

# Kidsafe WA Child Car Restraint Services, 10 years on

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## Abstract

*In 2001 Kidsafe WA established a child car restraint fitting, checking and hire service in Perth, Western Australia. Kidsafe WA is highly regarded for the child car restraint fitting / checking services that it delivers. In the 10 years that the service has been in operation there has been a significant increase in the number of restraints fitted and checked by Kidsafe WA. Some of the factors that have affected or influenced the service in that time include the development of an accredited training course for Type 1 fitters and a state-wide network of Type 1 fitters; the provision of regular free to the community checking days; changes to the laws covering the use of restraints by child passengers.*

*This paper compares the restraint fitting & checking service records from the first ten months of operation with the most recent 2 years; examines common restraint fitting and usage errors observed at checking services and discusses the effects of other factors, particularly the development of a state-wide network of fitters, has on the growth of the service over the last 10 years.*

## Background

Around Australia, child car restraint checking services have been in existence in one form or another since the late 1990's. Initially they were pilot projects, conducted to assess the level of correct installation and use of child car restraints in the community.

In Western Australia, Kidsafe WA piloted the first child car restraint checking days in 1998. *Assessing Child Restraint Misuse in Perth, WA* (Kidsafe WA 1998) reported that almost 70% of child car restraints checked during the pilot had one or more errors related to installation and/or use. This finding was consistent with similar Australian studies conducted at that time.

As a result of the findings from the pilot project, Kidsafe WA received funding from the WA Department of Health to deliver the first Type 1 Child Car Restraint Checking education course in 1999. The course participants included regional injury prevention officers and personnel from the road safety section of the WA Local Government Association (Roadwise). The rationale for training personnel from these particular professional groups was to ensure that child restraint checking services would be available outside the Perth metropolitan area.

It soon became apparent that a once off education course with no follow up support or updating was not effective in sustaining the necessary level of skill and competence to correctly and confidently check and/or fit child car restraints. As a result, Kidsafe WA, along with two other members of the then Child Car Restraint

Sub-Committee, recommended that the training of Type 1 fitters be formalised and accredited using a competency based training model to ensure reliability and consistency in the standard of child car restraint checking and fitting.

By late 2001 many of the community child car restraint checking service providers had suspended activity while awaiting the outcome to the recommendation for formalised training. However, community demand had been created and the increasing demand for assistance led Kidsafe WA, as the leading child injury prevention body in Western Australia, to establish a centre based, fee for service fitting and checking service. The establishment and operation of this service was consistent with the aims and purposes of the organisation and personnel with the necessary knowledge and skills in child restraint fitting were on staff.

Since its establishment, the Kidsafe WA Child Car Restraint Fitting and Checking Service has grown considerably and is highly regarded for the quality of its service provision and the experience of its fitting team members.

In 2003 the paper, *Operating a Child Car Restraint Fitting Service in Perth, Western Australia*, reported on the first ten months and 1139 records of service provision. This paper also highlighted and discussed some of the problems identified in checking child car restraint installations and some of the issues related to operating child car restraint fitting and checking services.

Since 2003, Kidsafe WA child car restraint services have expanded significantly and a number of factors have influenced its development and growth. This paper will compare fitting service records for the period January 2008 to 30 June 2011, with those reported in 2003 and will discuss some of the factors that have influenced service provision over the 10 years.

Comparisons between the two time periods are indicative only, due to the vast difference in the number of records (n=1,139 and n=14,390) and the difference in the length of the two time periods.

### **Kidsafe WA Fitting Service Processes**

Each occasion of service for child car restraint fitting or checking by Kidsafe WA is documented on a fitting service record form. Where a vehicle has more than one restraint, there is a record for each restraint.

At the conclusion of the occasion of service, the consumer is given the original copy of the fitting service record form and the duplicate is kept for the fitting service records. As of the end of June 2011, there were more than 28,800 completed paper based forms from our service; however only 16,700 of these have so far been

entered into our database. This paper reports on the 14,390 records for the period 1 January 2008 to 30 June 2011.

The fitting service record form documents variables related to the vehicle and its anchorage points; the restraint; the fitment of the restraint in the vehicle and the configuration and adjustment of the restraint for the child who is to use it. Descriptive details such as the location and date of service provision; type of service provided and identification of the fitter providing the service are also recorded. Kidsafe WA fitters also discuss and demonstrate the correct fit and adjustment of the restraint for the child who is to use it.

Since the commencement of the Kidsafe WA Child Car Restraint Fitting & Checking Service, the fitting service record form has undergone several changes, the most recent in 2006. These changes were intended to make it easier for the fitters to complete and to follow a logical order for approaching service provision. In 2006 some additional detail that we wanted to collect was added, along with additional categories of restraint to reflect the range of restraint types available on the market at that time. The pro-forma requires amending again to account for new restraint types introduced by the 2010 revision of the Australian Standard for child restraints and recent changes to legislation.

### **Service Provision**

For all service provision, the “fit” of a restraint(s) accounted for 62% (n=706) of service provision in the first 10 months of the service and 44% (n=6,380) of service provision in 2008 - 2011. A “check” of an already installed restraint accounted for 27% (n=307 and n=3,884) of service provision in both time periods.

In the first 10 months of service provision, the remaining 11% (n=126) of service provision was recorded as “check & re-fit”. However in the period 2008 – 2011, the fitting of hire restraints was the next highest proportion of service provision, accounting for 14% (n=2,026); conversion to forward facing accounted for 6% (n=886) and the remaining 8% (n=1,214) were recorded as refitting of restraints and conversions to rear facing or booster seat mode.

In the first ten months of service provision, nearly all occasions of service were delivered at the Kidsafe WA Centre on the grounds of Princess Margaret Hospital for Children in Subiaco. Over time the centre based service has expanded from a regular but part-time delivery to operating between 9am – 5pm, five days per week. In addition to the expansion of the centre based service, a community located delivery of services has been established through several regular free child restraint checking days at shopping centres and, more recently, a service provided at several nursery retailer stores in the Perth metropolitan area.

**Table 1: Location of service provision**

<b>Location</b>	<b>Reported 2003</b>	<b>2008-2011</b>
Kidsafe WA Centre	958	12,200
Free Checking Days	-	1,114
Store Services	-	959
Other Community Location	181	117
<b>Total</b>	<b>1,139</b>	<b>14,390</b>

### **The Cars**

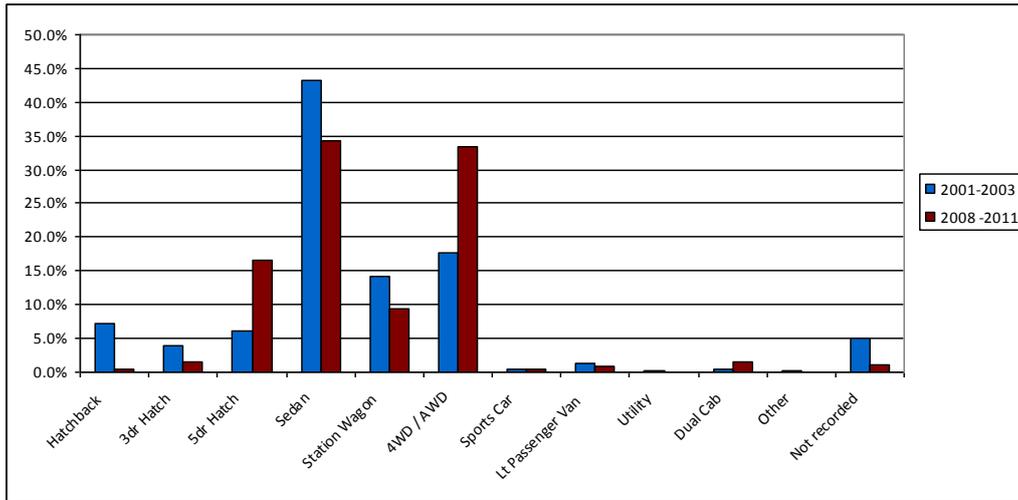
Vehicle make, model, body type, year of manufacture and registration number are recorded as part of the child car restraint service provision. Detail about after-market anchorage installation is also recorded, along with an assessment of any existing anchorage fitting in the vehicle.

Over time Kidsafe WA has fitted or checked child car restraints in almost every make of passenger vehicle from the less common makes like Audi and Porsche through to the major manufacturers of Toyota, Holden, Ford and Mitsubishi. We have also fitted or checked child car restraints in every vehicle body type from sedans to sports cars to 4WD's and utilities. The age of vehicles presenting for child restraint fitting or checking services since the services' commencement ranges from manufacture dates in 1965 through to 2011.

In the first 10 months of operation, Toyota (n=219), Holden (n=180) and Ford (n=152) accounted for 19.3%, 15.9% and 13.4% of all vehicles presenting to Kidsafe WA fitting services. Between 1 January 2008 to 30 June 2011, Toyota remained the leading car make, accounting for 19.4% (n=2,091) of vehicles attending for fitting services. Major manufacturers such as Holden and Ford, dropped to 12.3% (n=1,330) and 8.7% (n=937) respectively. Makes such as Mazda, Subaru, Volkswagen, Audi and BMW had higher proportions of presentation at Kidsafe WA fitting services in 2008-2011. The latter two may be an effect of the boom times in Western Australia in recent years or may be reflective of Kidsafe WA's proximity to the more affluent western suburbs of Perth.

A change has been noted in the type of vehicle presenting at Kidsafe WA child car restraint services over time. Where sedans were the most common vehicle body type in the early period, between 1 January 2008 to 30 June 2011, there was a marked increase in the proportion of 4WD / SUV's, 5 door hatchbacks and, to a lesser extent, dual cabs, presenting at Kidsafe WA fitting services. This is most likely indicative of the changing trends in vehicles in recent years and a potential contra-indication that West Australians are downsizing their vehicles.

**Figure 1: Body type of vehicles attending fitting services at Kidsafe WA**



A slight shift in the age of vehicles presenting to fitting services has been noted since the start of service provision. In the first 10 months of the service 62% (n=705) of vehicles presenting at Kidsafe WA fitting services were up to 10 years old (manufactured between 1995 and 2003). In the period 1 January 2008 – 30 June 2011, 57% (n=6,106) of vehicles were up to 6 years old (manufactured between 2005 and 2011).

**Table2: Dates of Manufacture of Vehicles**

Dates of Manufacture	No Reported 2003	%	No 2008-11	%
1965 - 1974	-	-	3	0.0%
1975 - 1984	34	3.0%	9	0.1%
1985 - 1994	231	20.3%	331	3.1%
1995 - 2004	705	61.9%	3904	36.2%
2005 - 2011	-	-	6106	56.7%
Not recorded	169	14.8%	421	3.9%
	<b>1,139</b>		<b>10,774</b>	

### The Restraints

Detail recorded about the child restraint includes: manufacturer, restraint type and configuration, model and date of manufacture. The restraint is checked to confirm Australian Standards and verified that it is an appropriate type for the weight, size and age of the child who is to use it.

In relation to second hand restraints, our procedure is to recommend that restraints over ten years of age not be used. Fortunately, the percentage of restraints over ten years of age brought to Kidsafe WA for fitting is very small and in many cases, the consumer is happy to have a reason to replace the restraint.

Rear facing restraints made up the majority of restraints seen in all child car restraint occasions of service, accounting for nearly 80% (n=905) in the first ten months of

service provision and almost 64% (n=9,126) in the 2008 – 2011 period. Forward facing restraints accounted for 17.9% (n=202) of occasions of service in the first ten months of operation and for 20.6% (n=2,954) in 2008 – 2011. A significant change over time has been an increase in the proportion of combination restraints and booster seats seen in the fitting service. In the first ten months booster seats & harnesses accounted for 2% (n=19) of service provision, while in 2008 – 2011, combination restraints represented 10% (n=1,466) of restraints and booster seats & harnesses accounted for 5% (n=720).

When examining “checking” services only, rear facing restraints accounted for over half of all restraints checked in both time periods. In 2008 – 2011 forward facing restraints accounted for 25% (n=975) of “check” occasions of service; combination restraints accounted for 11% (n=439) and booster seats & harnesses for 9% (n=353).

There is almost no difference between the two time periods in the brands of restraint seen in fitting and checking services. Safe-n-Sound accounted for  $\frac{3}{4}$  of all restraints seen in both time periods. There have been some minor changes in other brands between the two time periods, with most other major brands decreasing in proportion, most likely due to the influence of new brands appearing on the market in the later period.

### **Anchorage Installations**

The practice for Kidsafe WA fitters is to verify anchorage requirements against the Vehicle Owner’s Handbook. This practice is just as important now as it was 10 years ago. Many of the vehicles seen by the fitting service in the beginning had at least one manufacturer supplied anchorage fitting in new cars. In the current period, many manufacturers are supplying three anchorage fittings. Manufacturer supplied anchorages can be similar in appearance to a standard bolt kit, or they can be “D” ring in appearance or integrated into the vehicle structure or concealed in recesses.

Integrated anchorages and luggage securing points are a source of confusion among some consumers. There are examples in our records of standard bolt kits being attached to integrated anchorages and, more commonly, restraint upper tethers attached to luggage securing points.

Used vehicles remain a problem when it comes to the presence of a vehicle owner’s handbook, making it harder for consumers to verify the number and location of the anchorage points in their vehicle. What has changed over time is that many hatchback vehicles that previously required a longer than standard bolt have changed the location of their anchorage point, so that longer bolts, and extension straps are no longer required.

The main problems related to anchorage fittings observed by Kidsafe WA fitters when checking installed child restraints are:

- incorrect anchorage point identified by consumer,
- incorrect assembly of anchorage fitting

Examples of incorrect anchorage point identification by consumers include:

- Luggage tie-down rings identified as anchorage systems
- Holes drilled into vehicle bodywork where manufactured anchor points exist
- Anchor bolts fitted into trim plug holes

Examples of incorrect anchor assembly include:

- Standard bolt kit attached to integrated anchorage
- No spacers used where they should be
- No lock washer or split washer used
- Anchor bracket facing wrong direction

### **Restraint Installation**

When checking consumer installation of child car restraints, Kidsafe WA fitters examine the vehicle seatbelt, ensure that the seatbelt is passing through the correct pathway for the restraint usage mode; assess the usage of the upper tether strap, any extension strap or gated buckle and whether they have been used correctly.

Common errors observed related to restraint installation include:

- Seatbelts not used / not done up
- Wrong seatbelt for the seating position used
- Incorrect seatbelt pathway for restraint configuration
- Broken or malfunctioning seatbelt buckles
- Twisted, frayed or damaged seatbelt webbing.
- Seatbelts buckle issues related to connecting or adjusting the seatbelt firmly
- Auto locking seatbelts – not engaged when it should or engaged where it shouldn't
- Upper tether strap not used at all
- Upper tether strap too tight, increasing lateral movement of the restraint
- Upper tethers attached to something other than an anchor bracket
- No extension strap used when required
- Upper tether strap incorrectly used to reach the anchor bracket
- Incorrectly fitted or used gated buckles

### **Suitability of the restraint for the child**

Fitters also assess the suitability and adjustment of the restraint for the child who is to use it. This includes restraint type; harness height; adjustment and weight/size/age variables.

With the majority of service provision being for rear facing restraints, the majority of our consumer base is expectant parents, so there is often not a baby or child present to assess harness fit on. In these instances, the process for Kidsafe WA fitters is to

demonstrate and discuss the harness adjustment and correct fitting guidelines with the consumer and answer any questions they may have related to the use of the restraint.

Fitters also show clients where the restraint instruction book is located and recommend that the instruction book be left with the restraint for future reference. Where second hand restraints have been used and there is no instruction book, Kidsafe WA will advise the client to contact the restraint manufacturer to obtain a copy of the instruction book, or will supply a photocopy of the relevant instruction book if available. Contact numbers for any referrals are written on the service record form for the consumer.

Within the context of checking and conversion services, the most common errors found relate to the adjustment of the harness for the child in the restraint. This is particularly the case in restraints that have an adjustable head protection component. The second most common problem observed through checking services, and to a slightly lesser extent through fitting services, was the wrong type of restraint for the age, weight and size of the child. This was a particular issue leading up to the implementation of the new laws, as we were educating consumers at the same time about the impending requirements.

Second hand and used restraints, while only a small proportion of restraints presenting for fitting or checking services, require extra care. Fitters inspect them closely for any visible signs of wear and tear in the harnessing, tethering, visible signs of stress in the restraint shell and missing or damaged parts. Clients are advised that it is a visual assessment only and that there is the chance that deterioration or stressing may still be present. During this examination of the restraint, the fitter will also adjust the harness to suit the child who is to use it. The usual scenario is that the restraint was last used by a 2 – 3 year old child and is now to be used for a newborn, resulting in the harness having to be adjusted down one or more shoulder levels for the newborn.

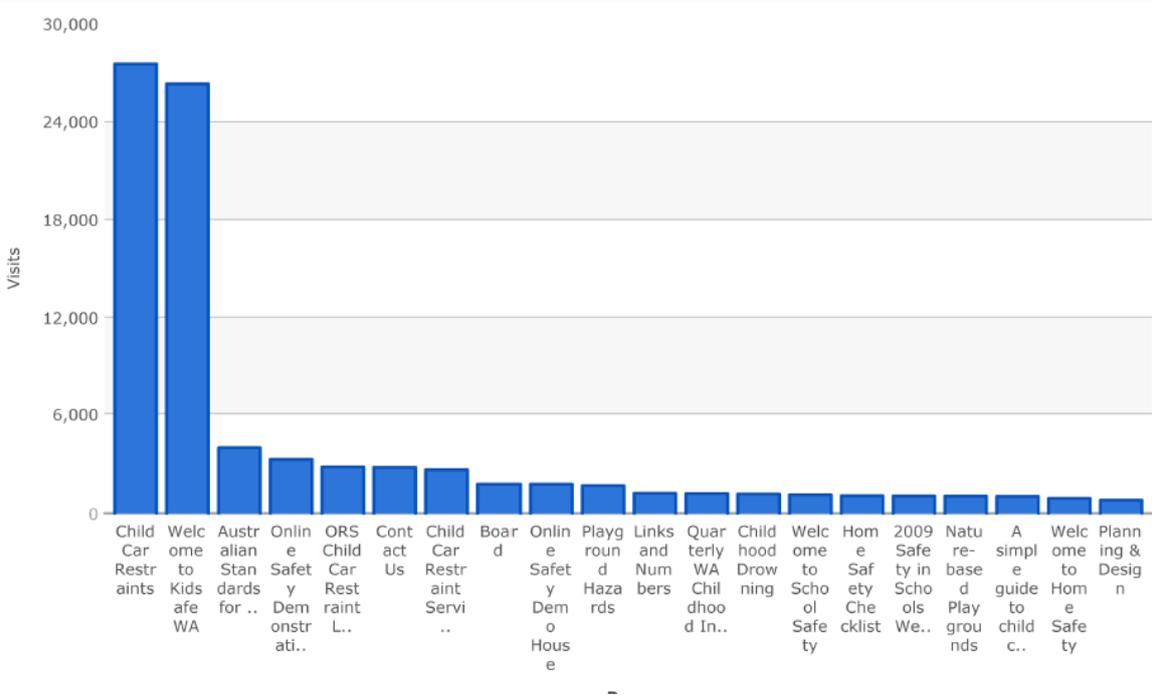
### **Legislation**

One of the most significant influences on fitting and checking service provision in the last twelve months has been the implementation of new laws for the restraint of children up to 7 years of age.

In the 12 months leading up to the implementation of the new laws in Western Australia, Kidsafe WA child car restraint services were stretched to their limit. There was frequently a waiting period of up to three weeks for centre based services. Our phone calls increased in volume from an average of 50 calls per day up to an average of 70 calls per day. Email and website traffic for child car restraint information also increased, peaking at over 12,000 visits in October 2010 when the new laws came into effect.

The graph below shows the entry pages to the Kidsafe WA website between July 2010 and June 2011 and shows clearly that the child car restraints page was the most frequent entry page to the Kidsafe WA website over 2010 – 2011.

**Figure 2: Entry page to Kidsafe WA website, July 2010 to July 2011**



Within the context of impending legislative change and consumer confusion, we had to ensure that our staff were up to date with the detail of the new legislation in order to be able to explain the requirements to our customers. A further complicating factor was the publication of a revision of the Australian / New Zealand Standard AS/NZS1754 for child car restraints in February 2010, which introduced significant changes to the way in which child restraints are classified. Our staff also had to be knowledgeable on what the changes to the Standard were, how they would affect consumers into the future, especially in relation to the new legal requirements, and when new products might be available on the market.

**Accredited Training**

The other main factor that has influenced the development of the Kidsafe WA child car restraint services has been the accreditation of the Course in Type 1 Child Car Restraint Installation (51637) by the Training Accreditation Council of WA in late 2004.

Delivery of training using the accredited course commenced in 2005, with the WA Local Government Association contracted to train and develop a state-wide network of Type 1 fitters. Two key Kidsafe WA personnel, Sue Wicks and Melita Leeds, were identified as lead trainers, enabling Kidsafe WA to also deliver the training course,

although on a fee for service basis, rather than a free course as was being provided by the WA Local Government Association.

It was anticipated that increasing the pool of people trained and able to deliver child car restraint fitting and checking services was likely to reduce the demand for services at Kidsafe WA however by the end of June 2011 this did not appear to have eventuated.

At the end of June 2011, there were more than 230 people listed as Type 1 Fitters on the website [www.childcarrestraints.com.au/fitters](http://www.childcarrestraints.com.au/fitters) almost half of them are located in the metropolitan area. What is not always clear from the listing is whether fitters are still active or the recency and currency of their child car restraint knowledge.

Despite charging for training when a free course was also being provided, Kidsafe WA has conducted fourteen courses over the last 5 years. Evaluation of the course delivery by participants has always been positive, particularly from those who have also attended other training.

As part of a strategic direction, Kidsafe WA has recently sought and been endorsed as a Registered Training Organisation with the re-accredited course (Course Code 52138) on scope. This will enable us to continue to deliver training in this area, although it appears that we will still have to surmount the challenge of a free course being offered.

## **Conclusion**

Kidsafe WA has extensive experience in operating a Child Restraint Fitting and Checking Service and is highly regarded for both the quality of its service and the expertise of its personnel. Our experience over the last 10 years in delivering fitting/checking services has built a wealth of experience which has been retained within the organisation, enabling Kidsafe WA fitters to correctly configure, adjust and fit a vast range of child car restraints in a wide variety of vehicles. The depth of expertise within the organisation and the contacts we have developed within the child car restraint industry also enable the problem solving of issues outside the usual range.

Our experience in relation to the development and delivery of training demonstrates that competency in knowledge and skills in this field, is built over time and wide practical application; completion of a training course is just the beginning. Working within an environment where there is ready access to support personnel with extensive experience; supervision and regular monitoring is essential to the development of skills and knowledge, particularly when there are significant changes in related legislation, Standards, product and vehicles. Within our own service, new fitters are supported for at least the first three months after completion of training to ensure the development of their competency.

The variables related to child restraint fitting and checking are numerous and constantly changing, which puts services delivered on an occasional basis at risk and their customers at a disadvantage. Regular monitoring and updating of fitter knowledge and skills by personnel with extensive experience and currency of, knowledge within the industry are essential elements to ensuring ongoing quality assurance. A final observation is that the need for detailed recording of all work performed must also be an essential part of training and ongoing development.

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