



MONASH University

Accident Research Centre

LA TROBE SAFE COMMUNITIES

EVALUATION OF A LOCAL LEVEL INJURY PREVENTION PROGRAM

1996 - 2000

by

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Abstract:

The aim of this study was to evaluate the second phase of the La Trobe Safe Communities (LTSC) program, formerly the Latrobe Valley Better Health Injury Prevention Program, a community based injury prevention program in the Latrobe Valley, Victoria. The program began as a stand-alone project in 1992, and in July 1996 was incorporated into the City of La Trobe as an activity of local government.

The evaluation was an observational study covering January 1996 to December 2000 and including pre and post-intervention observations, some of which were also available for a comparison region. Process measures included key informant interviews with local organisation representatives. Impact evaluation relied on self-reported changes in injury risk and protective factors, gathered by a random telephone survey. Outcome evaluation was based on four years of emergency department injury surveillance data, and twelve years of hospitalisation data, for LTSC and a comparison region.

The program continued to build strategic partnerships and implemented promotional, educational and policy-changing activities across a range of injury types. There was a 22% increase in the proportion of households able to list home safety features ($p < 0.001$). However, the proportion reporting purchase of a safety item in the previous 12 months decreased by 14% ($p = 0.02$). The LTSC program region compared favourably with non-metropolitan Victoria, having a statistically significantly greater proportion of households with smoke detectors installed, and hand rails present in the bathroom, and a lower proportion with hot water capable of scalding. The age standardised emergency department presentation rate for unintentional injury increased by 2% per year on average ($p = 0.40$), compared with a 7% increase in the comparison region ($p < 0.0001$). The age standardised emergency department presentation rate for intentional injury decreased by 4.7% per year on average ($p = 0.54$), compared with a 12% increase ($p < 0.0001$) in the comparison region. When controlling for pre-intervention trends, statistical modeling indicated that the unintentional injury hospitalisation rate in the program region decreased significantly by 9.2% on average relative to the comparison region. In the case of intentional injury, the rate increased significantly by 13.1% on average relative to the comparison region.

The LTSC program appeared to have been successfully incorporated into the local government structure, and despite some methodological limitations with the selected comparison region, the injury rate trends provide some, perhaps limited, support for the program being associated with injury reductions.

Key Words:

Evaluation, injury prevention, community-based

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Preface

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EXECUTIVE SUMMARY

Introduction

The community based approach to all age all injury prevention has been applied increasingly in various parts of the world, following the first successful reports in Sweden during the early 1980's. The La Trobe Safe Communities (LTSC) program, formerly the Latrobe Valley Better Health Injury Prevention Program, is a community based program, modelled on the Swedish experience, in the Latrobe Valley, Victoria. The program began as a stand-alone project in 1992, initially with funding from the Victorian Health Promotion Foundation. In July 1996 the program was incorporated into La Trobe Shire and became an activity of local government.

An evaluation of the first four years (first phase evaluation) was completed in 1997. We now report on the evaluation of the second phase of the program, from June 1996. We have attempted to address the lack of comparison data apparent in the first phase evaluation. This was done by utilising comparable impact measures which have become available from the Australian Bureau of Statistics and the Victorian Department of Human Services, and through the availability of emergency department and hospital admission injury data for similar regions of Victoria.

Methods

The evaluation is an observational study which includes pre and post intervention observations, some of which were also available for a comparison region. Process, impact and outcome measures were included. The operational region for the program was defined by the former Victorian local government areas of the Cities of Moe, Morwell and Traralgon, and the Shire of Traralgon, and for the purposes of the evaluation the program region was defined on the basis of postcode (3825, 3840, 3842, 3844, 3869, 3870). A comparison region was defined using the Accessibility/Remoteness Index of Australia (ARIA; Dept of Health and Aged Care, 1999) to identify areas in Victoria with the same index as the program region.

Data for process evaluation was obtained from reports to the Management Committee, an in-depth interview with the program officer, and through interviews with key informants from local organisations.

Data for impact evaluation (eg., changes to household safety features) was gathered using random household telephone surveys conducted in the program region in 1992, 1995 and 1999. In addition, two sources of comparison data for impact measures were identified. The first was a home safety survey which had been conducted by the Australian Bureau of Statistics, and from which some questions were included in the 1999 La Trobe survey. The second was the 1999 Victorian Population Health Survey which included one question which was also asked in the La Trobe surveys. Differences between responses in the pre and post-intervention surveys were tested using the chi-square function in Excel and SPSS 10.0. Proportional differences were tested using techniques outlined by Swinscow (1996).

Outcome evaluation included three sources of injury data: self-reported injury, emergency department presentations, and hospital admissions.

Self reported injury data was gathered in the telephone surveys. Injury rates for the two week period were calculated using the total population surveyed as the denominator.

Emergency Department injury presentation data for LTSC and the comparison region were obtained from the Victorian Emergency Minimum Dataset (VEMD) to which some 28 hospitals across Victoria provide data. Hospital admissions data for injury cases was obtained from the Victorian Admitted Episodes Database (VAED) which holds information relating to all Victorian public hospital (and more recently private hospital) admissions.

Consistent with the expansion of focus to all age all injury for the 1996-2000 period, analysis was not conducted by specific injury categories as was the case for the first phase evaluation. Injury data from the VEMD and VAED were used to calculate rates for the program and comparison regions. Population data for the denominators were obtained directly from the Australian Bureau of Statistics (ABS). Injury rates were standardised to the Victorian population by the direct method.

Trends in emergency department injury rates were determined using a log-linear regression model of rate data assuming a Poisson distribution of injuries. Trends in injury hospitalisation rates were examined with an offset log-linear regression model, with the injury frequencies included as a random variable and an age standardisation factor (derived from the age standardised rates) included as a fixed factor in the model.

Results

Collaborative partnerships with key organisations had continued to develop, following some initial confusion about the roles and responsibilities of the Project Office and the Advisory Committee following incorporation of the program into the local government structures. Key factors facilitating working partnerships were the adoption of a team approach by Council based on good relationships between the organisations, and good two-way communication particularly between the Community Safety Officer and Advisory committee members. All external key informants indicated that their organisations were keen to maintain ongoing representation on the Advisory Committee and a partnership approach on community safety initiatives.

The household telephone surveys revealed that in 1999 respondents were more likely to be able to list their home's safety features (79.3%, 96.5%, $P<0.001$), and were less likely to be able to list ways of improving their home than in 1995 (47.3%, 35.0%, $P<0.001$). In 1999 respondents were also significantly less likely to have purchased safety items in the last 12 months (45.8%, 39.3%, $P=0.02$). The average number of safety features per household increased marginally (2.2, 2.6, $P<0.001$).

The LTSC program region compared favourably with non-metropolitan Victoria, having a statistically significantly greater proportion of households with smoke detectors installed (96.7%, 85.3%, $P<0.001$), and hand rails present in the bathroom (20.2%, 11.9%, $P<0.001$), and a lower proportion with hot water capable of scalding (70.9%, 75.7%, $P<0.001$). La Trobe households also reported a marginally higher safety item usage across all categories (excluding personal protective equipment, such as recreation or sports items) when contrasted with the comparison region.

Overall, the self-reported injury rate decreased by 4.6% from 1992 (62.7 per 1000 persons) to 1999 (59.8 per 1000 persons). The significant decrease in self-reported injury observed in the first phase evaluation was not maintained in the second phase. In fact, between 1995

and 1999 the rate increased, although this was not statistically significant (48.2 per 1000, 59.8 per 1000, $P=0.15$).

The emergency department presentation rate for unintentional injury in both the program and comparison regions increased between 1997 and 2000. The estimated annual percentage increase in the program region (2%) was less than the increase observed in the comparison region (7%). Further, the increased trend in the program region was not statistically significant ($P=0.40$), whereas the increased trend in the comparison region was statistically significant ($P<0.0001$).

The emergency department presentation rate for intentional injury decreased in the program region between 1997 and 2000, in contrast to an increase in the comparison region. The estimated annual percentage decrease in the program region was 4.7%, compared with a 12% increase in the comparison region. The decreased trend in the program region was not statistically significant ($P=0.54$), however, the increased trend in the comparison region was statistically significant ($P<0.0001$).

When controlling for the pre-intervention trends, it was estimated from the statistical model that the unintentional injury hospitalisation rate in the program region significantly decreased by 9.2% ($P=0.0002$) on average relative to the comparison region during the intervention period. In the case of intentional injury, the rate in the program region increased significantly by 13.1% ($P=0.031$) on average relative to the comparison region during the intervention period.

Discussion

This current evaluation has a number of limitations in common with the first phase evaluation. These include that the community was self-selected, demographic differences were apparent in the samples obtained for the telephone surveys, and measurement of the outcome was at the level of the individual rather than at the community level, the level at which the intervention was delivered. Fewer systematic process measures were available, limiting the conclusions which can be drawn about implementation of some strategies such as development and delivery of relevant resources (such as safety audit tools, subsidy schemes), and changes to local government policies and practices.

A significant enhancement of the evaluation design was intended with the definition of a comparison region in rural Victoria, and the availability of some impact and outcome measures for this region. However, socio-economic differences between La Trobe and the comparison region, some unusual features of the hospitalisation data, and the differences in the pre-program trends between the La Trobe and comparison regions combined to weaken the validity of the comparison region and thereby complicate the interpretation of injury rate trends. However, it may have proven difficult to find a more appropriate comparison region in which emergency department surveillance data were also being captured.

Changes in injury rates were observed during the intervention period. Self-reported injury rates decreased marginally overall from 62.7 per 1000 persons in 1992 to 59.8 per 1000 persons in 1999. This should be interpreted with caution as age standardisation has not been possible. However, changes were also observed in emergency department presentation and hospitalisation rates that were age standardised. With respect to unintentional injury, emergency department presentation rates in the program region, although increasing, were not increasing to the same extent as observed in the comparison region. In addition, significant decreases in the hospitalisation rates for unintentional injury

in the program region (relative to the comparison region) were observed. Decreases were also observed for emergency department presentation rates for intentional injury, although there was no accompanying significant decrease in hospitalisation rates for intentional injury.

Alternative explanations for these observed effects in injury rates were canvassed. These included changes to health care delivery in the program region, such as the introduction of new inpatient and outpatient services not captured by the surveillance system, systematic improvements in data capture by emergency departments in the comparison region above any such improvement in capture at Latrobe Regional Hospital, and the removal of previously operating injury prevention initiatives in the comparison region. It was not possible to fully accept or discount any of these explanations, although on balance there did not appear to be a convincing case for any of them.

Thus in the absence of plausible alternative explanations, the evidence points to some reduction in injury rates, or at least a moderating effect on injury rate increases, associated with the La Trobe Safe Communities Program.

The results from the impact evaluation (i.e. changes in the risk and protective factors) provide little explanation for the observed reductions in injury. The three household surveys conducted in the program region suggest that while knowledge about home safety features and about where to purchase safety items improved, there had been little change in the home environment. Further, while the program region performed better than the comparison region on a number of household safety items, the actual proportions of households reporting the presence of various safety items was still relatively low, with the exception of smoke detectors and fire protection equipment. It is questionable that these measured changes in injury risk and protective factors contributed substantially to the observed injury reductions. It was noted, however, that the injury reductions may have been achieved through strategies not specifically measured in the household surveys.

The La Trobe Safe Communities program appears to have been successfully incorporated into the local government structure, and the injury rate trends provide some, perhaps limited, support for the program having an effect on injury outcome.

The following recommendations were made:

- Exploration of possible alternative, more appropriately matched, comparison regions could be considered prior to ongoing monitoring of trends in emergency department presentation and injury hospitalisation rates in the program and comparison regions.
- Regular reporting of program activities and strategy implementation should be detailed enough to identify links between these and injury outcome. Such reports should include, if possible, the injury prevention activities delivered by partner organisations with whom the program has actively engaged.
- The feasibility of a cost effectiveness study for the La Trobe Safe Communities program should be established.
- Statistical approaches to addressing some of the limitations of the quasi-experimental design should be explored for their potential to improve the methodological rigor of community trials in injury prevention research

1. INTRODUCTION

The community based approach to all age all injury prevention has been applied increasingly in various parts of the world, following the first successful reports in Sweden during the early 1980's (Schelp 1987a, Moller 1991, National Safety Council of Australia 1992, Gielan and Collins 1993). The early Swedish programs focussed on all types of injury among all age groups. This approach has also been applied to specific age groups and injury types (eg., Guyer et al 1989, Davidson et al 1994, Jeffs et al 1993, O'Donnell 1993, Bablouzian et al 1997).

The defining characteristic of the Swedish community based injury prevention project was a combination of the community-controlled (top-down) approach with the grassroots controlled (bottom-up) approach (Schelp, 1988). The community-controlled approach in this model means that the activities are initiated by established local organisations, in contrast to the grassroots controlled approach which refers to activities initiated by the citizens themselves. According to this model, working through the local organisations is used as a starting point for initiating community work. Individuals from the community become involved in assisting with problem definition, and as necessary knowledge and skills are acquired, increasingly take more responsibility for parts of the program. (Schelp, 1988). An additional characteristic thought to be central to the program's success is that of synergy. By targeting all age groups and all injury types, the various activities within the program combine synergistically to produce a greater effect than that which would be produced by a series of individual projects (Schelp 1987b).

Other programs have followed, and various health behaviour change and community-organising theories, such as social learning and diffusion, have been utilised to provide the theoretical base and structure for these programs (Bracht and Kingsbury 1990, Rifkin 1985, Green and Kreuter 1991).

The La Trobe Safe Communities program, formerly the Latrobe Valley Better Health Injury Prevention Program, is a community-based program, modelled on the Swedish experience, in the Latrobe Valley, Victoria. The program began as a stand-alone project in 1992, initially with funding from the Victorian Health Promotion Foundation. In July 1996 the program was incorporated into La Trobe Shire and became an activity of local government.

An evaluation of the first four years (first phase evaluation) was completed in 1997 (Day et al, 1997, 2001). The results indicated that the program built strategic partnerships, increasing the emphasis on local safety. Activities were implemented in the targeted areas of home, sport, and playground injuries. Some 47,000 educational contacts were made with the community and at least 6000 resource items distributed. There were significant increases in home safety knowledge. Some changes in the areas of playground and sport safety were achieved following partnership development with relevant agencies. The age standardised rate per 100,000 persons for emergency department presentations for all targeted unintentional injury fell from 6593.7 in year one to 4821.0 in the final evaluation year (1996). Poisson regression models showed significant decreases in the presentation rate to the hospital emergency department for all home injury and for the more severe home injuries. A decreasing trend in emergency department presentation rates was observed for home, sport and untargeted injuries. The decrease for home injuries, but not sports injuries, was significantly greater than that for untargeted injuries.

Like other community-based program evaluations (Langley and Alsop, 1996; Sanson-Fisher et al, 1996; Ozanne-Smith et al, 2002) the evaluation of the first four years had a number of limitations. It clearly demonstrated the difficulty of conducting robust evaluation when appropriate data are not readily available and inadequate budgets limit evaluation design and activities. The most significant limitation was the lack of comparison data, constraining conclusions about association of the program with the observed changes in impact and outcome measures.

During the last two years of the first evaluation period (1995-1996), state-wide agencies were implementing the Victorian Injury Prevention Strategy, launched in September 1994. Home, sport and playground equipment-related injury were all included in the state strategy, and the area of greatest activity was home injury prevention. Significant strategies included promotion of safe home design, a major scalds prevention campaign, and subsidised smoke detector installation. Sport and playground safety received less attention (Victorian Department of Health and Community Services, 1994, 1996).

At the same time, the La Trobe Safe Communities program developed collaborative relationships with local organisations and contributed to structural, environmental and organisational changes that have the potential to provide a cumulative benefit in terms of injury reduction. The extent of this contribution above that made by the state-wide strategy in the latter years of the program was not able to be determined.

We now report on the evaluation of the second phase of the program, from June 1996 when it was incorporated into local government until December 2000. We have attempted to address the lack of comparison data apparent in the first phase evaluation by utilising comparable impact measures which have become available from the Australian Bureau of Statistics and the Victorian Department of Human Services, and through the availability of emergency department and hospital admission injury data for similar regions of Victoria.

2. PROGRAM STRUCTURE

2.1 INCORPORATION INTO LOCAL GOVERNMENT

In July 1996, the previously stand alone Latrobe Valley Better Health Injury Prevention Program was re-named as the La Trobe Safe Communities (LTSC) and came under the auspice of the La Trobe Shire. Accordingly the program became incorporated into the organisational structure and operating mechanisms of local government. During the two years that followed, the program was moved into a number of different sections before becoming permanently placed within the Planning and Development Department, where it is one of seven activities including infrastructure planning and major projects, community development and social planning, corporate planning and performance, and strategic and statutory planning. A permanent position of Community Safety Officer was created within the Safe Communities Unit. Other staff, funded by external grants, work within the unit as required, under the direction of the Community Safety Officer.

Key functional differences between operation as a stand alone program and a local government program noted by the community safety officer include an increase in the public face of the program both within local government and within the community more broadly. Referrals from other local government sections and other government departments increased. The ability to directly influence council policies and priorities was also noted.

It appears that incorporation into local government brought some disadvantages which includes an increase in time spent on bureaucratic and administrative activities. The delay caused by these activities could at times result in missed opportunities for the program. These disadvantages were seen to be outweighed by the advantages which include increased importance of community safety within the local government context, access to decision makers, the ability to implement permanent change, and ongoing funding which increases productivity, and credibility.

2.2 AIMS AND OBJECTIVES

With the move into local government and designation as a WHO Safe Community, the program undertook to implement an ongoing program of injury control, covering the whole community, including people of all age groups, all environments and all situations.

This agreement has been reflected in the Shire Corporate Plans 1998-2001, and 1999-2002 in which the aim of decreasing the rate and severity of all types of injuries in the La Trobe Shire Community is declared.

Specific objectives listed in the program action plan include:

- To decrease the rate and severity of residential injuries
- To reduce harm associated with alcohol misuse by the community, particularly injuries related to interpersonal violence and self harm
- To decrease the rate and severity of sport and recreational injuries with a focus on eye injuries across all sports, and head injuries
- To decrease the rate and severity of injury on farms and agribusinesses in this region
- To decrease the rate and severity of transport injury among motor vehicle occupants, cyclists and pedestrians
- To decrease the rate and severity of work related injury

Strategies to achieve these objectives focus on increasing awareness and knowledge, development and delivery of relevant resources (such as safety audit tools, subsidy schemes), changes to relevant local government policies and practices, and working strategically to effect changes through other relevant organisations.

2.3 COMMITTEES AND WORKING GROUPS

The Management Committee of the program formally became a formal committee of Council when the program moved. Following a review of the project officer position and the role of the Management Committee, this committee was dissolved and replaced with an Advisory Committee with broader representation, including four community representatives. This committee also fulfills the role of the Local Municipal Safety Committee established by the police. The two functions of the committee are managed in two separate meetings, held consecutively. Working groups are formed around specific sub-activities as required.

2.4 MAJOR AREAS OF ACTIVITY

Major areas of activity identified in annual and progress reports included:

- Incorporation of injury prevention objectives into the La Trobe and Gippsland Public Health Plans
- Gippsland Anti-Violence Project
- Establishment of drug action teams
- Collaboration with the Safer Cities and Shires Program
- Vic Health Play Safe Sport sponsorship for 1998 football season
- Sports injury prevention seminars
- ADF Good Sports Program trial
- Introduction of safety requirements to be met by sporting clubs using council facilities
- Safety audit of local shopping areas
- Falls in small business project
- Additional promotion of Kidsafe campaign: No injury to my child, ever
- Plumber's information night on hot water scalds
- Introduction of safety audits and instruction for family day care workers
- Increased risk management approach within council activities
- Appointment of Risk Management officer by La Trobe Shire
- Attraction of \$82,000 in additional funding

3. METHOD

3.1 EVALUATION DESIGN

The evaluation is an observational study which includes pre and post intervention observations, some of which were also available for a comparison region.

The region in which the program operated during the evaluation period was defined by the former Victorian local government areas of the Cities of Moe, Morwell and Traralgon, and the Shire of Traralgon. The program region for the purposes of the evaluation was defined on the basis of postcode (3825, 3840,3842, 3844, 3869, 3870). The estimated resident population of the program region decreased from 73,916 in 1992 to 70,646 in 2000.

A comparison region was defined using the Accessibility/Remoteness Index of Australia (ARIA; Dept of Health and Aged Care, 1999) to identify areas in Victoria with the same index as the program region. ARIA is a geographic measure of remoteness, expressed in terms of access along the road network to four categories of service centres. Localities that are most remote have least access to service centres. The ARIA has 5 categories ranging from very remote to highly accessible. The LTSC program area is classified as highly accessible (ARIA score 0-1.84). Based on the ARIA indices for non-metropolitan areas of Victoria, and taking into account the availability of emergency department injury data, the regional areas of Warrnambool, Wimmera, and Echuca were selected together to comprise this comparison region, which was defined by postcodes (Appendix 1). Injury rates have been age-standardised thus removing differences in the rates that may occur due to demographic differences between the program and comparison regions.

Although the comparison region had the same ARIA index as La Trobe, the extent to which this region matched La Trobe on other important variables, such as socio-economic status, or proportion of population living in towns, was not able to be determined at the time of comparison region selection. Recent developments in the Victorian Injury Surveillance and Applied Research Program at MUARC have enabled the comparison of La Trobe and the comparison region on the basis of the index of relative socio-economic disadvantage, developed by the Australian Bureau of Statistics (McLennan, 1998). This demonstrated significant differences in relative socio-economic disadvantage between La Trobe and the comparison region. In 1996, 57.9% of La Trobe population lived in post-codes having an index of 1 or 2 (the most disadvantaged), compared with 16.1% for the population of the comparison region. Conversely, 6.4% of La Trobe population lived in post-codes having an index of 4-6 (the least disadvantaged), compared with 29.6% for the comparison region. The implications of this are outlined in the Discussion.

The second phase evaluation covers the period from January 1996 to December 2000. This represents the second stage of the program, during which time the initially free-standing program was incorporated into local government.

The first phase evaluation was used as a foundation (Day et al, 1997), and the framework of process, impact and outcome evaluation maintained (Table 1), albeit with a reduced emphasis on process evaluation. A number of potential methodological enhancements identified in the first phase evaluation were included, such as impact and outcome data for a comparison region and an increase in the number of households surveyed in the program region. Relevant results from the first phase evaluation are included here to provide continuity in assessing the effect of the LTSC program.

3.2 PROCESS EVALUATION

Random household telephone surveys conducted in the program region in 1992, 1995 and 1999 provided some data relating to awareness of safety programs, and recall of the LTSC program in particular. Details of the survey method are found in Section 3.3.1.

Reports to the Management Committee were available and an in-depth interview with the program officer was conducted towards the end of the evaluation period.

Key informant interviews were conducted to explore issues related to the development and operation of the new Community Safety Unit and Advisory Committee in the transition and early establishment period as the program came under council control. One key informant internal to Council and three external key informants, all from organisations represented on the Safe Communities Advisory Committee, were interviewed. External key informants, all members of the Advisory Committee, were drawn from Victoria Police, the local sports peak body and the community health service.

Table 1: Evaluation phases, La Trobe Safe Communities, 1996-1999

Program Plan	Evaluation Phase	Example measures
Goal reduction in injury incidence and severity in the community	Outcome measurement of long term effect	injury incidence, rates and severity
Objectives relate to achieving quantifiable changes in injury risk and protective factors	Impact measurement of immediate effect	knowledge and attitude; hazards and safety features in physical environment
Strategies plans to achieve the changes in risk factors	Process measurement of program delivery and execution of the strategies	implementation of activities; participation in program activities; organisational policy change

3.3 IMPACT EVALUATION

Random household telephone surveying was a major method utilised for the impact evaluation. A survey was conducted for this evaluation in the program region, using similar methods and instruments to those used for the previous evaluation surveys. In addition, two sources of comparison data for impact measures were identified and utilised. The first was a home safety survey which had been conducted by the Australian Bureau of Statistics, and from which some questions were included in the 1999 La Trobe survey. The second was the 1999 Victorian Population Health Survey which included, by negotiation with the Victorian Department of Human Services, one question which was also asked in the La Trobe surveys. The two comparison surveys were conducted within 5-7 months of the La Trobe survey (Table 2). For both these surveys, data for the respondents resident in the regional Victoria were compared with the La Trobe 1999 survey, for the common survey items.

Table 2: Data sources for impact evaluation, La Trobe Safe Communities, Victoria

Survey	Survey type	Time period	Response rate	Sample size	Comparison area
La Trobe	Telephone survey of randomly selected households	May 1999	68.5%	605	Not applicable
Victorian Home Safety Survey (Australian Bureau of Statistics)	Telephone and face to face survey of multi-stage sample of private dwellings	October 1998	Not available	1,482 outside Melbourne	Households outside Melbourne major statistical region
Victorian Population Health Survey (Vic Dept of Human Services)	Telephone survey of randomly selected households	August – October 1999	59%	6,060 outside Melbourne	Defined comparison region

3.3.1 La Trobe household telephone survey

The telephone survey questionnaire, designed to determine changes in knowledge and practice, was based on the questionnaire used in the pre-intervention (1992) and mid-intervention (1995) evaluation of the then Latrobe Valley Better Health Project. The questionnaire consisted of 13 questions; 4 were closed-ended questions, and 9 were open-ended or partially open-ended. Four of the 13 questions were new to the 1995 version of the questionnaire. Three of these questions were taken from the 1998 Australian Bureau of Statistics home safety survey; specifically, they inquired about smoke detectors, hot water, and hand rails. The fourth new question asked about usage of personal protective equipment in sport. Seven demographic questions were also asked. The May 1999 post-intervention survey was conducted by Gippsland Research and Information Service (Monash University, Gippsland). Copies of the questionnaires can be found in Appendix 2.

Sampling Frame

Three random samples were drawn independently from a sampling frame defined by Latrobe Valley area listings in the Telstra Electronic White Pages Telephone Directory. Numbers were randomly selected. Apparent business numbers were discarded. Up to four attempts were made with each number before discard.

A total of 883 households were contacted in the 1999 survey. Of this total, 605 households agreed to participate in the survey, representing a response rate of 68.5% (Table 3).

As Table 3 illustrates, the 1999 survey was larger in scope than both the 1992 and 1995 surveys. Response rates improved compared with 1995, and the total number of households participating increased by 50%, with a corresponding increase in total population coverage.

The questionnaires were coded for data entry after completion of the surveys. The amount of information lost in the coding process was minimised by discrete coding of responses rather than allocation to a category. The data were analysed using SPSS 10.0 to generate frequency listings and cross tabulations.

Table 3: Household telephone surveys, La Trobe Safe Communities evaluation, Victoria, 1992 to 1999

	1992 (pre-intervention)	1995 (mid-intervention)	1999 (post-intervention)
Connection rate*	76.8%	81%	66.8%
Response rate#	76.7%	55.5%	68.5%
Number of households participating	375	400	605
Number of persons	1052	1182	1723
Proportion of total population	1.4%	1.6%	2.4%

*proportion of numbers dialled resulting in connection with a person

proportion of households connecting, that participated in survey

As Table 3 illustrates, the 1999 survey was larger in scope than both the 1992 and 1995 surveys. Response rates improved compared with 1995, and the total number of households participating increased by 50%, with a corresponding increase in total population coverage.

The questionnaires were coded for data entry after completion of the surveys. The amount of information lost in the coding process was minimised by discrete coding of responses rather than allocation to a category. The data were analysed using SPSS 10.0 to generate frequency listings and cross tabulations.

Demographic Comparisons

Comparisons between the three (1992,1995,1999) survey samples show a high level of homogeneity. Table 4 summarises some of the key demographic categories. It is evident that the samples are similar across most demographic categories. There is no evidence to suggest that any sample was selected in a systematically biased manner. However, there were some demographic differences which may be important. In particular, the child age distribution varied across the three surveys. Detailed demographic comparisons are displayed in Appendix 3.

Table 4: Selected demographic indicators, household telephone surveys, La Trobe Safe Communities evaluation

Demographic indicator	Pre-intervention 1992	Mid-intervention 1995	Post-intervention 1999
Mode* respondent age	20-45 yrs (51.7%)	20-45 yrs (49.0%)	20-45 yrs (46.1%)
Mode - Adults per household	2 (58.4%)	2 (53.3%)	2 (64.1%)
Mode – Children per household	0 (58.4%)	0 (57.0%)	0 (61.0%)
Mode – respondents over 65 yrs	0 (78.9%)	0 (83.3%)	0 (76.5%)
Percentage of rented homes	19.7%	19.8%	17.4%
Mode – most sampled postcode	3844 (34.9%)	3844 (33%)	3825 (34.0%)

*most common

3.3.2 Australian Bureau of Statistics Victorian Home Safety Survey

This survey on safety hazards and safety features in the home was conducted by the Australian Bureau of Statistics in Victoria during October 1998 as a supplement to the Monthly Population Survey. The Monthly Population Survey is a multistage sample of private and non-private dwellings. The home safety survey was conducted using the sample of private dwellings in Victoria, constituting 5,200 dwellings from which a full response was obtained. Information was collected by either personal interview or telephone interview from an adult in the household (Australian Bureau of Statistics, 1999). Published data on the three comparable items for households outside of the Melbourne major statistical region were used for comparison with the Latrobe Valley data collected in the May 1999 evaluation survey.

3.3.3 Victorian Population Health Survey

The Department of Human Services, Victoria, conducted the 1999 Victorian Population Health Survey between August and October using computer assisted telephone interviewing (Department of Human Services, Victoria, 2000). A representative state-wide sample of adults was selected using random telephone number generation. A total of 10,094 interviews were completed of which 6,060 were non-metropolitan (Melbourne) residents. The questionnaire contained items on a number of health issues, including a question on the purchase of safety items in the previous 12 months which was included for the purpose of comparison with the Latrobe survey. Using the comparison region postcodes, responses on this item for respondents living in these regions were extracted and compared with the responses for the same question on the Latrobe survey.

3.3.4 Other methods

Alcohol sales (consumption) data from the Liquor Licensing Commission had previously been used as an impact measure. This was not possible for the second phase evaluation, as the type of records required are no longer kept by the Commission.

3.4 OUTCOME EVALUATION

3.4.1 Self reported injury

Self reported injury data was gathered in the random household telephone surveys conducted in the program area (see Section 3.3.1). Respondents were asked to recall injuries sustained by household members during the 2 weeks immediately preceding the telephone interview. Information on the activity, location, circumstances of all reported injuries was collected in addition to the level of medical treatment required. Injury rates for the two week period were calculated using the total population surveyed as the denominator. Self reported injury rates could not be age adjusted as the age of injured persons was not recorded.

Table 5: Data sources for the injury outcome analyses, La Trobe Safe Communities, Victoria

Database/source	Injury	Time period	Numerator extracted by	Population denominator
Telephone survey	all self reported	2 weeks in May 1992, 1995, 1999	residential postcode	number of persons in households surveyed
Victorian Emergency Minimum Dataset	Emergency department presentations	1997 to 2000	residential postcode	ABS estimated resident population by postcode
Victorian Admitted Episodes Dataset	hospital admissions	1988 to 1999	postcode	ABS estimated resident population by postcode

3.4.2 Emergency department injury presentations

Emergency department injury presentation data were obtained from the Victorian Emergency Minimum Dataset (VEMD). The Latrobe Regional Hospital participates in the VEMD collection, and is the only public hospital and the only hospital with outpatient facilities serving the population of the program region. Detailed descriptions of the data collection process and the VEMD database have been published elsewhere (Watt and Ozanne-Smith 1996). The data are collected electronically by participating hospitals, using a standardised electronic reporting framework (record entry form) and provided to MUARC for collation. This data collection process differs from the paper-based data collection system which provided emergency department presentation data for the first phase evaluation (Day et al, 1997). Consequently, data from the two time periods in which different collection methods were employed have not been combined, limiting the emergency department data to the period 1996-2000. The change from paper based to electronic data collection occurred in late 1995 and early 1996. During this transition there were changes in data capture and quality as the new system was introduced. Therefore, data from 1996 has been excluded from this analysis.

Data for injury presentations to the Latrobe Regional Hospital by people with a program postcode of residence were extracted from the VEMD. Similarly, data were also extracted for injury presentations by those living in the comparison region postcodes. Consistent with the expansion of focus to all age all injury for the 1996-2000 period, analysis has not been conducted by specific injury categories as was the case for the first phase evaluation (home, sport, playground). Injury data from the VEMD was used to calculate rates for the program and comparison regions. Population data for the denominators were obtained directly from the Australian Bureau of Statistics (ABS). Injury rates were standardised to the Victorian population by the direct method (Pollard et al, 1981).

3.4.3 Injury hospitalisations

The Victorian Admitted Episodes Database (VAED) holds information relating to all Victorian public hospital (and more recently private hospital) admissions. At the time of this current evaluation, VAED data was available for the 12 financial years 1987/88-1999/2000. MUARC holds, by agreement with the Victorian Department of Human Services, a subset of VAED records, selected by external cause of injury codes (E codes) from the International Classification of Diseases (Commission of Professional and Hospital Activities, 1986). The subset encompasses a range of variables for each injury

hospitalisation, including age, sex, and external cause of injury. Geographic identifiers include postcode of residence and local government area.

Attempts to use hospitalisation data in the first phase evaluation had been complicated by the timing of the introduction of changes to health care system funding in Victoria, which had a significant impact on injury hospitalisation rates during the period 1992/93-1994/95 (Stathakis, 1999). Hospitalisation rates increased sharply for most categories of injury and in a range of age groups. However, given the availability of data up to June 2000, the impact of these changes is likely to have diminished. Therefore, injury hospitalisation rates were a useful addition to the second phase evaluation. The period from 1988 to 1991 was defined as the pre-intervention period. The period from 1992-1999 was defined as the intervention period.

Frequencies for unintentional and intentional injury for the Latrobe program region and the defined comparison regions were extracted. This was combined with post code based population data obtained directly from the Australian Bureau of Statistics to calculate injury rates which were subsequently age standardised by the direct method to the Victorian population (Pollard et al, 1981).

3.5 STATISTICAL ANALYSES

Differences between responses in the pre and post-intervention surveys were tested using the chi-square function in Excel and SPSS 10.0. Proportional differences were tested using techniques outlined by Swinscow (1996).

Trends in emergency department and hospitalisation injury rates were determined using a log-linear regression model of rate data assuming a Poisson distribution of injuries. The statistics relating to the trend curves, slope and intercept, 95% confidence intervals around the slope, estimated annual percentage change and the p-value, were calculated using the regression model in SAS. A negative slope indicates a decreasing trend whereas an increasing trend has a positive slope. A trend was considered statistically significant if the p-value of the slope of the regression model was less than 0.05.

Trends in injury hospitalisation rates were also examined with a log-linear regression model, with the injury frequencies included as a random variable and an age standardisation factor (derived from the age standardised rates) included as a fixed offset in the model. The fitted model was used to measure the separation in the trends for the program and intervention regions during the intervention period, and assess whether the extent of separation was statistically different to that observed for the pre-intervention period. The average effect, and yearly effects, for the intervention period in the program region rates relative to the comparison region rates, were estimated using this model.

4. RESULTS

4.1 PROCESS MEASURES

4.1.1 Awareness

An element of the process evaluation concerns public awareness of the LTSC program. The level of public awareness was measured by the random household telephone survey. When asked about their general awareness of safety programs in the region, 20.8% of respondents indicated that they were aware of safety programs. This figure is identical to that obtained in the previous evaluation stage (1992: 18.7%; 1995: 20.8%). However, when participants were questioned specifically about the LTSC program, 13.2% recognised the program compared with 20.2% in 1995. This difference was found to be significant by pairwise chi-squared tests ($p < .001$).

4.1.2 Organisational changes

Clarity of the role of key organisations in the new structure especially their role on the advisory committee

The internal key informant reported that there was some confusion about the roles and responsibilities of both the Community Safety Officer (as the position shifted from community to council control) and the Advisory Committee (as it moved from a management to advisory role). He further reported that this uncertainty had dissipated somewhat with the development of a position statement for the Community Safety Officer. This statement clearly delineated the functions and outputs for the position holder and defined his/her responsibilities and accountabilities, and the development of clear Terms of Reference for the Advisory Committee. The external key informants appeared comfortable with the shift from the management role they had on the original Latrobe Valley Safe Communities Program Committee to an advisory role on the new Committee which is a formal sub-committee of Council.

Relationship of key organisations with council through the advisory committee (and Safe Communities Unit)

All three external key informants viewed their organisation's relationship with the Council (through the Advisory Committee and the newly established Safe Communities Unit) as a partnership with respect to the issues around community safety.

It is a partnership but not a continuous one, we assist the Council [through the Safe Communities Unit] on all sports safety matters.... Basically, sports safety has been given over to our organisation.

It's a partnership in the broadest sense. I was expected to set up a Community Safety Committee under the Victoria Police Local Priority Policing Program but because the Safe Communities Advisory Committee has much the same role, the Advisory Committee now fulfils both functions and we run the two meetings end-on.

The Safe Communities Advisory Committee shows there is a partnership approach. There could be the opportunity for parochialism and competition between Council and the Community Health Service in some areas ... however, we sit at the same table on the Advisory Committee and look at the best outcome for the community.

Factors attracting the organisation and agencies to work in partnership with Council

The external key informants reported that the key factor that attracted their organisations into a partnership with Council on community safety issues was that their organisations all recognised they had a role to play in community safety and the Advisory Committee provided opportunities for a team approach.

Both organisations have common goals – injury prevention and sports safety. The Safe Communities program aims to improve the environment in which sport is played and [encourages] safe participation and this fits with our role.

The Council and the Police have a clear understanding that they will cooperate on community safety...we are the two key agencies. As the representative of the Victoria Police on the Advisory Committee I offer a police perspective and advice on community safety issues, for example violence, street offences and problems around liquor licensing.

There is a good overlap between the core business of both organisations. The Health Service can provide statistical and technical information to enable Council to make informed decisions on local health and safety issues, rather than source the information independently which would take time and not produce the same level of accuracy.

Key factors making the partnerships work

The external informants reported that the key factors that were making the partnerships work were the adoption of a team approach by Council based on good relationships between the organisations (built over a number of years through the Better Health Safe Communities project) and good two-way communication particularly between the Community Safety Officer and Advisory committee members.

We don't wait for a meeting, we have good communication and address problems as they arise; we concentrate on getting the job done.

There is general good relationship between the organisations. The Community Safety Officer and I get on with each other, we talk to each other all the time. We send stuff to each other, invite each other to key meetings – it's a good working relationship.

The concept of having agencies come together to advise Council appealed to me – a commonsense approach. I see it as an effective use of the corporate intelligence that exists in each of the agencies on the Advisory Committee... There is a two-way exchange of information – I bring back issues to my agency and we frame an agency response...Our health promotion arm only has a finite budget which limits our ability to develop our own strategies [in this area]. {Our involvement in the committee} has enhanced what we would normally do.

Barriers and challenges to the working relationship between Council and participating organisations or the safe communities program

The key informant from Council reported that some managers of other areas initially questioned whether community safety was a legitimate function of local government and were sceptical about the value of having designated staff in this role. The informant further reported, however, that this initial resistance was 'turning around' as these

managers saw the contribution that the Community Safety Unit (and Officer) had made to resolving vexatious issues such as laneway safety/closures and public health and safety concerns during the local festival.

None of the external key informants identified any barriers or challenges to the working relationships between Council and the organisations on the Advisory Committee. One reported 'an overwhelming spirit of enthusiasm' among Advisory Committee members. The internal key informant reported that everybody on the Committee appeared 'pretty satisfied' with the new arrangements.

Two external informants identified that the major challenge was the lack of community awareness of local actions that could be taken to improve the safety of citizens.

Only some clubs take up sports safety and risk management information, the minority do, the majority don't. It's a lengthy process of education. The average club administrator doesn't understand risk management and duty of care.

The major challenge is getting the public to understand that there are things that can be done at the local level to enhance safety, for example crime prevention through environmental design initiatives.

Sustainability of the program and key organisations' participation

The internal informant described the community safety function as 'no more tenuous than any other function of Council'. The informant believed, however, that it would take a long time for community safety to be recognised as a separate discipline likening its progress to the evolution of environmental safety as a discipline.

This financial year is the first year that the position is entirely funded by Council which indicates that the Council places sufficient value on the position of Community Safety Officer to have that function whether or not external funds are available... The normal operating costs will be met by Council with additional staff funded by external grants which may involve Council matching external contributions...We are taking the same approach as we take to environmental planning – the position will provide guidelines and resources to enable good planning decisions to be made.

All external key informants indicated that their organisations were keen to maintain ongoing representation on the Advisory Committee and a partnership approach on community safety initiatives.

The partnership is established and can only get better. We now have a basis of trust, we work positively together.

4.2 IMPACT MEASURES

4.2.1 La Trobe Surveys

The 1999 telephone survey was analysed and compared to the 1992 and 1995 surveys. Response patterns across the 1995 and 1999 surveys were compared with pairwise chi-square tests.

Table 6: Summary of household telephone survey results, La Trobe Safe Communities

Proportion respondents:	1992 (pre-intervention)	1995 (mid-intervention)	1999 (post-intervention)	chi-square p-value ⁺
Able to list home safety features	65.9	79.3	96.5	<0.001*
Able to list ways to improve home safety	50.7	47.3	35.0	<0.001*
Know where to purchase safety items	62.4	72.0	69.9	0.54
Have purchased safety items in last 12 mths	42.7	45.8	39.3	0.02*
Can indicate prompt for safety item purchase	13.6	45.8	37.5	0.002*
Able to list ways to prevent sports injury	72.8	72.5	74.7	0.53

+ pairwise chi-square tests for 1995 and 1999

* significant at p<.05 level. Note that chi-square test was based on raw frequency counts rather than percentages displayed above.

Four of the six measures in Table 6 show a significant change over the 1995 and 1999 period. In 1999 respondents were more likely to be able to list their home's safety features, and were less likely to be able to list ways of improving their home. In 1999 respondents were also significantly less likely to have purchased safety items in the last 12 months, and were less likely to be able to indicate what prompted them to purchase items. The average number of safety features per household (not shown in Table 6) has increased marginally at each survey time point (1.9 in 1992, 2.2 in 1995, 2.6 in 1999). The increase between 1995 and 1999 was significant when tested with chi-square (p<0.001). This would seem to be more a reflection of increased awareness rather than an actual increase in safety items, given the results for having purchased an item in the last 12 months.

4.2.2 Australian Bureau of Statistics Victorian home safety survey

The LTSC program region compared favourably with non-metropolitan Victoria on a number of key safety features in the home. Table 7 summarises these findings.

Table 7: Home safety in La Trobe and non-metropolitan Victoria: selected household safety items

Proportion of households with:	La Trobe Survey (May, 1999)	Non-metropolitan Victoria ABS Survey (Oct, 1998)*
Smoke detectors installed	96.7	85.3
Hand rails present in bathroom	20.2	11.9
Hot water capable of scalding	70.9	75.7

* Source: Australian Bureau of Statistics. *Safety in the home, Victoria*. Canberra: Australian Government Publishing Service, 1999 Catalogue No 4387.2

Tests for the significance of differences between proportions (Swinscow, 1996) revealed significant differences (p<.001) between the LTSC program region and non-metropolitan Victoria on all three of the household safety items displayed in Table 7.

4.2.3 Victorian Population Health Survey

Table 8 shows percentages of households surveyed who reported possessing items in the delineated categories. La Trobe households reported a marginally higher safety item usage across all categories (excluding personal protective equipment, such as recreation or sports items) when contrasted with the comparison region.

Table 8: Victorian Population Health Survey, 1999: level of household safety item possession*

Proportion of households with:	La Trobe	Comparison Region
Personal Protective Equipment	8.5	8.8
Fire protection equipment	26.0	25.3
Security/Safety devices	4.8	4.4
Child safety/Childproof devices	5.5	4.3
Railing & fencing	3.3	2.2
Other safety items	5.6	3.9

*Source: Department of Human Services, Victoria

4.3 OUTCOME MEASURES

4.3.1 Injury outcome

Overall, the self-reported injury rate decreased by 4.6% from 1992 to 1999. The significant decrease in self-reported injury observed in the first phase evaluation was not maintained (Table 9). The increase in the rate between 1995 and 1999 was not significant ($p>0.15$). There was a statistically significant ($p<0.001$) increase in the proportion of injuries occurring in residential locations.

Table 9: Self-reported injury rates, La Trobe Safe Communities, Victoria

	Rate per 1000 persons	Proportion in residential locations	Proportion during sporting activities
1992	62.7	37.9	29.1
1995	48.2	28.1	43.9
1999	59.8	37.4	41.7

4.3.2 Emergency department presentations

The emergency department presentation rate for unintentional injury in both the program and comparison regions increased between 1997 and 2000 (Figure 1). The estimated annual percentage increase in the program region (2%) was less than the increase observed in the comparison region (7%). Further, the increased trend in the program region was not statistically significant, whereas the increased trend in the comparison region was statistically significant (Table 10).

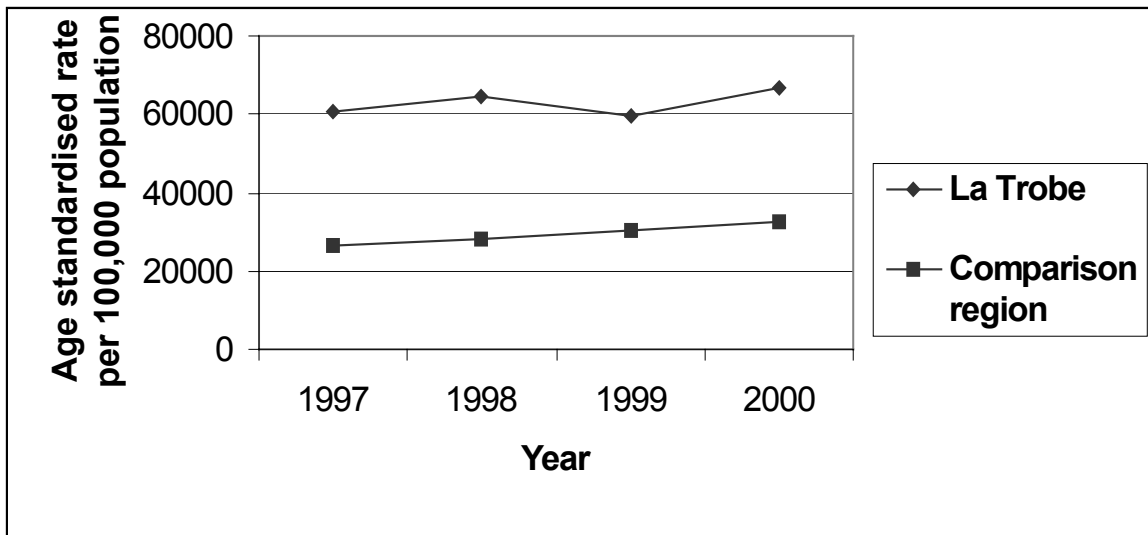


Figure 1: Age standardised unintentional injury rate, emergency department presentations, La Trobe Safe Communities

The emergency department presentation rate for intentional injury decreased in the program region between 1997 and 2000, in contrast to an increase in the comparison region (Figure 2). The estimated annual percentage decrease in the program region was 4.7%, compared with a 12% increase in the comparison region (Table 10). The decreased trend in the program region was not statistically significant, however, the increased trend in the comparison region was statistically significant (Table 10).

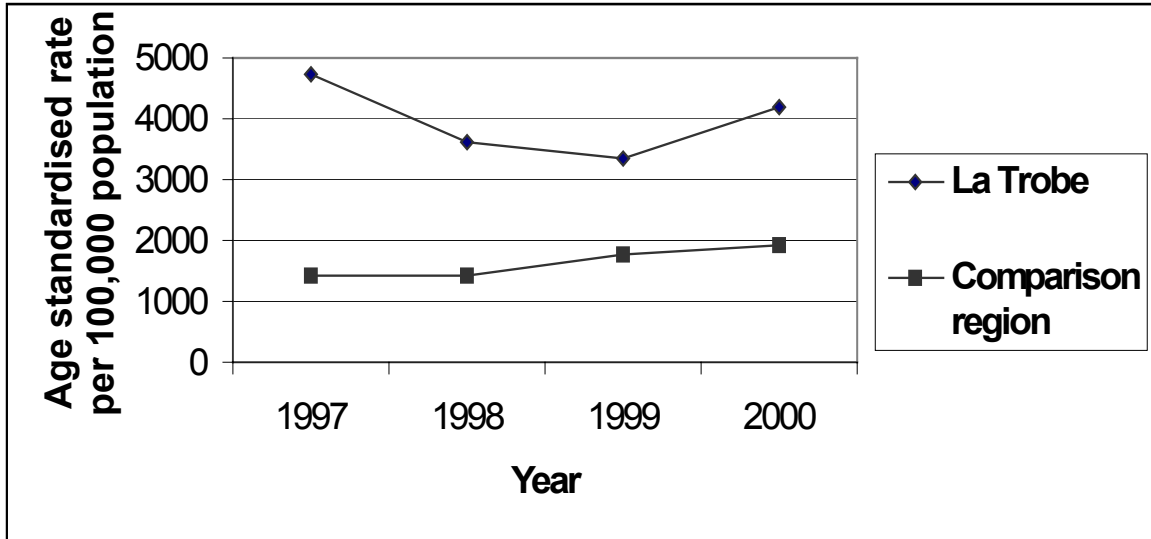


Figure 2: Age standardised intentional injury rate, emergency department presentations, La Trobe Safe Communities

Table 10: Trends in emergency department injury presentation rates, La Trobe Safe Communities, 1997-2000

	Slope	95% confidence interval for slope	p-value	Estimated annual % change
Unintentional injury				
La Trobe	0.022	-0.087-0.130	0.40	2.2
Comparison region	0.068	0.050-0.086	<0.0001	7.0
Intentional injury				
La Trobe	-0.048	-0.381-0.285	0.54	-4.7
Comparison region	0.113	0.011-0.215	<0.0001	12.0

4.3.3 Hospital admissions

Hospital admission data was examined over a twelve year period, which included several years prior to program commencement in May 1992. Trends over this period were influenced by changes to health care system funding, the effect of which was most pronounced from 1992/93 to 1994/95 (Stathakis, 1999). The pre-intervention period has been defined as 1998-1991, and the intervention period as 1992-1999.

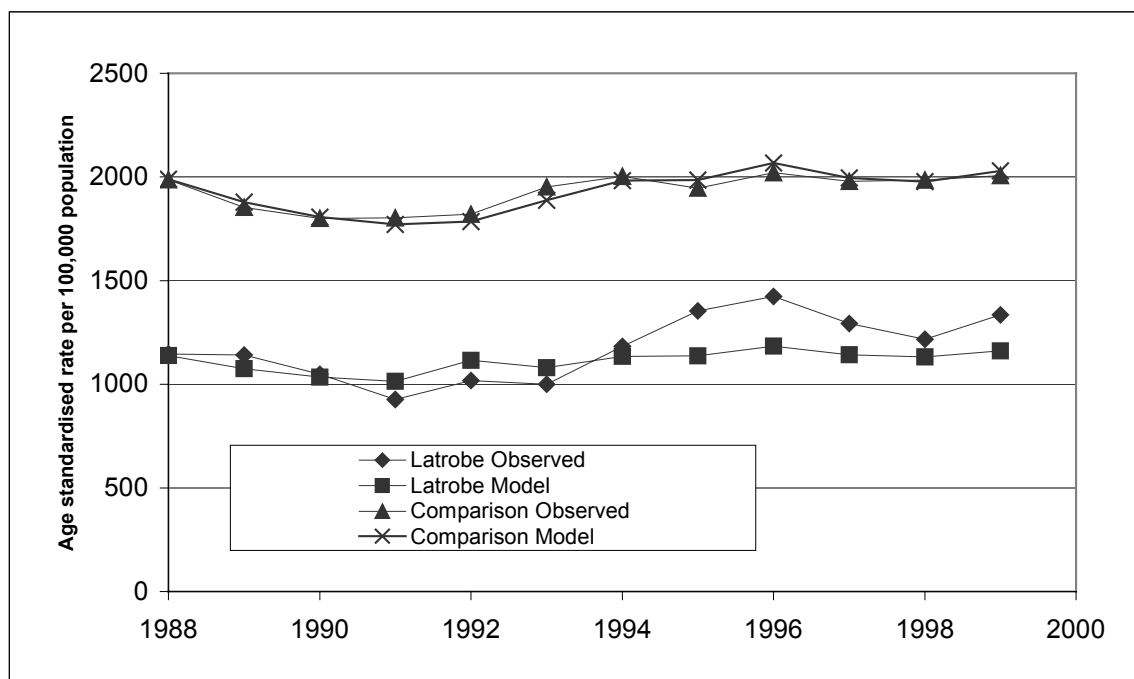


Figure 3: Age standardised unintentional injury rates, hospital admissions, La Trobe Safe Communities

The statistical modelling of the pre-intervention trends in unintentional injury indicated that during the pre-intervention period, there were significant differences in the trend between the program and comparison regions ($\chi^2=10.6$, $df=3$, $P=0.014$). Since the ideal in these quasi-experimental designs is that pre-intervention trends in the program and comparison regions should be comparable, the selected comparison region may not have been the most appropriate. However, it may also be the case that a more suitable comparison region (with emergency department surveillance data) may not have been available. It should also be noted that due to the relatively large populations involved, statistical power to detect a difference was considerably enhanced.

When controlling for the pre-intervention trends, it was estimated that the unintentional injury rate in the program region significantly decreased by 9.2% on average relative to the comparison region during the intervention period ($P=0.0002$). The estimated yearly effects are shown in Table 11. It can be seen that the effects were not uniform each year ($\chi^2=60.8$, $df=7$, $P<0.001$), with the most pronounced effects in 1995 and 1996 (21.5% and 23.1% reductions respectively). Note that these results cannot be deduced from the graph shown in Figure 3, as the log-linear model of the data is controlling for the pre-intervention trends.

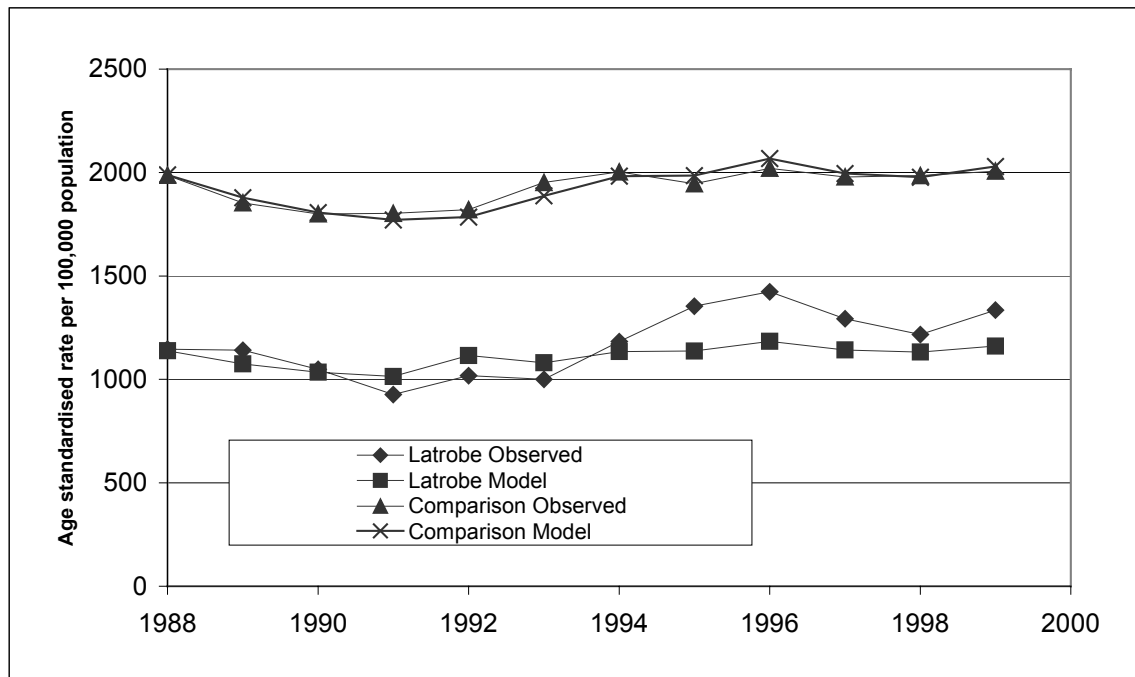


Figure 4: Age standardised intentional injury rates, hospital admissions, La Trobe Safe Communities

The statistical modelling of the pre-intervention trends in intentional injury indicated that during the pre-intervention period, no significant differences could be detected in the trend between the program and comparison regions ($\chi^2=4.36$, $df=3$, $P=0.225$). It should also be noted even though the populations were relatively large the frequency of intentional injuries was small enough to reduce statistical power.

When controlling for the pre-intervention trends, it was estimated that the intentional injury rate in the program region increased significantly by 13.1% on average relative to the comparison region during the intervention period ($P=0.031$). The estimated yearly effects are shown in Table 11. There were also marginally significant differences in program effect by year after implementation ($\chi^2=13.84$, $df=7$, $P=0.054$).

Table 11: Estimated program effectiveness relative to comparison region, La Trobe Safe Communities, 1988-1999

	Unintentional injury		Intentional injury	
	%change*	P-value	% change*	P-value
1992	2.3	0.602	-7.3	0.537
1993	10.6	0.013	5.1	0.662
1994	-3.2	0.464	14.8	0.164
1995	-21.5	<0.0001	10.7	0.317
1996	-23.1	<0.0001	6.0	0.580
1997	-14.1	0.001	10.8	0.316
1998	-7.1	0.107	31.9	0.001
1999	-16.3	0.0002	29.2	0.009

*Negative values indicate an estimated reduction in the injury rate of the treatment group relative to the control, whereas positive values indicate an estimated increase in the injury rate relative to the control.

5. DISCUSSION

5.1 EVALUATION DESIGN AND METHODS

This current evaluation has a number of limitations in common with the first phase evaluation. These include that the community was self-selected, possibly introducing a type of volunteer bias, even though comparison data was introduced in this evaluation. Although the response rate to the telephone survey improved compared with the 1995 survey, demographic differences in the surveyed population were still apparent. The most significant of these was a difference in the age distribution of children in the surveyed households, having a possible effect on the self-reported injury rates. Since age of the injured person was not recorded in the household surveys, age standardisation of the self-reported injury rates was not possible. Measurement of the outcome was at the level of the individual rather than at the community level, the level at which the intervention was delivered. Fewer systematic process measures were available, limiting the conclusions which can be drawn about implementation of some strategies such as development and delivery of relevant resources (such as safety audit tools, subsidy schemes), and changes to local government policies and practices.

A significant enhancement of the evaluation design was intended with the definition of a comparison region in rural Victoria, and the availability of some impact and outcome measures for this comparison region. Opportunistic use of similar concurrent household surveys conducted by the Australian Bureau of Statistics and the Department of Human Services, Victoria, to obtain data on key home safety issues added another dimension to the impact evaluation. The expansion of the Victorian Injury Surveillance System to include emergency department injury presentations at the major regional hospitals in Victoria created the opportunity to compare trends for the most recent four years in the program area with those in other regional parts of Victoria which comprised the comparison area. Finally, since time had moderated the impact of the health care system funding changes, trends in injury hospitalisations could be examined.

This enhancement by the inclusion of a comparison region was tempered somewhat by the significant difference in socio-economic disadvantage relative to the program region, rendering the comparison region a less useful one, since matching of comparison and program regions on potential confounders provides results which can be more readily interpreted.

Further, some unusual characteristics of the injury rates were observed. Since the program region had higher levels of relative socio-economic disadvantage, it would be expected that injury rates for both unintentional and intentional injury would be higher in the program region. A recent study of socio-economic disadvantage and injury rates found that rates for unintentional and intentional injury were generally higher for deaths, hospital admissions and emergency department presentations for the most disadvantaged areas of Victoria (Stokes, Ashby and Clapperton, 2001/02). Differences in the emergency department presentation rates for La Trobe and the comparison region were consistent with this finding, although the differential was greater than that observed for Victoria. La Trobe rates were 1.3-3.3 times higher than the comparison region, whereas for Victoria rates for the most disadvantaged groups were 1.2-1.9 times higher than the least disadvantaged groups (Stokes, Ashby and Clapperton, 2001/02).

Differences in the hospitalisation rates for intentional injury were also consistent with the finding of higher rates for most disadvantaged groups in Victoria. La Trobe rates were 1.2-1.6 times higher than the comparison region. In Victoria rates for the most disadvantaged groups were 1.8-2.7 times higher than the least disadvantaged groups (Stokes, Ashby and Clapperton, 2001/02).

However, the pattern was curiously reversed for unintentional injury hospitalisations. Comparison region (less disadvantaged) rates were 1.4-2.0 times higher than La Trobe (more disadvantaged), whereas for Victoria rates for the most disadvantaged groups were 1.2 to 3.0 times higher than the least disadvantaged groups. There is no apparent explanation for this reversal (source data have been checked to rule out a labeling error).

A second unusual observation was also apparent with respect to the injury hospitalisation rates. The effect of changes to health care system funding on injury hospitalisation rates was most pronounced for Victoria from 1992/93 to 1994/95, during which period marked increases in injury hospitalisation rates were observed (Stathakis, 1999). Marked increases were also observed for intentional injury in both the program and comparison regions, and for unintentional injury in the program region. However, unintentional injury rates did not increase markedly in the comparison region during this period.

An additional factor worthy of consideration is the observation in the modeling of the hospitalisation trends for unintentional injury that the pre-intervention trends in the program and comparison regions were significantly different, suggesting that the comparison region may not be well matched on this factor.

Socio-economic differences, some unusual features of the hospitalisation data, and the differences in the pre-program trends between the program and comparison regions combine to weaken the validity of the comparison region and thereby complicate the interpretation of injury rate trends. However, it may have proven difficult to find a more appropriate comparison region in which emergency department surveillance data were also being captured.

5.2 PROGRAM IMPACT

Changes in injury rates were observed during the intervention period. Self-reported injury rates decreased marginally overall from 62.7 per 1000 persons in 1992 to 59.8 per 1000 persons in 1999. The self-reported rates should be interpreted with caution as age standardisation has not been possible. However, changes were also observed in emergency department presentation and hospitalisation rates, that were age standardised. With respect to unintentional injury, emergency department presentation rates in the program region, although increasing, were not increasing to the same extent as observed in the comparison region. In addition, significant decreases in the hospitalisation rates for unintentional injury in the program region (relative to the comparison region) were observed. Decreases were also observed for emergency department presentation rates for intentional injury, although there was no accompanying significant decrease in hospitalisation rates for intentional injury.

Age standardised unintentional injury (targeted) emergency department presentation rates had been decreasing since program commencement in 1992 up until June 1996 (Day et al., 2001). While this decreasing trend was not maintained, the emergency department

presentation rate for unintentional injury in the program region increased at a slower rate than the significant increasing trend observed in the comparison region.

It is difficult to identify plausible explanations, other than the effect of the LTSC program, for these observed differences in injury rates. Changes to health care delivery in the program region, such as the introduction of new inpatient and outpatient services not captured by the surveillance system, could explain reductions in injury presentations and admissions to Latrobe Regional Hospital. In August 1998, the La Trobe Regional Hospital moved from its two site configuration (Moe and Traralgon) to a single new site near Morwell. At the same time, an after hours outpatient medical service was established in Moe (Henk Harberts, personal communication). This raises the possibility that decreases in emergency department presentations to the hospital could be a reflection of a shift in the location at which treatment is sought. Between 1997 and 1998, the unintentional injury emergency department presentation rate in La Trobe actually increased by 6.4%, while the rate for intentional injury decreased by 23%. If shifts in treatment location are the explanation for decreases in the La Trobe emergency department presentation rate, then the hypothesis must be that the shift has occurred only for intentional injury.

Systematic improvements in data capture by emergency departments in the comparison region above any such improvement in capture at Latrobe Regional Hospital could explain increased emergency department presentation rates in the comparison region. The Victorian Injury Surveillance and Applied Research System, that collates state-wide emergency department data and maintains close contact with the participating hospitals, is unaware of any such differential improvements. However, there is no system of capture auditing which would provide that data needed to assess differential capture (Karen Ashby, personal communication). Certainly, the completion rates for the intent variable, on which the injury data was extracted, have been high (>96% of injury cases with the intent variable completed with a meaningful code) and comparable in the program and comparison regions over the study period.

The removal of previously operating injury prevention initiatives in the comparison region could explain an increase in injury rates. However, one of the selection criteria for the comparison regions was that there had been no all age all injury prevention programs with a dedicated project officer operating in the areas.

Thus in the absence of plausible alternative explanations, the evidence points to some reduction in injury rates, or at least a moderating effect on injury rate increases, associated with the La Trobe Safe Communities Program.

The results from the impact evaluation (ie., changes in the risk and protective factors) provide little explanation for the observed reductions in injury. The three household surveys conducted in the program region suggest that while knowledge about home safety features and about where to purchase safety items improved, there had been little change in the home environment. The proportion of households having purchased safety items in the twelve months preceding each survey changed little overall, and the average number of safety features per household increased by less than one feature over seven years. Further, while the program region performed better than the comparison region on a number of household safety items, the actual proportions of households reporting the presence of various safety items was still relatively low, with the exception of smoke detectors and fire protection equipment. It is questionable that these measured changes in injury risk and protective factors contributed substantially to the observed injury reductions.

The injury reductions may have been achieved through strategies not specifically measured in the household surveys. Major areas of program activity (see Section 2) certainly indicate a range of initiatives the impact of which would not have been identified in the surveys, such as a major anti-violence project, policy changes in sporting activities, and changes to public areas. The key informant interviews indicated that, after the initial period of transition into local government, productive partnerships with key organisations continued to be a feature of the LTSC program. Many injury prevention strategies may have been delivered by these, and other partner organisations, the implementation of which could not be monitored by this evaluation.

5.3 RECOMMENDATIONS AND FUTURE DIRECTIONS

The La Trobe Safe Communities program appears to have been successfully incorporated into the local government structure, and the injury rate trends provide some, perhaps limited, support for the program having an effect on injury outcome. Exploration of possible alternative, more appropriately matched, comparison regions could be considered prior to ongoing monitoring of trends in emergency department presentation and injury hospitalisation rates in the program and comparison regions. Regular reporting of program activities and strategy implementation should be detailed enough to identify links between these and injury outcome. Such reports should include, if possible, the injury prevention activities delivered by partner organisations with whom the program has actively engaged.

The cost-effectiveness of local level programs is yet to be established. The feasibility of a cost effectiveness study for the La Trobe Safe Communities program should be established. Sufficient pre-intervention data is now likely to be available for hospital admissions to determine the likely injury rate trend if the program had not been implemented. Trends in the comparison region could now also be taken into account. The numbers of hospital admissions prevented by the program could be estimated, and a program cost per injury prevented established.

Local level or community level intervention programs are common methods of delivering injury prevention initiatives. These typically involve one community, and if evaluation is conducted, then one comparison community may also be selected. This kind of quasi-experimental approach has implications for the design, conduct and analysis of these studies (Bangdiwala, 2001). Some of the arising limitations are inherent and not readily addressed. However, others such as a more sophisticated approach to the analysis of injury outcome data to account for the specific design issues could be addressed. However, the nature of both the first and second phase evaluations of the La Trobe Safe Communities program precluded such an approach.

The difficulties encountered with the comparison region posed some constraints on conclusions drawn, and again highlights the need for alternative approaches to evaluation and research of community-based injury prevention programs. In recognition of the limitations of the quasi-experimental design employed in many community-based injury prevention program evaluations, previous recommendations had been made for controlled trials of multiple communities randomly assigned to intervention and control groups (Day et al, 1999, 2001). However, statistical approaches to addressing some of the limitations of the quasi-experimental design are emerging and should be explored for their potential to improve the methodological rigor of community trials in injury prevention research (Bangdiwala, 2001).

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APPENDIX 1

POST CODE LISTS OF COMPARISON AND LATROBE COMMUNITIES

Comparison areas			La Trobe Safe Communities
Echuca	Wimmera	Warrnambool	
3561	3317	3260	3825
3562	3318	3264	3840
3563	3377	3266	3842
3564	3380	3267	3844
3565	3381	3268	3869
3566	3388	3269	3870
3567	3390	3270	
3568	3391	3271	
3572	3392	3272	
3573	3393	3273	
3620	3395	3274	
3621	3396	3276	
3622	3399	3277	
3624	3400	3280	
3638	3401	3281	
3639	3407	3282	
	3409	3284	
	3412	3285	
	3414	3286	
	3418	3287	
	3419	3289	
	3423	3291	
	3424	3294	
	3478	3300	
	3480	3301	
	3482	3304	
	3483	3305	
		3311	
		3315	
		3325	

APPENDIX 2

QUESTIONNAIRES 1992, 1995 AND 1996 SURVEYS

CENTRE FOR HEALTH, EDUCATION AND SOCIAL SCIENCES

LATROBE VALLEY BETTER HEALTH PROJECT
TELEPHONE QUESTIONNAIRE

Interviewer: _____
Phone No.: _____
Location: _____
Post Code: _____

INTRODUCTION

My name is _____ I'm ringing from Monash Gippsland.
We are doing a survey on nutrition and on accident prevention on behalf of the Latrobe Better Health Committee. Can I ask you a few questions.

Do you live in a town or the country? _____ (Name of town/ district/ area) _____

What is your postcode? _____

Would you answer a few questions about safety in the home? It will not take very long.

1. Can you tell me some accident prevention features of your home? (Things that make people in your home less likely to have accidents or injuries such as smoke detectors or eye protection for working around the home)

2. Can you tell me some ways in which you could improve the safety of your home to prevent accidents?

3. Do you know anywhere in your town/shire where you can purchase safety products for leisure, sport or home activities? Please specify:

4. Have you bought any safety items for a family member or for your home, or garage, or yard in the last 12 months? Please specify:

5. Can you suggest some ways in which sports injuries could be prevented?

6. Are you aware of any accident prevention or safety programs in your town or shire?

YES NO

If Yes please list:

7. In the past two weeks has anyone from your household suffered an injury (at home/work/school/in traffic/sport, etc)?

YES NO

If Yes

location (home/ school/ etc)
activity (riding bicycle/ playing football/ etc)
mechanism (burn/ fall/ hit by car/ etc)
required medical treatment (hospital admission/hospital emergency department/
G.P. other/ none)

Repeat if more than one person from the household injured in past fortnight:

location (home/ school/ etc)
activity (riding bicycle/ playing football/ etc)
mechanism (burn/ fall/ hit by car/ etc)
required medical treatment (hospital admission/ hospital emergency department/G.P./ other/
none)

Would you mind answering a few questions about food?

(8 questions on nutrition asked but not reproduced here. See Harvey & Higgins, 1997)

Demographic Data

1. How many adults (18 years and over) live in your home? _____
2. How many children (under 18 years) normally live in your home? _____
3. How old are the children? _____
4. How many persons aged 65 years and over live in your home? _____
5. Is your home you are currently in being rented? YES NO
6. What is your age group?
under 20 years
20 - 45 years
46 - 65 years
over 65 years
7. Record of sex of correspondent Male
Female

Thank you for answering our questions

**CENTRE FOR RESEARCH IN HEALTH, EDUCATION AND
SOCIAL SCIENCES
AND
MONASH UNIVERSITY ACCIDENT RESEARCH CENTRE**

**LATROBE VALLEY BETTER HEALTH PROJECT 1995
TELEPHONE QUESTIONNAIRE**

Interviewer: _____ Phone No: _____
 My name is _____ I am ringing from Monash University.
 We are doing a survey on nutrition and on accident prevention. Your phone number has been randomly selected, I do not know your name or address. Can I ask you a few questions? This will take about 10 minutes of your time.

Do you live in a town/the country? _____ Name of town/district/area _____
 Postcode? _____ How long have you lived in the Latrobe Valley? _____

Would you answer a few questions about safety in the home?

1. Can you tell me some accident prevention features of your home? (Things that make people in your home less likely to have accidents or injuries. For example, smoke detectors or eye protection for working around the home)
 - (a) No = _____
 - (b) List _____

2. Can you tell me some ways in which you could improve the safety of your home to prevent accidents?
 - (a) No = _____
 - (b) List _____

3. Do you know anywhere in your town/shire where you can purchase safety products for leisure, sport or home activities?
 - (a) YES NO DON'T KNOW
 - (b) If YES, please specify

4. Have you bought any safety items for a family member or for your home, garage, or yard in the last 12 months?
 - (a) YES NO DON'T KNOW
 - (b) If YES, please specify

 - (c) What prompted you to make these purchases?

 - (d) Where did you get information about safety products?

5. Can you suggest some ways in which sports injuries could be prevented?
 - (a) No = _____
 - (b) List _____

6. Are you aware of any accident prevention or safety programs in your town or shire?
 - (a) YES NO DON'T KNOW
 - (b) If YES, please specify

7. In the past two weeks has anyone from your household participated in organised sport, such as training, a competition or through a club?

(a) YES NO DON'T KNOW

(b) If YES who (age and sex)?
what sport?
how many times?
how long each time?

Repeat if more than one person from the household has participated in organised sport in the past fortnight.

8. In the past two weeks has anyone from your household suffered an injury (at home/work/school/in traffic/sport, etc)?

(a) YES NO DON'T KNOW

(b) If YES, what happened ?

If YES, what location (home/school/etc)?
what activity (riding bicycle/playing football/etc)?
how did it occur (burn/fall/hit by car/etc)?
what was the medical treatment required (hospital admission/hospital emergency department/G.P./other/none)?

Repeat if more than one person from the household injured in past fortnight:

What happened ?

If YES, what location (home/school/etc)?
what activity (riding bicycle/playing football/etc)?
how did it occur (burn/fall/hit by car/etc)?
what was the medical treatment required (hospital admission/hospital emergency department/G.P./other/none)?

Would you mind answering a few questions about food?

(7 questions on nutrition asked but not reproduced here. See Harvey & Higgins, 1997)

9. (a) Have you heard of the Latrobe Valley Better Health Project?

YES NO

(b) If YES, how did you hear of it?

TV radio newspaper public event

other _____

What was the nature of the information?

(c) Have you been involved in any of these activities?

YES NO DON'T KNOW

(d) If YES, list and state how involved (eg organised activity themselves, attended education session).

Demographic Data

1. How many adults (18 years and over) live in your home?

2. How many children (under 18 years) normally live in your home?

3. How old are the children?

4. How many persons aged 65 years and over live in your home?

5. Is the home you are in currently being rented?

YES

NO

6. What is your age group?
under 20 years 20 - 45 years 46 - 65 years over 65 years
7. Record of sex of respondent
Male Female

Thank you for answering our questions

Latrobe Valley Safe Communities Project 1999 Evaluation Survey Questionnaire

TELEPHONE QUESTIONNAIRE

Interviewer: _____ Phone No: _____

"Hello, my name is _____ I am ringing on behalf of Monash University. We are currently conducting telephone surveys in order to evaluate the Latrobe Safe Communities Project, which aims at improving safety knowledge and practices in the Latrobe Valley. We would like to know how well this project is doing, so I'd like to ask you a few questions about safety in the home, workplace, and outdoors. Your phone number has been randomly selected, I do not know your name or address. Would you be willing to participate in this survey? This will take about 10 minutes of your time."

If yes, "Thanks for agreeing to participate. Before we start, let me confirm that your participation is completely anonymous; nobody will be able to identify you from this survey, and only combined results will be reported. Remember that your participation is completely voluntary; if you would prefer not to answer a question, please say so and I will go on to the next item. You are also free to stop your participation at any time. Also, I just need to check that you are at least 18 years old, as we are only interested in the opinions of those 18 years or older."

If under 18, "Thanks for your willingness to participate, but I need people at least 18 years old. Is there anyone who is at least 18 who is home right now? Could I please talk to them?"

If yes, "Should you have any complaint concerning the manner in which this research project (project number 99/050) is conducted, please do not hesitate to contact the Standing Committee on Ethics in Research on Humans at the following address: The Secretary, The Standing Committee on Ethics in Research on Humans, Monash University, Wellington Road, Clayton Victoria 3168. Telephone 03 9905 2052 Fax 03 9905 1420."

Preliminary Information:

Do you live in a town/the country? _____

Name of town/district/area _____

Postcode? _____

How long have you lived in the Latrobe Valley? _____

I'd like to start with some questions about safety in the home.

1. Can you tell me about some accident prevention features of your home? (Things that make people in your home less likely to have accidents or injuries. For example, smoke detectors or eye protection for working around the home)

(a) No

(b) List

2. Are there any smoke alarms or smoke detectors installed in your home?

No

Yes

3. ***Can you tell me some ways in which you could improve the safety of your home to prevent accidents?***

(a) No

(b) List

4. ***Do you know anywhere in your town/shire where you can purchase safety products for leisure, sport or home activities?***

(a) YES

NO

DON'T KNOW

(b) If YES, please specify

5. ***Have you bought any safety items for a family member or for your home, garage, or yard in the last 12 months?***

(a) YES

NO

DON'T KNOW

(b) If YES, please specify

(c) What prompted you to make these purchases?

(d) Where did you get information about safety products?

6. ***Can you suggest some ways in which sports injuries could be prevented?***

(a) No

(b) List

7. ***Are you aware of any accident prevention or safety programs in your town or shire?***

(a) YES

NO

DON'T KNOW

(b) If YES, please specify

8. ***Are there any hand rails fitted in a bathroom or toilet in your home?***

Yes

No

9. ***In the past two weeks has anyone from your household participated in organised sport, such as training, a competition or through a club?***

(a) YES NO DON'T KNOW

(b) If YES who (age and sex)?
what sport?
how many times?
how long each time?

Repeat if more than one person from the household has participated in organised sport in the past fortnight.

10. ***Compared to three years ago, how would you rate your usage of personal protective equipment in sport and similar activities? Do you use protective equipment:***

more often

about the same

less often

don't play sport

11. ***In the past two weeks has anyone from your household suffered an injury (at home/work/school/in traffic/sport, etc)?***

(a) YES NO DON'T KNOW

(b) If YES, what happened ?

If YES, what location (home/school/etc)?
what activity (riding bicycle/playing football/etc)?
how did it occur (burn/fall/hit by car/etc)?
what was the medical treatment required (hospital admission/hospital emergency department/G.P./other/none)?

Repeat if more than one person from the household injured in past fortnight:
What happened ?

If YES, what location (home/school/etc)?
what activity (riding bicycle/playing football/etc)?
how did it occur (burn/fall/hit by car/etc)?
what was the medical treatment required (hospital admission/hospital emergency department/G.P./other/none)?

12. (a) **Have you heard of the Latrobe Valley Safe Communities Project?**
 YES NO
- (b) If YES, how did you hear of it?
 TV radio newspaper public event
 other _____
 What was the nature of the information?

- (c) Have you been involved in any of these activities?
 YES NO DON'T KNOW
- (d) If YES, list and state how involved (eg organised activity themselves, attended education session).

13. **When the hot water in your house is at its hottest, could it scald or burn a young child?**
 Yes
 No
 Varies/sometimes
 Don't know

Demographic Data

1. How many adults (18 years and over) live in your home? _____
2. How many children (under 18 years) normally live in your home? _____
3. How old are the children? _____
4. How many persons aged 65 years and over live in your home? _____
5. Is the home you are in currently being rented? YES NO
6. What is your age group?
 under 20 years 20 - 45 years 46 - 65 years over 65 years
7. Record of sex of respondent
 Male Female

“Thank you for answering our questions. If you are interested, I can arrange for a home safety checklist to be mailed to you. It’s completely free, and you may find it helpful. In order to send it to you, I’ll need your name and address, but be assured that this information will not be traceable to your questionnaire responses – I’ll simply write it directly on to an envelope for mailing purposes. Would you be interested in receiving the home safety checklist?”

IF YES, TAKE NAME AND ADDRESS

We are also interested in observing the ways in which different homes set up their safety precautions. We think the best way to do this is to actually look at different houses. Our safety experts will be making home visits to do this. Would you be willing to have your name put into the pool for one of our safety experts visit your house? This would mean that you would be visited only if your name was drawn in a lottery process,

so there is a large chance we wouldn't visit you in any case. Would you be willing to go in our home visit lottery?

If yes, take name and address, and indication of preferred time of visit (eg weekdays, early afternoon).

“Thanks again for your time. Goodbye.”

APPENDIX 3

COMPARISON OF SURVEY SAMPLES

Table 1: Child age distribution, random household telephone surveys, La Trobe Safe Communities

Age group	1992 (pre-intervention)	1995	1999
0-4 years	24.3%	17.3%	26.4%
5-9 years	29.0%	24.8%	31.8%
10-14 years	21.3%	36.5%	27%
15-17 years	22.7%	20.3%	14.6%
Unknown	2.7%	1.1%	0.2%

Table 2: Post code distribution, random household telephone surveys, Latrobe Valley Better Health Project evaluation.

Post code	Pre-intervention, 1992	Post-intervention, 1995	Current Evaluation, 1998
3825	25.5%	27.3%	34.0%
3840	29.2%	26.5%	21.8%
3842	8.0%	8.8%	10.6%
3844	34.9%	33.0%	19.8%
3854	0.5%	0.8%	0%
3856	0%	1.0%	0%
3860	0%	0.3%	0%
3869	1.9%	1.8%	7.4%
3953	0%	0.3%	0%
3870	0%	0%	6.3%
3999	0%	0.5%	0%

Table 3: Respondent age distribution, random household telephone surveys, Latrobe Valley Better Health Project evaluation.

Age group	Pre-intervention, 1992	Post-intervention, 1995	Current Evaluation, 1998
<20 years	6.1%	8.8%	3.1%
20-45 years	51.7%	49.0%	46.1%
46-65 years	24.3%	28.0%	31.4%
>65 years	17.3%	13.0%	17.7%
Unknown	0.5%	1.25%	1.7%

Table 4: Adults per household, random household telephone surveys, Latrobe Valley Better Health Project evaluation

Number of adults	Pre-intervention, 1992	Post-intervention, 1995	Current Evaluation, 1998
0	0.3%	1.3%	0%
1	19.5%	21.3%	20.25
2	58.4%	53.3%	64.1%
3	14.4%	16.8%	10.4%
4	3.5%	5.3%	3.3%
5	1.9%	1.0%	.8%
6	0%	0.3%	0%
Unknown/missing	2.1%	1.0%	1.2%

Table 5: Children per household, random household telephone surveys, Latrobe Valley Better Health Project evaluation.

Number of children	Pre-intervention, 1992	Post-intervention, 1995	Current Evaluation, 1998
0	58.4%	57.0%	61%
1	12.3%	11.5%	10.7%
2	19.7%	17.5%	17.0%
3	5.3%	9.0%	7.1%
4	1.7%	3.7%	2.5%
5	0%	0.5%	1.2%
10	0.3%	0%	0%
Unknown/missing	2.1%	1.0%	0.5%

Table 6: Respondents over 65, random household telephone surveys, Latrobe Valley Better Health Project evaluation.

Respondents	Pre-intervention, 1992	Post-intervention, 1995	Current Evaluation, 1998
0	78.9%	83.0%	76.5%
1	10.7%	9.0%	13.7%
2	8.0%	6.8%	9.6%
3	0.3%	0.3%	.2%
Unknown	2.1%	1.0%	0%

Table 7: Rented homes, random household telephone surveys, Latrobe Valley Better Health Project evaluation.

Rented	Pre-intervention, 1992	Post-intervention, 1995	Current Evaluation, 1998
Yes	19.7%	19.8%	17.4%
No	76.8%	78.5%	80.7%
Unknown	3.5%	1.8%	1.9%

APPENDIX 4

INJURY RATES AND FREQUENCIES

Table 1: Unintentional injury emergency department presentations, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs	Total
1997	688	1272	1231	2204	381	5776
1998	737	1371	1412	2411	457	6388
1999	606	1200	1319	2296	434	5855
2000	717	1470	1418	2646	525	6776

Table 2: Unintentional injury emergency department presentations, age specific rates per 100,000, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs
1997	12361	21662	24290	82764	62975
1998	13773	23935	29000	89032	69347
1999	11878	21341	28390	83068	59534
2000	14922	26703	31277	93038	64496

Table 3: Intentional injury emergency department presentations, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs	Total
1997	2	25	127	208	3	365
1998	1	26	121	160	3	311
1999	4	11	91	156	2	264
2000	4	12	125	195	7	343

Table 4: Intentional injury emergency department presentations, age specific rates per 100,000, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs
1997	36	426	2506	7811	496
1998	19	454	2485	5908	455
1999	78	196	1959	5644	274
2000	83	218	2753	6857	86

Table 5: Unintentional injury emergency department presentations, Comparison region, La Trobe Safe Communities evaluation, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs	Total
1997	809	1613	2186	3463	536	8607
1998	881	1802	2211	3616	607	9117
1999	951	1901	2330	3923	749	9854
2000	980	2010	2376	4120	1078	10564

Table 6: Unintentional injury emergency department presentations, age specific rates per 100,000, Comparison region, La Trobe Safe Communities evaluation, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs
1997	5587	10547	20174	37377	16058
1998	6202	11944	21113	38907	17599
1999	6900	12712	2269	42165	20788
2000	7417	13433	23942	43575	29018

Table 7: Intentional injury emergency department presentations, Comparison region, La Trobe Safe Communities evaluation, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs	Total
1997	3	5	174	205	2	389
1998	4	10	169	208	3	394
1999	5	16	213	254	3	491
2000	2	28	217	277	8	532

Table 8: Intentional injury emergency department presentations, age specific rates per 100,000, Comparison region, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs
1997	21	33	1606	2213	60
1998	28	66	1614	2238	87
1999	36	107	2074	2730	83
2000	15	187	2187	2930	215

Table 9: Unintentional injury hospital admissions, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs	Total
1988	84	105	185	285	142	801
1989	79	150	197	315	99	840
1990	79	133	164	280	112	768
1991	67	124	132	234	120	677
1992	83	156	150	242	126	757
1993	56	127	132	267	141	723
1994	73	140	153	322	168	856
1995	77	183	178	352	194	984
1996	98	178	169	366	222	1033
1997	81	189	163	310	203	946
1998	58	120	153	323	218	872
1999	64	158	145	380	208	955

Table 10: Unintentional injury hospital admissions, age specific rates per 100,000, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs
1988	1258	828	1470	810	2471
1989	1189	1184	1584	887	1640
1990	1195	1051	1335	781	1771
1991	1019	981	1088	645	1814
1992	1292	1249	1274	667	1823
1993	893	1028	1156	735	1955
1994	1192	1147	1383	885	2238
1995	1290	1516	1662	966	2485
1996	1684	1493	1632	1004	2739
1997	1455	1608	1564	850	2424
1998	1083	1042	1478	884	2565
1999	1254	1400	1429	1046	2410

Table 11: Intentional injury hospital admissions, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs	Total
1988	3	3	65	85	2	158
1989	1	2	47	78	3	131
1990	1	4	41	61	4	111
1991	2	2	39	92	1	136
1992	2	10	47	91	6	156
1993	2	2	38	90	0	132
1994	3	7	35	95	1	141
1995	2	3	57	89	1	152
1996	3	9	41	102	1	156
1997	0	6	35	104	3	148
1998	0	3	29	87	1	120
1999	0	8	38	83	4	133

Table 12: Intentional injury hospital admissions, age specific rates per 100,000, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs
1988	45	24	516	242	35
1989	15	16	378	220	50
1990	15	31	334	170	63
1991	30	16	322	254	15
1992	31	80	399	251	87
1993	32	16	333	248	0
1994	49	57	316	261	13
1995	34	25	532	244	13
1996	52	76	396	280	12
1997	0	51	336	285	36
1998	0	26	280	238	12
1999	0	71	375	229	46

Table 13: Unintentional injury hospital admissions, Comparison region, La Trobe Safe Communities evaluation, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs	Total
1988	328	570	797	1239	834	3768
1989	306	583	735	1189	806	3619
1990	290	588	708	1166	785	3537
1991	293	528	676	1161	940	3598
1992	321	521	640	1222	953	3657
1993	341	569	730	1313	978	3931
1994	323	552	706	1350	1130	4061
1995	301	558	683	1329	1089	3960
1996	327	545	645	1427	1203	4147
1997	282	531	633	1368	1268	4082
1998	271	565	624	1361	1264	4085
1999	276	550	611	1375	1317	4129

Table 14: Unintentional injury hospital admissions, age specific rates per 100,000, Comparison region, La Trobe Safe Communities evaluation, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs
1988	2272	1858	2916	1392	3427
1989	2077	1883	2705	1305	3213
1990	1929	1882	2621	1251	3038
1991	1911	1675	2518	1217	3535
1992	2112	1661	2437	1270	3460
1993	2264	1823	2843	1352	3454
1994	2163	1777	2813	1378	3872
1995	2034	1806	2786	1345	3625
1996	2230	1773	2695	1432	3892
1997	1947	1738	2607	1377	4070
1998	1908	1864	2596	1372	4034
1999	2003	1824	2561	1388	4166

Table 15: Intentional injury hospital admissions, Comparison region, La Trobe Safe Communities evaluation, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs	Total
1988	4	8	104	118	9	243
1989	4	14	93	121	12	244
1990	4	5	98	129	2	238
1991	3	5	97	120	10	235
1992	3	12	109	132	10	266
1993	0	4	106	138	6	254
1994	4	11	116	169	4	304
1995	5	12	108	177	13	315
1996	10	16	112	161	11	310
1997	0	7	94	200	11	312
1998	4	7	103	204	14	332
1999	6	6	104	207	16	339

Table 16: Intentional injury hospital admissions, age specific rates per 100,000, Comparison region, La Trobe Safe Communities, Victoria

	0-4 yrs	5-14 yrs	15-24 yrs	25-64 yrs	65+yrs
1988	28	26	380	133	37
1989	27	45	342	133	48
1990	27	16	363	138	8
1991	20	16	361	126	38
1992	20	38	415	137	36
1993	0	13	413	142	21
1994	27	35	462	173	14
1995	34	39	441	179	43
1996	68	52	470	162	36
1997	0	23	387	201	35
1998	28	23	429	206	45
1999	44	20	436	209	51