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This issue of Hazard describes the frequency, pattern, causes and mechanisms of fatal and hospital-treated asphyxia in children. Recommendations for prevention and first aid advice are provided.

Unintentional asphyxia (choking, suffocation and strangulation) in children aged 0-14 years

Melinda Congiu, Erin Cassell, Angela Clapperton

Summary

Asphyxia is defined as a lack of oxygen in the blood, due to interference with respiration (breathing), leading to loss of consciousness or death. The main causal sub-groups of asphyxia are choking, suffocation and strangulation. This report covers unintentional asphyxia.

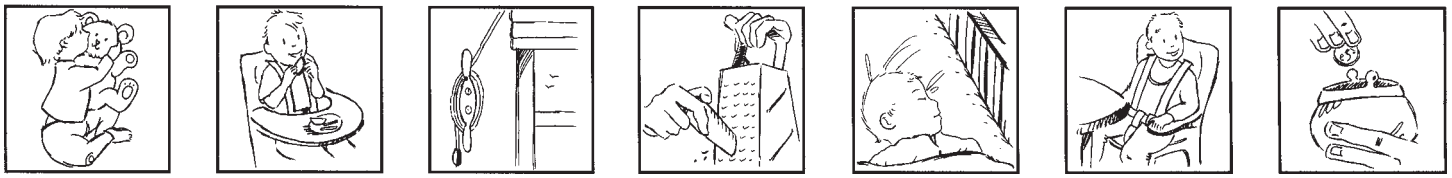
Fatality, hospital admission, and Emergency Department (ED) presentation data for unintentional asphyxia in children aged 0-14 years were extracted from Victorian Injury Surveillance and Applied Research (VISAR) datasets, for the latest available three-year period (January 2000 to December 2002 for fatalities and July 2000 to June 2002 for hospital treated cases).

Over the three-year study period, there were 13 deaths in Victoria resulting from unintentional asphyxia. Asphyxia ranked as the third highest cause of injury death in children, behind transport (n=65) and drowning (n=24). Twelve of the asphyxia deaths occurred in children aged 0-4 years. The major causes were suffocation and strangulation in bed, accidental hanging and strangulation, and inhalation or ingestion of food causing obstruction of the respiratory tract. Mechanisms included entrapment of the child's neck between the side of a cot and the wall, in a chair, in a collapsed pusher and hanging by string/rope/twine and a knitted top. Cases involving food inhalation were not well described but one was caused by reflux inhalation of a food bolus and another possibly by a lolly.

At least 324 Victorian children aged 0-14 years were treated in hospital for unintentional asphyxia over the three-year study period comprising 224 hospital admissions and at least 110 ED presentations. Males were slightly over represented in hospital treated cases, comprising 61% of admissions and presentations. Over 75% of admissions and presentations were young children, aged 0-4 years. Available evidence indicates that children with physical and intellectual disabilities and some medical conditions may be at an increased risk of asphyxia.

Choking on food and small objects accounted for 82% of hospital admissions and 61% of presentations for asphyxia. Young children are particularly vulnerable to choking on food because of their small size and immature anatomy, developmental stage, ability to bite better than they can chew and the smaller diameters of their airways. Some of the food items that are hazardous to children are hard lollies, apples, carrots, nuts and pieces of meat.

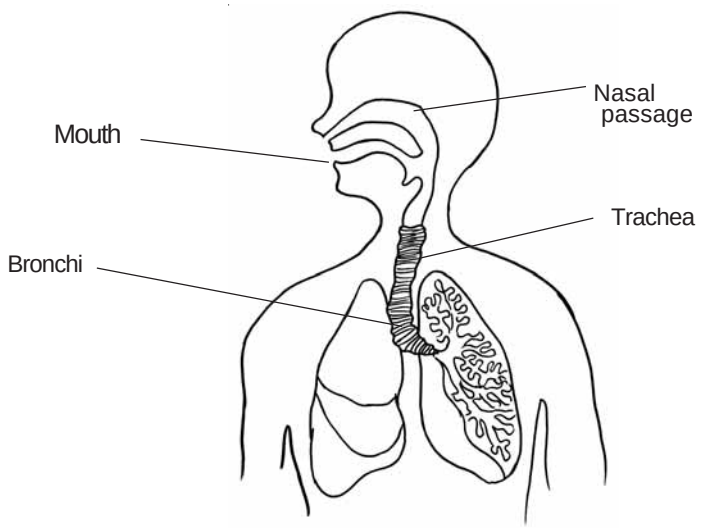
The natural tendency of children to put objects in their mouths further increases their vulnerability to choking. Coins were the most common small object involved in choking.



Suffocation and strangulation cases were comparatively rare. Incidents included child strangulation on cords (clothing, curtain and venetian blind) and compression of the neck when a child's head became entrapped between railings/ objects.

A multi-faceted approach is necessary to reduce the risk of unintentional asphyxia in children. A combination of education, publicity, regulation, design modification and adequate safety standards should reduce the number of children injured and killed by choking, strangulation and suffocation.

Diagram of the human respiratory system **Figure 1**



Introduction

Unintentional asphyxia is an important and preventable cause of childhood death and injury, especially in toddlers and young children.

This report covers unintentional childhood asphyxia cases. Unintentional drowning and immersion cases are classified separately and were not included in this analysis. Asphyxia is defined as a lack of oxygen in the blood, due to interference with respiration, leading to loss of consciousness or death. Causal subgroups of asphyxia include choking (foreign body inhalation/ aspiration), suffocation, and strangulation (Altman & Ozanne-Smith, 1997). Choking is the interruption of respiration by internal obstruction of the airway. Only choking cases that caused a threat to breathing were selected. Suffocation is an obstruction of the airway by an external object blocking the nose and mouth. Strangulation results from external compression of the airway by an external agent, such as string, caught around the neck or entrapment of the neck (Tarrago, 2000).

Figure 1 shows the respiratory system. The trachea is the tube that provides air to the lungs. The major cause of asphyxia in children is choking, when a foreign body (such as a food item or a small object) is inhaled through the larynx into the right main bronchus (Tan et al., 2000). The signs and symptoms associated with foreign body aspirations are observed in three stages (Tan et al., 2000). The most frequent initial symptom is a choking episode, followed by paroxysms of coughing, gagging, wheezing and occasionally airway distress. The second stage is asymptomatic. The third stage is characterised by symptoms of complications including a worsening and prolonged cough, asthma, seizure, stridor (a shrill, harsh sound indicating laryngeal obstruction), pneumonia and sudden chest pain.

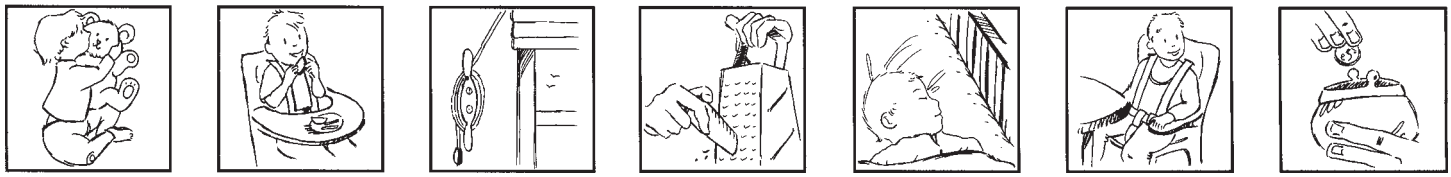
Methods

Victorian fatality data were extracted from the Australian Bureau of Statistics (ABS) Death Unit Record File (DURF) for the 3-year period January 2000 to December 2002. This dataset contains deaths registered by State Registrars of Births, Deaths and Marriages. Some additional detail on the causes and circumstances of ABS-recorded fatalities were extracted from the National Coroners Information System (NCIS).

Non-fatal injury data were extracted from two datasets of hospital-treated injury cases held by VISAR: the Victorian Admitted Episodes Dataset (VAED) which records all Victorian public and private hospital admissions; and the Victorian Emergency Minimum Dataset (VEMD), which gathers presentation data from 28 of the 35 Victorian public hospital emergency departments (EDs). Deaths were excluded from the VAED, and deaths and admissions were excluded from the VEMD to avoid double counting. Data were extracted for the three-year period 2000/01 to 2002/03.

The VEMD data classification system does not clearly differentiate choking cases where there was a threat to breathing from other choking episodes (e.g. fish bones stuck in throat or respiratory tract). A conservative approach was taken and only cases where there was a confirmed threat to breathing were included in the analysis (110 of 467 possible cases).

The method for extracting data is described in more detail in Box 2 placed at the end of this report.



Results

Deaths

There were 13 deaths from unintentional asphyxia in Victoria recorded on ABS-DURF in the three-year study period of January 2000 to December 2002, representing 8.8% of all child injury deaths (n=148) over this period. Asphyxia was the third highest cause of childhood injury deaths behind transport related deaths (n=65, 43.9%) and drowning (n=24, 16.2%).

Of the 13 deaths, 12 occurred in children aged four years or under. Ten fatalities (77%) were male. Four deaths were caused by suffocation and strangulation in bed, four by 'other' accidental hanging and strangulation, and four by inhalation or ingestion of food causing obstruction of the respiratory tract. The cause of one death was unspecified.

At least 9 of the 13 asphyxia deaths occurred in the home (69%). No other details of the circumstances of the deaths are included in the ABS-DURF.

The Coroners database (NCIS) recorded 12 unintentional childhood asphyxia cases over the same 3-year period but only nine matched with ABS cases on year of death, age, sex and cause, probably due to coding differences. The NCIS provided a small amount of additional detail on the circumstances of the matched asphyxia deaths. Suffocations/strangulations in bed included a case where the child's neck was caught between the side of the cot and the wall and a child who strangled in 'bedding'; 'other' accidental hanging and suffocation cases included an entrapment in a collapsed pusher and two cases of hanging that occurred while children were playing, one by string/rope/twine and the other by a knitted top. Cases involving food inhalation were not well described but one case was caused by reflux, one by inhalation of a food bolus and another possibly by a lolly. Unmatched cases recorded on NCIS included a neck entrapment in a car window, and strangulation by a home building component/fitting (not further described).

Frequency of hospital treated asphyxia injury in children aged 0-14 years, Victoria July 2000-June 2003 **Table 1**

	Year of patient admission or ED presentation			
	2000/01	2001/02	2002/03	Total
Hospital admissions	65	84	75	**224**
Hospital presentations	29	37	44	**110**
Total	**94**	**121**	**119**	**324**

Sources
Hospital admissions: Victorian Admitted Episodes Dataset (VAED) July 2000 to June 2003.
Emergency department presentations (non-admissions): Victorian Emergency Minimum Dataset (VEMD) July 2000 to June 2003

Hospital-treated asphyxia

At least 324 Victorian children aged 0-14 years were treated for asphyxia in the three-year study period July 2000 to June 2003. There were 224 hospital admissions and 110 ED presentations (Table 1). The number of ED presentations is higher than identified, as the lack of specificity in case narrative data and misclassification led to the exclusion of many possible asphyxia cases.

Yearly trend

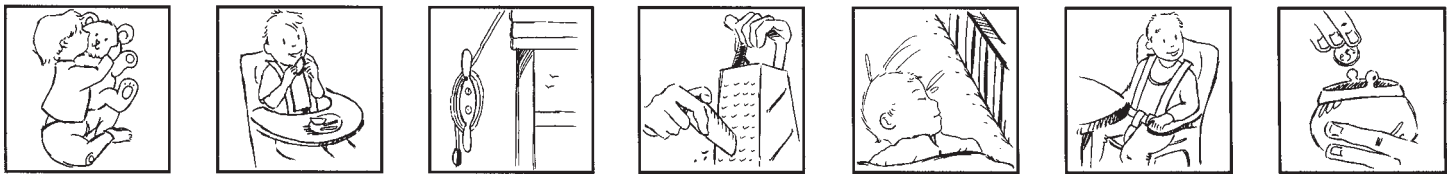
Figure 2 shows the trend in admission rates for both unintentional asphyxia and foreign bodies in the respiratory tract combined and separately in children aged 0-14 years over the ten-year period, July 1993 to June 2003. Foreign body records were selected using the cause codes E915: foreign body accidentally entering other orifice (ICD 9) and W44: foreign body entering into or through natural orifice (ICD10) and then narrowing cases to the respiratory tract using injury codes 933 to 934 (ICD 9) and T17 (ICD10). There is a sharp decrease in the hospital admission rate for unintentional asphyxia cases and a sharp increase in foreign bodies in the respiratory tract from 1997/98 to 1998/99. However, the rates for both causes combined remains constant over time. These changes coincide with the upgrade in the VAED classification system from ICD version 9 to ICD version 10 in July 1998. The upgrade in coding saw a change in the cause code 'E915: Foreign bodies into or through natural orifice.' The instructions for this code changed from excluding all cases of foreign bodies in the respiratory tract in ICD 9 (which were then coded to asphyxia) to only excluding cases of foreign bodies that caused *an obstruction* in the respiratory tract in ICD 10. Figure two shows that the decrease in unintentional asphyxia cases is contrasted by an increase in foreign bodies in a natural orifice cases, suggesting that some cases that were previously coded as unintentional asphyxia cases are now being more accurately coded to foreign bodies in a natural orifice.

Figure 3 shows hospital admission rates by 5-year age groups. It is evident that the rate was substantially higher for the 0-4 years age group than age groups 5-9 and 10-14 years. For example, in 2002/3 the hospital admission rate for the 0-4 year age group was more than six times the rate for 5-9 year olds and 9 times the rate for the 10-14 year olds.

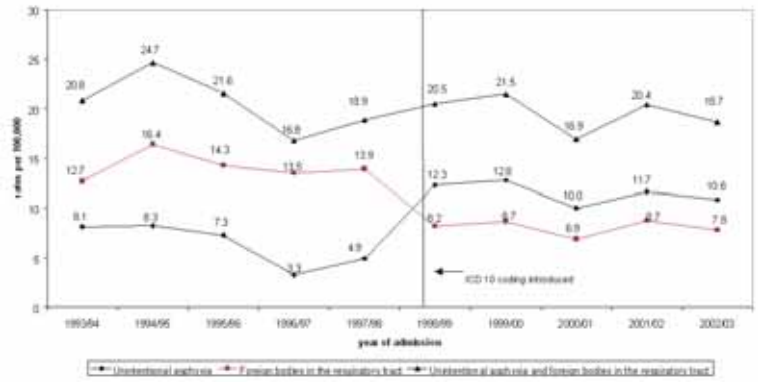
Frequency and pattern of injury

The pattern of unintentional asphyxia admissions and presentations is summarised in Table 2.

- Males are over-represented in hospital admissions and ED presentations (61%).

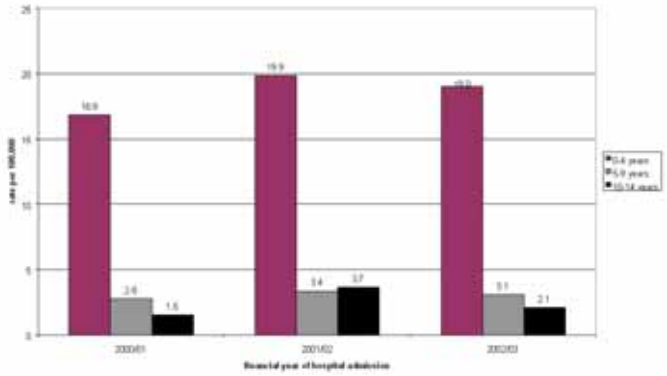


Trend in crude hospital admission rates for unintentional asphyxia and foreign bodies in the respiratory tract in children aged 0-14 years, Victoria July 1993-June 2003 **Figure 2**



Source: Victorian Admitted Episodes Dataset (VAED) July 2000 to June 2003.

Crude hospital admission rates per 100,000 population for unintentional asphyxia by age groups, Victoria July 2000 to June 2003 **Figure 3**



Source: Victorian Admitted Episodes Dataset (VAED) July 2000 to June 2003

Frequency and pattern of hospital treated asphyxia in children aged 0-14 years, July 2000-June 2003 **Table 2**

Characteristics	VAED admissions n = 224		VEMD presentations (non-admissions) n = 110	
	n	%	n	%
Gender				
Male	137	61%	67	61%
Female	87	39%	43	39%
Age groups in years				
0-4 years	170	76%	95	86%
5-9years	30	13%	13	12%
10-14years	24	11%	2	2%
Location (n=243)	n=150		n=93	
Home	105	70%	83	89%
School/day care/other institution	38	25%	4	4%
Other specified location	7	5%	6	7%

Sources
Hospital admissions: Victorian Admitted Episodes Dataset (VAED) July 2000 to June 2003.
Emergency department presentations (non-admissions): Victorian Emergency Minimum Dataset (VEMD) July 2000 to June 2003.

- The 0-4 year age group is well over-represented in both ED presentations (86%).
- The most common location of asphyxia was the home (67% of admissions coded for location and 85% of ED presentations coded for location).

Causes in detail

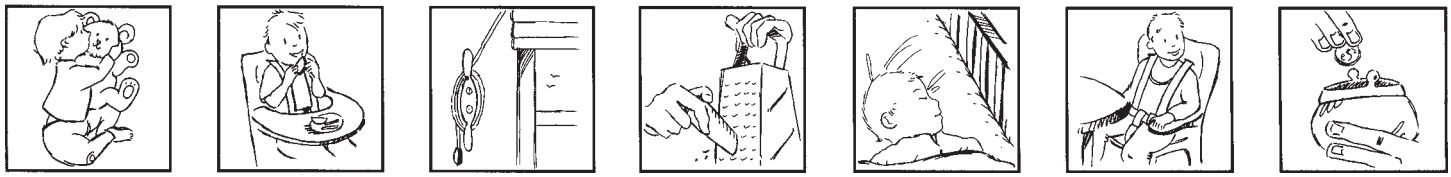
Table 3 shows a detailed breakdown of the causes of asphyxia admissions and ED presentations for the three-year period, 2000/01 to 2002/03. Note that the presentation data are not complete, because not all Victorian hospitals with 24-hour EDs contributed injury surveillance data to VEMD over the study period, and some records lack specificity.

To allow comparison with admissions, VEMD presentations were manually re-coded to the ICD-10 classification system, using case narrative data.

Choking on food was the most common cause of admitted asphyxia cases in children, accounting for nearly half of admissions (46%), closely followed by choking on other objects (37%). This pattern was reversed for ED presentations. Choking on other objects accounted for 32% of ED presentations whereas choking on food accounted for 26%.

Mechanisms of injury

VEMD case narrative data provide more information on the major mechanisms of choking injuries (Table 4). Cases that were admitted to hospital were included. The most common specified items to cause an obstruction of the respiratory tract are coins (19%), followed by lollies (10%), pieces of meat and chicken pieces (5%), nuts (3%), carrots (3%) and toys or parts of toys (3%). There are a large number of 'other specified' items. There are also a large number of cases where the item is not specified. This was due to the object not being seen by the parent or caregiver and not visible on presentation to the ED, or lack of specificity in narrative data.



A selected sample (n=30) of VEMD case narrative descriptions are summarised in Table 5. Selection was based on the quality of the narrative description and included presentations as well as cases that were admitted.

These scenarios provide some indication of the range of circumstances involved in asphyxia events. There were three accidental hangings and strangulations in ED presentations, and two involved curtain cords. Choking on a food item was a common scenario as was swallowing a small object. Other and unspecified threats to breathing commonly included choking incidents.

Co-morbidities

Analysis of diagnoses codes—excluding codes related to the signs and symptoms of asphyxia— indicated that a substantial proportion of asphyxia hospitalisations (56/224, 25%) involved children with disabilities and chronic conditions. The most frequently recorded co-morbidities were cerebral palsy (n=15), congenital malformations (n=9), asthma (n=8), chromosomal abnormalities (n=7), gastro-oesophageal reflux disease (n=6) and epilepsy (n=4).

Length of hospital stay

Just over two-thirds of patients admitted were in hospital for less than two days (67%); 21% stayed for 2-7 days; 8% stayed for 8-30 days, and 4% stayed for longer than 31 days. Of the 25 patients that stayed for 8 days or longer, 72% were aged one year or under. Ten of these cases reported pneumonitis (aspiration pneumonia) due to food and vomit, there were six reports of gastro-oesophageal reflux disease, five reports of feeding difficulties and mismanagement and four reports of pulmonary collapse.

Detailed causes of hospital treated asphyxia in children aged 0-14years, Victoria July 2000-June 2003 **Table 3**

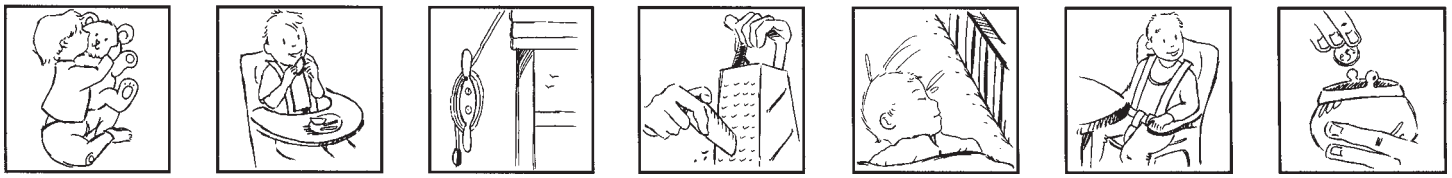
Cause of injury ICD10-AM codes W75-W84	VAED Admissions (n=224)				VEMD Presentations (n=74)			
	0-4 years	5-14 years	Total VAED	%	0-4 years	5-14 years	Total VEMD	%
W75 Accidental suffocation and strangulation in bed	2	-	2	<1%	-	-	-	-
W76 Other accidental hanging and strangulation	2	3	5	2%	2	1	3	3%
W77 Threat to breathing due to cave-in, falling earth and other substances	-	-	-	-	-	-	-	-
W78 Inhalation of gastric contents	17	6	23	10%	2	-	2	2%
W79 Inhalation and ingestion of food causing obstruction of respiratory tract (choking on food)	79	23	102	46%	25	4	29	26%
W80 Inhalation and ingestion of other objects causing obstruction of respiratory tract (choking on other objects)	62	20	82	37%	28	9	37	34%
W81 Confined to or trapped in a low oxygen environment	-	-	-	-	-	-	-	-
W83 Other specified threats to breathing	4	-	4	2%	1	-	1	<1%
W84 Unspecified threat to breathing	4	2	6	3%	37	1	38	35%
Total	170	54	224	100%	95	15	110	100%

Sources
Hospital admissions: Victorian Admitted Episodes Dataset (VAED) July 2000 to June 2003.
Emergency department presentations (non-admissions): Victorian Emergency Minimum Dataset (VEMD) July 2000 to June 2003.

Mechanism of choking injury, Emergency Department presentations and admissions, July 2000 to June 2003 (n=73) **Table 4**

Item as described in the case narrative	Number of cases	%
Food items		
Lollies	12	10%
Apple	6	5%
Meat and chicken	6	5%
Nuts	4	3%
Carrot	4	3%
Potato chip	3	2%
Biscuit	3	2%
Food, other	10	8%
Food, not further specified	3	2%
Sub total (all food items)	**51**	**43%**
Objects		
Coin	19	16%
Toy or part of toy	4	3%
Plastic	2	2%
Item of jewellery	2	2%
Nail, screw	2	2%
Other foreign body	16	14%
Foreign body not further specified	22	19%
Sub total (all objects)	**67**	**57%**
TOTAL	118	100%

Source
Victorian Emergency Minimum Dataset (VEMD) July 2000 to June 2003



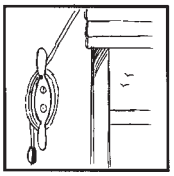
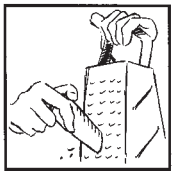
Common scenarios for unintentional asphyxia by cause

Table 5

Cause	Scenario
W76 Other accidental hanging and strangulation	*Cord to venetian blind around child's neck for 2 minutes. Red mark present on arrival.* *Airway obstruction – had his head caught in the chair, actually stopped breathing for 2-3 minutes. Commenced EAR and child responded. Neck swollen, had some blood discharge from nose and vomited once (child admitted)* *Resting in bedroom, curtain cord caught around neck*
W77 Threat to breathing due to cave-in, falling earth and other substances	*Patient building tunnel in sand. Tunnel collapsed on top of him, submerged for three minutes. Dazed and confused when extracted from tunnel (child admitted)*
W78 Inhalation of gastric contents	*Breastfeeding problems, choked on vomit* *Choked on vomit, cyanosed*
W79 Inhalation and ingestion of food causing obstruction of respiratory tract (choking on food)	*Cyanotic episode post obstruction due to lollypop. Grandmother dislodged lolly out of throat with a finger. Child had turned blue.* *Meat lodged in trachea* *Inhalation of custard this afternoon. Patient gagging with stridor (child admitted)* *Inhalation of cashew nut (child admitted)* *Pain in chest after swallowing hard lolly, complaining of breathing and movement difficulties* *Foreign body - bronchus, post ingestion of chicken bone. Has mild stridor (child admitted)* *Young child chewing carrot when inhaled piece. Mother held child upside down and patted him on the back* *Aspirated piece of apple. Bronchoscopy tomorrow (child admitted)* *Sitting in car and had been eating McDonalds. Mother noticed child was not breathing*
W80 Inhalation and ingestion of other object causing obstruction of respiratory tract (choking on other	*Foreign body to bronchus. Swallowed a coin this evening (child admitted)* *At home blowing up balloon. Inhaled balloon.* *Child known to have asthma. Tonight when taking inhaler also inhaled a piece of tissue. Reported stridor* *Swallowed something out of cupboard, mother noticed child choking and putting hand in mouth* *Inhaled piece of plastic straw and has now developed a cough* *Probable inhaled foreign body, sudden onset of noisy breathing while playing with beads and apples* *Respiratory distress- baby rushed into ED by mother. States choking on play dough* *Playing on bed when inhaled small plastic object (child admitted)* *Obstructed airway, toy removed. Traumatised upper airway, blood around nose and mouth (child admitted)*
W83 Other specified threats to breathing	*Child asleep in pram, pram tipped up. Child asphyxiated with equipment (child admitted)* *Apneic after being caked in sand (child admitted)*
W84 Unspecified threat to breathing	*Had a choking episode, gagging, blue around lips, frothy around mouth distressed for ten minutes* *Short choking episode while in bath* *Respiratory occlusion (?) with cessation of breathing* *Difficulty breathing (child admitted)*

Source: Victorian Emergency Minimum Dataset (VEMD) July 2000 to June 2003




Discussion

Unintentional asphyxia in children is a persistent and life-threatening problem. In this study, the most vulnerable groups for fatal and non-fatal unintentional childhood asphyxia were under 5 year olds and males. These findings are consistent with previous studies (Morley et al., 2004; Lima & Fischer, 2002; Tan et al, 2000; Altmann & Ozanne-Smith, 1997).

Over the three-year study period, asphyxia ranked as the third highest cause of injury death with almost all deaths occurring in the 0-4 year age group. Asphyxia fatalities were caused by accidental suffocation or strangulation in bed, other accidental hanging and strangulation, and obstruction of the airway by inhalation of food. The most common cause of hospital-treated asphyxia (admissions and ED presentations) was choking on small objects or food.

A number of physical and developmental factors influence the vulnerability of infants and young children to asphyxia injury, including disabilities and pre-existing health conditions. A variety of prevention strategies can reduce the risk of asphyxia in young children and increasing parental/carer knowledge and training in paediatric first aid can reduce the risk of fatal asphyxia.

Prevention of choking

Choking through inhalation/aspiration of foreign bodies (small objects and food) accounted for more than 80% of hospital admissions in our study. A risk factor increasing young children's vulnerability to choking on small objects is that they have a natural tendency to put things in their mouths (Rimell, 1995).

This study confirmed previous reports that small items, such as coins and small toys or toy parts, cause a high proportion of choking episodes in young children (Nixon et al., 1995; Altmann & Ozanne-Smith, 1997; Tan et al, 2000; Lima & Fischer, 2002; Morley et al., 2004). Although there was only one case of a child choking on an uninflated balloon in this study, several other studies have reported that balloons are a common cause of fatal and non-fatal choking (Rimell et al, 1995; Lifschultz & Donoghue, 1996; Abdel-Rahman, 2000; Tarrago, 2000).

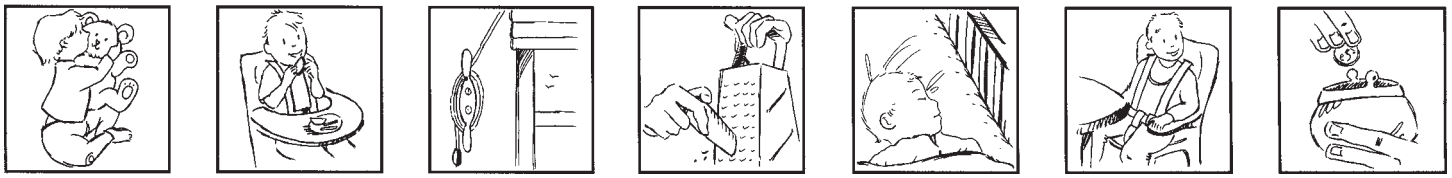
As shown in this study and previously (Morley et al., 2004; Lima & Fischer, 2002; Tan et al, 2000; Altmann & Ozanne-Smith, 1997), young children are also particularly vulnerable to choking on food. This is due to their immature anatomy and developmental stage (Tarrago, 2000). Absence of molar (back) teeth affects their ability to properly chew and grind food; consequently they may attempt to swallow large pieces of food whole. In addition, young children's airways have a small diameter, and their swallowing mechanisms are comparatively weak and ineffective, further increasing their risk of choking. Foods that are round or cylindrical and pliable or compressible and conform to the shape of the airway present the most danger.

In the present study available data indicated that the main foods involved in choking episodes were lollies, apples, meat, nuts and carrots. There is variation in the lists of foods implicated in asphyxia in the literature, mainly due to cultural, regional and feeding habit differences (Lima & Fischer, 2002). Nuts (especially peanuts) and seeds (including popcorn kernels), grapes, fruit stones and pips, hard lollies, raw carrot and apple, hot dogs and sausages are commonly identified by different authors (Nixon et al., 1995; Altmann & Ozanne-Smith, 1997; Tarrago, 2000, Tan et al, 2000; Lima & Fischer, 2002; Morley et al, 2004).

Children aged under 3 years explore their world by using their mouths and lack the experience and cognitive skills to avoid choking (Tarrago, 2000). They tend not to eat slowly and chew well. Choking is particularly likely if young children run, play, laugh or cry while eating. Inadequate adult supervision may contribute to the risk of choking because young children need to be reminded to take small bites and chew thoroughly. Children should not be fed by siblings unless under the supervision of an adult.

The present study indicates that children with physical disabilities (such as cerebral palsy) and chronic medical conditions (such as asthma and epilepsy) may be over-represented in asphyxia cases. Corroborative evidence from the literature was sparse because this potential risk factor for asphyxia has not been well researched in population-based or case control studies.

Sherrard et al (2001 & 2002) reported that a representative sample of children and young people aged 5-29 years with intellectual disability (ID) (n=465) had substantial excess injury mortality and morbidity (hospitalisations) than their counterparts in the general Australian population. Asphyxia— mainly caused by choking on food—was a major contributor to excess mortality and morbidity in the ID population. A case control study conducted in the U.S. reported that dysphagia (difficulty with swallowing) and choking while eating occurred more frequently in children with muscular dystrophy than in healthy aged matched controls (Jaffe et al., 1991). Shavelle et al. (2001) found elevated death rates from suffocation in persons with autism compared with the general population. Half of the eight deaths from suffocation occurred in age group 10-20 years but no further detail of the circumstances of the deaths were reported. There were also case reports of asphyxia in children with cerebral palsy (Nixon et al., 1995; Gadol et al., 1987) and Down syndrome (Mitchell et al., 2003).



Preventive measures

Preventive intervention should focus on educating parents and carers on the size and range of items that present a high risk for asphyxia in young children, monitoring the effectiveness of current legislation and standards that aim to control young children's access to toys with small parts and developing and promoting safe design/storage solutions to limit young children's access to hazardous objects.

Reducing choking on foreign objects

Awareness raising and education programs directed at parents and other caregivers

Awareness and education campaigns could assist in the reduction of childhood choking injuries. Education campaigns should focus on the following measures:

- Ensure that small objects such as coins, small toy parts, batteries, nails, screws and small items of jewellery are kept out of the reach of young children
- Select toys carefully by reading and heeding the advice label on the packaging
- Ensure older children's toys are kept away from younger children
- Regularly check a child's play area for small objects
- Check that small parts of toys have not broken off or become loose
- Never give uninflated balloons to small children. Always blow balloons up for children and supervise them while playing with balloons.

Legislation, standards and appropriate product labelling

In Australia, the Consumer Affairs (Product Safety) (Children's Toys) Regulations 1998, require that toys intended for children under three years of age must not have small parts that can pose an ingestion or inhalation hazard. Generally speaking, any object that is smaller than a table tennis ball or fits in a 35mm film canister is an ingestion or inhalation hazard, as this approximates the size of the fully expanded throat of a child under three years old (Consumer Affairs Victoria, 2003; CPSC, 2001). Any toy that is reasonably regarded as suitable for children under three must comply with the regulations. Simply labelling a toy with a warning '*Not suitable for children under 3 years,*' does not exempt a toy from complying with the regulations.

Current Australian legislation only requires that foam toys carry a warning: '*Not suitable for children under three years as foam pieces may break off and become a choking hazard*'. The Australian Standard (AS/NZ ISO 8124.1:2002) provides guidelines for safety labelling of toys that present a choking hazard, including small toys or toys that contain small parts, balloons, small balls and marbles, but this standard is voluntary rather than mandatory. The warning labels provided in the Standard conform to the recommendation from the research by Langlois et al. (1991). The authors concluded that labels identifying the hazard together with the age appropriateness statement are more likely to make an impact, such as '*Not recommended for below three – contains small parts.*' This statement could be used in conjunction with the recommended symbol (figure 4).

Graphic symbol for age warning **Figure 4**

Source: Standards Australia, 2002

Design solutions

Design changes to particular products can reduce the risk of children choking on small items/parts. For example, venting of pen tops appears to have reduced the frequency of choking by this method (Nixon et al., 1995). Possible design innovations include: providing more secure button battery compartments in products, venting coins (designing coins with a hole in the centre) and designing/promoting the use of storage units for coins and other small objects in the home to keep them out of reach of young children. Kerr (1996) suggests that the design of toy boxes should change to incorporate a sorting device (based on hopper feeding sorters used in industry or other designs) that separates out hazardous smaller toys from larger ones. The box or compartment containing smaller toys would be fitted with a child resistant closure.

Reducing choking on food

Education of parents and other caregivers

Education of parents and carers should focus on the following issues:

- Age appropriate food

Parents and caregivers need to be aware of age appropriate food. Small, hard food items, such as nuts, popcorn and hard lollies pose greater risks for choking and should not be given to children under 5 years of age. Children under three years of age are most at risk of choking on carrot sticks, pieces of apple, meat, fish and chicken bones. The risk of choking tends to decrease as age increases except among children with disabilities.

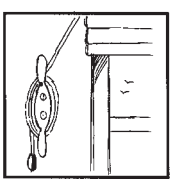
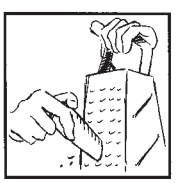
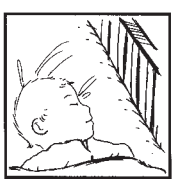
- Appropriate preparation of food items

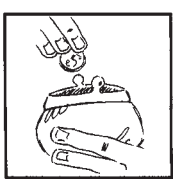
All food for young children should be cut into small pieces. Apples and carrots should be cooked or grated. Sharp, or small pieces of bone should be removed from fish, chicken and meat, or boneless fillets used. All types of sausage and frankfurters should be cut into small pieces and tough skins removed. Parents should also avoid giving children foods that can break off into hard pieces (Kidsafe, 2000).

- Adult supervision

Young children should be supervised at meal times and be encouraged to sit





quietly when eating and drinking. Furthermore, children who are upset should not be forced to eat because they are more at risk of choking. Babies should never be left alone with a bottle.

Prevention of strangulation

Unintentional asphyxia caused by hanging and strangulation is rare but preventable, accounting for four deaths and 5 hospitalisations over the 3-year study period (excluding cases that occurred in bed which are separately coded, see below). There were only three reported ED presentations for strangulation but this is a likely under estimation due to poor quality narrative data from some participating VEMD hospitals. Reported mechanisms of strangulation included external pressure on neck by cords (curtain and blind), rope/twine/string, a collapsed pusher, a car window and one case where the child's head was caught in a chair.

The danger that the cords of window coverings present for young children has been recognised for about a decade (Henley, 2003). Available data indicate that this cause has led to at least four deaths of toddlers in Australia since 1999 (Driscoll, Henley, Harrison, 2003). Rauchschwalbe & Mann (1997) identified two common injury scenarios from their investigation of the records of 183 fatal window-cord strangulations among children aged 1 month to 8 years compiled by the U.S. Consumer Product Safety Commission (CPSC) over a 15-year period from 1981 to 1995:

(1) Infants in cots near windows may become entangled in cords while sleeping or playing.
(2) Toddlers may be suspended from cords after jumping or falling from furniture placed near a window.

By the mid 1990s, the Consumer Product Safety Commission (CPSC) in the U.S. had responded to the problem and worked with industry to develop safer designs, a Standard for new blinds and methods to improve the safety of existing blinds (Henley, 2003). Window blinds sold in the U.S. since 1995 no longer have pull cords ending in loops. Following further investigation of mechanisms of window blind cord deaths by the CPSC, window blinds sold since November 2000 have attachments on the pull cords so that the inner cords can't form a loop if pulled by a young child (CPSC, 2003). The New South Wales government called up the relevant U.S. Standard under the NSW Fair Trading Act, which came into effect in 2003.

Preventive measures

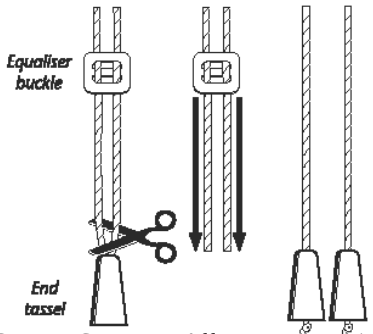
Reducing window covering cord strangulation

Legislation, safety standards and design solutions

New South Wales is the only state in Australia with a mandatory safety standard for corded internal window coverings. The NSW regulation requires that corded window coverings must be designed so that any looped cord is 1600mm above the base of the covering (or has a cord release or tension device). It must carry a warning label and hang tags, and be accompanied by written safety information (NSW Office of Fair Trading, 2003). Similar legislation should be introduced in Victoria and other Australian states to assist in the prevention of strangulations caused by window blind and curtain cords.

Existing window covering cords can be made safer by cutting the cord to get rid of the loop (see figure 5). Once the cord is cut, the end tassel and the equaliser buckle are removed. A tassel is then attached to the each of the cord ends and the end knotted to hold the tassel in place. For cords that cannot be cut, safety products are available that comply with the NSW standards. Manufacturers should provide curtain and blinds with safety devices attached, or supplied in the price of the window covering, at the point of sale. Consumers should be made aware of these devices to improve the safety of window covering cords.

How to cut cords for safety **Figure 5**



Source: Consumer Affairs Victoria. (2003). *Product safety fact sheet*: *Curtain and blind cords* <www.consumer.vic.gov.au>

There are three different devices that can improve the safety of existing window covering cords with loops:

Cleat or cord wind up

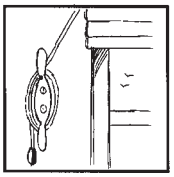
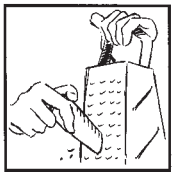
Cleats and cord wind-ups are designed to help keep long dangling cords out of reach of children and therefore reduce the risk of strangulation. Attach a cleat (a piece of metal or wood with projecting arms or ends on which a rope can be wound or secured) to the wall or window frame near the top of the curtain, and wrap the cord around the cleat (see figure 6).

Cord wind-ups function in a similar way to cleats as they work by keeping long cords out of reach of children. Cleats are available from hardware stores and cord wind-ups are available from The Royal Children's Hospital Child Health and Safety Shop at $6.00 for a pack of two (Safety Centre, 2005).

Cleat **Figure 6**

Source: Consumer Affairs Victoria. (2003). *Product safety fact sheet: Curtain and blind cords*

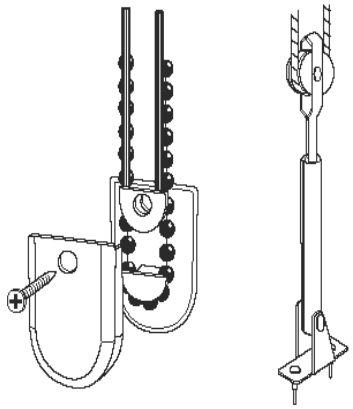



Tie-down or tension device

Use a tie down or tension device to pull the cord tight and secure it to the wall for cords that cannot be cut (see figure 7).

Tie-down and tension devices **Figure 7**

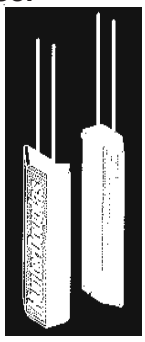


Source: Consumer Affairs Victoria. (2003). *Product safety fact sheet: Curtain and blind cords* <www.consumer.vic.gov.au>

Break through safety tassels

The break through safety tassel is designed to prevent unintentional strangulation of children by a looped cord. If the cord is cut, getting rid of the loop, each half of the break-through tassel can be fitted to the end of the cords and snapped together to form the tassel (see figure 8). If a child becomes entangled between the cords, the tassel easily separates and the cord loop disappears. This device complies with the child safety legislation introduced in NSW, and is available from curtain suppliers and manufacturers.

Break through safety tassel **Figure 8**



Source: Hunter Douglas Window Fashions. <http://www.rebarts.com/html/child_safety.htm>

Promoting window coverings that comply with the NSW regulations may encourage parents of small children to purchase window coverings with safety features, or to modify current blind or curtain cords. These products should be promoted on home improvement and renovation television shows, to increase the public awareness about their availability.

Public awareness campaigns

Until safety regulations are considered and implemented, Victoria should continue with public awareness campaigns to increase knowledge of the dangers of window blind and curtain cords so parents and caregivers can take the appropriate precautions in the home. One current initiative by the Australian Government is a 'Safety Alert' brochure (Department of Health and Ageing, 2004). It alerts parents to the dangers of window covering cords and advises of precautions to reduce the associated risk of strangulation. Recommended actions include not placing a child's bed or cot near curtains or blinds with long cords and modifying curtain and blind cords to improve their safety.

Reducing other forms of accidental strangulation

Other cords, strings and ropes also present a risk of strangulation to children. Again, public awareness campaigns to ensure adequate parental knowledge of these dangers are a key to reducing risk. Parents and caregivers need to know that unsupervised children should not play with rope, cord or belts; toys and balloons should not be tied to a cot or other nursery furniture with long strings. Safety helmets should not be worn except for their original purpose. The U.S. Consumer Product Safety Commission (CPSC) has reports of two strangulation deaths to children when their bike helmets became stuck in openings on playground equipment, resulting in hanging (CPSC, 2003). Children should always take a helmet off during play activities. Babies should not sleep in clothing that is loose, has a hood, or a

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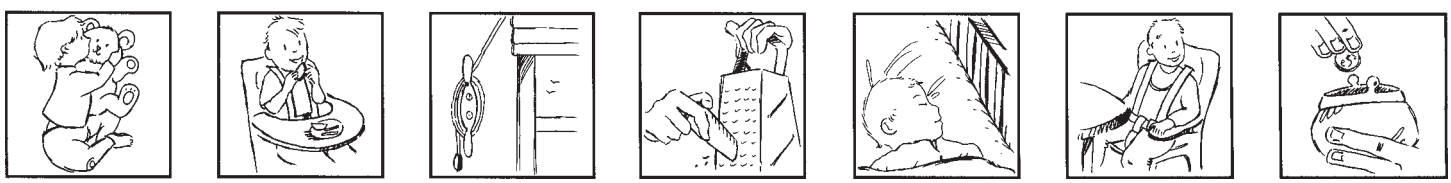
Prevention of suffocation

This report identified four deaths and two hospital admissions that were coded to the ICD10 code W75¾ accidental suffocation and strangulation in bed. Cases recorded under W83 & 84—other specified and unspecified threats to breathing may be suffocations. Narrative data were available on two of the four deaths and both were caused by strangulation: an entrapment in which the head of the child was caught between the cot side and the wall and 'strangulation by bedding'. The case narrative for one admission was available but it was unclear whether the cause was suffocation or strangulation when the pram in which the child was sleeping overturned.

A number of studies have documented that infants are at higher risk of suffocation on adult beds and couches than on sleep surfaces designed for infants. This is mainly due to overlaying by an adult or another child or entrapment



in the bed structure (Drago & Dannenberg, 1999; Nakamura et al, 1999; Kemp, et al, 2000; Scheers et al, 2003). Kemp et al. (2000) conducted a population-based death scene investigation study of 116 infant deaths caused by SIDS, accidental suffocation or cause undetermined that occurred in St Louis and were investigated by State Medical Examiners. Three quarters (76%) of the 119 deaths occurred on a sleep surface not designed for infants including adult bed, couch/sofa/cushioned chair and makeshift bed and almost half the deaths (47%) occurred on a shared sleep surface.

Byard et al. (2001) examined South Australian and Californian coronial and medical examiners' files on the specific circumstances that led to accidental asphyxia deaths in infants on sofas and found that deaths occurred in both shared and solo sleeping arrangements. Lethal circumstances involved infants being overlayed by an adult, wedged between the adult and the back of the sofa, sleeping with an intoxicated adult, wedged between pillow and back of sofa and wedged into back of sofa. Nakamura et al (1999) investigated CPSC files on 515 asphyxia deaths of children younger than 2 years in standard beds, daybeds and waterbeds and found that 121 (23%) were due to overlying of the child by a parent, other adult or sibling and 394 (77%) were due to entrapment in the bed structure.

Modifying beds for children with disabilities who are prone to fall out of bed may also increase their risk of asphyxia. An investigation of childhood asphyxia deaths caused by unsafe sleeping situations conducted in South Australia by Amanuel & Byard (2000) found that two of the 26 deaths involved children with significant mental and physical disabilities. In both cases, asphyxia was caused by a device (a wooden board and a retractable metal cot slide) that was put in place to prevent the child from falling out of bed.

Certain sleeping conditions are also noted as risk factors for Sudden Infant Death Syndrome (SIDS) (De-Kun, et al, 2003; Thogmartin, et al, 2001). As SIDS is a syndrome that affects sleeping infants in the first year of life and is characterized by a sudden cessation of breathing, the risks of SIDS may be similar to suffocation risks of sleeping children. Furthermore, there is a problem with the misclassification of SIDS in Australia and internationally; many SIDS cases may in fact be asphyxia fatalities or other causes of death (Byard & Krous, 1999; Byard, 2001). Therefore, recommendations for the prevention of SIDS may also have an influence in the prevention of suffocation in bed, and vice versa.

Byard (2001) states that many infant deaths that occur in Australia are accepted as SIDS without autopsies, or with autopsies that are 'poor quality' and called for uniform guidelines for evaluating death scenes and autopsy examinations. In March 2004 the first Australian SIDS pathology workshop met with the aim to reach a national consensus for the definition of SIDS and uniform guidelines for autopsy examinations (SIDS and Kids, 2004). A national consensus on a definition was reached and significant progress was made towards the development of an agreed Australian SIDS Autopsy Protocol. A further workshop is scheduled for late 2005.

The Royal Children's Hospital in Melbourne notes in their Safety & First Aid Book that babies and young children risk suffocation and strangulation in various unsafe sleeping situations including:

- Sleeping with adults
- Sleeping on a water bed, couch, beanbag or sheepskin rug
- Getting wedged in a gap between a mattress and the cot sides
- Sleeping face down
- Sleeping in nightwear with a cord or ribbon around the neck
- Sleeping in a cot that has a cord or string attached or in a cot that is near a curtain blinds.

Preventive measures

Reducing suffocation in bed

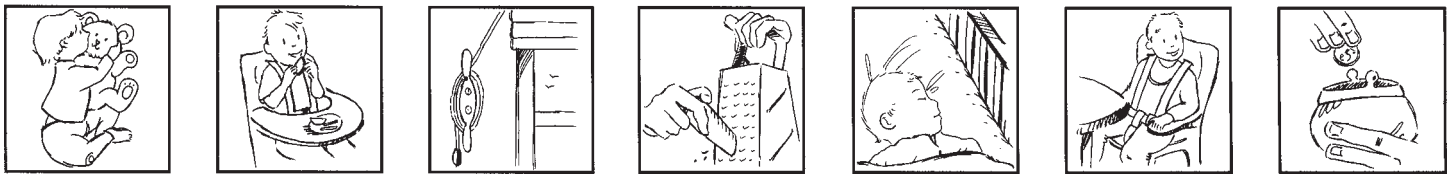
Awareness raising and education programs directed at parents and other caregivers

Educational programs should target the dangers of certain sleeping arrangements and encourage parents to place their children in safe sleeping environments. Furthermore, parents should be aware that pillows and bumper pads are unnecessary for children under the age of two, as they pose an increased risk of suffocation. Children's mattresses should be firm, as babies and children have sometimes suffocated when they have been lying down on soft surfaces, such as beanbags and waterbeds.

Legislation, safety standards and design solutions

Parents should also ensure that the cot they buy or use complies with the mandatory Australian/New Zealand Safety Standard for household cots (AS/NZS2172-1995). All new and second-hand cots for sale or hire must comply with the Standard and should have a label or swing tag attached confirming that the cot meets all of the safety requirements in the Standard. However, the law does not apply to private sales of cots, defined as transactions where a cot is sold by a relative or another person in a private capacity, or in a single transaction such as a garage sale. Consumer Affairs Victoria has provided a fact sheet at **www.consumer.vic.gov.au t**o assist buyers of new and second-hand cots to assess if a cot meets the safety requirements in the Standard. The fact sheet includes a checklist covering the mandatory safe dimensions and safety features of a cot, and other safety advice to minimise the risk of asphyxia from strangulation and suffocation and injuries from falls, entrapments and cutting/piercing.

Even though every cot available for sale since 1998 should pass the Standard's safety tests, only five of the ten cots purchased and tested by Choice



Magazine in October 2004 did so (ACA, 2005). All the failed cots were manufactured in Australia. As a result, Choice called on the ACCC, to act and remove from sale all cots that failed any of the Australian standard safety tests and asked the ACCC to do more to ensure that non-complying cots do not reach the marketplace. Parents should refer to publications such as Choice magazine (January/February 2005 edition) and the website of Consumer Affairs Victoria to assist them to purchase a safe cot.

Reducing suffocation from other causes

Public awareness campaigns and parental education about the dangers of suffocation in bed should also focus on other products that are associated with suffocation of children such as plastic bags, fridges and freezers and toy chests. Plastic bags should be tied in a knot before storage or disposal. Any small place in and around the home in which a child could get stuck and which has a limited air supply should be made inaccessible or provided with adequate ventilation.

First aid

Appropriate first aid is likely to reduce the mortality rate associated with choking, suffocation and strangulation. It is highly recommended that all parents and caregivers be trained in paediatric first aid, as emergency medical treatment for young children is not always the same as that for adults. Courses may be booked through St John's Ambulance Australia (**www.stjohn.org.au** or phone 131 394). Courses are also held at the Royal Children's Hospital and can be booked through Emergcare (phone 9304 1622). Recommended first aid treatment for choking related incidents in children and infants are outlined in Box 1. Note that first aid advice may change with new knowledge, and first aid information and resources should be regularly updated.

Box 1: First aid treatment for choking in children and infants

The most important thing to remember is never to pat or slap a choking child on the back if he/she is managing to cough. This may dislodge the object and cause it to be inhaled deeper into the airway.

If a child is choking and has trouble breathing, first aid suggestions include:

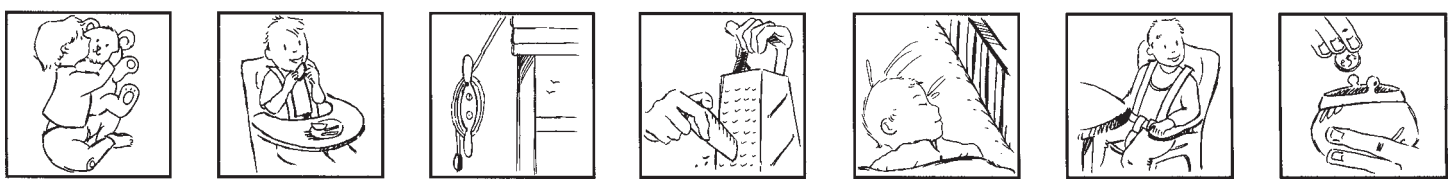
- First, encourage the child to cough. Coughing is a normal reflex to choking and may assist in dislodging a foreign object or food item.
- If the coughing does not dislodge the object, put the child in a position where their head hangs down, perhaps over the knee. Slap firmly four times between the shoulder blades.
- Check to see if the object has fallen out and if the child can breathe properly again.
- If not, repeat the procedure and call an ambulance.
- If the child loses consciousness, place them on the floor on their side and repeatedly compress and release their ribcage with your hands, using sharp, fast actions. This may force the remaining air in their lungs to expel the object.
- If the child is still not breathing, perform mouth-to-mouth resuscitation until the ambulance officers arrive and take over.

Source: The Better Health Channel (2004) *Toddlers and choking fact sheet.* Victorian Government Department of Human Services. <www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/%28Pages%29/Toddlers_and_choking?OpenDocument > Accessed 17/02/05

Recommendations

Injury prevention and control initiatives

- Conduct ongoing, multifaceted asphyxia prevention education and media campaigns targeting parents and other caregivers. Issues covered should include:
  - safe storage of coins and other small items, out of reach of young children;
  - the dangers of certain foods, the age appropriateness of foods and adequate food preparation measures;
  - the normal developmental behaviours of children which includes putting small objects in their mouths to explore their sensory world;
  - use of safety devices associated with window covering cords;
  - tying plastic bags in a knot before storage or disposal;
  - warnings about unsafe sleeping situations; and
  - promotion of paediatric first aid courses to parents and carers.
- The Australian government should mandate the voluntary standard for warning labels on all toys that present a choking hazard, not just foam toys.
- The Victorian government should consider introducing safety legislation for window covering cords in Victoria and promote the advantages of safety features on window coverings, based on the current NSW legislation.
- The Australian Competition and Consumer Commission (ACCC) should take action to ensure that cots that do not meet the



Australian mandatory safety standard for household cots are not available for sale or hire.

Surveillance, research and investigations

- Implement measures to improve narrative data quality on injury surveillance systems so that they are more informative and include details of the causes and circumstances of the injury.
- Support the adoption of the Royal College of Pathologists of Australia's agreed definition for SIDS and the standardised investigative guidelines for autopsies and death scene investigations when finalised.
- Investigate Victorian coroner's data to estimate the extent of misclassification of unexpected infant death from intentional and unintentional suffocation.
- Conduct a survey to ascertain the level of parental knowledge concerning the risks of asphyxia and preventive actions.
- Investigate the level of adherence to warning labels by adults purchasing toys for children and the reasons behind following/not following the age recommendation.
- Research asphyxia deaths in cots pre- and post- the introduction of the mandatory safety standard for cots to see if the standard is effective in reducing the number of unintentional cot-related asphyxia deaths.

Box 2: Methods of extracting asphyxia injuries from fatality file and hospital injury surveillance datasets

Fatality data were extracted from the Australian Bureau of Statistics (ABS) Death Unit Record File (DURF). ABS death data are coded using the World Health Organisation (WHO) International Classification of Diseases (ICD) coding system. Unintentional asphyxia cases were extracted from the ABS-DURF using the ICD-10 codes 'Other accidental threats to breathing' (W75-W84). Additional information on the causes and circumstances of deaths was extracted from the National Coroners Information System (NCIS).

Hospital treated asphyxia data were extracted from the Victorian Admitted Episodes Datasets (VAED) and the Victorian Emergency Minimum Dataset (VEMD) using different methods due to database-specific coding issues.

The VAED records hospital admissions for all Victorian hospitals, both public and private. Up to 1997 data are coded to ICD-9, from that year forward data are coded to ICD version 10 with Australian modification (updated every two years). Asphyxia cases for the main study period (July 2000 to June 2003) were identified using the following ICD-10 codes 'Other accidental threats to breathing' (W75-W84).

The VEMD records public hospital presentations to 28 EDs, representing approximately 80% of statewide ED presentations. Asphyxia cases were extracted using the VEMD external injury cause code 13: other threat to breathing, the nature of injury code: asphyxia or other threat to breathing or the body region code: foreign body in the respiratory tract, excluding nose. A check of narrative data for each case found that there were many misclassifications, and these cases were excluded from analysis. Only foreign body cases that specifically detailed respiratory distress were included. Due to this strict inclusion method, and the poor quality of narrative data in the VEMD, the number of ED cases is likely to be a large underestimate of the actual number of asphyxia cases that present to the ED. Cases were manually grouped according to ICD-10 coding system for the purpose of comparison with hospital admissions.

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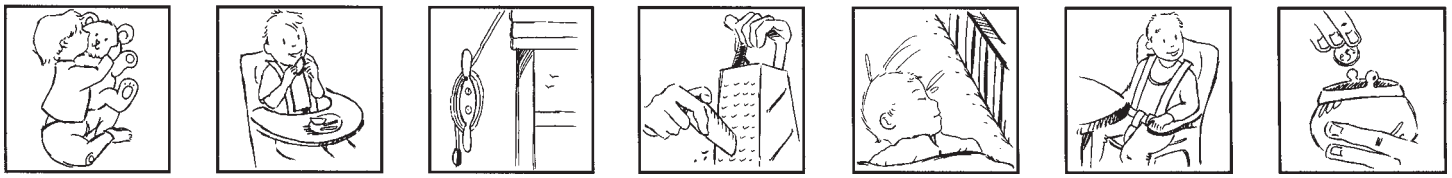

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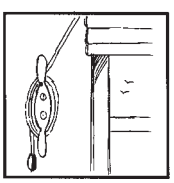
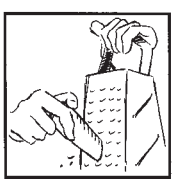
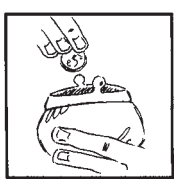
www.christine.chesterman@general.monash.edu.au



VISAR NEWS

Change in VISAR funding arrangements

Following the VISAR triennial review conducted in 2003, VicHealth and the Department of Human Services (DHS) entered into negotiations to tranfer responsibility for funding of VISAR to DHS. By agreement, VicHealth funded VISAR to the end of 2004, the 13th year of VicHealth support for VISAR, with DHS assuming funding responsibility from January 1, 2005.

We thank the Board and staff of VicHealth for the tremendous support they have given VISAR which has seen the Victorian injury surveillance system grow from a fledgling paediatric collection in the emergency department of one hospital to a system that provides complete coverage of Victorian injury deaths, hospital admissions and ED presentations (from January 2005).

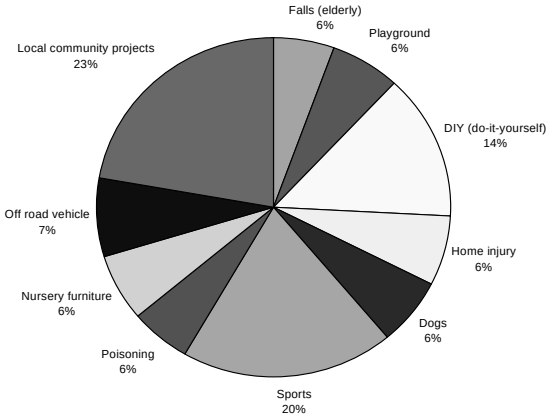
We look forward to a close and productive relationship with DHS especially in the areas of data systems development including data quality improvement, data linkage and data accessibility. We will continue our commitment to provide a high quality and timely data and information service to underpin the development and monitoring of injury prevention policy and programs, regulations, projects and research in Victoria and nationally.

VISAR achievements, 2004

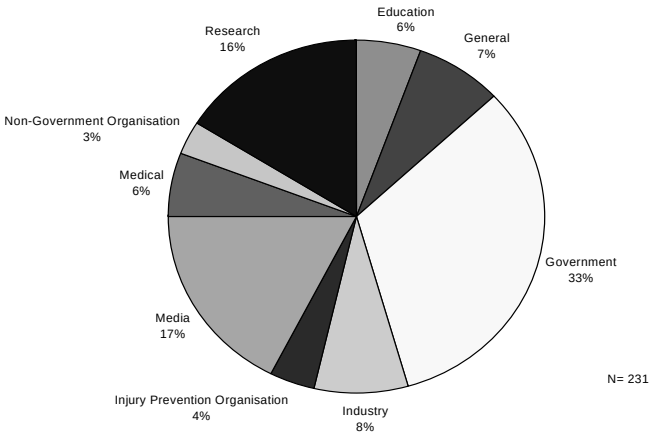
Data and information dissemination

A major project in 2004 was the production of a series of injury surveillance reports to assist the identification of injury prevention priorities to be included in the *Victorian Injury Prevention Strategy 2005-*, currently being developed by the Department of Human Services. One of

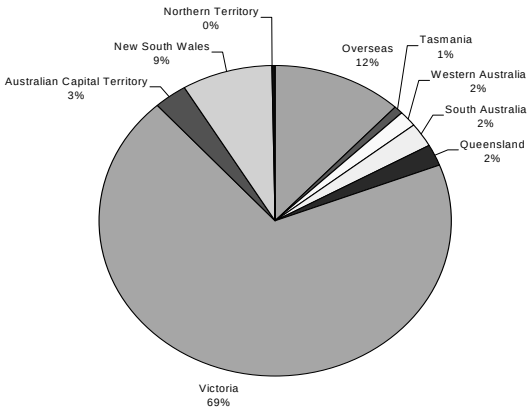
Data information requests 2004, more freqently requested topics — **Figure 9**

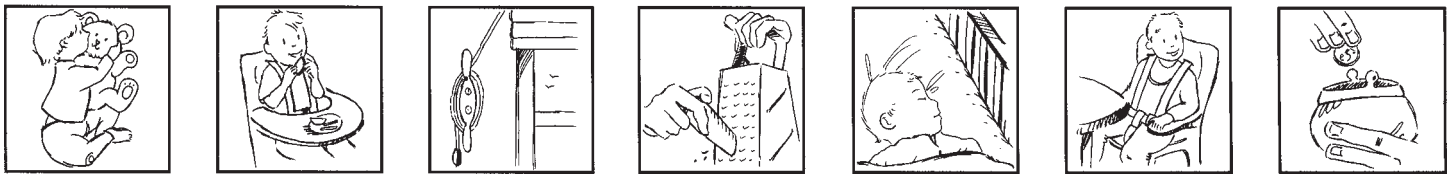


Data & information requests 2004 — **Figure 10**



Hazard Distibution — **Figure 11**





Victorian Safe Communities Network Inc

Third Annual Conference
Creating Safer Communities
Sharing Practioner Knowledge

Thursday 17 November 2005
9.00am – 5.00pm
followed by
VSCN Annual Dinner 6.00pm till late
Darebin Arts & Entertainment Centre
Cnr. St. Georges Road and Bell Street,
Preston, Victoria.

The Victorian Safe Communities Network invites people who are working to make local communities safer to come together and share new ideas, techniques and knowledge at the third annual conference. The focus is on effective practice and sustainable programs. Practitioners, volunteers, researchers and policy makers are invited to present quality information and evidence of best practice programs. Now is the time to offer your suggestions about topics that you would like to learn more about or to present to others.

Please send suggestions or enquiries to:
VSCN Annual Conference 2005
C/- Barbara Minuzzo
Safety Centre
Royal Children's Hospital
Flemington Rd, Parkville
Vic 3052

PH: 9345 5193
Fax: 9345 5086

Email: vscn.vscn@rch.org.au
Website: www.vscn.org.au

the reports was *Injury Profile Victoria, 2002*, a comprehensive overview report which is posted on the VISAR website early in 2005. VISAR produced two other major injury surveillance reports for government agencies in 2004: *Fire-related death and injury in the Metropolitan Fire District* (for Metropolitan Fire Brigade) and *Marine Safety in Victoria*: July 2002 to June 2004 (for Marine Safety Victoria)

Three key data and information dissemination strategies undertaken by VISAR are the quarterly production of the VISAR publication *Hazard*, the information request service and the VISAR website.

Publication of Hazard

VISAR produced three issues of Hazard in 2004: *Boating-related sports and recreational injury, Victoria 2000-2002 (Summer edition), Burns and scalds in vulnerable population groups: the very young and the very old (Autumn edition) and Overview of unintentional hospital treated work injury, Victoria 1999-2002(Winter edition).*

The hard copy of *Hazard* is distributed to more than 1,300 Victorian (69%), interstate (19%) and overseas (12%) subscribers. Accessing *Hazard* through the VISAR website is increasingly popular. More than 102,008 Hazard requests were down loaded in 2004, a more than four-fold increase over 2003. The most popular editions of *Hazard* covered sports injury, intentional injury, trampoline injury, venomous bites and stings, child falls, socio-economic status and injury, swimming pool safety and recreational boating injury.

VISAR data and information request service

In 2004, VISAR responded to 231 information requests via our phone and e-mail request service from a range of sectors including government, media, research/education, industry, medical/ health organizations, injury prevention and other non-government organisations and the general public.

Over 2004 the most frequently requested topics were: elderly falls, playground and play equipment injury, DIY home maintenance injury, home injury, dog bite, sports injury, poisoning, nursery furniture and equipment injury, off road vehicle injury and local community injury profiles.

VISAR web-page

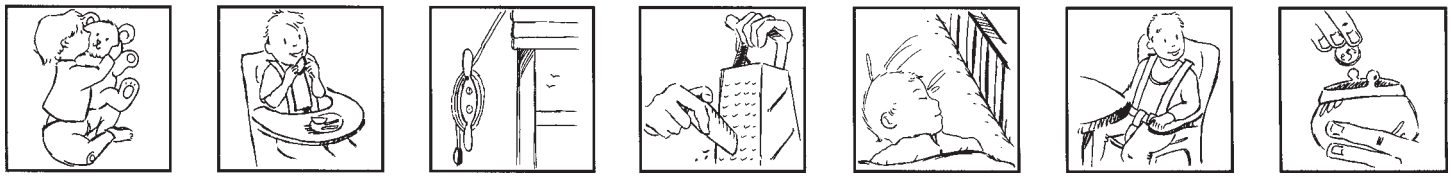
The VISAR web page continues to be a well-utilised resource (www.general.monash.edu.au/muarc/visar). Over 2004 the VISAR web page received 27,785 requests for pages, an average of 75 requests per day.

Applied research program

VicHealth did not fund this aspect of VISAR's program in 2004, but VISAR was committed to continue work on two studies (both part funded by Sport and Recreation Victoria): *Call back study of patients with serious injury from playing non-elite Australian Rules football in season 2004* and *A web-published database of sports countermeasure reviews*.

VISAR staff also took prime responsibility for several recreational boating safety research projects, part of a program of work funded by Marine Safety Victoria and for a study investigating barriers to the wearing of personal protective equipment by in-line skaters and skateboarders, funded by the Department of Human Services Public Health Grants Scheme.

Erin Cassell (Director, VISAR)
Prof. Joan Ozanne-Smith (Chair, VISAR Executive Committee)



COMMUNITY**SAFETY**MONTH

October

Start Planning for Community Safety Month 2005

October is Community Safety Month. Community Safety Month (CSM) is a mobilisation program that promotes a partnership based approach to raising the awareness of safe practices in the Victorian community.

Join with the Victorian Department of Justice and the Victorian Safe Communities Network and dedicate one month to safety. Educate and offer safety and health solutions for your workplace, home, and community, increase awareness of living safely throughout the year, and help decrease the number of injuries and deaths.

Participation in Community Safety Month will demonstrate your commitment to maintaining Victoria as the safest state in Australia. By promoting safety and safe practices within your community, you will be contributing to increasing the confidence of Victorians about safety.

Each week in Community Safety Month has a different focus:

Crime Prevention Week: 2-8 October 2005

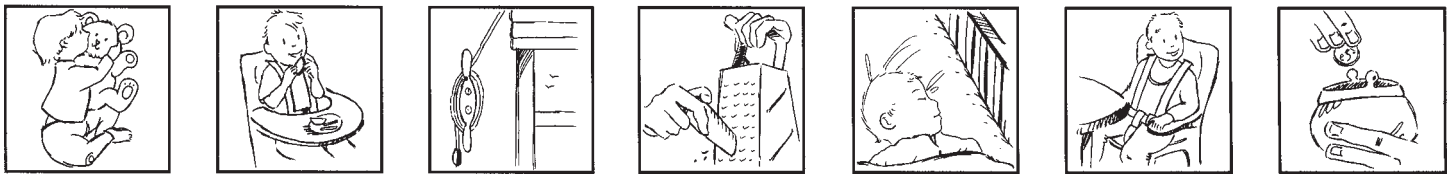
Emergency Prevention Week: 9-15 October 2005

Injury Prevention Week: 16-22 October 2005

Work Safe Week: 23-28 October 2005

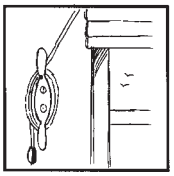
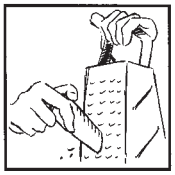
Don't forget to put Community Safety Month into your organisation's calendar.
Start your own Community Safety Working Group to undertake audits or determine the safety priorities for your organisation in 2005.

For more information visit www.communitysafetymonth.com.au



- INDEX -




VISAR Executive /Editorial Board

How to access VISAR data:

VISAR collects and analyses information on injury problems to underpin the development of prevention strategies and their implementation. VISAR analyses are publicly available for teaching, research and prevention purposes. Requests for information should be directed to the VISAR Co-ordinator or the Director by contacting them at the VISAR office.

Contact VISAR at:

MUARC - Accident Research Centre
Building 70
Monash University
Victoria, 3800

Phone:

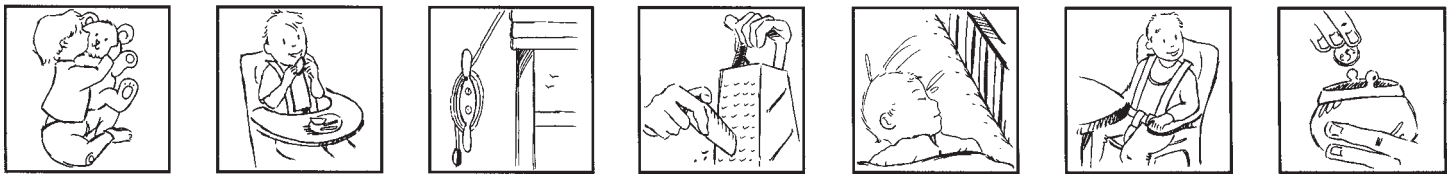
Enquiries	(03) 9905 1805
Co-ordinator	(03) 9905 1805
Director	(03) 9905 1857
Fax	(03) 9905 1809

Email:
visar.enquire@general.monash.edu.au

All issues of *Hazard* and other information and publications of the Monash University Accident Research Centre can be found on our internet home page:http://www.monash.edu.au/muarc/visar

Coronial Services

Access to coronial data and links with the development of the Coronial's Services statistical database are valued by VISAR.



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MONASH University
Accident Research Centre

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