The economic and social benefits of lifeguard provision

Sponsor: RNLI Lifeguards
Department: RNLI Operations Research Unit
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Date completed: December 2013
Contractors: Oxford Economics and Ipsos MORI
Principal researcher: Andy Logan

This research project sought to collect evidence of the wider benefits of the RNLI’s lifeguard provision and to quantify the economic impact of the presence of our service. The benefits were then compared with the costs of providing the service, with the aim of providing RNLI customers and partners with the evidence they need to make an economic and social case for lifeguards in their area.

Summary

International evidence suggests that lifeguard provision can provide a wealth of economic and social benefits to beach users. To understand how our service contributes to the communities we serve, the RNLI commissioned this research project through Oxford Economics and Ipsos MORI during the Summer of 2013.

The project included a survey with over 800 members of the public on RNLI lifeguarded beaches. The main findings were:

- The lifeguard service generates an economic benefit to local communities through additional beach visits and tourism. Across the 16 RNLI beaches in our sample, we found that around 82% of beach users come from outside the local area, with 7% of that group saying that they would go elsewhere if the lifeguard service wasn’t present. The spending associated with those beach visits generates substantial additional income for local hotels, shops and restaurants.

- Analysis of our incident data showed that the triage and casualty care provided by lifeguards on the beach saves the NHS money, by preventing the unnecessary use of accident and emergency departments and emergency ambulance services. The study also showed that we save the NHS a small amount of money on equipment and medical supplies.

- There is a strong perception among the public that the presence of a lifeguard reduces the incidence of antisocial behaviour and crime. Beach users thought that our lifeguard service helped to deter vandalism and graffiti, drunken behaviour, petty theft and crime, and littering and dumping rubbish.

The evidence we collected will be invaluable as we continue to work with local authorities and beach owners to expand our service across the UK.
Research aims and objectives

The aims of the research were firstly to identify whether there are tangible ‘wider’ benefits to our lifeguard service and, secondly, to collect robust and objective evidence regarding the scale and impact of any benefits. Since the cost of providing a lifeguard service is typically shared between the RNLI and a local authority or private beach owner, the project sought to provide rigorous evidence that our customers and partners can use to make an economic and social case for an RNLI lifeguard service in their area.

The objectives for the project were:

1. Review existing literature to identify the types of benefits that might arise from a lifeguard service.
2. Conduct primary research with beach users.
3. Analyse pre-existing RNLI datasets (on number of beach users and casualty care).
4. Summarise the benefits of RNLI lifeguard provision, and quantify and monetise where possible.
5. Produce a summary of findings, which the RNLI and its partners can use as a case for support.

Method and approach

Literature review

A literature review of evidence from the UK, Australia and USA looked at the following three categories of research:

a. The economic value of lifeguard services.
b. Factors affecting user preferences and beach choice.
c. Other benefits from a service, such as lifeguards as first responders and beach supervisors, preventing crime and antisocial behaviour.

The review highlighted a number of important issues that this research needed to consider. Firstly, there was some evidence from the UK to suggest that safety and the provision of a lifeguard service is a factor in people’s choice of beach, albeit among a large number of other criteria. Secondly, previous internal RNLI research conducted with South West Ambulance Trust highlighted the important role of lifeguards as first responders to emergencies. Finally, anecdotal evidence highlighted an initiative involving active participation from RNLI lifeguards that has been proven to reduce crime and antisocial behaviour in the Sefton area.

The literature review identified a gap in the research with respect to quantifying some of the tangible local economic benefits of lifeguard provision.

While a number of pre-existing studies explored beach users’ willingness to pay for lifeguards, and the statistical value of lives saved to the economy, the review found no existing evidence that quantifies the economic benefits that accrue to a local community as a result of, for example, increased tourism.

The researchers therefore set out to fill this gap in the evidence base by conducting primary fieldwork with beach users.

Primary research

A survey of 839 beach users was undertaken by Ipsos MORI on 16 RNLI lifeguarded beaches in England, Scotland, Wales and Northern Ireland during the 2013 peak season of July and August. The 16 beaches covered a wide range of beach types and locations. Some 366 people were interviewed on beaches classified as urban, with 473 on rural ones, and the number of people interviewed on any beach location ranged from 47 to 60.

The primary aim of the survey was to provide the study team with estimates of the proportion of tourists for whom a lifeguard service was a significant factor in their choice of resort/beach. Previous RNLI research had shown this proportion can be relatively small, but that there is a significant minority of tourists for whom a lifeguard service is essential.

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1 For example, see Morgan, R (1999). A novel, user-based rating system for tourist beaches, Tourism Management, 20, 393–410.
2 Operation BeachSafe ran as a pilot at the Sefton coastline during 2013.
3 This research uses the rural and urban definitions for England and Wales, derived from the 2001 census of the Office for National Statistics.
The following RNLI data and information were then analysed to calculate the tourism benefit of the RNLI's service:

- daily lifeguard logs, which record the number of beach users, number of bathers and the total number of preventative actions carried out by our lifeguards
- the cost of the service to local authorities and beach owners (typically lifeguard wage costs).

The primary research and analysis of pre-existing RNLI datasets were then used in the following steps:

a. How many visitors are attracted to an area by the provision of lifeguards on beaches?

Before applying the results of our survey, the study had to first establish estimates of the number of beach visitors over the course of a season. The RNLI’s own daily log data allowed the study team to produce rough estimates of these figures, using conservative assumptions.

Importantly, our lifeguards record 2-hourly point estimates of the number of beach users in their daily logs, not a count of the number of the unique users per day. The study team therefore took the midday to 2pm peak visitor timeslot from all of our beaches as a highly conservative proxy for the number of visitors during the day.

The number of days lifeguards were on duty at each of our beaches was taken from RNLI records.

Estimates for the average number of people visiting each RNLI patrolled beach over the course of the season were then calculated by simply multiplying the average number of beach visitors by the number of days of our service.

The study team then applied our figure from the survey for the proportion of beach users who answered that they would have gone elsewhere if it wasn’t for the lifeguard service. Using the survey data, they were then able to profile the number of these visitors who were day-trippers and the number staying overnight. This is an important distinction when we apply assumptions about the amount of spending that these visitors bring to the local area (see step b).

b. How much additional visitor expenditure do RNLI lifeguards attract into an area?

To calculate the expenditure in the local authority in which the beach is located, the total expenditure of visitors per trip was obtained from data in Visit Britain’s *The GB Day Visitor: Statistics 2012* and *The GB Tourist: Statistics 2012*. These provide a range of estimates of daily expenditure by different types of coastline and visit. Visit Britain estimates, for example, that the average day visitor to a seaside resort or town spends £45 per trip.

To ensure that we only included inward additional expenditure that accrues in the local area, the research team excluded transport costs and other travel services and package travel.

Our survey asked beach users staying overnight about the locality of their accommodation. Between 4% (rural) and 8% (urban) were staying outside the local area (defined as within 20 miles of the beach) so this percentage was removed as it is spending that does not accrue to the local economy.

Finally, in order to avoid overestimation of visitor spending, estimates of expenditure were further scaled down by 0.75 for a couple and 0.375 for families, to account for the fact that costs are usually shared across members of a party.

See Figures 2 and 3.

c. The benefit–cost ratios of lifeguard provision

To complete the economic analysis, the researchers calculated the typical tourism cost–benefit ratio of investment in the RNLI’s service by dividing the additional tourist expenditure in the locality by the cost to local authorities or beach owners.

The results of the cost–benefit analysis are presented in the key findings section of this research project.

See Figure 1.
During a typical season RNLI lifeguards provide a substantial amount of first aid on the beach. In 2012, for example, they treated a wide range of minor ailments, including 4,752 weever-fish stings, 2,528 small cuts and 127 jellyfish stings. A second strand to the research therefore used RNLI data to estimate the savings to the NHS that occur due to our lifeguards preventing unnecessary accident and emergency (A&E) visits and ambulance trips. The study team also looked at the saving to the NHS from the equipment the RNLI uses in treating casualties on the beach.

This analysis was conducted through the following steps:

a. Calculating the savings to the NHS due to non-urgent cases not using emergency services

RNLI lifeguards save the local NHS money in two ways:

i. They provide triage on the beach and determine the need for further care and recommend the appropriate place of subsequent treatment, if required.

ii. They are able to treat minor injuries and use RNLI equipment rather than NHS staff time and equipment.

The extent of the NHS savings from the RNLI lifeguard service’s triage is hard to quantify, so the RNLI’s Clinical Lead and Head of Lifeguard’s views were sought on what proportion of minor first aid interventions, by complaint type, might otherwise have called an ambulance or gone to A&E. Both sought to use conservative assumptions of the proportion of casualties who would have otherwise sought emergency NHS care.
We assumed, for example, that just 10% of casualties with a small cut would have sought NHS treatment in the absence of lifeguard first aid.

The NHS publish data on the average costs of the treatment type and provides unit costs of an ambulance for an emergency transfer and attendance at A&E (not leading to admittance to hospital). The savings to the NHS in coastal areas can therefore be calculated by:

- multiplying the number of unnecessary calls to an ambulance service by the unit cost of an ambulance for an emergency transfer
- multiplying the number of trips to A&E by the unit cost for each attendance at A&E.

b. Medical equipment cost
RNLI lifeguards treat thousands of people with injuries at the beach each year. The cost of the medical equipment used during these treatments was analysed, a cost that would otherwise have come from NHS budgets.

The results of these analyses are presented in the key findings section.

Reducing antisocial behaviour and crime
A final strand of the work sought to explore whether lifeguards contribute to safer beaches. The survey asked beach users their perceptions as to whether they felt that the presence of a lifeguard on the beach reduced four types of antisocial behaviour and crime:

- vandalism and graffiti
- drunken and rowdy behaviour
- petty theft and crime
- littering and dumping rubbish.

The analysis does not quantify the savings that accrue to the local areas from any reduction in crime as these are the beach users’ perceptions rather than actual criminal activity but a Home Office report was used to estimate the average costs of a criminal incident and theft.

Key findings

How many visitors are attracted to an area by the provision of lifeguards on beaches?

Over the course of the 2012 RNLI lifeguard season:

<table>
<thead>
<tr>
<th></th>
<th>Urban beaches</th>
<th>Rural beaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of days</td>
<td>108</td>
<td>106</td>
</tr>
<tr>
<td>Estimated average number of daily visits</td>
<td>693</td>
<td>516</td>
</tr>
<tr>
<td>Number of day visits</td>
<td>75,000</td>
<td>54,000</td>
</tr>
</tbody>
</table>

The survey found that 7% of the people on both urban and rural beaches said that they would not have been on the beach had there not been a lifeguard service stationed there.

This suggests that over 5,200 visits to an average urban beach in 2012 would not have occurred had a lifeguard not been present. The equivalent figure for a typical rural beach is 3,800.

<table>
<thead>
<tr>
<th></th>
<th>Inward tourist (including overnight stay)</th>
<th>Day-tripper</th>
<th>Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>61</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Rural</td>
<td>39</td>
<td>44</td>
<td>16</td>
</tr>
</tbody>
</table>

How much additional visitor expenditure do RNLI lifeguards attract into an area?

<table>
<thead>
<tr>
<th></th>
<th>Urban beaches</th>
<th>Rural beaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual day visitor spend</td>
<td>£34.55</td>
<td>£25.38</td>
</tr>
<tr>
<td>Individual overnight spend</td>
<td>£42</td>
<td>£42</td>
</tr>
<tr>
<td>Total average spend per day on all beaches</td>
<td>£17,200</td>
<td>£12,300</td>
</tr>
<tr>
<td>Total average spend per season on all beaches</td>
<td>£1.86M</td>
<td>£1.30M</td>
</tr>
</tbody>
</table>

The survey results indicate that a significant proportion of the spending shown would not have occurred had there not been a lifeguard present on the beaches. On an average urban beach, the analysis suggests that around £130,000 of additional tourism spending over the season occurred because a lifeguard was present. The average rural beach with a lifeguard attracted £91,000 that would otherwise not have been spent.

**The cost of RNLI provision**
In 2012, the RNLI received £3.4M for the provision of lifeguards on 186 beaches. This equates to an average cost to a local authority or beach owner of £18,310 for a lifeguard service on one of its urban beaches. On a rural beach, the annual average cost was £17,971 (with a marginally shorter season).

**The benefit–cost ratios of lifeguard provision**
For every £1 the local authority pays, the lifeguards attract an additional £7.10 of tourism spending into urban areas and £5.06 into rural areas.

**Savings to the NHS from non-urgent cases not using emergency services**
It is estimated that 2,054 unnecessary calls to an ambulance service and 2,000 trips to A&E were averted in 2012.

The unit cost of an ambulance for an emergency transfer was £255 in 2010–11 and £149 for each attendance at A&E not leading to admittance. Both costs were then uprated to 2012 prices to allow for inflation.

In 2012, the lifeguard service’s triage of minor first aid saved £542,000 in unnecessary ambulance journeys and £318,000 in unnecessary attendances at A&E. This is a total saving of £860,000.

**Medical equipment cost**
In 2012, RNLI lifeguards provided casualty care to 10,454 people (or an average of 56 people per beach where the service was provided). Of these, 9,584 people (or 92%) were classified by the lifeguard as requiring minor first aid. The remaining 870 people (or 8%) required major casualty care (many of whom were subsequently handed over to the emergency services for onward care).

In 2012, the RNLI spent £11,500 on replacing medical equipment used in the treatment of people with injuries. This would otherwise have come from NHS budgets.

**Reducing antisocial behaviour and crime**
Across both genders and all ages, and irrespective of whether they were day-trippers, overnight visitors, visiting alone or with others, respondents felt that the presence of a lifeguard substantially reduces all four types of antisocial behaviour and crime. The impact (% net balance of respondents who agree minus those who disagree) was perceived to be greatest on vandalism and graffiti (+64%); drunken and rowdy behaviour (+54%); petty theft and crime (+49%); and reducing littering and dumping rubbish (+48%).

A notable feature is the greater perception among rural beach users that the presence of a lifeguard service reduces the likelihood of antisocial behaviour and crime. This is consistent with smaller numbers on the beach that may give rise to greater opportunity to undertake such behaviour unobserved.

Home Office data on 2012 prices suggests that each incidence of criminal damage costs society £1,116 and each incidence of theft £1,119 so the presence of lifeguards may yield significant economic benefits.
How the RNLI is using the evidence

The evidence collected will be invaluable as we continue to work with local authorities and beach owners to maintain and expand our service across the UK.

The economic and social benefits outlined can be used by our customers/partners to make a case for the lifeguard service in their area. If you are interested in finding out more about the study, please contact Tom Walters, Research Manager for the Operations Department: Thomas_Walters@rnli.org.uk.

Further reading


Merseyside News: *Operation Beachsafe on the Sefton coastline.* Available at merseyside.police.uk/your-area/sefton/harington.aspx.

Acknowledgements and thanks

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The RNLI and the research team would like to thank all of the beach users who participated in the survey.