

Firearms, mental illness, dementia and the clinician

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The question of firearms and public health depends on which “public” we mean. In America, where firearm ownership is a constitutional right, almost 50% of households have at least one firearm¹ and, in 2011, firearms accounted for half of all suicides.² In Australia, in 2001, the rate of licensed firearm owners was 3.96/100 population.³ Following 1996 law reform, the rate of firearm-related suicides in men in Australia declined from 3.4 deaths/100 000 person-years in 1997 to 1.3/100 000 person-years in 2005.⁴ The contrast is even starker with firearm-related homicides. In 2010, there were 30 in Australia or 0.13/100 000⁵ compared with 11 078 in the United States or 3.6/100 000.⁶

Gun laws and licensing in Australia

In Australia, state and territory governments are responsible for firearms laws. After the Port Arthur mass shooting in 1996, the National Firearms Agreement led to more alignment between state laws and mandated firearm licences for firearm use and ownership.⁷ Although the individual Firearms Acts of each state and territory vary, they all include key stipulations such as mandated secure firearm storage and permit to acquire before purchase with a minimum 28-day delay before issue of the first permit. This delay, instituted to enable background checks, reduces suicide rates in people over 55 years,⁸ possibly by preventing impulsive firearm purchase.⁹ Additionally, a genuine reason from a prescribed list (eg, pest control) must be given before a firearm licence is issued.

Is there a relationship between mental illness, dementia and firearm violence and injury?

Most people with mental illness do not commit violent acts, and most violence in the community is not due to mental illness.¹⁰ However, if substance misuse or dependence is comorbid with mental illness, a statistically significant relationship with violence exists.¹¹ A large meta-analysis found increased risk of violence with psychosis, with a much larger effect size associated with comorbid substance-use disorders compared with psychosis alone.¹² The proportion of these violent acts attributable to firearms is unknown.

In relation to suicide risk, American homes with firearms have higher risk of suicide, not attributable to incidences of mood, anxiety or substance-use disorders.¹³ In

Summary

- Clinicians have an obligation to report to state or territory police any concerns about risk of harm from patients with access to firearms.
- Dementia is an under-recognised medical problem which may increase the risk of firearm injury or violence in those with such access.
- There are no guidelines for clinicians regarding mandatory screening for access to firearms, and currently the onus is on the firearm licence holder to declare any relevant medical conditions.
- We propose that clinicians should screen patients for firearm possession and use a combined capacity and risk assessment approach to evaluating fitness for firearm licences.

the US, firearm regulations that reduce gun availability reduce rates of male suicide, whereas regulations that prohibit high-risk individuals (those with a criminal or mental health history or substance misuse) from owning firearms have less effect.¹⁴ However, comparisons of data from other countries do not support a clear link between firearm ownership and suicide.¹⁵ Dementia and cognitive impairment pose particular theoretical risks in relation to firearm violence.¹⁶ In a US retrospective cohort study of almost 300 000 patients aged over 60 years with dementia, most suicides occurred in the newly diagnosed, with firearms being the most common method (175/241, 72.6%).¹⁷

Capacity to safely handle firearms may be affected by both behavioural changes and cognitive decline.¹⁸ Behavioural and psychological symptoms of dementia such as psychosis, depression and aggression may increase risk. In dementia, a variety of cognitive impairments may increase the risk of unsafe firearm use, including apraxia, visuospatial and memory deficits, and executive dysfunction (including impulsivity, disinhibition and impaired judgement).

Dementia is often undetected in the community¹⁸ but even when known, family members may not appreciate safety concerns and remove guns from the household of adults deemed incompetent to use them. In American households with a resident relative with dementia, 60% had a firearm in the house and almost 45% of guns were kept loaded.¹⁹ Formal assessments of competency to obtain or retain a firearm are not routine, and caregivers of people with dementia (especially when slowly progressive) may find it difficult to determine and manage risk concerns.²⁰

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1 Medical history which must be disclosed by individuals applying for a firearm licence in the states and territories of Australia	
Jurisdiction	Medical restrictions for obtaining a firearms licence
New South Wales <i>Firearms Regulation 2006.</i> (http://www.legislation.nsw.gov.au/fullhtml/inforce/subordleg+512+2006+FIRST+0+N#pt.2)	<ul style="list-style-type: none"> any mental illness or other disorder that may prevent the applicant from using a firearm safely.
Victoria <i>Victoria Police. Fit and proper persons.</i> (http://www.police.vic.gov.au/content.asp?Document_ID=34426 [last updated 31 March 2012]); <i>Alzheimer's Australia. Dementia and firearms information sheet 2011.</i> (http://www.fightdementia.org.au/common/files/VIC/20111808_FAandDementia_VIC_Info_Sheet.pdf)	<ul style="list-style-type: none"> psychiatric, depression, stress or emotional problems; alcohol- or drug-related problems; stroke or head injuries; any other medical condition which could preclude the applicant from obtaining a licence and possessing firearms (this may include but does not refer to dementia); and/or any physical disability which may preclude the applicant from obtaining a licence and possessing firearms.
Australian Capital Territory <i>Adult firearm licence application. ACT Firearms Act 1996 – part 7.</i> (http://www.police.act.gov.au/~media/act/pdf/adult-firearms-licence-application.ashx)	<ul style="list-style-type: none"> physical and/or mental disability that may render the applicant unfit to use or be in possession of a firearm: <ul style="list-style-type: none"> mental and or emotional illness; excessive alcohol consumption; illicit drug use or dependence; fits, blackouts, dizziness; and/or serious head injuries.
Tasmania <i>Tasmania Police. Application for firearms licence (Firearms Act 1996).</i> (http://www.penguinclaytargetclub.com/images/Firearm%20Information/Applicatio%20for%20a%20firearm%20licence.pdf)	<ul style="list-style-type: none"> mental or emotional problems; fits, dizziness, blackouts; alcohol- or drug-related problems; and/or any serious injury.
Queensland <i>Queensland Police. Weapons and health issues.</i> (http://www.police.qld.gov.au/programs/weaponsLicensing/licenceApplication/applicant/healthandweapons.htm [last updated 25 August 2014])	<ul style="list-style-type: none"> serious visual impairment; fits, dizziness or blackouts; head injuries; psychiatric or emotional problems; alcohol- or drug-related problems; and/or physical impairment.
South Australia <i>South Australia Police. Firearms Act 1977. Application for a firearms licence.</i> (https://www.police.sa.gov.au/_data/assets/pdf_file/0006/2589/firearms_licence_form_pd303.pdf [revised 5 December 2011])	<ul style="list-style-type: none"> any physical or mental instability which may render the applicant unfit to use or be in possession of a firearm.
Western Australia <i>Firearms Regulations 1974 – Schedule 1.</i> (http://www.austlii.edu.au/au/legis/wa/consol_reg/fr1974211/sch1.html)	<ul style="list-style-type: none"> treatment for any medical condition or regularly used prescribed medication or other drugs in the last 5 years; and/or a diagnosis of any physical or mental condition that could affect fitness to hold a firearm licence.
Northern Territory <i>Northern Territory Police. Firearms licences permits information.</i> (http://www.pfes.nt.gov.au/Police/Firearms-Weapons/Firearms-licences-permits-information.aspx)	<ul style="list-style-type: none"> any history of mental illness or incapacity which could affect fitness to hold a licence.

Do doctors have any obligations in relation to firearm licences?

Current practice

Little is written about practices of Australian doctors in screening and reporting access to firearms for perceived at-risk patients. In a survey of 243 psychiatrists and general practitioners in Queensland, 93% of respondents believed that doctors had a role in reporting people they considered at risk of firearm violence. However, only 85% of psychiatrists and 50% of GPs reported *sometimes* asking patients about firearm access.²¹ Doctors were more likely to ask about firearm access if they believed their patient to be at risk of violence (65%) rather than suicide (22%). In America, only 25% of adult psychiatrists reported having

routine procedures for identifying patients who owned firearms.²² Among US physicians treating older patients with depression and suicidal ideation, 42% reported not enquiring about firearm access with patients or their families.²³ Given the high rate of suicide by firearms, closer monitoring and assessment of firearm access have been recommended as an important part of treatment planning, particularly for older male patients with dementia.¹⁷

The law

Who can acquire a firearms licence?

Requirements to obtain a firearms licence vary between Australian states and territories. Minimum requirements common to all jurisdictions are that the person is a resident of the state, is over 18 years of age, has completed a

2 Recommendations for doctors: a combined capacity and risk assessment incorporating relevant personality, physical and cognitive factors, symptoms of mental illness and behavioural symptoms with an assessment of capacity to own and use firearms

1. Screen for access to firearms as routine part of assessment of risk, particularly in rural areas.
2. Take a corroborative history from caregiver and family regarding access to firearms.
3. Assessment of risk and capacity (initially and at periodic review):
 - Risk
 - ▶ physical factors: does the person have intact vision, praxis and level of consciousness (eg, dizziness, seizures or blackouts)?
 - ▶ cognitive factors: is memory loss, or visuospatial or frontal lobe impairment present?
 - ▶ psychiatric factors: has there been a diagnosis of depression, schizophrenia or bipolar disorder, and what symptoms have manifested (eg, paranoid ideation, hopelessness and auditory hallucinations — especially command-type)?
 - ▶ personality factors: are there features of borderline, antisocial or paranoid personality and how have these manifested (eg, impulsivity, aggression, suicide, poor frustration tolerance, intense anger, irritability and aggression, affective instability, a disregard for the safety of others or oneself, a paranoid world view and lack of remorse)?
 - ▶ behavioural symptoms: are there symptoms such as agitation, aggression or impulsive disinhibited behaviour, which may occur in both dementia and mild cognitive impairment?
 - ▶ substance misuse — is there current substance misuse?
 - Capacity
 - ▶ does the person understand the nature and responsibilities of, and safety regulations associated with, a firearm licence?
 - ▶ if the person has mental illness or dementia, does the person have insight into this diagnosis and how that might affect these responsibilities and the risk associated with firearm ownership?
 - ▶ has the person taken any precautions to mitigate the risks?
4. Early planning and involvement of the individual in decision making, eg, at diagnosis of dementia or during screening risk assessment and periodic review for mental illness:
 - can the person engage in forward planning to mitigate risk during future relapse of illness or deterioration in cognition?
 - involve the carer. Include a discussion of the risks, and why and when the person might need to give the gun and licence up (see http://www.fightdementia.org.au/common/files/VIC/20111808_FAandDementia_VIC_Info_Sheet.pdf). Suggest an advance gun directive.
5. Support for families with risk management, especially if the person has dementia. If the person is no longer capable of being involved in decision making about firearm removal and/or refuses:
 - work with caregiver to disable guns or remove access to firearms. Consider graded steps, eg, take away gun cabinet keys, ensure ammunition is locked away separately, as mandated by law.
 - discuss ideas for how to redirect or distract the person from discussions about guns.
 - give practical suggestions for living without firearms, eg, have someone else with a licence come to the property when the need arises, such as with pest control.
 - consider strategies like having someone else “borrow” or “store” the firearm permanently. Alternatively, families or caregivers could sell the guns or say the guns need to be taken away for professional cleaning.²⁶ Be aware that these strategies may be sufficient for a casual shooter, but that a long-term owner of firearms may recognise these statements as false.
 - for long-term firearm owners it may be more appropriate to have the firing mechanism removed by a gunsmith, thereby rendering the gun inoperable but enabling the individual to retain a sense of control and an important part of his or her identity.
6. Notify state police and family where there are concerns regarding access to firearms.
7. Determine eligibility to retain licence at regular intervals for patients with previously identified limitations in capacity to possess or use a firearm. ◆

firearms safety training course, can confirm his or her ability to meet safety storage requirements and is a “fit and proper person” — an ambiguous term — who may be trusted to possess a firearm without endangering public safety National Firearms Agreement.⁷ All applicants are subject to personal history checks that prevent people with a criminal history obtaining a firearms licence (eg, those subject to an apprehended violence order). In all Australian jurisdictions, a licence may be denied if there

is evidence of mental or physical conditions rendering the person unsuitable to possess, own or use a firearm (Box 1).⁷

Firearm licence renewal notices are sent to licence holders 2 months before expiration; however, there is no routine follow-up of lapsed licences. When a firearm licence is due for renewal, licence holders must disclose whether they have a condition which would preclude them from continuing to hold a firearm (Box 1). The applicants may be asked to obtain a medical report from their doctor outlining their suitability to hold a firearm licence.

What is the doctor's role?

In Australia, health professionals *should* notify the state or territory commissioner of police when treating people who have made threats to harm themselves or others, or when they believe that people may be at risk to their own or public safety if they possess a firearm. Section 79 of the *Firearms Act 1996* (NSW) and section 38 of the *Weapons Prohibition Act 1998* (NSW) protect a health professional from criminal or civil liability that may arise when they breach patient confidentiality by disclosing such information to the commissioner of police. The health professional must complete a notification form and fax it to the police station nearest to the patient's home address as well as to the relevant state or territory firearms registry, according to the jurisdictional Firearms Act. The police will check whether the person has a firearms licence, permit and possession of a firearm. Aside from situations where risk is involved, the onus is on the individual applying for the firearm licence rather than the treating doctor to declare relevant physical or mental health conditions.

In the event of licence suspension or firearms seizure, owners may request a doctor's opinion regarding whether they may continue to hold a firearms licence.²⁴ The firearms registry then makes a decision about the course of action.

While it is clear that doctors should report concerns about risk assessment of patients with firearms, there is no formal obligation to conduct capacity assessments. However, there are advantages of capacity assessment over risk assessment in this situation, and doctors are well placed to evaluate capacity in their patients. The weak relationship between clinician risk assessment and accurate prediction of adverse outcomes such as suicide justifies the search for a more effective alternative.²⁵ A capacity assessment judges the ability of the individual to understand the nature, effects and risks of firearm ownership. One advantage of this shift in focus is that it does not unfairly discriminate against people with unspecified mental illness regarding firearm ownership. Rather it concentrates on establishing the effect of the illness on the understanding of firearm ownership responsibilities and safety compliance.

A capacity model of assessment would incorporate the complexity of the task of firearm ownership and the consequences of impaired decision making around this task, which are important in terms of harm. Capacity to hold firearms would be considered a complex, higher order task, requiring ongoing constant vigilance and compliance with established safety standards. It would therefore require a high level of cognition and mental

health stability. Capacity may therefore vary depending on mental state; for example, during an episode of acute mental illness compared with remission. Using this model, it is possible that capacity to possess and use a firearm, similar to other higher order complex tasks, such as driving and financial management, may be lost in early dementia, and perhaps even during mild cognitive impairment; this will vary between individuals. Conversely, those who have held a firearm licence for many years may have preserved crystallised intelligence (the ability to use knowledge, skills and experience) enabling them to retain the required information and skills to safely possess and use a firearm for longer. Additionally, concerns for safety, respect and familiarity with one's firearm may differ markedly between long-term committed gun owners and casual shooters. These arguments go towards methodical, individualised assessments of capacity, and against any generalised statements about capacity and cognitive decline.

Surprisingly, and in contrast to drivers licences, although organisations such as the Firearm Safety and Training Council in NSW hold the mandatory firearm safety courses required for initial licence applications, there is no formal mechanism for subsequent monitoring or practical assessment of ability to use a firearm for licence holders whose capacity is later questioned. It is sufficient for a concerned health professional to notify the jurisdictional firearms registry, which will then review the person's suitability to retain their licence without formal practical assessment of the person's skills, knowledge or capacity to use a firearm.

We suggest a combined capacity and risk assessment model, incorporating assessment of relevant personality, physical and cognitive factors, and symptoms of mental illness or behavioural symptoms with an assessment of capacity to own and use firearms (Box 2). This assessment could be conducted in 40 to 60 minutes, depending on the complexity of the patient's conditions and how well they are known to the doctor. As capacity and risk are dynamic, a plan for regular review and reassessment is essential. The clinical cases in Box 3 highlight relevant factors in assessing patients with firearm access.

Ethical implications

Unlike the US, Australia does not have a constitutional right to bear arms, and self-defence is not a genuine reason for having a firearm licence. Nonetheless, in Australia, gun use and ownership are valued by many for recreational and occupational use. However, concerns about safety must be weighed against individual rights and freedoms.¹⁸ If, as in the case with driving licences, restrictions are made arbitrarily on the basis of age, discrimination against older people may occur.¹⁸ Similarly, excluding anyone with a mental illness or dementia from gun ownership is unjust and unsupported by evidence. A more nuanced approach might rely on capacity assessment combined with consideration of risk factors such as the presence of paranoid or suicidal ideation and of cognitive impairment.¹⁸

Treating doctors may have potentially conflicting roles as both clinicians and evaluators of licence suitability.²⁸

3 Clinical examples highlighting relevant factors in assessing patients with firearm access

Case 1

A 47-year-old man with hepatitis C was referred to a psychiatrist for an assessment for suitability to commence combination ribavirin and interferon treatment, as a result of a past history of mood instability. He was a member of a bikie gang, had a history of periods of incarceration for assaults and robbery and reported having a very short fuse and anger problems. During the assessment he disclosed that he had a "stash of guns" available to him should anyone "cross him", and added he would not reveal where they were.

Case 2

A 91-year-old socially isolated man with vascular dementia was admitted to a general hospital after an overdose of diazepam and an antihypertensive. He was assessed by a psychiatrist, and revealed that the overdose was taken with suicidal intent in the context of a major depressive illness. Over the course of admission he revealed that he had made three of five instalments to purchase an illegal gun from a local tobacconist, with the purpose of killing himself.

Discussion

Consider the case histories. In both cases, access to firearms was discovered during psychiatric assessment rather than through a routine or dedicated screening process. The first case demonstrates the potential of increased risk of violence in a person with antisocial traits, previous violence and poor impulse control, but no actual psychiatric illness.

This history, combined with the proposed interferon treatment, which may increase irritability, hostility and anger,²⁷ presents an ethical dilemma for the clinician. The doctor may decide to breach confidentiality and report gun possession to police and/or to deny the patient this treatment for hepatitis C due to concerns about risk. The patient may blame the doctor for loss of the licence. Doctors may fear the consequences for their own safety (including being shot), knowing they have acted contrary to their patient's wishes and breached confidentiality. Alternatively, the doctor may respect the patient's right to access treatment and recommend that he proceed, but notify other clinical staff of the concerns and the need for close monitoring. Ultimately, the clinician should discuss the dilemma and risks with other members of the team and together they should make a decision about treatment.

In the second case, a man with known dementia, depression and a high-lethality suicide attempt revealed that these medical problems are no barrier to the black market purchase of a gun. There was no identifiable family or carer who was aware of his plans and at-risk mental state. He did not have a firearm licence and does not fit the profile of someone a doctor might think likely to have access to a firearm to trigger screening for this important risk factor. Additionally, the doctor is obliged to report the tobacconist's illegal firearm sale to the police. ♦

The latter may impinge on the objectivity of their decision making and rapport with the patient. Additionally, patients may be reticent to disclose mental illness and homicidal or suicidal thoughts knowing it may affect their chances of obtaining or keeping a firearm.²⁹ Similar to driving, for some, firearm ownership and use are integral and enduring aspects of their life, closely bound to their identity, occupation and self-esteem.²⁰ For them, losing a firearm licence may be especially distressing.

Conclusions

Although firearm ownership is relatively uncommon in Australia, screening for firearm access should be a routine part of risk assessment due to potential serious adverse consequences of lacking capacity to use a firearm. We therefore propose recommendations for doctors treating patients with firearms (Box 2). At a minimum, it is prudent for doctors to test vision and cognition and to have the person demonstrate proficiency (and safety) in firearm use with an appropriate assessing organisation.²⁰ Suggestions for carers of people with dementia may be found online through Alzheimer's Australia (http://www.fightdementia.org.au/common/files/VIC/20111808_FAandDementia_VIC_Info_Sheet.pdf). Similar to drivers licences, it has been suggested that firearm licences should be reassessed at regular intervals, and more frequently in older people.²⁰ Overall, the emphasis should be on comprehensively assessing capacity

to possess and use a firearm, and managing identified risks, rather than simply focusing on physical or mental health diagnoses.

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