



Response to:

Consumer Affairs Fairer Safer Housing
Residential Tenancies Act Review

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Executive Summary

The Chase and Tyler Foundation welcomes this important review and the opportunity to make a submission on behalf of Victorian tenants and urges Consumer Affairs Victoria, via Fairer Safer Housing, to support the recommendations contained in this submission.

The Directors of the Chase and Tyler Foundation advocate that there should be a minimum standard before a property can be released onto the rental market, as well as ongoing safety checks and servicing. Investing in a property is a business decision and landlords should be obligated to the same laws and legislation for providing employees with a safe place to work.

Our message is simple – Landlords have a duty of care to provide safe secure housing, as it is a fundamental human right.

The deaths of Chase and Tyler Robinson

On a cold evening on the 29th May in 2010, Chase 8, Tyler 6 and their mother Vanessa went to bed with the gas heater kept on low in the family lounge room to keep their rental premises warm overnight. Their mother was roused disorientated and severely unwell the following evening around 6:00 pm - a full day had been lost. Chase and Tyler had died through the night from carbon monoxide (CO) poisoning, whilst their mother was admitted to hospital for a month and a half as a result of acute exposure.

The killer? A gas heater, which due to the lack of servicing, created CO that spilled throughout the home at deadly levels.

The death of Chase and Tyler highlighted that there was little to no knowledge within the Australian community regarding the requirement for regular ongoing maintenance to gas and fuel burning appliances, appropriate ventilation requirements when running these appliances and knowledge about CO poisoning. Also identified, were that trades within the energy, building, medical and emergency sector, had little knowledge when it came to regular servicing of gas and fuel appliances and diagnosing CO and identifying associated risks.

¹Gas Technology Services and the Australian Gas Association conducted further investigations on the gas wall furnace within the rental property of Vanessa, Chase, and Tyler Robinson. It was found to have a thick layer of soot build-up within the heat exchanger and the presence of foreign matter, such as dust or carpet lint which partially/wholly blocked the main burner primary air opening, reducing the amount of air in the primary supply and disturbed the ratio of air to gas, thereby producing CO.

By using the same external weather conditions as per the night of the incident and the operation of two extraction fans within the rental property, the presence of CO within the bedrooms was recorded at 800 parts per million. It was hypothesised that had that scenario continued, after around three hours the concentration may well have exceeded 1000 ppm.

Table 1. Levels of COHb and clinical manifestations

CONCENTRATION (%)	SYMPTOMS AND EXPOSURE TIME
35 ppm (0.0035)	Headache and dizziness in 6 to 8 hours of constant exposure
100 ppm (0.01)	Slight headache in 2 to 3 hours
200 ppm (0.02)	Slight headache, loss of judgment in 2 to 3 hours
400 ppm (0.04)	Frontal headache in 1 to 2 hours
800 ppm (0.08)	Dizziness, nausea, and convulsions in 45 min; unresponsive within 2 hours.
1,600 ppm (0.16)	Headache, tachycardia, dizziness, and nausea in 20 minutes; death in less than 2 hours.
3,200 ppm (0.32)	Headache, dizziness and nausea in 5 to 10 minutes. Death within 30 minutes.
6,400 ppm (0.64)	Headache and dizziness in 1 to 2 minutes. Convulsions, respiratory arrest, and death in less than 20 minutes.
12,800 ppm (1.28)	Unconsciousness after 2 to 3 breaths. Death in less than 3 minutes.

¹ Heffer, J – Coroner (2013) *Finding into a death with inquest - Chase and Tyler Robinson*.

²At the inquest of Chase and Tyler, various other factors within the property identified what led to the death of Chase and Tyler, and the injury of their mother was that³:

- the property had a high energy rating with little adventitious ventilation.
- the house was retrofitted with additional DIY exhaust fans, which caused a negative pressure drawing combustion products (including CO) back down the flue and spilling into the home.

Since the accident, Vanessa Robinson has worked alongside Energy Safe Victoria, appearing in domestic consumer awareness campaigns as well as Licensed and qualified gas fitters training DVD. Vanessa was also a silent partner alongside the Hon Dr. Sharman Stone who called on state and federal leaders to push for legislative changes in regards to gas safety, which the government then headed the National Gas Safety Strategy, by the Department of Resources, Energy and Tourism.

Carbon Monoxide

You can't see, taste or smell CO, but at high levels it can kill a person within minutes. CO is produced when there is incomplete combustion, for example when fuels such as gas, oil, coal and wood do not burn properly. In the home this is most commonly caused by appliances and flues that have been incorrectly installed, not maintained or are poorly ventilated.

There are two main categories of CO poisoning: acute, which is caused by short exposure to a high level of carbon monoxide, and chronic or sub-acute, which results from long exposure to a low level of CO. The symptoms and signs depend on the level of CO in the environment and the length of exposure, as well as the patient's state of health.

³CO poisoning is known as the great imitator for its ability to present with equivocal signs and symptoms, many of which closely resemble other diseases. In particular, patients may be misdiagnosed with viral illness, acute myocardial infarction, deteriorating cognitive ability and migraine. It is estimated that CO poisoning misdiagnosis may occur in up to 30-50 percent of CO-exposed patients presenting to emergency departments. Failing to recognise carbon monoxide poisoning may result in the return of vulnerable patients and their families to the toxic and potentially lethal environments. Patients with acute CO poisoning are more likely to present with more serious symptoms, such as cardiopulmonary problems, confusion, syncope, coma, and seizure. Chronic poisoning is generally associated with the more insidious symptoms. Low-level exposure can exacerbate angina and chronic obstructive pulmonary disease, and patients with coronary artery disease are at risk of ischemia and myocardial infarction even at low levels of CO.

In Australia, the statistics concerning the incidence of accidental CO poisoning (as opposed to suicides) are limited. The Australian Bureau of Statistics collects data concerning accidental poisoning in Australia, but does not classify these statistics into different types of poisoning. The records do not capture the number of people who are unwillingly exposed to low levels of CO poisoning; levels that may cause long-term ill health but go unrecognised and misdiagnosed. This type of CO poisoning is, by its very nature, an unknown.

Gas Safety Strategy

⁴It was established throughout the development of the Gas Safety Strategy Regulation Impact Statement (and the Quantitative Risk Analysis that preceded it) that the risk of CO poisoning is rising due to a number of factors. This includes:

- improvements to the sealing of houses, particularly in retrofitted houses;
- the installation of powerful exhaust fans in bathrooms;
- increasing gas consumption rate of some gas appliances; and
- higher energy efficiency of gas space heating appliances resulting in lower flue temperatures and less flue pull.

² *Ibid* 1

³ Bartlett D. *The Great imitator: Understanding & treating carbon monoxide poisoning. Lethal Exposure. Elsevier Public Safety, Spring 2006.*

Baker MD, Henretig FM, Ludwig S. *Carboxyhemoglobin levels in children with nonspecific flu-like symptoms. J Pediatr. 1988;113:501-4.*

Barret L, Danel V, Faure J. *Carbon monoxide poisoning: A diagnosis frequently overlooked. Clin Toxicol. 1985;23:309-13.*

Grace TW, Platt FW. *Subacute carbon monoxide poisoning: Another great imitator. JAMA. 1981;246:1698-700.*

R, Kingston, Mathew, E (2011). *Clinical manifestation, effects, diagnosis, monitoring of carbon monoxide poisoning and toxicity - African Journal of Pharmacy and Pharmacology, Vol. 5(2), pp. 259-264.*

⁴ Allen Consulting Group Pty Ltd (2012). *The risk of carbon monoxide poisoning from domestic gas appliances - Decision Regulation Impact Statement*

The principal risk identified in the QRA related to the effects of powerful exhaust fans in the development of negative pressure situations and a lack of adequate ventilation for the proper operation of gas appliances. Moreover, awareness campaigns also fail to specifically target the appliance types (also identified in the QRA) as posing the greatest risk to the community — namely appliances with a natural draught flue. Consultations undertaken for this RIS have highlighted how little capability the public — including consumers and tradespeople involved in the building sector — has in recognising risks associated with gas appliances.

Objectives of the Chase and Tyler Foundation

The Chase and Tyler Foundation was founded in 2011, with its mission being to eliminate accidental CO poisoning throughout Australia by increased awareness, preventative measures, regulation, training and research.

Our Foundation's main focus is to:

- Provide education & awareness initiatives to further improve gas fossil fuel safety for the public and industry throughout Australia which includes the following:
 - General Public
 - Medical Community including:
 - GP's, Physicians, nursing staff, Emergency Departments, Ambulance officers, Australian Medical Association
 - Emergency Personal including, Firefighters and Police
 - Licensed and gas fitters and plumbers
 - Building industry
 - Real Estate/Landlords
 - Educational organisations (Primary, Secondary, TAFE and University) and childcare centers.
- Advocate to government, (both federal and state) to mandate gas appliance servicing and carbon monoxide alarms in all rental and government housing
- Advocate to, both federal and state governments to introduce mandatory Post-mortem CO testing in Australia
- Provide free CO alarms to vulnerable people throughout Australia.

Proposal

To ensure that residential premises do not expose tenants to health risk, we propose four recommendations to be included in the Tenancies Act.

Recommendation 1

Gas appliance inspections and servicing

Landlords/agents should be obliged by law to have all gas and fuel-burning appliances inspected annually or at least biennially, by a qualified gasfitter. This conforms to Energy Safe Victoria and manufacturers' strong recommendations that appliance to be serviced at a minimum of every two years.

⁵The current legislation concerning appliances is for them to be in 'good repair'. This is ambiguous at best, and sees landlords who are not prepared to part with money for regular servicing or are ignorant to the dangers associated with an unserviced appliance and may overlook the upkeep, even on request. Until a legal requirement is put in place, tenants continue to be at risk.

Having a gas appliance serviced maintains efficiency and prolongs the life of the landlord's investment.

Recommendation 2

Gas Safety Checklist Record

Tenants should be provided with a ⁶Gas Safety Checklist Record upon new tenancy. This allows tenants the opportunity to be informed about the appliances service history as well as the next expected service timeframe.

⁵ Residential Tenancies Act 1997 Act No. 109/1997

⁶ Energy Safe Victoria. Rooming house gas safety checklist

Recommendation 3

Installation of battery operated carbon monoxide alarms

All rental properties containing gas and fuel burning appliances should have 1 – 3⁷ CO alarms installed to ensure additional safety precautions in case of a sudden failure between servicing or a sudden appliance failure.

There is much controversy associated with carbon monoxide alarms in Australia, in that it is suggested they give consumers a false sense of security. In so much as a smoke alarm does not prevent a fire, but gives the occupants a warning when smoke or fire is present, CO alarms do not prevent carbon monoxide being produced, but it will give the occupants a warning if it is present at dangerous levels in the room.

Carbon Monoxide alarm standard

Currently, Australia has no standard in place with regard to CO alarms, though they are widely available in hardware stores and supermarkets across Australia (including many substandard models – hence the requirement for an Australian standard).

The foundation recommends the EN50291 (European) or UL2034 (US) standards, due to numerous years of rigorous testing by government and independent organisations regarding the improvement of performance and reliability.

Location of alarm and installation⁸

CO alarm manufacturers suggest installing CO alarms in or near to every room that has a gas heating appliance, and that when selecting installation locations, to make sure the alarm is audible from all sleeping areas.

Alarms located in the same room as a gas heating appliance should be located as directed by the manufacturer's installation instructions. If there is a partition in a room, the unit should be located on the same side of the partition as the gas heating appliance.

Alarms should also be installed in or near bedrooms or other rooms remote from gas heating appliances, which are normally occupied, and should be located relatively close to the breathing area of the occupants.

Recommendation 4

Adherence to Regulations and Codes and retrofitting of ventilation appliances

Any rental properties containing gas or fuel burning appliances should be assessed for adherence to all building, plumbing and electronic regulations and codes before being leased.

Retrofitting of ventilation appliances, such as extraction fans within properties containing gas and fuel burning appliances, should legally be installed by a licensed builder, gasfitter or electrician, to reduce the likelihood of poor ventilation caused by DIY projects.

Ventilation and energy efficient homes⁹

Houses are increasingly being retrofitted to improve energy efficiency by reducing the rate at which air is exchanged between the inside of a house and the outside environment. This air exchange results in the transfer of heat, requiring increased energy use to maintain temperatures within a dwelling. As a result, houses are increasingly being fitted with better sealing around windows and doors to reduce the rate of air exchange between inside and outside environments (i.e. preventing drafts).

Improved house sealing is producing problems on two accounts. Firstly, the reduction in the frequency of air exchange between the internal and external environments can result in a lack of air being available for complete combustion in cases where appliances, such as natural draught space heaters, draw air for combustion from the internal environment. Prolonged operation of these appliances in confined spaces with insufficient ventilation can reduce the level of air for combustion. Well-sealed houses may not provide sufficient oxygen for combustion, resulting in the production of CO.

Increasing the air tightness of houses is often associated with the installation of extraction fans in bathrooms and other areas to remove moisture-rich air. Combining the use of powerful extraction fans with increased weather sealing can produce a negative pressure gradient between the internal and external environments.

⁷ *Dependant on the size of the property and the quantity of fuel burning appliances within the establishment.*

⁸ *Energy Safe Victoria - Gas Information Sheet No. 36 Carbon Monoxide Alarms for Domestic Use*

⁹ *Allen Consulting Group Pty Ltd (2012). The risk of carbon monoxide poisoning from domestic gas appliances - Decision Regulation Impact Statement*

When this pressure gradient develops, air will travel from the higher-pressure external environment into the lower pressure environment inside the house. When this situation develops often air is drawn into the house down the flue of a natural draught open flued gas appliance. When this occurs the airflow of the flue is reversed, resulting in the spillage of combustion products into the internal environment. This is called adverse flow.

Conclusion

Since 2010, there has been a heightened awareness of the need to service and maintain gas heaters due to the deaths of Chase and Tyler Robinson and the combined CO awareness campaigns of Energy Safe Victoria and the Chase and Tyler Foundation. Thousands of dangerous gas appliances operating throughout Victorian were found to be producing high levels of carbon monoxide. After more than six years campaigning for change, the issue remains. Dangerous appliances generally go undetected until a licensed gasfitter conducts an inspection and service, or condemns the gas appliance completely. During the time frame of the spillage and the incident being resolved, irreparable damage can occur to community members' health, not to mention the potential of death.

Currently, if a gasfitter finds unsafe CO levels being produced by a gas heater, there is no compulsory reporting requirement. This means that government and industry are not getting a true reflection of the continued health and safety risks the community members is facing.

Until regulation changes to mandatory servicing of gas and fuel burning appliances in rental properties, tenants will literally be risking their lives.