	Rationale
Ensure that the person is adequately hydrated the day before treatment.	To reduce the possibility that dehydration occurs when the person fasts
Arrange for safekeeping of the person's valuable items.	To ensure the person's valuables are looked after and there is a documented record of this
Explain the procedure, including side effects, to the person using educational pamphlets and videos as appropriate and answer questions that they may have.	To reassure the person about the treatment using a number of methods to support their understanding of ECT and the care associated with its administration
If others wish to be present to observe ECT, request permission from the person.	To ensure the person is comfortable with who will be present in the ECT suite and why they will be there. ECT is directly relevant to medical and nursing students. If other disciplines are to be present this should only occur with consent and if it is purposeful (for example, if the person is a case manager and not from a medical or nursing background).
Have the person fast (food and fluids) for six to eight hours and abstain from smoking for two hours prior to the procedure or in accordance with local policy or as otherwise advised by the anaesthetist.	To prevent excessive bronchial secretions and possible aspiration during general anaesthesia
Ensure pre-testing occurs prior to ECT by administering a simple cognitive test.	To enable comparisons to be made between pre- and post-ECT results so that any changes to cognition as a result of ECT can be identified and considered
Ensure medications are given as prescribed. Determine what medications must be taken at their regular time and what medications may be delayed until after ECT. Administer accordingly.	To ensure medications (for example, cardiac medications) are administered on time if there is a need to do so and to delay other medication until after ECT following consultation with the anaesthetist
Ensure the person is not wearing make-up, nail varnish or body piercings. Assist in removing them if they have not done so.	To ensure they do not interfere with or impact on the treatment site or prevent the observation of hands and feet following the administration of anaesthetic
Ensure the person's hair is clean and dry and hairpins, hairnets and other hair ornaments are removed.	To ensure appropriate electrode contact is not prohibited
Encourage the person to empty their bladder before treatment.	To reduce any discomfort, bladder distension and complications that may arise due to a full bladder
Have the person remove any prostheses, loose-fitting dentures, glasses, hearing aids and contact lenses immediately prior to the administration of the anaesthetic.	To assist the person in their mobility and communication, it is beneficial for people to use their sight and hearing aids for as long as possible before treatment. Their removal is required so they won't interfere with treatment.
Check the person's identity in multiple ways and ensure that an identity band is being worn by the right person.	To ensure the right treatment is administered to the right person
When the person is an outpatient, ensure that they have agreed to not drive and will have a responsible adult care for them during the first 24 hours after treatment. Also, book further ECT appointments.	To ensure that the person will be safe and cared for after treatment
Have a nurse who the person knows and who is aware of their legal and consent status escort the person to the treatment waiting room.	To minimise and address any anxiety that the person may be experiencing
Perform the pre-treatment checklist for general anaesthesia and ECT.	To ensure the person is ready for general anaesthesia and ECT
Have outpatients who may have travelled long distances treated at the beginning of the day.	To allow maximum recovery time

Nursing practice - working with people prescribed and undergoing electroconvulsive therapy

The ECT coordinator has a role to monitor and mentor other nurses.	To ensure quality of care and contribute to staff development
Ensure adequate handovers occur.	To support the continuity of care
Provide support as required to the psychiatrist and anaesthetist.	To facilitate individual care to the person receiving ECT
Ensure documentation is completed.	To support the continuity of care
Prepare equipment and consumables needed for treatment. This includes ensuring that local policies and procedures are developed in relation to the set-up and cleaning of the ECT suite and equipment with regard to the disinfection and autoclaving of equipment.	To ready the ECT suite for the administration of treatment
Record physical observations.	To facilitate monitoring of the person's progress

Note: The information in Table 2 was sourced from Finch (2005), Kavanagh & McLoughlin (2009), the RANZCP (2007) and the policy and procedure documents of Victorian healthcare services that provide ECT.

Table 3: Possible nursing functions during the procedure

Procedure	Rationale
Welcome the person to the suite and introduce the person to staff in the treatment room. Explain the roles of the different staff.	To enable the person to become familiar with the staff responsible for their care
Ensure the person is not wearing footwear – assist them to remove their footwear if necessary.	To allow observation of the person's extremities during the procedure
Cover the person with a sheet. If they are cold provide a blanket.	To keep the person warm and maintain their dignity
Provide the person with explanations and offer support.	To assist the person to manage any anxiety or concern
Confirm the person's legal status, informed consent and relevant documentation.	To ensure adherence to relevant laws, policies, guidelines and procedures
Explain every procedure as it occurs.	To inform the person about what is happening
Participate in a 'time-out' procedure.	To check that the right procedure is being given to the right person
Assist with the introduction of an intravenous line into the person's arm or hand if required (often the anaesthetic nurse or technician will assist with this).	To allow the administration of intravenous medications
Clean sites of electrode contact with alcohol swabs, gel or saline.	To ensure the cleanliness of the electrode and to ensure best contact of electrodes with the person's head
Place leads for various monitors.	To enable monitoring of the person, for example, electrocardiogram (ECG), pulse oximeter, blood pressure
Place electrodes on the person's head.	To facilitate electroencephalographic monitoring
Assist with anaesthesia, including monitoring blood pressure, electrocardiographic activity, expired carbon dioxide levels and pulse oximetry.	To ensure the person's condition is stable and to alert other staff if this situation should change
Administer oxygen to the person.	To prevent hypoventilation during administration of the anaesthetic
Assist psychiatrist, anaesthetist and other nurses as required.	To facilitate person-centred care
Insert a disposable or bite block (autoclaved) into the person's mouth.	To prevent joint dislocation and tooth, tongue and gum damage
Press the test/treat button on the ECT machine in consultation with the psychiatrist.	To complete testing of electrodes and initiate treatment
Time the duration of seizures and the time between seizures and communicate this information, along with the titration, to the psychiatrist.	To support the decision-making process
Turn the person using a slide sheet with assistance from other staff.	To place the person in the recovery position
Ensure documentation is completed.	To support the continuity of care
Transfer the person to recovery room once they are breathing again and able to maintain own airway.	To monitor and support the person to recover from the anaesthetic

Note: The information in Table 3 was sourced from Finch (2005), Kavanagh & McLoughlin (2009), the RANZCP (2007) and the policy and procedure documents of Victorian healthcare services that provide ECT. ^aFor more information about the time-out procedure, please refer to the World Health Organization (2008) *Surgical safety checklist*. An Australian and New Zealand version of this checklist has been developed and has been endorsed by the ANZCA, ACORN and other medical organisations. The checklist is available at <<www.anzca.edu.au/resources/endorsed-guidelines>.

Core Area	Торіс	Content
Basic sciences		Instruction must include appropriate elements of the following basic sciences as they apply to anaesthesia: physics, chemistry, pharmacology, anatomy, physiology, clinical measurement and microbiology.
Anaesthesia	Anaesthesia equipment	 (i) The care, use and servicing of equipment: anaesthesia delivery systems and ventilators, monitoring equipment including ultrasound devices, airways devices including fiberoptic instruments and intravascular devices (ii) Cleaning and sterilisation of equipment (iii) Infection control issues for staff, equipment and patients (iv) Pollution prevention
	Safety	Electrical safety, gas cylinders and pipelines, hazards in anaesthetising locations, patient safety and staff safety
	Anaesthesia techniques	Including all areas of perioperative practice (preparation, monitoring, induction, securing the airway, maintenance and recovery) in both theoretical and practical terms
	Invasive techniques	Including insertion of peripheral, central venous and pulmonary artery catheters and arterial lines as well as their ongoing management, intercostal tube drainage, red cell salvage and endoscopy of the airways
	Regional and local anaesthesia	Including all commonly used techniques for regional and local blocks
	Ultrasound	Including use for nerve and vascular localisation
	Therapeutics	Including the storage, preparation and use of all drugs, fluids and other therapeutic substances administered during anaesthesia
	Emergency care	Including knowledge of appropriate algorithms for crisis management, assistance to the anaesthetist and provision and care of necessary equipment for: CPR, management of the difficult airway and failed intubation, cardiac defibrillation and cardioversion, massive blood transfusion, anaphylaxis and malignant hyperthermia
	Post-operative pain	Including management and equipment required
Management		Rostering, budgets, anaesthesia standards and protocols, incident monitoring, workplace, occupational health and safety regulations, communication, privacy protection, interfaces with other healthcare workers, legal responsibilities and human resources management

Table 4. ANEOA 3 recommended course content for the training of assistants to anaesthetist
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Note: The information in Table 4 was sourced from the ANZCA (2008c).

Providing post-treatment care

Nurses have responsibilities for assisting people in their recovery from ECT (Finch 2005; Gomez 2004; Victorian Department of Health 2009). The Victorian Chief Psychiatrist makes specific reference to the need for a continuous nursing presence during the recovery period, with people being observed until they are fully oriented. Tasks that nurses may perform during the recovery period are detailed in Table 5.

Action	Rationale
Nurse the person in left lateral or supine position and ensure a clear airway is maintained.	To ensure that the person's airway is patent and not compromised
Be present with the person at all times and monitor consciousness.	To ensure there is no adverse reaction to anaesthetic and that the person does not come to any harm as they recover from anaesthetic
Administer oxygen to the person.	To maintain oxygen saturation and prevent hypoventilation while recovering from the anaesthetic
Monitor and record vital signs regularly (including oxygen saturation).	To identify and respond to complications
Maintain intravenous line/access.	Intravenous access is maintained in case rapid medication administration is requested
Complete post-operative side effects checklist at regular intervals.	To identify and record any common or concerning side effects
Provide reassurance and orientation until the person begins to retain information.	To assist the person to become oriented to the ward setting
Administer a simple cognitive test.	To enable comparisons to be made between pre- and post-ECT results so that any cognitive abnormality as a result of ECT can be identified
Maintain the person's safety, administering prescribed medication for agitation if required.	To assist the person if they become agitated, aggressive, restless or disoriented for a short period of time
Ensure that a bay in the recovery room is available and prepared for the person.	To enable the person to be sent to the recovery area
Ensure the person does not leave the recovery area until they are alert.	To prevent falls or injury due to level of alertness
Ensure that information about any medication administered and procedures used, as well as the person's condition, treatment response and behaviour is recorded in the ECT notes and transferred to the ward nurse.	To facilitate the continuity of care
If a person requires non-standard procedures or actions, ensure they are included in the ECT documentation that is transferred to the ward nurse.	To ensure that other medical and nursing staff are aware of a person's particular requirements or issues in the rare event that they arise
If the person is a current inpatient, individual assessment will take place upon their return to the ward regarding the level of physical observation needed and the extent to which they are oriented to the ward.	To ensure adequate post-anaesthesia care is provided
Administer medications such as analgesia and anti- emetic as prescribed.	To respond to the person if they identify they are in pain or have a headache, muscle soreness or nausea

Table 5:	Possible	nursina	functions	durina	the	recoverv	period
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Continue to remind the person about the treatment and

orient them to the environment. Encourage the person to rest. To manage distress due to post-treatment amnesia

To facilitate recovery from treatment

Nursing practice - working with people prescribed and undergoing electroconvulsive therapy

Receive handover from treatment room staff.	To facilitate the continuity of care
Keep the person warm.	To help the person feel comfortable
Report any problems to the ECT coordinator, psychiatrist or anaesthetist.	To enable potential complications to be managed
Check the person for the presence or absence of nausea or vomiting.	To monitor recovery before a light meal is consumed
Supervise a light meal (such as breakfast) and consumption of liquids.	To provide the person with sustenance and hydration
Inform the nurse in charge of stock needing to be reordered.	To ensure the ECT does not run out of consumables
Assist the person to dress in their own clothes.	To ready the person for leaving the recovery room and assess whether they are ready to leave
Prior to the person leaving (when their condition is satisfactory) remove the cannula, apply firm pressure and apply a sterile covering	To prevent bleeding
Continue to complete documentation.	To facilitate the continuity of care
Book or confirm further ECT appointments (if required).	To ensure future ECT appointments have been made and the person and their carers know when they are scheduled
Facilitate transfer or discharge arrangements.	To organise the person's departure from the recovery room
Wipe down used mattresses and pillows, remake trolleys, clean and maintain ECT suite and recovery room and replace consumables.	To maintain the ECT suite and ensure it is ready for the next individual

Note: The information in Table 5 was sourced from Finch (2005), Kavanagh & McLoughlin (2009), the RANZCP (2007) and the policy and procedure documents of Victorian healthcare services that provide ECT.

Review of policies and procedures

The ECT policy and procedure documents for the nine healthcare services included in this review all identified nursing tasks pertaining to the management of ECT suites and the provision of care before, during and after ECT. There is variation among documents in the level of detail provided, however. Some services (for example, Albert Road Clinic 2009) have provided an in-depth analysis of all tasks allocated to nurses, including switching on and off lights in the treatment and recovery rooms. The majority of documents provide less detail (Ballarat Health Services 2007; Barwon Health 2007; Eastern Health n. d.; Mercy Health 2006; Northpark Private Hospital 2008; South West Healthcare 1995; Southern Health, n. d.). Sometimes it is unclear in the documents (for example, Normanby, Northpark Private Hospital) who is responsible for undertaking certain tasks. From an inspection of these documents, it seems probable that (a) not all tasks that are undertaken have been included in each document (for example, having a person remove make-up, nail varnish or body piercings was not mentioned in all documents) and (b) some tasks that nurses routinely perform in practice were not designated as nursing tasks in these documents.

To undertake this review, the tasks allocated to nurses were compared and contrasted with those identified in the literature (Tables 2, 3 & 5; Finch 2005; Kavanagh & McLoughlin 2009; RANZCP 2007). The tasks were compared and contrasted in four sections: ECT suite management (Table 6), pre-ECT care (Table 7), care during ECT (Table 8) and post-ECT care (Table 9). Generally, the policy and procedure documents that provided the most detail seemed to cover more of the tasks identified in the literature than documents that provided less detail.

When interpreting the information contained within these tables recognition should be paid to the fact that there are variations among documents, as well as between the documents and the literature, in how tasks are described. The failure to identify particular tasks in policy and procedure documents should not be construed to mean that these tasks are not being performed in practice. Some tasks could be subsumed under other, broader tasks or could appear in other documents that are not specifically related to ECT.

Managing the ECT suite

In addition to the four tasks identified in the literature, 12 nursing tasks relating to the management of ECT suites were identified from policy and procedure documents (Table 6). These 12 tasks covered several areas including the maintenance of nursing standards, administration, preparing the ECT suite, liaising with staff and people undergoing ECT, coordinating daily routines, and staff and student education and research. Furthermore, many of the policy and procedure documents make no reference to some of the tasks identified in the literature, such as attending to licensing issues and attending clinical and administrative meetings.

Providing pre-treatment care

Most of the pre-ECT nursing tasks identified in the literature were present in the policy and procedure documents of several of the healthcare services (Table 7). Only two nursing tasks present in the literature were not mentioned in any of the policy and procedure documents ('administer a simple cognitive test' and 'have outpatients who have travelled long distances treated at the beginning of the day'). Six tasks were identified in the policy and procedure documents that were not stated in the literature. These additional tasks include: the nurse in charge monitoring and mentoring other nurses, handovers, supporting psychiatrists and anaesthetists, ensuring documentation is completed, preparing the equipment and consumables and recording observations.

Providing care during treatment sessions

All 13 tasks identified in the literature were mentioned in some of the policy and procedure documents (Table 8). Tasks related to the confirmation of informed consent were most likely to be included in policy and procedure documents. An additional six tasks were identified from the policy and procedure documents that were not found in the literature. The most commonly occurring of these tasks were assisting psychiatrists, anaesthetists and other nurses, ensuring documentation is completed and providing people with reassurance.

Providing post-treatment care

All but two of the 15 nursing tasks identified from the literature were described in the policy and procedure documents (Table 9). The two tasks not found in these documents were: 'administer a simple cognitive test' and 'ensure the patient does not leave the recovery area until they are alert'. A further 11 tasks were identified that do not appear in the literature. The most commonly included tasks were: completing documentation, supervision of light meals, facilitating transfer or discharge arrangements and maintaining the ECT suite and recovery rooms.

Task	Albert Road Clinic	Ballarat Health Services	Barwon Health	Eastern Health	Mercy Health	Northpark Private Hospital	Southern Health	South West Healthcare	St Vincent's Hospital
Attend to licensing issues.									
Ensure resources and equipment meet prescribed standards.	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Update local protocols so that they remain consistent with best-practice guidelines on the environment, equipment and medication used.	Yes	Yes						Yes	
Attend clinical and administrative meetings as required.	Yes								
Develop, implement and evaluate nursing standards.*		Yes						Yes	
Ensure appropriate standards for nursing staff are met and maintained.*		Yes						Yes	Yes
Complete administrative tasks such as maintaining databases and record keeping.*	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Prepare the ECT suite to receive staff and the person about to undergo the procedure.*	Yes		Yes	Yes	Yes		Yes	Yes	Yes
Liaise with psychiatrists, anaesthetists and other staff.*		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Schedule ECT sessions.*			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Coordinate daily routines such as the flow of those receiving treatment to and from inpatient wards or the community and through the ECT suite (including the recovery area).*	Yes	Yes			Yes	Yes	Yes	Yes	Yes
Determine allocation of staff roles.*	Yes	Yes					Yes		Yes
Ensure documentation is completed before, during and after treatment, and filed or forwarded to other health professionals as required.*	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Prepare for and welcome students.*	Yes	Yes	Yes					Yes	Yes
Educate nursing staff.*		Yes						Yes	Yes
Collect and collate relevant data for research purposes.*		Yes							

Table 6: ECT suite management – comparison of nursing functions detailed in policy and procedure documents with those in the literature

* These functions appear in the policy and procedure documents of the nine healthcare services but were not identified in the literature.

Yes

Yes

treatment.

anaesthetic.

Have the person remove any prostheses, loose-fitting

Check the person's identity in multiple ways and ensure

that an identity band is being worn by the right person.

dentures, glasses, hearing aids and contact lenses immediately prior to the administration of the

Albert Ballarat Eastern Mercv Northpark Southern South West St Task Barwon Private Vincent's Road Health Health Health Health Health Healthcare Services Clinic Hospital Hospital Arrange for safekeeping of the person's valuable items. Yes Yes Explain the procedure, including side effects, to the Yes Yes Yes Yes Yes Yes person using educational pamphlets and videos as appropriate and answer questions that they may have. Have the person fast (food and fluids) for six to eight Yes Yes Yes Yes Yes Yes Yes Yes hours and abstain from smoking for two hours prior to the procedure or in accordance with local policy or as otherwise advised by the anaesthetist. Ensure pre-testing occurs prior to ECT by administering a simple cognitive test. Ensure medications are given as prescribed. Determine Yes Yes Yes Yes Yes Yes what medications must be taken at their regular time and what medications may be delayed until after ECT. Administer accordingly. Ensure the person is not wearing make-up, nail varnish Yes Yes Yes Yes Yes or body piercings. Assist in removing them if they have not done so. Ensure the person's hair is clean and dry and hairpins, Yes Yes Yes Yes hairnets and other hair ornaments are removed. Encourage the person to empty their bladder before Yes Yes Yes

Yes

Yes

Yes

Yes

Table 7: Pre-ECT care – comparison of nursing functions detailed in policy and procedure documents with those in the literature

Task	Albert Road Clinic	Ballarat Health Services	Barwon Health	Eastern Health	Mercy Health	Northpark Private Hospital	Southern Health	South West Healthcare	St Vincent's Hospital
When the person is an outpatient, ensure that that they have agreed to not drive and will have a responsible adult care for them during the first 24 hours after treatment. Also, book further ECT appointments.			Yes		Yes				
Have a nurse who the person knows and who is aware of their legal and consent status escort the person to the treatment waiting room.		Yes			Yes	Yes	Yes	Yes	Yes
Perform pre-treatment checklist for general anaesthesia and ECT.		Yes		Yes		Yes	Yes		Yes
Have outpatients who may have travelled long distances treated at the beginning of the day.									
The ECT coordinator has a role to monitor and mentor other nurses.*	Yes	Yes							
Ensure adequate handovers occur.*		Yes	Yes		Yes	Yes		Yes	Yes
Provide support as required to the psychiatrist and anaesthetist.*	Yes			Yes			Yes		
Ensure documentation is completed.*	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Prepare equipment and consumables needed for treatment. This includes ensuring that local policies and procedures are developed in relation to the set-up and cleaning of the ECT suite and equipment with regard to the disinfection and autoclaving of equipment.*	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Record physical observations.*		Yes	Yes	Yes	Yes	Yes	Yes	Yes	

* These functions appear in the policy and procedure documents of the nine healthcare services but were not identified in the literature.

Task	Albert Road Clinic	Ballarat Health Services	Barwon Health	Eastern Health	Mercy Health	Northpark Private Hospital	Southern Health	South West Healthcare	St Vincent's Hospital
Welcome the person to the suite and introduce the person to staff in the treatment room. Explain the roles of the different staff.	Yes								
Ensure the person is not wearing footwear – assist the person to remove their footwear if necessary.	Yes					Yes			
Confirm the person's legal status, informed consent and relevant documentation.	Yes		Yes		Yes		Yes		
Explain every procedure as it occurs.	Yes						Yes	Yes	
Clean sites of electrode contact with alcohol swabs, gel or saline.			Yes					Yes	
Place leads for various monitors.	Yes	Yes						Yes	
Place electrodes on the person's head.									
Assist with anaesthesia, including monitoring blood pressure, electrocardiographic activity, expired carbon dioxide levels and pulse oximetry.	Yes		Yes	Yes				Yes	
Administer oxygen to the person.	Yes			Yes					
Insert a disposable or bite block (autoclaved) into the person's mouth.			Yes						
Press the test/treat button on the ECT machine in consultation with the psychiatrist.								Yes	
Time the duration of seizures and the time between seizures and communicate this information, along with the titration, to the psychiatrist.	Yes	Yes		Yes				Yes	
Transfer the person to recovery room once they are breathing again and able to maintain their own airway.	Yes								
Maintain the person's dignity and cover them with sheet, or if they are cold provide a blanket.*	Yes								
Provide the person with reassurance.*	Yes	Yes					Yes	Yes	Yes

Table 8: Care during ECT – comparison of nursing functions detailed in policy and procedure documents with those in the literature

Task	Albert Road Clinic	Ballarat Health Services	Barwon Health	Eastern Health	Mercy Health	Northpark Private Hospital	Southern Health	South West Healthcare	St Vincent's Hospital
Assist with the introduction of an intravenous line into the person's arm or hand, if required (often the anaesthetic nurse or technician will assist with this).*		Yes							
Assist the psychiatrist, anaesthetist and other nurses as required.*	Yes			Yes	Yes		Yes		Yes
Turn the person using a slide sheet with assistance from other staff.*	Yes								
Ensure documentation is completed.*	Yes	Yes	Yes	Yes					Yes

* These functions appear in the policy and procedure documents of the nine healthcare services but were not identified in the literature.

Task	Albert Road Clinic	Ballarat Health Services	Barwon Health	Eastern Health	Mercy Health	Northpark Private Hospital	Southern Health	South West Healthcare	St Vincent's Hospital
Nurse the person in left lateral or supine position and ensure a clear airway is maintained.		Yes		Yes			Yes	Yes	Yes
Be present with the person at all times and monitor consciousness.	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Administer oxygen to the person.	Yes	Yes		Yes	Yes	Yes		Yes	Yes
Monitor and record vital signs regularly (including oxygen saturation).	Yes	Yes	Yes			Yes	Yes	Yes	Yes
Maintain intravenous line/access.						Yes			
Complete a post-operative side effects checklist at regular intervals.								Yes	
Provide reassurance and orientation until the person begins to retain information.	Yes	Yes					Yes		
Administer a simple cognitive test.									
Maintain the person's safety, administering prescribed medication for agitation if required.	Yes	Yes	Yes						Yes
Ensure the person does not leave the recovery area until they are alert.									
Ensure that information about any medications administered and procedures used, as well as the person's condition, treatment response and behaviour is recorded in the ECT notes and transferred to the ward nurse.					Yes				Yes
If the person is a current inpatient, individual assessment will take place upon their return to the ward regarding the level of physical observation needed and the extent to which they are oriented to the ward.		Yes			Yes	Yes			
Administer medications such as analgesia and anti- emetic as prescribed.				Yes					

Table 9: Post-ECT care – comparison of nursing functions detailed in policy and procedure documents with those in the literature

Task	Albert Road Clinic	Ballarat Health Services	Barwon Health	Eastern Health	Mercy Health	Northpark Private Hospital	Southern Health	South West Healthcare	St Vincent's Hospital
Continue to remind the person about the treatment and orient them to the environment.	Yes							Yes	
Encourage the person to rest.		Yes							
Ensure that a bay in the recovery room is available and prepared for the person.*	Yes			Yes					
Receive handover from treatment room staff.*	Yes			Yes					
Keep the person warm.*	Yes					Yes			
Report any problems to the ECT coordinator, psychiatrist or anaesthetist.*	Yes	Yes							Yes
Supervise a light meal (such as breakfast) and consumption of liquids.*	Yes	Yes		Yes	Yes	Yes	Yes		Yes
Inform the nurse in charge of stock needing to be reordered.*	Yes								
Assist the person to dress in their own clothes.*		Yes		Yes					
Prior to the person leaving (when their condition is satisfactory) remove the cannula, apply firm pressure and apply a sterile covering.*	Yes	Yes		Yes					
Continue to complete documentation.*	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Facilitate transfer or discharge arrangements.*			Yes	Yes	Yes	Yes	Yes	Yes	
Wipe down used mattresses and pillows, remake trolleys, clean and maintain ECT suite and recovery room and replace consumables.*	Yes		Yes	Yes				Yes	Yes

* These functions appear in the policy and procedure documents of the nine healthcare services but were not identified in the literature. ^aAlthough some policy and procedure documents listed maintaining people's safety as a nursing task, none suggested that this outcome should be achieved through medication.

Survey of nurses involved with ECT

Responses to the survey were received from 43 registered nurses. With regard to their education and training, the key findings are below.

- All nurses either strongly agreed (67 per cent) or agreed (33 per cent) that they were familiar with the theory and application of ECT.
- Almost all nurses either strongly agreed (58 per cent) or agreed (37 per cent) that they received formal education in the theory and application of care for a person who has a general anaesthetic and ECT.
- There was a wide distribution of responses to the statement that current training practices give mental health nurses confidence in regard to this form of treatment. Although over half of nurses strongly agreed (21 per cent) or agreed (33 per cent) with this statement, 28 per cent disagreed and 16 per cent held neutral positions.
- There was a wide distribution of responses to the statement that when they completed their nurse training, nurses felt competent in their abilities to carry out ECT nursing responsibilities and care for a person undergoing ECT. Although over half of nurses strongly agreed (21 per cent) or agreed (33 per cent) with this statement, 23 per cent disagreed, 16 per cent held neutral positions, and 7 per cent strongly disagreed.
- Most nurses either strongly agreed (53 per cent) or agreed (40 per cent) that, in terms of their
 professional development and aspirations, they had adequate exposure to the theory and practice of
 ECT.
- Over half of the nurses (58 per cent) reported that they had received more than four hours of nonbedside ECT training during their nurse training, with a further 37 per cent receiving two hours or less of training.
- During their undergraduate training, almost three-quarters (72 per cent) of respondents spent five hours or less based in ECT suites, with 16 per cent spending more than 15 hours in these facilities. With regard to postgraduate education, one-third (33 per cent) of respondents had spent five hours or less based in ECT suites, with 58 per cent spending more than 15 hours in these facilities. Almost one-third (30 per cent) of respondents had spent no time in ECT suites during their undergraduate training and 14 per cent had spent no time in them when undertaking postgraduate study.
- The number of times respondents had observed the administration of ECT prior to their involvement in caring for a person undergoing ECT was mostly split between one and three times (45 per cent) and more than 12 times (45 per cent).
- Most nurses strongly agreed (36 per cent) or agreed (50 per cent) that their organisation has adequate policies and procedures for the provision and coordination of nursing support for ECT.
- Most respondents also strongly agreed (31 per cent) or agreed (43 per cent) that their organisations' policies and procedures ensure that nurses are appropriately educated and skilled to complete this role. Some nurses (14 per cent), however, disagreed with this statement.
- The aspects of ECT that concerned nurses the most were
 - communication and cooperation with non-ECT nursing staff (64 per cent)
 - the adverse effects of treatment such as memory loss and confusion (26 per cent)
 - coercion or forcing the person to comply (21 per cent)
 - the safety and effectiveness of the procedure (7 per cent).
- Most nurses (88 per cent) reported that education of people undergoing ECT was a function of ECT nursing at their facilities.
- Almost all nurses (95 per cent) felt that they were adequately prepared to provide education to people undergoing ECT.
- Almost all respondents (98 per cent) were aware of the Victorian Chief Psychiatrist's *Electroconvulsive therapy manual* for the administration of ECT.

- Most nurses (81 per cent) indicated that, from a nursing perspective, there were no issues within their services that needed addressing to ensure compliance with the Victorian Chief Psychiatrist's clinical guidelines and to provide optimal care for the unconscious person.
- Almost all respondents (90 per cent) indicated that their services did not provide personal carers in post-recovery.

Summary

Despite nurses being involved in ECT since the time it was first administered, there has been a limited amount of research interest in understanding what nurses do or should be doing when they prepare people for ECT treatment, assist in the administration of ECT and provide post-treatment care. This limited interest in nursing and ECT from a research perspective contrasts sharply with the attention paid to this treatment in nursing magazines. There would seem to be significant merit in performing a detailed job analysis of the nursing role in ECT for purposes such as developing job descriptions, recruitment, selection, training, compensation and job design.

In the absence of job analyses for the ECT nursing role and empirical study in the area, the tasks that nurses could perform during treatment can be distilled from: papers by experts in the United Kingdom (Finch 2005; Kavanagh & McLoughlin 2009), the guidelines of the Victorian Chief Psychiatrist (Victorian Department of Health 2009) and the guidelines and recommendations of professional bodies (for example, ANZCA and RANZCP). Nursing tasks can be divided into four areas: managing the ECT suite and providing care to people before, during and after treatment. One important aspect of the nursing role is the care of the unconscious person.

There appears to be wide variability in the extent to which the nursing tasks detailed in the policy and procedure documents of Victorian healthcare services match those in the literature. Policies and procedures that incorporate greater levels of detail seem to include tasks identified in the literature to a greater extent than those with lesser detail. This finding, however, may be more a reflection on the policies and procedures than on the nursing tasks performed at each of the services. Job analyses would need to be performed to obtain this level of detail. Furthermore, without clear guidelines on what the nursing role in ECT should be, it seems reasonable to expect that variations in policy would develop.

The survey of ECT nurses has allowed for the identification of potential areas that may need attention. In particular, there were wide distributions of responses regarding nurses' perceptions of their confidence and competence with ECT given the current training practices. Large percentages of respondents had experienced two hours or less of non-bedside ECT training and five hours or less in ECT suites during their undergraduate or postgraduate education. The aspect of ECT that concerned nurses the most was their communication and cooperation with non-ECT nursing staff.

Taken together, these findings create a compelling argument for the development of a guideline to support ECT nursing practice in Victoria. Such a guideline could be useful in achieving greater consistency in ECT policies and procedures and, ultimately, in nursing roles across Victoria.

Appendix: Recommendations regarding ECT and specific health conditions

Table 10: Recommendations regarding ECT and specific health conditions

Condition	Recommendations	Rationale		
Hypertension	Before ECT, stabilise the blood pressure of people with pre-existing hypertension. ^b	After shock, systolic pressure rises between 29% and 48% and diastolic pressure rises between 24% and 63% (Rumi et al. 2002; Takada et al.		
	 blood pressure ≤140/90 mm Hg: administer usual antihypertensive medication throughout the morning of procedure.^a 	2005). Some beta-blockers (for example, esmolol) may shorten the duration of seizures and reduce the efficacy of ECT (van den Broek et al. 2008).		
	 For chronic or new-onset hypertension with blood pressure >140/90 mm Hg: antihypertensive medications should be started in accordance with JNC-7 guidelines (Chobanian et al. 2003) delay ECT until blood pressure is <140/90 mm Hg avoid administering beta- blockers.^a 			
Recent myocardial infarction	Take extreme caution when performing ECT within the first 10 days following myocardial infarction. The risk generally decreases during the three months following the myocardial infarction. ^b	There is no reliable evidence for when it is safe for ECT to proceed after myocardial infarction (RANZCP 2007).		
Asymptomatic or stable coronary artery disease	Continue the following medications: aspirin, statins, antihypertensive agents and antianginal medications including nitrates for chronic cardiac conditions. ^a For people with coronary stents, continue aspirin and clopidogrel. ^a	The risk of cardiac ischemia is increased if long-term cardiac medications are discontinued on the morning of the procedure (Tess & Smetana 2009).		
Aortic stenosis	 Perform echocardiography to assess the severity of the aortic stenosis in either of the following circumstances: echocardiography has not been performed within the past year symptoms have changed.^a If the aortic stenosis is moderate or severe, consult cardiologist and reassess the appropriateness of ECT. 	Limited evidence suggests that ECT may be safe for people with aortic stenosis (Mueller et al. 2007; O'Reardon et al. 2008; Rasmussen 1997). In one study of 10 individuals with aortic stenosis undergoing ECT, hypertensive systolic blood pressure and tachycardia as a result of ECT required treatment in seven individuals during approximately half of the ECT sessions (Mueller et al. 2007). Low blood pressure needed to be treated in two individuals.		

Condition	Recommendations	Rationale
Cardiac pacemakers	Before and after ECT, have a pacemaker technician check that the pacemaker is functioning normally. ^{a,b} Place a magnet at the person's bedside in case electrical interference leads to pacemaker inhibition and bradycardia. ^a Properly ground all monitoring equipment and ensure that anyone in electrical contact with the ground does not touch or hold the person during the stimulus. ^b People should be treated in settings with immediate access to coronary care. ^b	Evidence suggests that ECT can be safely administered to people with implanted cardiac pacemakers (Dolenc et al. 2004; MacPherson et al. 2006). Of the 26 individuals in one study, only one serious cardiac event occurred (supraventricular tachycardia), which required the individual to be admitted to the cardiac unit (Dolenc et al. 2004).
Implantable cardioverter-defibrillator (ICD)	During ECT, ensure detection mode on the ICD is turned off. ^a Perform ECG monitoring continuously throughout treatment and pay careful attention to grounding. ^a Ensure resuscitative equipment is available at the person's bedside in case external defibrillation is needed.	Limited evidence suggests that ECT can be safely administered to people with an ICD (Davis et al. 2009; Dolenc et al. 2004)
Arrhythmia	 For atrial fibrillation: continue to administer individual medications for controlling heart rate if needed, control heart rate with calcium channel blockers manage anticoagulation (see below).^a For bradyarrhythmias: consider the use of an anticholinergic agent (for example, atropine) during pretreatment.^b 	Although little published evidence exists, it appears that people with atrial fibrillation can be safely treated with ECT (Venditti et al. 1992). During ECT, there may be conversion to and from sinus rhythm (Tess & Smetana 2009). It is unknown what the effect of spontaneous rate conversion on embolisation rates may be. People with pre-existing bradycardia are at risk of a clinically relevant bradycardia or asystole due to the slowing of the heart rate immediately prior to the application of electrical stimulus (RANZCP 2007). The risk may be increased with stimuli that do not produce seizures (for example, during a dose titration procedure).
Need for long-term anticoagulation	Unless there is an increased risk of intracranial hemorrhage (such as an intracranial mass or aneurysm), administer anticoagulant therapy to maintain an international normalised ratio of ≤3.5.	Limited evidence suggests that ECT can be safely performed with people receiving long-term anticoagulant therapy (Bleich et al. 2000; Mehta et al. 2004).

Condition	Recommendations	Rationale		
Asthma or chronic obstructive pulmonary disease	Cease the use of theophylline by tapering the dose if possible. ^a Continue pre-existing individual treatment regimen of bronchodilators	Theophylline increases the risk of prolonged seizures and status epilepticus in people undergoing ECT (Rasmussen & Zorumski 1993; Schak et al. 2008).		
	and inhaled corticosteroids. ^a If an exacerbation is present when people are evaluated, provide standard treatment (that is, inhaled beta-agonists and, if necessary, corticosteroids) before undertaking ECT. ^a	Limited research shows that ECT is safe for people with asthma (Mueller et al. 2006). One study showed that asthma was exacerbated in 12% of individuals, but these exacerbations were all treated with standard asthma medication (Mueller et al. 2006).		
Intracranial pathology	 Evaluate the risks of ECT on an individual basis. ECT is contraindicated when intracranial pressure is raised. Show caution when people have had a recent brain injury, infection, haemorrhage or stroke. Show caution when people have organic brain lesions or cognitive pre-existing impairment.^b 	The RANZCP (2007) cites long- standing evidence suggesting that raised intracranial pressure is a contraindication to ECT. More recent research suggests that intracranial pressure may be able to be managed during ECT (Patkar et al. 2000).		
Aneurysms	Avoid treatment-induced hypertension when people have vascular aneurysms such as intracranial and abdominal aneurysms. ^b Before administering ECT in the presence of vascular aneurysm, ensure the appropriate surgeon/ neurosurgeon/neurologist performs a thorough evaluation of the individual. ^b	Systematic arterial hypertension may increase the risk of developing aneurysms (Inci & Spetzler 2000).		
Diabetes	Monitor blood glucose levels prior to and following ECT. ^a On the morning of the procedure provide half the usual amount of long-acting insulin. ^a Withhold oral agents until people are able to eat. ^a Treat elevations in blood glucose level with short-acting insulin. ^a If possible, schedule and perform ECT early in the morning. ^a	The influence of ECT on blood glucose levels can be highly variable due to the effect of the procedure on appetite, diet and energy levels (Tess & Smetana 2009). Limited evidence suggests that ECT is safe for people with diabetes (Netzel et al. 2002; Rasmussen et al. 2006). One study showed a 9% mean rise in blood glucose following ECT, which is similar to increases in non-diabetic people (Rasmussen et al. 2006). No clinically significant rise or fall in blood glucose was recorded for any individual in this study.		

Condition	Recommendations	Rationale
Epilepsy	Perform electroencephalographic monitoring. ^b	Evidence suggests that ECT can be safely administered to people with epilepsy (Lunde et al. 2006).
	Reduce the person's dose of anticonvulsant medication so that possible loss of seizure quality and efficacy is mitigated. ^b	
Osteoporosis	Give muscle relaxants in adequate doses and allow time for them to take full effect before administering ECT. Confirm full muscle relaxation has occurred using an electronic device or by testing the patellar reflex. ^b	If ECT is unmodified or poorly modified, people with osteoporosis are at risk of fracture (RANZCP 2007).
	Avoid holding a person down."	
Retinal detachment	For people who may be susceptible to retinal detachment, consult an ophthalmologist before administering ECT and adequately control blood pressure during ECT. ^b	ECT stimulates increases in intraocular pressure, which may cause retinal detachment in those who are susceptible (RANZCP 2007).
Pregnancy	Include an obstetrician and an anaesthesiologist in the informed- consent and risk-stratification process. ^a For women who are more than 14 to 16 weeks pregnant, use non-invasive	Although some authors claim ECT is a low-risk procedure for pregnant women that may have some advantages over pharmacotherapy (Saatcioglu & Tomruk 2011), other writers suggest it should be used with caution for pregnant women (Dipotto et al. 2007)
	fetal monitoring as well as standard monitoring. ^a	(Pinette et al. 2007).
	For women who are more than 24 weeks pregnant, perform a non- stress test with a tocometer before and after treatment. ^a	
Skull defect	Place electrodes away from metal plates and/or skull defects. ^b	Excessive current density at the site of the plate or defect should be avoided (RANZCP 2007).

Note: The recommendations in Table 10 were sourced from ^aTess & Smetana (2009) and ^bRANZCP (2007).

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