## (V) safefood

## Food Standards Agency

## DINING OUT: THE CHALLENGE FOR THOSE WITH A FOOD ALLERGY OR FOOD INTOLERANCE

EVALUATION RESULTS: Republic of Ireland


# Dining out: The challenge for those with a Food Allergy or Food Intolerance 

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## 1 Executive Summary

The food allergen aspects of Regulation (EU) No 1169/2011 of the European Parliament and the Council on the provision of food information to consumers came into effect in December of 2014 when the obligation for caterers to have allergen information proactively available for their customers will become a legal requirement. This is designed to ameliorate the risks to consumers with food allergy and intolerance. In advance of this, safefood conducted a survey of these consumers to ascertain their experiences when dining out. To achieve this, the questionnaire was exclusively sent to the members of Anaphylaxis Ireland, the primary non-governmental support organisation in the Republic of Ireland (Rol) for those with food allergy. The majority of respondents were guardians of young children (especially mothers). Most responses concerned those who were unique in their own families in having food allergy / intolerance. The vast majority had been medically diagnosed, primarily in childhood, but occasionally later in life. The majority also had allergies/intolerances to two or more food allergens. The top five reported food allergies / intolerances were to peanut, tree nut, egg, crustaceans and milk, all of which are listed in Annex II to the Regulation. Kiwi allergy ranked ninth in reported incidence. This allergen is not listed in Annex II.

In terms of the history of adverse reactions that happened outside the home, the majority were reported to have taken place in a commercial food establishment. Respondents cited a lack of control of cross contamination as being the chief cause of adverse reactions. They were quite clear as to what caterers should do to ensure a safe dining experience for their food sensitive customers. They also highlighted a lack of adequate information provided by the catering staff (this will be unacceptable under the impending legislation). Almost a third of all respondents to this survey reported having been refused service during 2012 and most of those had been refused more than once with a lack of knowledge as to the allergen status of the food ingredients underpinning most of these refusals. The food allergic/intolerant customer will tend toward loyalty to those restaurants where they will be courteously and safely accommodated and cross contamination from allergens is controlled. Therefore, there are both legal and economic imperatives for caterers to ensure proper control of food allergens on their premises. It would be erroneous to assume that those with food allergy or intolerance never eat out: this survey shows they are no different when compared to the general population, despite the increased risks and challenges. The survey highlighted the need to ensure that frontline staff are sufficiently trained and updated in all aspects of food allergen control. Caterers need to be not just aware of food sensitivities, but knowledgeable about them. The caterer must work with their food sensitive customers to safeguard their health and ensure a safe and pleasurable dining out experience.

## 2 Introduction

Protection of consumer health when dining out is underpinned by a dynamic body of food safety and hygiene legislation which clearly places the onus on the food businesses (includes caterers) to ensure that the risks of ill health due to food poisoning are kept to a minimum. In accordance with the requirements of Article 5 of Regulation EC No. 852/2004 on the hygiene of foodstuffs, all food businesses, whether retail or catering, are obliged to operate a food safety management system that is based on the principles of Hazard Analysis and Critical Control Points (HACCP) ${ }^{1}$. Further legislation gives effect to the different elements of the regulatory regime to enforce the provisions of food safety and hygiene legislation through a programme of on-site inspections backed up by a network of analytical capacities as well as recourse to the law. The evolution of this regulation and enforcement structure has also witnessed the development of a number of guidance documents and training materials that are designed to assist the food business operator meet their legislative obligations ${ }^{2-10}$.

Existing food labelling regulations concerning the labelling of allergens on pre-packed food products for retail sale is, due to the nature of the industry, more prescriptive than that covering food produced in a catering environment ${ }^{11}$. So whereas labelling requirements exist for fourteen specified food allergens where used as deliberate ingredients in pre-packed food, these requirements have hitherto not been applied to foods sold loose. Similarly, the obligation to control cross-contamination during food manufacturing has led to the development of precautionary or 'May contain' allergen labelling for pre-packed foods but again this is not an information requirement for foods sold loose. In October 2011, the European Parliament and the Council adopted Regulation (EU) No 1169/2011 on the provision of food information to consumers (EU FIC) ${ }^{12}$. The food allergen aspects of the Regulation will not address the issue of food allergen cross-contamination.

Identifying and controlling cross-contamination by food allergens is an essential element of HACCP food safety management in both the retail and catering industries. Caterers routinely control microbiological risks and the risk of allergen contamination can be controlled through much the same approach, although it has to be emphasised that, unlike harmful bacteria, allergens are not destroyed during cooking. A number of guidance documents have been published to assist caterers in the control of food allergens including the Food Allergy \& Intolerance: Guidance for the Catering Industry produced by safefood, the joint Food Safety Authority of Ireland (FSAI)/ Food Standards AgencyNorthern Ireland (FSA-NI) Safe Catering pack and The Provision of Allergen Information for Non Prepacked Foods produced by the UK Food Standards Agency (FSA-UK) ${ }^{2,8,13}$. All of these guidance resources are designed to assist caterers factor food allergen control into their food safety management systems.

In the absence of focused legislative requirements, the impact of these guidelines is uncertain. In 2010, FSA-UK published an evaluation of their guidance document, The Provision of Allergen Information for Non Pre-packed Foods. They found that allergen management and notification was
not as high a priority amongst caterers as say the traditional issues relating to food hygiene and safety. Furthermore, most food businesses were doing the bare minimum in terms of allergen control and information was provided on a reactive basis. Only a quarter of food businesses which handled foods sold loose were aware of the guidance document but those that were aware found it very beneficial. This was correlated with an increase in the provision of allergen controls and information to customers. An un-related telephone survey of table-service restaurants in the Brighton area in the UK was also carried out in 2010 ${ }^{14}$. The objective was to ascertain the level of knowledge amongst staff of anaphylaxis and food allergy in general. Of the restaurants contacted, 90 respondents ( $56 \%$ ) agreed to participate and of these, $90 \%$ had received food hygiene training while a third had received food allergy training specifically. Approximately half of those interviewed could name three or more food allergens while over $80 \%$ expressed confidence that they could provide a safe meal for a food allergic customer. However, when probed with specific questions it became clear they still had a fundamental lack of understanding of the risks associated with a food allergy (or any other food sensitivity for that matter). Almost $40 \%$ of respondents believed drinking water to dilute the allergen would help someone during an allergic reaction while $23 \%$ of respondents thought it safe to consume a small amount of an allergen. Furthermore, a fifth of respondents thought that a meal would be rendered safe if the allergen-containing component was directly removed and $16 \%$ agreed cooking food renders it non-allergenic. Alarmingly, a further $12 \%$ did not realise that a food allergic reaction could be fatal.

Further evidence of a dearth in knowledge and awareness of food allergies and allergen control was obtained through a number of research projects carried out on the island of Ireland. Research carried out in 1999 in Northern Ireland (NI) found that Local Council environmental health officers (EHOs) did not incorporate food allergen control in their HACCP-based inspections due to a fundamental lack of knowledge and appropriate training ${ }^{15}$. Another NI survey in 2002, which investigated the potential for obtaining an allergen-free meal on request in a take-away setting returned a failure rate of $20 \%{ }^{16}$. Most front-of-house staff did not consult with the chef or manager and the majority of EHOs who carried out the sampling expressed a need for more training. A similar survey conducted throughout the lol in 2007 highlighted the risk of an allergic reaction due to inaccurate information received in catering businesses ${ }^{17}$. Using peanut as the test allergen, $10 \%$ of staff had no understanding or awareness of peanut allergy and only a third were confident in the advice they gave. Across the lol, over half of the foods that tested positive for peanut protein were sold with the wrong advice and the levels of peanut protein in a number of these products indicated that peanut was used as a deliberate ingredient as opposed to being present due to cross-contamination. Once again, the sampling EHOs expressed a desire to receive training on this issue.

These deficits in knowledge and awareness may well be a consequence of an absence of focused legislation for allergen control in catering. Equally, it may well have been a consequence of an historic absence of consumer demand for foods free from specific allergens. However, they could also be a consequence of a general knowledge gap with regard to food safety and hygiene in the catering
industry. A survey of chefs and catering managers throughout the lol in 2006 showed that $20 \%$ of head chefs had no formal training in food preparation and a similar percentage had no hygiene training ${ }^{18}$. Furthermore almost a fifth of head chefs defrosted meat in an unsafe manner while $8 \%$ of respondents did not effectively control cross-contamination between cooked and raw foods. Almost $80 \%$ of head chefs showed a poor knowledge of current food safety legislation and the survey found that the concept and application of HACCP principles were poorly understood. It is against this background that regulators are fostering an increased awareness of what is essentially an emerging food safety hazard. Inculcating food allergen control into the safety and hygiene culture within the catering industry is a long-term objective.

These deficits in general food safety/hygiene awareness and knowledge contrast with the increased popularity of dining out in our culture. In recent decades, this has become an integral part of life for a great many people on the Iol. Data from Bord Bia (the Irish Food Board) in 2011 shows that while the current economic situation has had an impact on people's pockets, the numbers who dine out frequently still remain relatively high with $25 \%$ of respondents in the Rol and $23 \%$ of those in NI reporting dining out at least once per week and a further $29 \%$ and $33 \%$ respectively, reporting they dine out at least once per month ${ }^{19}$. Unsurprisingly, the risks to the food allergic and other food sensitive consumers have been modulated accordingly. In one UK study into so-called asthma-related deaths, upwards of $40 \%$ of the recorded fatalities were associated with the consumption of catered food and food sold loose ${ }^{20}$.

There are no food-allergy related mortality data available for the Rol or NI specifically. There are at least six confirmed fatal incidents of food related anaphylaxis each year in the UK in a total population of around 60 million ${ }^{21}$. The prevalence of food allergy on the lol is generally considered to be similar to that in the UK with $1-2 \%$ of adults and $5-8 \%$ of children affected. The justification for this is based on the assumption that diet, genetics and geography between the populations in both islands are similar. One of the rare sets of hard data emanating from the lol is the Rol Hospital Inpatients Enquiry database records for the period 1995-2004 which recorded an average of 45 people discharged from hospital with a principal diagnosis due to food related anaphylaxis each year ${ }^{22}$. For cases where the culprit food was specified, peanut was the highest principal cause of hospital discharges due to food-induced anaphylaxis: tree nuts, eggs and fish were also significant causes.

With regard to the other types of food sensitivity, the prevalence of coeliac disease in the populations on the Iol is now generally accepted to be similar to that in other Western populations at $1 \%{ }^{23}$. The prevalence of food intolerance in general has not been established due in part to an absence of agreed clinical definitions for many adverse food reactions ${ }^{24,25}$. However, the prevalence of lactose intolerance alone is considered to be approximately $5 \%{ }^{26}$. The prevalence of specific food allergies or intolerances may seem insignificant: collectively however they add up to a significant proportion of the overall population. Given that risk management for all food sensitivities is based on an avoidance diet, the significance of good allergen control in the catering industry cannot be overstated.

The EU-FIC modifies existing food labelling provisions in the EU and one of the principle objectives is to allow consumers to make informed and safe choices with regard to the purchase of food through the provision of clearer allergen information ${ }^{12}$. Among the changes introduced by the Regulation is the requirement for information on allergens used as deliberate ingredients in non pre-packed foods, i.e. food sold loose, including those sold in restaurants and cafés. This requirement is mandatory and caterers must be proactive in providing this information. It cannot simply be made available on request but must be evident and easily accessible by consumers. The mechanism by which this is achieved is open to interpretation at national level. The allergen information aspects of the EU FIC came into effect in December 2014.

## 3 Methodology

This report presents the results of the Rol segment of a joint survey that was conducted on an allisland basis by safefood in the Rol and a safefood-FSA-NI partnership in NI. The purpose of the survey was to find out the experiences and opinions of consumers who have food allergy or food intolerance with regard to eating out in catering establishments such as restaurants, hotels, cafes, etc. The survey was conducted on a voluntary basis in co-operation with Anaphylaxis Ireland, the registered charity that represents the interests of, and provides support for, consumers with food allergies and other food sensitivities as well. During the period $1^{\text {st }}$ January 2013 to $8^{\text {th }}$ February 2013, an electronic survey questionnaire prepared jointly by safefood and FSA-NI was circulated by Anaphylaxis Ireland to their membership. The survey was not limited electronically to one response per IP address. This was to capture those families where more than one member who had a food allergy/food intolerance and who would have used the same computer to participate in the survey. The survey consisted of just twenty questions which were designed to probe the experiences of respondents when dining outside the home in a catering environment (see Appendix 1).

A primary concern when disseminating the survey questionnaire was to exclude potential respondents who did not have a food allergy/food intolerance. The survey was limited to members of Anaphylaxis Ireland and as such does not capture food allergy or intolerance data for non-members who may be affected.

## 4 Results

### 4.1 Details of the survey respondents

The questionnaire was disseminated by email to 420 members of Anaphylaxis Ireland. In total, there were 259 responses to the survey questionnaire which represents a $62 \%$ response rate. It is assumed that all respondents were notified members of Anaphylaxis Ireland. In total, 7 respondents did not indicate their food allergy status and did not complete the questionnaire while 3 respondents indicated they did not have a food allergy or food intolerance (question 4). A further 8 respondents did not answer any further questions after indicating they had a food allergy or food intolerance and were therefore omitted from the analysis. When asked to specify their food allergy or intolerance 3 respondents highlighted allergies to non-food allergens only: however, since they had stated they had a food allergy or intolerance they were still included in the analyses as was a fourth respondent who indicated their allergy/intolerance had not yet been defined. This gave a total valid cohort of 241 respondents. All of the respondents indicated the county in which they lived (Appendix 2). There was no clear association between the reported incidence of food allergy/food intolerance and either population size or urban-rural divide.

Respondents were asked to indicate the number of family members that had food allergy or food intolerance and there was a $100 \%$ response rate to this question. The majority ( $59 \%$ ) of respondents were associated with families where just one person was affected. The number of respondents reporting 2, 3 and 4 family members affected was $31 \%, 7 \%$ and $3 \%$, respectively. No respondent reported coming from a family with 5 or more affected members (Figure 1). Therefore, $41 \%$ of respondents are from families where more than one member has a food allergy/food intolerance. The atopic status of these families is unknown and was not possible to determine from this survey.

Figure 1: $\quad$ Reported number of family members who have a food allergy / food intolerance


> One member affected 59\%
> Two members affected 31\%
> Three members affected 7\%
> Four members affected 3\%

All of the 52 respondents who completed the survey on behalf of themselves were aged 13 and over. These accounted for $22 \%$ of returns which indicates the level of survey completions by the guardians of sufferers. Therefore, this is primarily a 'Guardian' survey (Figure 2). 60\% of all returns were completed by a parent. Of the 107 responses concerning those in the 0-12 year old group, $79 \%$ were completed by a parent (majority mother). Of the 67 responses concerning those in the 13-20 year old age group, $69 \%$ of responses were completed by a parent (again majority mother). However, this falls to $29 \%$ in the $21-30$ year old age range ( 34 responses) and to zero for those aged 31 years or more. This is a clear indication of the level of concern and anxiety among parents of children/young adults with a food allergy or food intolerance. However, it cannot be concluded that these responses are evidence for increased food allergy rates in younger generations as they may simply reflect a lack of membership (or membership renewal) of Anaphylaxis Ireland by adults with food sensitivity.

Figure 2: $\quad$ Relationship of the respondent to the food allergic/intolerant individual


The age of the food allergic/intolerant person was identified by all respondents. All but one respondent stated the age of the person with the food allergy/intolerance. $45 \%$ of survey responses were concerned with 0-12 year olds. This increases to $73 \%$ when the $13-20$ year-old cohort is factored in. Again this emphasises the level of survey completions by guardians which was at $77 \%$ (Question 6) and confirms the survey returns were skewed toward the younger age groups ( $0-20$ year olds). The age distribution of the subjects of the survey responses (i.e., the food allergic / food intolerant individuals who completed the survey or on whose behalf the survey was completed) is given in Figure 3.

Figure 3: Age of the subjects of the survey responses


Similarly, the age at which the food allergy/food intolerance was diagnosed was given by all respondents. $22 \%$ of all respondents had been diagnosed in infancy (up to 1 year old) rising to $76 \%$ by age 5 years. This is particularly true for respondents aged up to 20 years. The diagnosis history for those in the $20+$ age categories is less clear with some reporting having been diagnosed as teenagers or adults but most diagnosed as children; some respondents reported being diagnosed in their fifties or sixties. Perhaps this indicates that food allergy/food intolerance can develop clinically at any stage in life although the individual in question may have lived with the condition for some time prior to diagnosis. The age at which the survey respondents were diagnosed is given in Figure 4.

Figure 4: Age at which the subjects of the survey respondents were diagnosed


The respondents were asked if the food allergy or food intolerance had been medically diagnosed. All respondents answered this question and overwhelmingly ( $97 \%$ ) reported that the food sensitivity in
question had been medically diagnosed. $68 \%$ of respondents indicated the medical personnel and/or clinical setting at which the diagnosis was made (Table 1).

Table 1: Locations and personnel identified as being involved in the diagnosis of the food allergy/food intolerance

| Means of diagnosis | Total respondents / \% Total respondents |
| :---: | :---: |
| Allergy clinic | $0(0)$ |
| Allergy specialist | $26(16)$ |
| Doctor named | $60(37)$ |
| Un-named doctor | $50(31)$ |
| Hospital named | $48(29)$ |
| Hospital unnamed | $11(7)$ |
| Non-medical | $1(1)$ |
| Unknown | $1(1)$ |

### 4.2 Range and prevalence of food allergies/intolerances

There was a $100 \%$ response to the question concerning the kind of food the subject of the questionnaire response was allergic / intolerant to. Respondents were asked to identify from a list of foods that cause food allergy/food intolerance based on Annex II of the EU FIC ${ }^{12}$. Four respondents did not list specific food allergens but indicated other allergies to bee sting, chemicals, and salicylates, or indicated that their food allergy had yet to be identified. However, since they indicated they had a food allergy/intolerance they were included in the analyses. When ranked in terms of prevalence, the top five reported allergens were peanut, tree nut, egg, crustaceans and milk, in that order. The majority of respondents were peanut ( $71 \%$ ) and tree-nut ( $59 \%$ ) allergic. Note, cereals containing gluten is included although the survey was not designed to pick up responses from coeliac sufferers and therefore the true prevalence of sensitivity to gluten is under-represented.

Figure 5: $\quad$ Percentage of survey respondents who are allergic/intolerant to the 14 allergens identified in Annex II of the EU FIC and non-regulated food allergens


Respondents were also asked to identify any other foods they were allergic or intolerant to. Within the "Non-reg food allergens" category there were 61 responses relating to substances not listed in Annex II to the Regulation. These included nine different non-food allergens and 49 food-related allergens (unregulated food allergens). These were mostly varieties of fruit and vegetables but also meat and other food commodities. This emphasises the fundamental paradigm that a food sensitivity can develop to just about any kind of food. Figure 6 shows the top twenty-one reported food allergens in rank order of prevalence. The food allergens highlighted in yellow are currently not required to be declared under EU food labelling legislation ${ }^{12}$. Allergies/intolerances to kiwi were more prevalent than those to soya bean, mustard, lupin, $\mathrm{SO}_{2}$ and celery. Legumes, banana, melon, wheat,
beans, lentils and mushroom were also in the top twenty-one reported food allergens. Returns were also registered for 'Wheat non-gluten' which probably reflects wheat allergy or non-coeliac wheat intolerance. Although the survey did not focus on coeliac condition, it is possible that a respondent may have had this condition and other food intolerances as well. The full list of returns is given in Appendix 3.

Figure 6: $\quad$ Top twenty-one reported food allergens in rank order of prevalence


As is evident from the Figure 5, there were respondents who were allergic/intolerant to more than one food. Indeed, about $75 \%$ of respondents reported being allergic/intolerant to more than one food allergen. Allergies to two food allergens were most commonly reported with roughly $29 \%$ of respondents affected. This decreased to $15 \%$ of respondents implicating three foods, $9 \%$ implicating five foods and $7 \%$ implicating four foods or six foods. Some respondents indicated being allergic/intolerant to up to 12 different foods. This is shown in Figure 7.

Figure 7: $\quad$ Prevalence of multiple food allergies among respondents based on all food allergies reported in the survey returns (All FA) and responses to the $\mathrm{EU}-14$ food allergens only


## Number of food allergies per individual respondent

Of the top five reported allergens (peanut, tree nut, egg, crustaceans and milk), $49 \%$ of respondents were allergic to both peanut and tree nut while $28 \%$ were allergic to both tree nut and egg ( $23 \%$ of respondents were allergic to all three food allergens). $15 \%$ of respondents were allergic to both egg and milk while $3 \%$ were allergic to peanut, egg and milk ( $10 \%$ were allergic to peanut, tree nut, egg and milk). The prevalence of multiple food allergies among respondents for specific combinations of the top five reported food allergens is shown in Figure 8.

Figure 8: $\quad$ Prevalence of multiple food allergies among respondents for specific combinations of the top five reported food allergens


It has been established that certain food allergies can resolve with age while others are more tenacious. For instance, an allergy to milk protein in childhood usually resolves by eight years of age whereas a peanut allergy usually remains into adulthood. The prevalences of the different food allergies in each age cohort were ranked (Table 2). Because of the low number of respondents in some cohorts, the results were grouped ( $0-5$ year olds and those aged 31 years and over). Up to age thirty, the top three food allergies were peanut, tree nut and egg, in that order. Milk, fish, sesame and kiwi featured as the fourth/joint fourth most prevalent food allergy, depending on the age cohort. For the 32 responses concerning those aged 31 and over, crustaceans was the most prevalent food allergy followed jointly by peanut, tree nut and molluscs. Egg and kiwi were the third and fourth most prevalent food allergies in this age cohort, respectively.

Table 2: $\quad$ Prevalence of different food allergies in the different age cohorts

| Age Cohort | $\mathbf{0 - 5}$ | $\mathbf{6 - 1 2}$ | $\mathbf{1 3 - 2 0}$ | $\mathbf{2 1 - 3 0}$ | 31+ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No. of respondents | 29 | 78 | 67 | 34 | 32 |
| Most prevalent FA | Peanut | Peanut | Peanut | Peanut | Crustaceans |
| $2^{\text {nd }}$ most prevalent FA | Tree Nut | Tree Nut | Tree Nut | Tree Nut | Peanut / tree nut / <br> molluscs |
| $3^{\text {rd }}$ most prevalent FA | Egg | Egg | Egg | Egg | Egg |
| $4^{\text {th }}$ most prevalent FA | Sesame / Milk / <br> Fish / Kiwi | Sesame | Fish | Milk | Kiwi |

### 4.3 Respondent's experiences when dining out

The remaining questions in the survey were designed to probe the respondent's previous experiences when eating outside the home in a catering setting. In total, 173 respondents $(72 \%)$ indicated if they (or the person on whose behalf they were completing the survey questionnaire) had ever experienced an allergic/intolerant reaction whilst eating outside the home (Figure 9). All of these respondents specified where the reaction had taken place with a majority ( $69 \%$ ) of adverse reactions happening while eating out in a commercial food establishment such as a hotel, restaurant, fast food outlet or café, etc. A further $13 \%$ reported reactions in an institutional catering setting while $39 \%$ reported reactions in someone else's home. These figures probably reflect an absence of proper control in an environment where food allergy/food intolerance is not a feature.

Figure 9: Dining out settings where a food allergic/intolerant reaction occurred


Under the response choice 'Other' which gave respondents the option to highlight other dining out settings, 11 respondents reported experiencing a food allergic/intolerant reaction in an aeroplane (1), multiple locations (1), cinema (2), food stall (2), car (1), abroad (1), train (1), non-disclosed location (1) and at work (1).

When probed as to the reasons for the failure in the management of risk that led to the food allergic / intolerant reaction taking place, all but 5 of the 173 respondents ( $97 \%$ ) gave reasons (Figure 10). The most commonly reported reason was the possibility of cross contamination with a food allergen ( $42 \%$ ) and this is followed with lack of information on the menu ( $25 \%$ ) or misunderstanding by the person who took the order ( $25 \%$ ). Forty seven comments were received for this question (Appendix 4). When analysed, it was clear that, in addition to the eight possible reasons proffered in the survey
questionnaire, two further categories of responses could be identified namely, that the failure pertained to a food product purchased in a retail setting and that many respondents food allergy/intolerance had not actually been diagnosed at the time of the event.

Figure 10: Reasons proffered by respondents as to why the food allergic/intolerant reaction occurred when dining out


The respondents were forthcoming when asked to identify what they considered to be essential elements of an allergy-safe dining experience. All bar two respondents chose from ten predetermined essential elements:-

1. General hygiene standards
2. Staff well informed about food allergy/intolerance
3. Polite and helpful staff
4. Direct contact with manager/chef
5. Knowledge of cross contamination
6. Menu notice inviting dialogue
7. Notices on premises that invite dialogue
8. Discretion of the catering staff
9. Information sheets or lists of allergens on food products
10. Other (please specify)

Respondents indicated that when looking towards a safe dining out experience they ranked highest the need for staff in catering settings to be well informed about food allergy/food intolerance (98\%) followed with a need for knowledge of the potential for cross contamination (87\%). Figure 11 demonstrates the importance the respondents attached to the pre-determined elements. Under the response choice 'Other', $35(17 \%)$ of respondents took the opportunity to draw attention to their concerns whilst others emphasized the options referred to in the question. It was evident that, in addition to the pre-determined elements in the survey questionnaire, two further categories of responses could be identified namely, flexibility on the part of the caterer to facilitate the customer and accurate information as to the food allergen content of the menu items. The comments also emphasised the need for staff training to increase their level of awareness. A full list of responses is contained in Appendix 5.

Figure 11: Respondents ranking of elements that constitute a safe dining-out experience


238 ( $99 \%$ ) respondents commented on the question concerning the frequency at which the food allergic/intolerant individual dined out during the year 2012. $51 \%$ of respondents eat out once a month or almost once a month. $23 \%$ do so less frequently while $3 \%$ never eat outside in a commercial catering setting (this was exclusively due to food allergy/food intolerance considerations; economic considerations were not a factor). $21 \%$ eat out more frequently than once per month. Figure 12 describes the frequency with which respondents ate outside in a catering setting during 2012.

Figure 12: Frequency at which respondents dined out during 2012


Once again under the response choice 'Other', 37 ( $15 \%$ ) respondents took the opportunity to convey their opinions and experiences with regard to eating out (Appendix 6). It is clear from the comments that people with food allergy/intolerance will return to a restaurant where they have had a safe and pleasurable dining experience and in many cases will not eat out anywhere else. They are also quite prepared to bring food along for the person who is allergic/intolerant and require understanding of this by the restaurant. Furthermore, respondents are keenly aware of their responsibility toward protecting their own health when venturing to eat outside the home. For this to work, they need accurate reliable information and good engagement with catering staff.

Figure 13: $\quad$ Number of service refusals experienced by respondents during 2012


When further probed on whether or not they had been refused service when trying to dine out during the year 2012, 63 respondents ( $27 \%$ ) stated they had been refused service. Almost all of these indicated the number of service refusals they had experienced during 2012. The number decreases progressively from one through to five refusals during that year (Figure 13) but interestingly 12 (19\%) respondents reported being refused service on more than five occasions.

62 of the 63 respondents who had experienced a service refusal during 2012 reported the reasons given by the caterer at the time. To facilitate a response, a choice of nine possible reasons was given. The percentage responses are shown in Figure 14:-

Figure 14: $\quad$ Reported caterer's reasons for service refusal


Clearly, an inability to guarantee allergen-free food was reported to be the chief concern of caterers where a service refusal was reported. Presumably this was due to an inability or unwillingness to determine and control cross-contamination as ascertaining the presence of allergens from the ingredients information is relatively straightforward. $51 \%$ of respondents reported not knowing if the ingredients contained the allergen as a reason for a refusal of service. Under the EU FIC, this explanation will no longer be acceptable. Also, $25 \%$ reported the caterer had insufficient knowledge regarding food allergens. Again, this cannot be used as a valid excuse under the provisions of the EU FIC. $14 \%$ reported the caterer had no time to deal with the request while $32 \%$ reported the caterer was worried about the legal implications if something went wrong. $29 \%$ of respondents also reported the caterer had not received allergen guarantees from their ingredient suppliers which proves the necessity of accurate labelling and information right along the supply chain.

Under the response choice 'Other', 11 comments were documented (Appendix 7). From these it is clear that some food business operators claim that they cannot guarantee anything or will restrict what will be made available. In one instance, despite being given specific details about the customer's allergenic condition, a meal was served with a dairy ingredient, the chef was summoned and
proceeded to bin the product in front of the customer. Respondents reported menus that stated 'none of the advertised food as being suitable for people with a nut allergy' and some chefs stated that the cooking oils used may have contained traces of nut therefore resulting in a limited range of options available to the patron. It was also stated that some caterers buy in cakes and could therefore not guarantee the accuracy of ingredients. In one instance, a respondent reported a notice welcoming allergy queries that was not backed up by a willingness to accommodate a food allergic customer.

Finally, $98 \%$ of all respondents gave their opinion as to how exactly caterers could advertise their ability to provide food free from specific allergens. To facilitate a response, thirteen possible predetermined elements of 'good advertising' were presented:-

1. Menu or premises signage inviting dialogue
2. Request for info accommodated prior to visiting the restaurant
3. Website information etc. for food sensitive customers
4. Polite and helpful staff
5. Direct contact with manager/chef
6. Staff/chef/manager's knowledge of cross contamination
7. Staff discretion to avoid embarrassment
8. Openness about the level of staff training on allergens
9. Openness regarding control of allergens in the premises
10. Food business received an allergen control award / accreditation
11. Advertise food details on Facebook or other social media
12. Advertise food details on catering business website
13. Other (please specify)

The extent to which respondents agreed with each choice is demonstrated in Figure 15.

Figure 15: Communication approaches that respondents would favour from caterers


It is clear from the responses that respondents rated the staff/chef/manager's knowledge of cross contamination highest in addition to the provision of accurate and accessible information. Respondents also highlighted the importance of staff honesty and a majority would favour interaction with the chef or manager. Interestingly, respondents did not rate social media or staff discretion as being that important, although a majority did cite the importance of politeness. Furthermore, respondents favoured the idea of an accreditation or award for food businesses as a sort of adjudication on their ability to accommodate their food sensitive customers and take the issue seriously. Under the response choice 'Other', 18 comments were documented which emphasised some of the choices provided (Appendix 8). Some respondents believe that their ability to make an informed choice may be dependent on having access to the food ingredients via the menu. Others felt that allergen training should be required for all catering establishments and that this was more important than the issuing of awards. An allergy-free menu option was also suggested by one respondent. Staff politeness was highlighted in the comments and also catering staff who would be prepared to alter a dish to make it suitable for consumption rather than serving 'bland, tasteless alternatives'.

## 5 Discussion

### 5.1 Details of the survey respondents

This survey was targeted at a specific population cohort, namely those with a food allergy or food intolerance and was disseminated through the NGO support organisation for this cohort, namely Anaphylaxis Ireland. The underlying assumptions here are (a) their membership should capture only those who have food allergy or intolerance and (b) this organisation probably has the most complete database of consumers in the Rol who have food allergy or intolerance. It is not known to what extent the total population of this cohort is captured in the membership suffice to say the services provided are unique. Most respondents ( $42 \%$ ) were from Dublin city and county while in terms of administrative area Cork (city and county) returned the most respondents (16\%). There was no clear association between the incidence of food allergy/food intolerance and either population size or urban-rural divide.

In total, there were 241 valid responses to the survey. The degree to which the respondents were engaged with the subject matter can be deduced from the number and detail of the comments where this option was provided. Furthermore, the evidence clearly indicates this was mostly a survey of 'guardians' (mothers accounted for $52 \%$ of completions) of food allergic/intolerant individuals who were the focus of the questionnaire completions. This was corroborated by the age profile of the persons who completed, or on whose behalf a guardian completed, the questionnaire. $45 \%$ of all completions were concerned with 0-12 year olds and this increase to $73 \%$ when the 13-20 year-olds are factored in. This is a clear indication of the level of concern and anxiety among parents/guardians of children/young adults with a food allergy or food intolerance. It probably also reflects the membership profile of the support organisation.

The food allergy/intolerance had been medically diagnosed in $97 \%$ of cases with most respondents citing the clinical setting and/or personnel involved in the diagnosis. Interestingly, the majority of those in the $20+$ age categories had been diagnosed in adulthood or as teenagers. These diagnoses were not associated with a particular allergen; peanut and nut allergies predominate in this age cohort as in childhood diagnoses. These individuals may have lived with the food allergy/food intolerance since childhood but with sub-clinical symptoms. It may also simply indicate improvements in clinical care.

Most questionnaire completions ( $90 \%$ ) concerned individuals who were the only members of their family with a food allergy/intolerance or had just one other affected family member. Taken together with the age and guardian profiles, this may indicate an increasing awareness and diagnosis accuracy of food allergy/intolerance in recent years. However, it may also simply indicate the age cohort affected that would most likely result in membership of a support organisation.

### 5.2 Range and prevalence of food allergies/intolerances

The survey respondents specified the foods causing the allergy or intolerance. These not only included the 14 allergenic foods listed in Annex II of the EU FIC, but 49 other foods as well as 9 nonfood allergens. $77 \%$ of respondents reported being allergic/intolerant to more than one food allergen. Allergies to two food allergens were most commonly reported with $29 \%$ of respondents affected.

In terms of incidence, the top five allergens reflect what has been documented in other surveys from time to time, namely peanut, tree nut, egg, crustaceans and milk. Up to age thirty, the top three food allergies were peanut, tree nut and egg, in that order. Milk, fish, sesame and kiwi featured as the fourth/joint fourth most prevalent food allergy, depending on the age cohort. For the 32 responses concerning those aged 31 and over, crustaceans was the most prevalent food allergy followed jointly by peanut, tree nut and molluscs. Egg and kiwi were the third and fourth most prevalent food allergies in this age cohort, respectively. Kiwi allergy ranked ninth overall and was more prevalent than those to soybean, mustard, lupin, $\mathrm{SO}_{2}$ and celery. Peas and banana, which are also not in Annex II, ranked higher than lupin, $\mathrm{SO}_{2}$ or celery. In the EU FIC, there is provision for the EU Commission to review the Annex II list of food allergens. The incidence of self-reported kiwi allergy in this survey suggests that it may be worthwhile investigating the prevalence in other EU Member States with a view to adjudicating on its possible inclusion to the Annex. Since the survey did not focus on coeliac condition, the returns for 'Cereals containing gluten' probably reflect gluten intolerance.

### 5.3 Respondent's experiences when dining out

Respondents cited lack of control of cross contamination as being the chief cause of adverse reactions outside the home. A lack of information was also highlighted which perhaps substantiates the objectives of the EU FIC in which the obligations for caterers to have allergen information proactively available for their customers became a legal requirement from December 2014. (It is worth noting that, in a number of cases, the adverse reaction occurred because the individual didn't actually realise at the time that they had a food allergy/intolerance.) Caterers should take note that customers with food allergy/intolerance will return to a restaurant where they have had a safe and pleasurable dining experience and in many cases will not eat out anywhere else. With conservative estimates of the total prevalence of food sensitivities in the population at around $10 \%$, this highlights the size of the potential market that caterers can exploit. They must be more flexible in dealing with their food sensitive customers who are also quite prepared to bring food along for the person who is allergic/intolerant and require understanding of this by the restaurant. The respondents themselves favoured the idea of an accreditation or award for food businesses as a sort of adjudication on their ability to accommodate their food sensitive customers and take the issue seriously.

Respondents were quite clear as to what was necessary for caterers to do to ensure a safe dining experience for their food sensitive customers. This is understandable when the reported rate of dining out is compared with figures for the general population. From the survey, $27 \%$ of respondents dine
out once a month while $24 \%$ dine out up to ten times a year (those who reported never dining out did so due to their food allergy/intolerance; economic constraints were not a factor.) This compares to the Bord Bia 2011 data from the general population in which $29 \%$ of respondents ate out a few times/once a month. Therefore, the assumption that food sensitive consumers do not eat out is grossly misleading as this survey has shown that there is certainly no difference when compared to the general population, despite the increased risks. The implementation of the EU FIC will go some way towards ameliorating this risk as it compels the caterer to take a more proactive role in the provision of accurate information on food allergens, at least for the major allergens that are used as deliberate ingredients. However, the survey showed that the variety of food allergies and intolerances is quite broad so a generic approach to the dissemination of accurate information on the foods they sell will probably allow the caterer to best meet the requirements of the Regulation. Control of cross contamination is still critical to protecting the health of the food allergic/intolerant customer and, although not provided for in the Regulation, must nonetheless be an essential element of a caterer's food allergen control plan. Given the barriers which those with food allergy/intolerance face when dining out, it is not surprising that they tend to return to those restaurants where they will be courteously and safely accommodated and cross contamination from allergens is controlled.

Consumer with food allergies and intolerances face challenges when dining out which the general population don't have to consider. Almost a third ( $27 \%$ ) of all respondents had been refused service during 2012 and most of those had been refused more than once. Indeed $19 \%$ of respondents who had experienced a refusal of service reported being refused on more than five occasions. The reasons for a refusal of service by caterers pointed toward a lack of knowledge and issues with crosscontamination. This may have been backed up by recourse to precautionary statements, the equivalent of 'May contain'. This has relevance for the implementation of the EU FIC as such an absence of knowledge will be unacceptable, at least in the case of a deliberate ingredient. In this context, it is interesting to note that a third of caterers were reported to have been concerned about the legal implications if anything went wrong.

But ensuring current obligations are met is also important: the survey returns indicate there is still a need to ensure that all staff are sufficiently trained and updated in all aspects of food allergen control. Caterers need to be not just aware of food sensitivities but knowledgeable about them. Clear and accurate information on which to make an informed choice will be dependent on the caterer's familiarity with the issue. This was considered by respondents to be more important than basic politeness which is however necessary for generating the right kind of environment where the customer can be encouraged to engage more with the staff. Respondents are keenly aware of their responsibility toward protecting their own health and to do so they need accurate reliable information and good engagement with catering staff. Respondents were also concerned about the use of precautionary 'cover-all' statements such as 'we can't guarantee' or 'may contain'. This reflects either continued uncertainty with regard to cross-contamination or an unwillingness to accommodate the
customer. Since the EU FIC does not address the issue of cross-contamination, there is a danger that such 'precautionary statements’ could become commonplace.

In recent years, best practice guidelines on the control of food allergens in the catering industry have been issued by a number of agencies in Ireland and the UK. These have advocated an awareness of the ingredients used and the competence to address the potential for cross-contamination. They have also sought to foster better accommodation of the needs of the food sensitive consumer when dining out. The safefood resource pack Food Allergy and Intolerance: Guidance for the Catering Industry will assist caterers in ensuring their staff have a basic grounding on the subject. The Safe Catering manual available from the FSAI is based on HACCP principles and contains a dedicated section on food allergens. The manual highlights the danger allergens present for the food sensitive customer and the obligations of the caterer in mitigating this risk.

## 6 Conclusion

The main observations from the survey are as follows:-

- Given the response rate to the survey and the extent to which written comments were provided by respondents, we can conclude that the risks associated with dining out are a key issue for those with food allergy/food intolerance.
- The high rate of guardian responses to this survey may indicate a high level of anxiety and concern among the parents/guardians of children with food allergy/food intolerance. Conversely, it may simply reflect the membership of Anaphylaxis Ireland which, as a local support organisation, will be regarded as a resource for assisting in the management of food sensitivities.
- Peanut was the most common food allergy, followed by tree nut, egg and milk allergy. This reflects findings elsewhere in the developed world.
- The incidence of reported food sensitivities in this survey does not necessarily reflect current labelling legislation. Kiwi allergy was relatively common amongst the survey respondents. This emphasises the fundamental paradigm that a food sensitivity can develop to just about any kind of food.
- The risk of an allergic/intolerant reaction whilst eating outside the home is high with more than half of respondents reporting having experienced same. An inability to control crosscontamination and deficits in information were proffered as underlying causes for these failures.
- There is a clear requirement for caterers to have knowledge, and be aware, of food allergy and food intolerance and how these can impact on health and quality of life. There are both legal and economic imperatives to do so, as food sensitive customers will show loyalty to those establishments whom they can trust.
- Food sensitivity consumers dine out just as frequently as their non-sensitive counterparts. Being refused service is par for the course.
- Flexibility on the part of the staff is greatly appreciated. Customers are quite prepared to bring food along for the person who is allergic/intolerant. They will return to those establishments where they have had a safe and pleasurable dining experience and in many cases will not eat out anywhere else.
- Caterers should be aware that control of cross-contamination remains an essential element of food allergen control even though it is not addressed in the EU-FIC regulation.
- Resorting to precautionary 'cover-all' statements such as 'we can't guarantee' or 'may contain' in the absence of a proper evaluation of the cross-contamination potential demeans the quality-of-life of food sensitive customers and does not make good business sense.
- Caterers must take their obligations toward protecting the health and quality of life of their food sensitive customers seriously. They must include allergen control as part of their food safety management system.


## 7 Acknowledgements

safefood and the FSA-NI wish to thank Mrs. Regina Cahill of Anaphylaxis Ireland, her colleagues and the members for their patience and co-operation in carrying out this survey.

## 8 Appendices

## Appendix 1:

## The survey questionnaire

Q1 Please indicate which region you live in.
Q2 Please select the district council region in Northern Ireland in which you live.
Q3 Please select the county in the Republic of Ireland in which you live.
Q4 Do you or a member of your family have a food allergy or food intolerance?
Q5 How many members of your immediate family (including yourself) have a food allergy or food intolerance?
Q6 Choosing one family member with a food allergy or food intolerance, what is your relationship to this person?
Q7 Has the food allergy/food intolerance been medically diagnosed?
Q8 What is the age of the person with the food allergy/food intolerance?
Q9 At what age was their food allergy/food intolerance diagnosed?
Q10 What kind of food(s) is the person allergic or intolerant to? (Please tick all that apply.)
Q11 Did the person ever experience an allergic/intolerance reaction whilst eating outside the home?
Q12 Please select the setting where eating the food that caused the reaction occurred?
Q13 Was the allergic/intolerance reaction possibly as a result of one or more of the following? (tick all that apply)

Q14 When planning to eat out in a catering establishment e.g. hotel, restaurant, fast food outlet or cafe etc, what do you think are the essential elements of an allergy-safe dining experience? (tick all that apply)
Q15 Since January 2012 how often did the person with the food allergy/food intolerance eat out in a catering establishment?

Q16 If you answered "Never" in the last question in respect of eating out was it because of (a) food allergy or food intolerance considerations or (b) economic considerations?
Q17 During the year 2012, did a caterer ever refused to serve the food allergic/intolerant person because of their condition?
Q18 On how many occasions has service been refused?
Q19 What reason(s) was given by the caterer? (tick all that apply)
Q20 In your opinion how could catering establishments advertise their ability to provide allergen free food? (tick all that apply)

## Appendix 2:

Geographical distribution of Anaphylaxis Ireland respondents

| District Council Region | Total count | Percent |
| :---: | :---: | :---: |
| Carlow | 1 | 0 |
| Cavan | 0 | 0 |
| Clare | 2 | 1 |
| Cork | 38 | 16 |
| Donegal | 4 | 2 |
| Dublin - Dublin Corporation | 12 | 5 |
| Dublin - Dún Laoghaire \& Rathdown | 28 | 12 |
| Dublin - Fingal | 24 | 10 |
| Dublin - South Dublin | 37 | 15 |
| Galway | 17 | 7 |
| Kerry | 2 | 1 |
| Kildare | 14 | 6 |
| Kilkenny | 4 | 2 |
| Laois | 1 | 0 |
| Leitrim | 1 | 0 |
| Limerick | 1 | 0 |
| Longford | 1 | 0 |
| Louth | 8 | 3 |
| Mayo | 8 | 3 |
| Meath | 6 | 2 |
| Monaghan | 1 | 0 |
| Offaly | 2 | 1 |
| Roscommon | 2 | 1 |
| Sligo | 1 | 0 |
| Tipperary North | 0 | 0 |
| Tipperary South | 3 | 1 |
| Waterford | 4 | 2 |
| Westmeath | 2 | 1 |
| Wexford | 2 | 1 |
| Wicklow | 15 | 6 |
| TOTAL | 241 | 100 |

## Appendix 3:

Total returns for food allergens

| Allergen | Count | \% | Allergen | Count | \% |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Peanuts | 170 | 71 | strawberry | 2 | 1 |
| Tree nuts | 143 | 59 | Chick peas | 2 | 1 |
| Eggs | 99 | 41 | Citrus fruits | 2 | 1 |
| Crustaceans | 50 | 21 | Celery | 1 | 0 |
| Milk | 45 | 19 | Avocado | 1 | 0 |
| Fish | 41 | 17 | Beef | 1 | 0 |
| Sesame | 37 | 15 | Carrots | 1 | 0 |
| Molluscs | 33 | 14 | Black pepper | 1 | 0 |
| Kiwi | 25 | 10 | Cauliflower | 1 | 0 |
| Soyabeans | 15 | 6 | Chestnut | 1 | 0 |
| Cereals with gluten | 13 | 5 | Fruits | 1 | 0 |
| Mustard | 8 | 3 | Garlic | 1 | 0 |
| Banana | 8 | 3 | Nutmeg | 1 | 0 |
| Peas | 6 | 2 | Barley | 1 | 0 |
| Lupin | 4 | 2 | Pesto | 1 | 0 |
| Wheat | 4 | 2 | Pine Nuts | 1 | 0 |
| Lentils | 4 | 2 | potatoes | 1 | 0 |
| Melon | 3 | 1 | Salami | 1 | 0 |
| SO2 | 3 | 1 | Seeds | 1 | 0 |
| Beans | 3 | 1 | tomato | 1 | 0 |
| Mushrooms | 3 | 1 | Squash | 1 | 0 |
| Legumes | 2 | 1 | Sweet potato | 1 | 0 |
| Pork | 2 | 1 | Chicken | 1 | 0 |
| Rhubarb | 2 | 1 | Honey | 1 | 0 |
| Salicylates | 2 | 1 | Oranges | 1 | 0 |

## Appendix 4:

## Comments received for Q13 - Was the allergic/intolerance reaction possibly as a result of one or more of the following?

(NB Names have been redacted)

1. 1st reaction to nuts
2. A misunderstanding, an older child allowed access to an allergen while the adult in charge was out of the room. It resulted in a severe reaction which required treatment with adrenaline.
3. All the above questions bear no relevance to the previous question; the allergen was in an unmarked chocolate bar i.e. a multi pack.
4. Allergies unknown at the time
5. Also after inhaling airborne particles in pet food shop bagging the allergen
6. Ate peanut butter this was the first time we knew he had allergy
7. Birthday party, hostess unaware ingredients in "safe" treat had changed.
8. Catering staff were not properly briefed on what was in the canapés they were serving, and food was not labelled
9. Child took free sample of food, asked if foods he is allergic to were present and were informed that they were not.
10. Chinese take away
11. Chocolate chip cookie in a wrapper which omitted to say chocolate chip cookie with nuts. It did say it in the tiny writing in the ingredients. Company was INFORMATION REDACTED.
12. Could be from contamination by latex gloves used in food preparation
13. Didn't know he had the allergy
14. Egg used in making of the food and this was unclear on menu
15. Father unaware of allergy until afterwards
16. first reaction ever in hotel after eating peanuts
17. first time allergy was apparent
18. first time eating the dish which had peanut in it and my son never ate peanuts before this
19. First time it had happened
20. Food purchased from a retail outlet without any allergen information on it.
21. happened before she was diagnosed
22. happened in friend's house before she was diagnosed she ate a sweet
23. Hazel nut served by family member
24. Healthy eating options in school to encourage kids to eat fruit so my daughter tried a kiwi and swelled up immediately around mouth lips throat blood shot eyes and had difficulty swallowing.
25. I was given incorrect information by the person serving the food.
26. In early stages and family had not read the label correctly. Item actually contained Allergen and was listed on label
27. In one case in a restaurant in Belfast, where we'd put in a special order, the waitress made a mistake with serving dessert and gave a sundae with walnuts in it to my daughter, and my daughter's nut free sundae to a person at a different table. In another case, the waiter didn't realise that the pesto inside the chicken breast contained cashew nuts
28. Incorrect reassurance given by chef despite booking having been made on the basis of catering for allergy and despite questioning on each menu item and the specific food. We were told the food - sorbet - was made in the kitchen form water and lemon and sugar and that it contained no egg white - we queried this as we expected it to contain egg white but were told it did not. It transpired - after the reaction from eating a small amount of the sorbet and while \waiting an ambulance - that a commercial base containing egg white had been used.
29. It was a definite cross contamination with an allergen. I submitted my own penne pasta to the chef, to be cooked for my child, as it did not contain egg. Halfway through eating his pasta I noticed some spaghetti on his plate underneath the penne pasta. This spaghetti came from the kitchen, not me and my child had a severe anaphylactic reaction to the egg in the spaghetti and was taken to hospital.
30. Lack of information as it was undiagnosed.
31. Lack of information provided by the 3 waiters asked
32. My Anaphylaxis allergic reaction has been not been identified as any particular food group. I keep a log, which does not show any pattern. I have been tested, with no reaction. When asking restaurants for the list of ingredients of my meal, I have found that they have been very helpful (once I explained I had a reaction and not food poisoning).
33. My father suffered an anaphylactic reaction whilst eating shellfish in a French restaurant. He did not know at the time he was a sufferer of a food allergy.
34. No previous reaction to the food in question
35. One severe reaction in China due to language difficulties
36. Only just diagnosed
37. Peanut - when child was three in a cereal bar....didn't know child had peanut allergy then and didn't notice it was in cereal bar....correct labelling on product Egg - as recent as this year....again labelling was correct....was a food challenge
38. Restaurant discloses ingredients in food but not all, for example use of peanut oil was possibly what caused the reaction (she had fried rice). However, they also use peanuts in other foods so maybe cross contamination also occurred. At the time we did not know she was allergic though so we did not enquire about the ingredients used.
39. She was given chips in INFORMATION REDACTED. We were very clear about her allergies and first asked if there was anything else cooked in the same oil, and if they could be certain to avoid cross contamination. They assured me they were safe, yet after eating a couple of chips, hives began appearing on her face.
40. Somebody on the plane opened a packet of peanuts and my son went into anaphylactic shock
41. Staff at the Crèche unaware of the importance of not giving child a little taste of their own treat. Gave him a little taste of their own pastry slice.
42. The allergy was diagnosed following an allergic reaction at school. We were unaware of the allergy until then.
43. This was her first allergic reaction we did not know she was allergic at the time
44. Unaware of allergy
45. Waiters having poor English and understanding of what l'm trying to say. they get very flippant and think I'm been OTT
46. We suspect it was a bar from a multi-pack, with inadequate ingredient information on outer wrapper.
47. Wrong information given by a member of staff to my son. He asked if the dish contain peanuts because he had a life threatening peanut allergy and was told that there were no peanuts in the dish.

## Appendix 5:

## Comments received for Q14 - When planning to eat out in a catering establishment e.g. hotel, restaurant, fast food outlet or cafe etc., what do you think are the essential elements of an allergysafe dining experience?

## (NB NAMES HAVE bEEN REDACTED)

1. An ability and flexibility of kitchen to prepare off-menu items. Many foods are previously battered and seasoned and ready to be cooked. My son must eat meat, etc. that is completely plain as there is too much risk of cross-contamination, and items in sauces, etc. that he is allergic to.
2. Accurate information on allergen information on a specific dish. When eating out my child wants to eat a dish of food, we need to know the particular dish she chooses is safe for her to eat, all the other items are just around general food safety/information.
3. All above are important and some more than others
4. Allergen information on each dish on the menu (including any additives in sauces etc)
5. Allergen information on menu beside each dish
6. An openness and willingness from staff to engage with patrons who have severe allergies too many hide behind the "well we couldn't guarantee......" or "may contain nut traces..." excuse. It's so good when we find a chef/restaurant who says "I can make you a nut free version of that dish" or "can i recommend XXX - that's a nut free dish"
7. At present we don't have any confidence that waiting staff, managers or even the chef is completely knowledgeable on cross contamination and the risks for those with severe allergy. We minimise the risks by choosing particular types of restaurants and would never order dessert; the risk of cross contamination with nuts is too high.
8. Details on the menu of allergens contained in meals
9. Embrace food allergies in a confident sensitive manner.
10. For people like myself the food handling is the possible area where contamination can occur. Just because gloves are used in food handling often staff do not realise that the materials the gloves are made of may be the issue of concern for me.
11. For staff to have good understanding of English so able to communicate effectively
12. For the waiter/waitress not to be trying to stop themselves from throwing up their eyes to heaven as if to say 'not another fuss pot'
13. Front line staff coming across as positive, confident and reassuring. Many times when this was not the case, my son refused to eat out of fear.
14. Generally an understanding of the severity of Anaphylaxis, and getting the balance right between paranoia - e.g. refusing to serve person with allergy and being sensible and taking precautions with individuals food. In teenage years her social life inhibited by her lack of confidence in attending eating establishments. As she is get older and more confident finds most staff members in restaurants very courteous and understanding. Mainly though people should be aware of severity and take necessary precautions, and not just say everything is fine if they are not sure. Again it's all about balance though. We need common sense and not paranoia. Thanks.
15. Good description of what ingredients goes into each dish
16. Having lived with a number of severe food allergies since I was very young, dealing with restaurant staff has been a constant source of stress. I have lived abroad and travelled widely and in my experience Ireland is one of the most difficult countries to eat out with a
food allergy. The main barriers I have found are (1) Staff not fluent in English so understanding is limited to begin with, (2) Staff unwilling to or not trained appropriately to deal with a food allergy and so they find it easier to simply refuse to serve you. This has happened on countless occasions and has left me feeling embarrassed and victimized; (3) Kitchen staff unsure of the ingredients of some of the products they use and so are unable to determine whether they contain any allergens.
17. Having staff ask (as standard) if any member of the family have an allergy prior to being given a menu. Having an oral Anti-histamine and at least 2 Anapens in the First Aid kit in the establishment.
18. Having Waiting Staff that have good English is extremely important - non-native speakers with a poor understanding can be very high risk. A separate cooking area for anaphylaxis sufferers is important to minimise cross contamination
19. I carry a small Allergy Alert card clearly listing my allergies. I give it to the waiter who in turn gives it to the chef (on my insistence if necessary). I would not eat out without it. Many staff do not use English as a first language so it's very easy for misunderstandings to occur. Also I believe that when staff are handed something tangible, in writing, they are far more likely to listen and take the matter seriously.
20. I hate it when restaurants say that they can't guarantee anything---I think this is a lazy cop out on their part. I also hate it when the issue is not dealt with discretely and sensitively ---i.e. waiter delivering dishes to the table saying 'Who is the nut allergy?'
21. I really do not trust any food outlet and would really worry now that my daughter is getting older and will be out and about more with friends. I think it needs to start in the training of staff at catering colleges etc. I think also the food outlets will only take notice when they can be held accountable.
22. I think the most important element is that staff understand what a severe allergy is and understand the risks posed by cross contamination. Staff also need to be fully aware of the ingredients of the food they serve; this information is vital for people with a severe allergy. At the moment staff seem to have little understanding of severe allergy and allergen control. We are careful about the restaurants we eat in and the dishes we choose.
23. I will now deal only with the chef or named person cooking the food. Cross contamination is our biggest concern and lack of knowledge in the area of anaphylaxis as opposed to food intolerance or food sensitivity
24. I would like to see catering establishments taking the issue of allergies and food intolerances more seriously. They claim they are informed but I constantly feel I have to defend myself when explaining my son's allergies and have to make it clear that it's not that he's a fussy eater. I feel the gravity of the situation is very often not grasped and I get the 'yeah, right, eyes rolled to heaven' type od attitude when I say that he could die from a serious reaction.
25. It is frustrating if a blanket response of caution is given, where the establishment might say the food may be unsafe for our situation even if it probably is safe, because perhaps they fear litigation. Some kind of disclaimer situation would be useful.
26. It's vital that there are signs labelling food and well informed staff is essential
27. Knowledge is key. Not only awareness but also complete understanding of the ingredients of the products the establishment is selling is very important. Not enough to say that the mayonnaise is not homemade but that it "comes from a bottle".
28. Main thing is for the staff to understand the ingredients, likelihood of allergen being in the food etc. INFORMATION REDACTED provide an excellent fact sheet with allergen information for every item on their menu - this would be a great point of reference for other catering establishments.
29. A degree of knowledge of the issue amongst staff is vital
30. Specific hygiene standards. All cafes/restaurants I have spoken with have been understanding as the information is being disseminated, but not one, to date, has been able to guarantee that their kitchen could provide an allergy safe meal without prior warning of the visit. Further, most have said that given the possibility of cross contamination either at source or in the kitchen, it would be difficult to provide an allergy safe meal. I can bring food of my own in for the staff to heat up.
31. Staff being able to check ingredients on food that's been bought in. Packaging has often been thrown out
32. Staff should have to watch DVD on anaphylaxis as part of health \& safety
33. The biggest problem we have had is the waiter not understanding allergy due to very poor language. I was once laughed at by a waitress who thought a peanut was a penis! This was in INFORMATION REDACTED a large chain!
34. To feel that I'm listened to, rather than a general, Oh Yes, that's fine, we'll manage - even before I've finished listing my son's allergies.
35. Well established and trusted fast food outlet have established a track record (ie, INFORMATION REDACTED) so it is often the easiest value option for this family. We have found 3 or 4 food chains who seem to offer us a child friendly and allergy safe option so we tend to return to those chains including other branches of the same chains.

## Appendix 6:

## Comments received for Q15 - Since January 2012, how often did the person with the food allergy/food intolerance eat out in a catering establishment?

(NB NAMES HAVE BEEN REDACTED)

1. Always in the same restaurant, and always ordering the same dish that we know will be safe for her.
2. Before diagnosis
3. But only in well-known restaurants where we know we can rely on them. Also only certain types of restaurant where fish is easy to avoid
4. College Student - eat food on the go from various outlets
5. Eating out is never an easy option and always needs consideration on my part. Fast food outlets are the biggest offenders when seeing balloons in food serving areas.
6. Every restaurant tells you there is always the risk of cross contamination and none of them can guarantee peanut free
7. generally eat at INFORMATION REDACTED as their menu states products which contain the allergens
8. He eats lunch from the school canteen about once a week. He has checked ingredients and made staff aware that he has a severe allergy; the dishes generally remain the same. He also eats out with the family and always notifies staff of his allergy and always carries his adrenaline.
9. However, when on holidays we would eat out every days or eat in the hotel.
10. I have generally found Irish establishments to be very helpful and considerate of my son's allergies. However I do need to stress the risks of cross-contamination. Many people don't get that you can't use the spatula you flipped the burgers with for his chicken (forgot to mention he's also allergic to beef). Also, when I specify PLAIN, I mean plain - no sauces or garnishes. I've had to send perfectly good food back before because chef decided it would be nice to plop a prawn on top of my son's plate.
11. I live between the UK and Ireland, and tend to eat out frequently in the UK, however I try to avoid eating out in Ireland unless I know the restaurant as I have had such bad experiences eating in Irish restaurants in the past.
12. Including safe option of INFORMATION REDACTED
13. It is generally too stressful to eat out as establishments don't seem to understand about food allergies and their menus lack information.
14. It would be more frequently if we had healthier options. (as opposed to fast food and pizza which we can do). Also the person with the allergy is not inclined to try new places because of the hassle and embarrassment of making sure the food with be safe.
15. Many of the occasions were for a simple drink. Eating in INFORMATION REDACTED (clear information available) or top rated restaurants (will make a specific dish for my child) are the easiest options. Middle of the road are hardest, untrained staff, dodgy information, unwillingness to be flexible. Our simple family rule is "no injections, no food". We have twice in the past year walked out of a restaurant as they could not cater for our child. If we know in advance we phone the establishment and let them know our specific needs.
16. My son always asks if he is not sure.
17. Not frequently - I was unaware this directive was implemented
18. Only when I "had" to...weddings/christenings
19. Our child is 4 so we regularly eat in INFORMATION REDACTED. Very comfortable taking him there because of their very extensive food allergy information. It's a life saver if need to eat unexpectedly while outside our home and have not time for long dialogues and discussions.
20. She will only eat basic food with no additives or sauces or INFORMATION REDACTED who highlight all allergens.
21. That is the school canteen where she has a hot chicken roll.
22. The allergen is raw egg white and to a certain extent cooked egg products so eating out isn't as bad. I have to make sure nothing has mayonnaise or egg whites (raw) on the food.
23. The same couple of restaurants rather than a wide number.
24. There are only a couple of restaurant which I eat out in, where I know from experience they can look after me. I am extremely nervous if eating out somewhere new, try to avoid it to be honest.
25. Usually in fast food restaurants where the list of allergens is well displayed. In restaurants only with prior consultation with serving staff.
26. We avoid fish restaurants
27. We eat in familiar establishments where we have had no problems before.
28. We eat out as a family but I always bring my son's prepared food with us. On occasion I may need it heated up so i have it in a secure container. He has so many allergies that I cannot take the risk of having any food cooked at the establishment. As much as the staff have a duty of care to meet my son's needs once agreed, I feel I share some of the responsibility should something go wrong.
29. We eat out with our child about once a month. It's essential to help our child to learn how to eat out safely. It may be as simple as just ordering a sandwich for lunch in a cafe, but he must always ensure that he explains his allergies and his requirements. We never eat in Chinese, Indian or Thai restaurants because they use nuts in a lot of their dishes and we never order dessert for the same reason. We try to minimise the risks, but there are no guarantees.
30. We tend not to eat out unless we're 100 per cent confident that the establishment can cater for my son's allergies.
31. We tend to avoid restaurants, and only eat tested food that we know is okay in say INFORMATION REDACTED / INFORMATION REDACTED.
32. We tend to return to the same 'safe' establishments when eating out as it is too much hassle going to new eateries and also too much of a risk in some places due to lack of knowledge about food allergies etc.
33. We tend to stick to "safe" restaurants, which limits our eating out experiences. By safe I mean, places which have previously provided us with comprehensive information and we have eaten there successfully, without incident.
34. We would have to check the menu and this can sometimes be a pain especially when with friends, they just think you are an overbearing, overprotecting mother. So it really should be easier for people to eat out and not have to worry all the time. Places like INFORMATION REDACTED are fine because none of their foods have nuts.
35. Will drink an orange juice but neither main courses or desserts have been suitable.
36. I didn't answer never but we would eat out more if it wasn't for food allergies
37. We don't eat out in restaurants often because the food allergy makes things really difficult and it usually means that the child with the allergy has such a limited choice that everyone else feels guilty. No pleasure for anyone in that.

## Appendix 7 :

## Comments received for Q19 - What reason(s) was given by the caterer (for refusal of service)? (NB Names have been redacted)

1. But we had checked in advance and were told it was ok with allergies and ingredients.
2. Chef advised that he thought there may be traces of peanut in the cooking oil so he would not provide sausage \& chips meal to my son.
3. Dealt with very well. Chef was very honest and says alot of nuts were used in the kitchen and would be afraid of cross contamination. Chef was previously a nurse and appeared very tuned in to the dangers. She did allow me a coffee!
4. I have frequently encountered restaurants who write on their menus that NONE of their food is suitable for nut allergy sufferers as they cannot guarantee that there is no nut traces in the food. This causes huge problems as while I am allergic to nuts I am not so allergic that I will react if my food is cooked in the same kitchen. However restaurants refuse to differentiate between these different types of allergy and frequently try to refuse to serve me.
5. In some cases staff did not understand what I was talking about because of the language barrier.
6. Not stated but I expect legal implication if something went wrong was also a factor.
7. Some restaurants now buy in a lot of their cakes and therefore cannot guarantee the ingredients do not contain nuts or were not make in a nut free kitchen.
8. Staff told me that my son could only have chips in children's activity centre.
9. The first time this happened was when I brought my plate of food back to the counter (INFORMATION REDACTED), I explained that despite extensive explaining when ordering my plate of food still contained cheese (it was through a salad they'd given me). The chef came out, took the place off me and poured the contents in the bin in front of me! Astonishing.
10. There was no mention of legal implications, but that's not to say it wasn't thought of! Anyone I spoke to was very good about giving of their time.
11. We tried to eat recently at INFORMATION REDACTED (Apologies for singling them out), they had a very friendly sign, if you have a specific food allergy, requirement please ask. So I asked, "my child has a nut allergy, what can she eat" and I was told "Nothing, the kitchen is full of almonds everywhere". We left without ordering anything for our whole group, but I phoned several days later and was informed that the kitchen is full of almonds is what the staff have been trained to tell customers. So despite the company having training, and signs and being aware of food allergies we were still unable to have a meal there.

## Appendix 8

## Comments received for Q20 - In your opinion how could catering establishments advertise their ability to provide allergen free food?

(NB Names have been redacted)

1. Allow customers to make an informed decision without always have to phone in advance every time we want to go out to eat.
2. Anything would help to raise awareness and confidence in the customer that they are safe to eat there.
3. Be open to all aspects of a person's allergy. I have been told that "we use gloves so everything is handled properly" yet these have been the very people who had latex gloves clearly displayed in the food preparation area. Understanding between the different types of gloves I found to be very limited or impossible to get through.
4. Companies should not be allowed to say May contain nuts traces, because this seems to be used by a cop out for a lot of companies just to cover themselves, so the child is left in limbo land not knowing but still cannot eat the product. Thank you for doing this survey.
5. I think an Award System would be a great incentive. We really do not eat out as a family. If we felt safe we most certainly would.
6. I think there's a great need for training on allergens, allergy and cross contamination in the catering industry. I would like to see all caterers meet the requirements of the new regulation, not just some!
7. I would like to see allergen information and training for all catering establishments, rather than possibly giving an allergen control award to a small number of caterers.
8. Implement allergy free options, for instance for me I would like to see a nut free option on the menu, similar to a vegetarian option on a menu.
9. It is vitally important that staff check out ingredients and preparation of food without causing embarrassment. There is no room for uncertainty when it comes to food allergies.
10. Make the person feel welcome and allergy no problem. 77
11. polite staff who are ill informed are not actually helpful.
12. Polite staff who are willing to alter dishes to suit an allergy sufferer without serving up plain and tasteless food is the most important. Flexibility and a certain amount of insight on behalf of the restaurant staff make life so much easier for allergy sufferers.
13. Properly trained staff
14. provide ingredients on menu so that we can choose to read it or not, then we can make informed choices about what food we order. Therefore avoiding all embarrassment
15. Staff to be very familiar with products not made on their premises. No use telling Customer that it may contain nut traces or made in a factory handling nuts - need for definite info.
16. The food business being a recipient of an allergen control award/accreditation would give great peace of mind
17. To be fair i think it will be next to impossible to achieve a completely allergen free food as there will always be a risk of cross contamination. It will take alot to convince me.
18. We often take word of mouth recommendations and love to get them from other people who are allergy aware.

## 9 References

${ }^{1}$ Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 20040 the hygiene of foodstuffs.(OJ L 139, 30.4.2004, p. 1)
${ }^{2}$ Food Allergy \& Intolerance: Guidance for the Catering Industry. Retrieved from http://www.safefood.eu/SafeFood/media/SafeFoodLibrary/Documents/Professional/Training/Safefoo d-20Food-20Allergy-20and-20Intolerance-20Catering-20Guide.pdf
${ }^{3}$ Allergy: What to consider when labelling food: A guide for small businesses that make or sell prepacked food. UK Food Standards Agency, 2006. Retrieved at http://www.food.gov.uk/multimedia/pdfs/publication/allergyjamjar0109.pdf
${ }^{4}$ Food allergy: What you need to know. UK Food Standards Agency, 2007. Retrieved at http://www.food.gov.uk/multimedia/pdfs/publication/loosefoodsleaflet.pdf
${ }^{5}$ Think Allergy. UK Food Standards Agency, 2007. Retrieved at http://www.food.gov.uk/multimedia/pdfs/publication/thinkallergy.pdf
${ }^{6}$ Allergen control checklist: catering premises. UK Food Standards Agency. Retrieved at http://www.food.gov.uk/multimedia/pdfs/publication/allergencateringogo8.pdf
${ }^{7}$ Allergen control checklist: manufacturing premises. UK Food Standards Agency. Retrieved at http://www.food.gov.uk/multimedia/pdfs/publication/allergenmanufacturer0908.pdf
${ }^{8}$ The Provision of Allergen Information for Non Pre-packed Foods: Voluntary Best Practice Guidance. UK Food Standards Agency, 2008. Retrieved at
http://www.food.gov.uk/multimedia/pdfs/loosefoodsguidance.pdf
${ }^{9}$ Guidance on Allergen and Miscellaneous Labelling Provisions. UK Food Standards Agency, March 2011. Retrieved at
http://www.food.gov.uk/multimedia/pdfs/publication/allergenlabelguidanceog.pdf
${ }^{10}$ Guidance on Allergen Management and Consumer Information: Best Practice Guidance on Managing Food Allergens withParticular Reference to Avoiding Cross-Contamination and Using Appropriate Advisory Labelling (e.g. 'May Contain’ Labelling). UK Food Standards Agency, 2006. Retrieved at http://www.food.gov.uk/multimedia/pdfs/maycontainguide.pdf
"Directive 2000/13/EC of the European Parliament and of the Council of 20 March 2000 on the approximation of the laws of the Member States relating to the labelling, presentation and advertising of foodstuffs. (OJ L 109, 6.5.2000, p. 29) Retrieved from
http://www.fsai.ie/uploadedFiles/Consol_Dir2000_13.pdf.
${ }^{12}$ Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004. (OJ L304/18; 22.11.2011). Retrieved from:-http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0018:0063:EN:PDF.
${ }^{13}$ Safe catering - your guide to making food safely. Retrieved from:- http://www.fsai.ie/safecatering/
${ }^{14}$ Bailey, S., Albardiaz, R., Frew, A.J. and Smith, H., Restaurant staff's knowledge of anaphylaxis and dietary care of people with allergies. Clinical \& Experimental Allergy, 41,713-717,2011.
${ }^{15}$ Leitch, I., Blair, L., and McDowell, D.(2000), " Dealing with Allergy", Environmental Health Journal October. 335-339.
${ }^{16}$ Leitch, I.S., Walker, M.J., and Davey, R. (2005). "Food allergy: Gambling your life on a take-away meal", Int. JIEnv Health Research April, 15, 79-87.
${ }^{17}$ safefood Evaluating food allergy awareness among catering staff. Published August 2008. Available from www.safefood.eu.
${ }^{18}$ Bolton, D.J., Meally, A., Blair, I.S., McDowell, D.A. and Cowan, C. Food safety knowledge of head chefs and catering managers in Ireland.Food Control, Vol. 19, pp291-300, 2008.
${ }^{19}$ Bord Bia. The Irish Food Board.PERIscope 6: Irish Consumers and their Food, 2011. Retrieved from http://www.bordbia.ie/industryservices/information/publications/bbreports/PERIscope6/Documents /PERIscope6\%20Full\%20Report.pdf
${ }^{20}$ Pumphrey, R.S. and Gowland, M.H., Further fatal allergic reactions to food in the United Kingdom, 1999-2006. J. Allergy Clin. Immunol., 119(4):1018-9, 2007.
${ }^{21}$ Pumphrey, R.S.H. (2000). "Lessons for the management of anaphylaxis from a study of fatal reactions" Journal of Clinical and Experimental Allergy 30, 1144-50.
${ }^{22}$ Hospital In-Patient Enquiry Scheme (HIPE), discharges with a principal diagnosis of ICD-9-CM 995.60 e 995.69. Health Research \& Information Division, Economic and Social Research Institute, Whitaker Square, Dublin, Ireland.
${ }^{23}$ Mustalahti1, K., Catassi, C., Reunanen, A., Fabiani, E., Heier, M., McMillan, S., Murray, L., Metzger, M., Gasparin, M., Bravi, E., Mäki, M. and the Coeliac EU Cluster, Epidemiology, The prevalence of celiac disease in Europe: Results of a centralized, international mass screening project. Annals of Medicine, 42(8), PP587-595, 2010.
${ }^{24}$ Young, E., Stoneham, M.D., Petruckevitch, A., Barton, J. and Rona, R., A population study of food intolerance. The Lancet, 343(8906) pp1127-1130, 1994.
${ }^{25}$ Niestijl Jansen, J., Kardinaal, A.F.M., Huijbers, G., Vlieg-Boerstra, B.J., Martens, B.P.M. and Ockhuizen, T., Prevalence of food allergy and intolerance in the adult Dutch population. J. All. andClin. Immunol., 93(2), PP446-456, 1994.
${ }^{26}$ Ferguson, A, MacDonald, D.M. and Brydon, W.G., Prevalence of lactase deficiency in British adults. Gut, 25:163-167, 1984.
www.safefood.eu
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